

Soil Resource Strategy & Sustainability Options Appraisal

Site: Land west of Tye Lane, Walberton

LPA Planning Reference: WA/127/21/OUT

Appellant: David Wilson Homes

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1. Introduction and Background

- 1.1. The purpose of this report is to confirm the soil types and to set out the basic principles of soil handling for the proposed development site west of Tye Lane, Walberton and provide an outline Soli Resources Plan (SRP) and Sustainability Options Appraisal.
- 1.2. The application is supported by an appraisal of Agricultural Assessment. This was prepared by an RICS Surveyor and Fellow of the Association of Agricultural Valuers.

2. Site and Soil Conditions

- 2.1 The site comprises a mix of arable and grazing land to the west of Tye Lane and north of the existing residential areas off The Street. It measures 8.15 hectares (20.1 acres). The site is located on the north side of Walberton, West Sussex. The Street is fronted by residential properties on both sides and Tye Lane has the proposed development site to the west and the Linden homes scheme and Avisford Park golf course to the east.
- 2.2 As set out in the Agricultural Assessment there is a mix of soil types noted on the site. The Assessment states:

To the north part of the site, there is a seem of Binsted Series (Bu1) which are a well-drained fine silty soil over clayey soils and locally very flinty which is the case here as flints are in very evident. Moving south there is a seem of Strettington Series (sG1). This is a very similar soil to the Binsted series. Further south there is a seem of Hook Series (hK1) which is deeper silty soil and tends to be a far less stony soil but can be affected by ground water. There is also a small area of Park Gate Series (Pz1) whose geology is 'Aeolian silty drift' and is described as a 'Deep stoneless silty soils variably affected by groundwater.

- 2.3 These soils are fairly common to this locality and seems of soils in this area run east/west parallel to the South Downs with the better quality soils being further south on the coastal plain

3. Soils Resources Plan & Sustainability Options Appraisal

- 3.1 The proposal comprises an outline planning application for the construction of up to 131 dwellings, with all matters reserved, other than means of access. The proposal also includes minor changes to the garden area serving Little Firs, which adjoins the southern boundary of the site.
- 3.2 This statement sets out a suitable strategy and procedures for stripping, storing and reinstating soils throughout the construction of a proposed development. Further consideration will need to be considered at the detailed stage, which will ensure that the

physical soil properties are maintained throughout construction, such that undisturbed and reinstated soil profiles will be able to support healthy root growth and successful plant establishment.

3.3 The outline strategy is to be used to identify the soil quality and potential options for re-use. Final details will need to be secured, once the detailed proposals are presented at the reserved matters stage.

3.4 The has been classified as ALC Grade 3a, good to moderate quality with moderate limitations which effect the choice of crops, timing and type of cultivation etc.

4. Landscape design and soil suitability

4.1 The topsoil resource stripped from the area of built development would likely be utilised on site in the detailed design of residential gardens, landscape buffers and the LEAP area in the south-west of the site.

4.2 The site has been under permanent grass and crop for over forty years. The soils are therefore proven to be well suited to this purpose and are appropriate for re-seeding with grass for gardens and open space.

4.3 A suitable soil profile for reinstatement should utilise as much of the displaced topsoil resource as is possible. Profiles comprising 900mm of subsoil material beneath 300mm of topsoil should be achievable throughout all garden and tree planting areas.

4.4 The soil resource is inherently freely draining which, provided the structure is maintained through good working practices, should result in fewer potential complications with tree and grass establishment than might be expected with a heavier and/or less well drained subsoil, although close monitoring for signs of vegetation failure will be necessary.

5. Soil Management Strategy

5.1 The following soil management strategy is based on best practice guidance contained within Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, MAFF's Soil Handling Guide and industry experience.

Good practice for handling soils

5.2 Inevitably, soil structural quality will be disrupted by handling or trafficking. There are three principal objectives to consider when stripping, handling and storing soils:

- the avoidance of unnecessary damage to all three soil layers (topsoil, upper subsoil and lower subsoil), especially by compaction and smearing;
- the maintenance of a reasonable degree of fissuring, and hence aerobic conditions, in stored soils, especially topsoil; and
- the reasonable replication of the original permeability of the soil profile when the materials are replaced.

