

30/01/2017

Your ref:
Planning ref:
Our ref: J11145/DB/c07

Ms A Wright
Barratt David Wilson Southampton
Tollbar House
Tollbar Way
Hedge End
Southampton
Hampshire
SO30 2UH

Dear Ms Wright,

**RE: LAND NORTH OF HAVANT RD & WEST OF SELANGOR AVE, EMSWORTH
MINERALS ASSESSMENT LETTER REPORT**

Following on from our ground investigation works at the above site, we have been requested to provide an evaluation of the mineral resource present at this site, which is to be developed through the construction of 158 new dwellings comprising houses and apartments together with proposed new access roads, areas of car parking, areas of soft landscaping and areas of private gardens.

This site is located within a Minerals Consultation Area as defined within the Hampshire Minerals and Waste Plan. The minerals resources that are protected at this site are sand and gravel for reuse as aggregates and clay with a potential for brick making.

Any assessment of mineral resource viability needs to take account of the nature of the mineral resource and the physical and hydrogeological constraints presented by the site.

This assessment discusses the mineral resource and its site specific qualities and suitability for commercial reuse together with presenting a discussion of the site setting, currently use, ground conditions, hydrogeology and other constraints with a view to assessing the viability of commercial recovery of the identified minerals resource at this site. This assessment is provided in accordance with our standard terms, conditions and limitations.

This assessment should be read in conjunction with our previous ground investigation letter report (report reference J11145c06 dated July 2016) which provides more comprehensive discussion of the ground conditions, site setting and history.

Summary of Ground Conditions and Mineral Resource Description

The ground conditions at this site have been assessed as part of the previous ground investigation to comprise a generally nominal thickness of topsoil beneath which Aeolian Deposits comprising a firm silty clay have been encountered to depths of between 0.80 m and 2.20 m below ground level. These clay soils have been found to be locally desiccated with visible rootlets encountered to a depth of up to 1.20 m and desiccation indicated to a depth of at least 1.30 m below ground level.

Underlying these clay soils, Head Gravel comprising a generally medium dense clayey gravel was encountered to the full depth in the trial pits, which terminated due to trial pit instability upon encountering groundwater at a maximum depth of 2.30 m below ground level.

Where proved in the deeper small diameter boreholes at depths of between 1.60 m and 3.80 m, these variably sandy and clayey gravels were found to be underlain by a fine silty sand / sandy silt which was encountered to depths of between 3.40 m and 3.70 m where proved within the central part of the site. The base of these sand soils was not however proved to a depth of up to 4.00 m below ground level across the majority of the site.

Underlying the fine silty sand soils, where proved, stiff grey fissured clay of the London Clay was encountered and proved to the maximum depth of investigation at 5.45 m below ground level.

The results of laboratory index testing carried out on selected soil samples indicates the near surface silty clay soils of the Aeolian Deposits to be of medium plasticity, with the underling clay soils of the London Clay to be of medium to high plasticity. On the basis of these tests it is considered that these near surface clay soils could be considered as source material for brick making.

The results of laboratory grading analyses carried out on selected samples of the Head Gravel indicate these soils to be a variably silty, sandy and clayey gravel. On the basis of these tests it is considered that there would be a significant requirement for washing and grading of any excavated materials to render them as a suitable aggregate for commercial use. This processing requirement is likely to significantly impact upon the viability of this resource materials.

Discussion of the Constraints and Opportunities for Mineral Extraction at this Site

Availability of Road Network

This site is also located in close proximity a junction on the A27 which provides ready access to the main trunk road network of the south coast. Access to the site is currently through Selangor Avenue, a narrow residential road with roadside parking, which is far from ideal as a works access to a minerals extraction site.

The proposed development does however include the provision for a new road access off the A259 to the south of the site that would provide ready access to the A27 and beyond.

There are two listed brickworks within Hampshire, one of which is currently inactive, whilst the only remaining brickworks in Michelmersh is located approximately 30 miles away, such that the road transportation of brick making clay to this brickworks would be wholly unsustainable and uneconomic.

