LAND AT HALL ROAD, ROCHFORD

SOILS AND AGRICULTURAL ASSESSMENT

READING AGRICULTURAL CONSULTANTS

OCTOBER 2009
1. INTRODUCTION

1.1 Reading Agricultural Consultants Ltd (RAC) is instructed by Bellway Homes Limited to assess the impact of the Proposed Development of land to the north and south of Hall Road, Rochford, Essex on agriculture and soil resources. In particular, this assessment considers the potential impacts of the loss of agricultural land in terms of agricultural land quality, soil resources, local farm businesses and agri-environment schemes.

1.2 In responding to these instructions, RAC has carried a detailed Agricultural Land Classification (ALC) survey and has interviewed the owner of the agricultural land to establish the use made of the land in terms of agricultural businesses.

2. POLICY AND GUIDANCE

Legislative Framework

2.1 In 2006 the European Commission (EC) adopted a comprehensive ‘Thematic Strategy’ (Ref. 1) specifically dedicated to soil protection which included a proposal for a ‘Soil Framework Directive’ (Ref. 2) to promote the sustainable use of soil and protect soil as a natural resource. However, thus far, Environment Ministers have been unable to reach agreement on EC proposals for an EU soil framework directive.

2.2 Although there remains no specific legislation for the protection of soil and agricultural land, the Department for Environment, Food and Rural Affairs’ (DEFRA) issued the Soil Strategy for England – Safeguarding our Soils in September 2009 (Ref.3). The Strategy sets our DEFRA’s vision that by 2030 all England’s soils will be managed sustainably and degradation threats tackled successfully in order to improve the quality of England’s soils and safeguard their ability to provide essential services for future generations.

- The Strategy sets out priorities for action in respect of:
- Better protection of agricultural soils;
- Protecting and enhancing stores of soil carbon;
- Building the resilience of soils to a changing climate;
- Preventing soil pollution;
- Effective soil protection during construction and development; and
- Dealing with the legacy of contaminated land.

2.3 DEFRA also published a Code of Practice for the Sustainable Use of Soils on Construction Sites in September 2009 (Ref.4). The code of practice is a practical guide to assist the construction industry to protect the soil resources with which it works and achieve good soil management at all stages of the construction process. It advises that the protection, use and movement of soil should be considered from the outset of a development project’s planning, through its design and construction phases and on into future maintenance. The code provides practical guidance on the following aspects of the sustainable use of soils on construction sites:
- Identifying existing soil resources on site;
- On-site soil management;
- Topsoil and subsoil stripping;
- Soil stockpiling and placement;
- Sourcing, importing and manufacturing topsoil;
- Soil aftercare; and
- Uses for surplus topsoil.

**Planning Policy**

**National Planning Policy**

2.4 National planning policy guidance regarding development related to agricultural land and soil is set out in Planning Policy Statement 7 (PPS7), Sustainable Development in Rural Areas (2004) (Ref. 5) Paragraph 28 of PPS 7 advises that, when determining planning applications, the presence of the best and most versatile agricultural land (i.e. that classified as Grades 1, 2 and 3a in the Agricultural Land Classification) should be taken into account alongside other sustainability considerations (including the protection of natural resources, such as soil quality).

2.5 The guidance states that where significant development of agricultural land is unavoidable, poorer quality land in Grades 3b, 4 and 5 should be used in preference to higher quality land, except where this would be inconsistent with other sustainability considerations.

2.6 The guidance goes on to suggest that little weight in agricultural terms should be given to the loss of agricultural land in Grades 3b, 4 and 5, except in areas such as uplands where particular agricultural practices contribute in some special way to the environment or economy.

2.7 There is no guidance within PPS7 with regard to the effects of development on farm holdings, although it remains DEFRA's policy to secure an environment in which a competitive and sustainable agricultural industry with a strong market focus can flourish.

**Development Plan Policy**

2.8 Regional planning policy guidance is set out in East of England Plan (May 2008) (Ref. 6). Policy ENV4 provides specific policy guidance stating that: “promote and encourage the expansion of agri-environment schemes to:… maintain and enhance the resilience and quality of soils…” and to “encourage the sustainable use of soil resources…”.

2.9 None of the saved policies contained within the Structure and Local Plans relate to the protection of soils or agricultural land.

**Guidance**
2.10 Guidance on classifying agricultural land is contained in ‘Agricultural Land Classification of England and Wales, Revised Guidelines and Criteria for Grading the Quality of Agricultural Land’, prepared by the then Ministry of Agriculture, Fisheries and Food (MAFF) in 1988 (Ref. 7).

2.11 Agricultural land in England and Wales is graded between 1 and 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on agricultural use. Grade 1 land is excellent quality agricultural land with very minor or no limitations to agricultural use, and Grade 5 is very poor quality land, with severe limitations due to adverse soil, relief, climate or a combination of these. Grade 3 land is subdivided into Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land).