5.3 All soil material to be re-used, for whatever purpose, will be handled only under appropriate conditions, when in a dry and friable state, which is when they are least susceptible to damage by compaction and smearing, and according to the following rainfall criteria:

- if there is very light rain or drizzle, handling can proceed for up to four hours unless the soils are already in too moist a state (determined by field tests);
- if there is normal rain, handling will cease if the rain has not stopped in 15 minutes;
- if there is heavy rain (as from intense showers, slow-moving depressions) handling will stop immediately;
- after rainfall has ceased, field tests will be applied to determine when handling may re- start.
- The field tests used to determine the suitability of handling should be applied to soils from at least five locations in each area to be assessed. Records of all tests will be kept.

Soil stripping

- 5.4 Any standing crop or bulky vegetation will normally be cut and removed before stripping. If under grass, the grass should be cut as short as possible and any arisings should be carted away.
- 5.5 The stripped topsoil and any stripped subsoil resources should be stored in separate bunds within the site, the locations and volumes of which should be recorded. Haul routes and storage areas will first be stripped of topsoil. The principal objective is to avoid trafficking of materials by wheeled vehicles.
- 5.6 Plant of appropriate size for the operation will be used to strip the soils and place them into storage bunds as appropriate, as recommended in the Good Practice Guide for Handling Soils. Plant will include tracked excavators and dumpers.

Depth of soil stripping

- 5.7 The full thickness of the topsoil horizon should be stripped before any subsoil stripping occurs. Each layer should be stripped to its natural thickness, identified by colour, avoiding incorporation of subsoil material into the removed topsoil.

Topsoil stockpiling

- 5.8 Topsoil should be stockpiled when in an appropriate condition as determined by the field tests for moisture and consistency described above. This will ensure the soil is less prone to damage and compaction and will also facilitate re-spreading where applicable.
- 5.9 Topsoil stockpiles are proposed to have a maximum height of 3m and a gradient of 1 in 3 to allow for maintenance by mowing rather than strimming. Stockpiles must be located away from areas that may be at risk of flooding or ponding.
- 5.10 Appropriate plant, such as tracked excavators and dump trucks, can be used to construct the soil mounds as required as recommended in the Good Practice Guide for Handling Soils. The dump trucks should travel to the storage area within the haul routes. The trucks should back-tip the transported soil starting at the furthest point from the access. Excavators and dozers can then be used to progressively shape and firm the mounds.
- 5.11 Any subsoil stockpiles may be up to 5m in height, with a side gradient of 1 in 3.
- 5.12 Any stockpiles in place for more than 6 months will be grassed down, normally with a low-maintenance mix unless otherwise agreed, and kept in a tidy and weed-free condition.
- 5.13 Locations should be monitored for signs of ponding. If that occurs, temporary drainage measures should be immediately put in place.
- 5.14 The locations and footprints of each stockpile shall be recorded accurately on a plan of not less than 1:2,500 scale.
- 5.15 The approximate volume and nature of each type (topsoil and subsoil) of the stored materials will be recorded.

Subsoil preparation

- 5.16 Soil placement will occur once the areas to be reinstated to gardens and green infrastructure are dry and clear of debris.
- 5.17 To ensure successful establishment of grass and trees, the subsoil must be un-compacted and well aerated in order to avoid waterlogging and the development of anaerobic conditions. If significant rainfall occurs during the replacement operation, work must be suspended and not restarted until the weather forecast is expected to be dry for at least one full day.
- 5.18 Any re-instated subsoil should be loose-tipped into the receiving area and spread using appropriate plant. Any debris that may have been incorporated into the subsoil resource should be removed.

Topsoil re-spreading

- 5.19 Topsoil should also be taken out of stockpiles when in a dry and friable condition, and loose- tipped onto the prepared subsoil, to a depth of 300mm (plus up to 20% to allow for settlement).
- 5.20 Following topsoil re-spreading, the soil profiles should be de-compacted if required and larger clods broken up prior to the soil being seeded or trees being planted.
- 5.21 Tree and grass establishment must be monitored subsequent to planting. At the first signs of failure, the soil profiles will be examined in order to identify any drainage or compaction issues, and a strategy to ameliorate these issues will be developed.