Availability of Rail Network

Adjacent to the northern part of the site is the mainline railway from Southampton to Brighton, although the site is remote from any existing sidings or stations. There is the potential for the construction of a new siding to provide rail access to the site, although this would require the use of third party land and would be a significant expense that is not considered likely to be justifiable for site such as this.

Proximity of Adjacent Residential Properties

The site is bounded to the east and southwest by existing residential properties.

These properties would present a significant limitation on the extent of mineral resource at this site and it is considered that a 100m standoff from Selangor Avenue would be appropriate in view of the risks of noise and dust risks and nuisance, especially in view of the prevailing wind direction. A potentially reduced stand off distance of 75m may be acceptable with respect to the houses to the southwest of the site.

Presence of a Strategic Gas Main on Site

Within the eastern part of the site is a strategic high pressure gas main which would require protection as part of any potential minerals extraction. It is considered that a minimum 20m standoff would be required to ensure protection.

Protected Ecologically Sensitive Vegetation

The site is bounded to the west by a Highways Agency road embankment supporting the A27, which is currently planted with a screening tree belt. It is essential that the integrity of the embankment and the tree belt are protected such that a minimal 10m stand off distance is required on this site boundary.

Within the central southern part of the site there is a relic mature hedge that has been deemed ecologically sensitive which needs to be protected during the course of the development. A 10m stand off would be required for the protection of this hedge as part of any possible mineral resource abstraction works.

Shallow depth to Groundwater

Winter groundwater level monitoring has indicated groundwater to be significantly shallower during winter months, with levels as shallow as 0.20 m below ground level, which would indicate that at certain times of the year the site would not be suitable for any form of bulk excavation works

Extent of the Proposed Residential Development

The majority of the site is to be redeveloped for housing, through the construction of a mix of houses with roads, areas of hardstanding and private domestic gardens. Areas of public open space are also to be provided, with the majority of these areas located within the eastern part of the site where development is not possible due to the presence of the strategic gas main.

It is considered that any bulk excavation works for aggregate or clay resources could only be carried out outside of the development area at any excavations would compromise the foundation solutions for the proposed new buildings. Any deepening of foundations or the requirement for piled foundations would be expected to negate any commercial benefit is aggregate removal.

Conclusions

The overlapping constraints associated with the current setting of the site are summarised on the enclosed minerals assessment plan. From this review a relatively small part of the site has been identified that could be free of constraints prior to development.

Once this potentially unconstrained area is considered further with regards to the proposed development layout it is apparent that almost all of this area is to be occupied by houses and apartment blocks, roads and car parking areas, with only a small area forming part of an area of public open space.

The Hampshire Authorities provide a framework for the assessment of mineral resources which considered Larger Scale Extraction, Medium to Small Scale Extraction and Incidental Extraction.

It is considered that due to the site constraints the site is not suitable for Larger Scale Extraction. Furthermore it is considered that whilst the near surface potentially brickworks suitable clay could be considered for Medium to Smaller Scale Extraction, there is no viability for onsite reuse and there is no sustainable economic basis for transportation of any suitable clay to the nearest brick manufacturer approximately 33 miles away.

It is considered that the depth of excavation and ground disturbance required to gain access to the underlying sand and gravel, the seasonally very shallow depth of groundwater, together with the requirement for extensive processing to render the material suitable for reuse would also make Medium to Smaller Scale Extraction of sand and gravel unviable.

Consideration should however be given to Incidental Extraction whereby the arisings of all excavations on site as part of the redevelopment or site clearance works should be effectively managed and segregated. Whilst much of these materials may be effectively reused on site as part of a cut and fill exercise to create building platforms as part of the planning consent, there may be a surplus of material which could present an economically viable option for reuse.

The developer and / or appointed groundworkers should seek to maximize the potential for reuse of any such materials in accordance with a Construction Environment Management Plan that will be developed for the site.

We trust that this letter provides sufficient information although please do not hesitate to contact me should you have any queries or questions.

Yours sincerely
Wilson Bailey Partnership

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Principal Engineer