2.12 Best practice guidance on soil handling and management during the construction phase, to minimise potential adverse impacts on the soil resource, is found in MAFF’s ‘Good Practice Guide for Handling Soils’ (2000) (Ref. 8), and DEFRA’s ‘Construction Code of Practice for the sustainable use of soils on construction sites’ (2009) (Ref. 4).

3. ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

Scope of the Assessment

3.1 The key agricultural and soil issues assessed in this report are:

- the magnitude and significance of any loss of agricultural land (especially that classified as ‘best and most versatile agricultural land’) to the national agricultural land resource;
- the magnitude and significance of effects on soil resources;
- the magnitude and significance of effects on local farm businesses; and
- the magnitude and significance of effects on statutory and non-statutory rural land designations and agri-environment schemes.

Extent of the Study Area

3.2 For most of the key issues identified, the study area is restricted to the site of the Proposed Development. There may, however, be the potential for effects on neighbouring farmland during the construction and operational phases.

Consultation

3.3 Natural England, which maintains the national database of Agricultural Land Classification (ALC) surveys, has been consulted as to the availability of existing post-1988 ALC surveys on or close to the site. No surveys have been carried out in this area.

3.4 The owner of the land has been consulted to establish the existing farming circumstances on the site and the nature of any agri-environment schemes.

Method of Baseline Data Collection

3.5 Soil profiles in thirty two locations were examined using an Edelman (Dutch) auger and spade. One soil pit was used to examine soil structures and thicknesses. The locations of observations are indicated on Figure RAC 1. Observation density on the agricultural land is approximately one site per ha. At each observation point the
following characteristics were assessed for each soil horizon up to a maximum of 120 cm or any impenetrable layer:

- soil texture;
- significant stoniness;
- colour (including local gley and mottle colours);
- consistency;
- structural condition;
- free carbonate; and
- depth.

3.6 Soil droughtiness was investigated by the calculation of moisture balance equations. Crop-adjusted Available Profile Water (AP) is estimated from texture, stoniness and depth, and then compared to a calculated moisture deficit (MD) for the standard crops wheat and potatoes. The MD is a function of potential evapotranspiration and rainfall. Grading of the land can be affected if the AP is insufficient to balance the MD. When a profile is found with significant stoniness, sufficient to prevent penetration of a hand auger, then it is assumed, for the purposes of calculating droughtiness, that similar levels of stoniness continues to the full 1.2 m depth considered.

3.7 Soil Wetness Class (WC) was inferred from the presence or absence of, and depth to, greyish and ochreous gley mottling and/or poorly permeable subsoil layers at least 15 cm thick.

3.8 An interview was held with the owner of the affected land to establish the physical characteristics of the farm and identify any adverse effects arising from the proposed development. Details collected included:

- the size and boundaries of the farm;
- the nature of land tenure;
- the nature and scale of current agricultural enterprises and practice;
- items of fixed farm capital;
- means of agricultural access;
- agricultural under-drainage of the land;
- water supplies to the land;
- the extent of any agri-environment scheme involvement;
- the potential physical effects of the proposals;
- the farm management implications of the proposals; and
- possible mitigation measures.

3.9 The extent of existing agri-environment schemes has been established from www.magic.gov.uk (Ref. 9) and through consultation with the farmer.
Assessment Criteria

3.10 In order to assess the effect of the Development on agriculture, two sets of significance criteria have been adopted: one relating to the impact on agricultural land (i.e. the area and quality of the land affected – refer to Table 1), and the other relating to effects upon farming businesses (refer to Table 2). These are based on interpretation of the advice in PPS7 and best practice guidance, and have been developed in consultation with DEFRA and the Rural Land Use Team at Government Office for the East of England in relation to development proposals.

Table 1: Significance Criteria for Agricultural Land-take

<table>
<thead>
<tr>
<th>Significance</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major adverse</td>
<td>The loss of 20ha or more of best and most versatile agricultural land in Grade 1</td>
</tr>
<tr>
<td>Moderate adverse</td>
<td>The loss of 10ha or more of Grade 1 land, or 20ha or more of land in Grade 2 or Subgrade 3a; or where there is a loss of more than one grade of land, the cumulative loss exceeds the threshold for the lowest grade of land</td>
</tr>
<tr>
<td>Minor adverse</td>
<td>The loss of any best and most versatile land not included in the Major and Moderate Adverse categories</td>
</tr>
<tr>
<td>Neutral</td>
<td>No permanent effect on agricultural land</td>
</tr>
<tr>
<td>Minor beneficial</td>
<td>The net restoration of up to 20ha of agricultural land</td>
</tr>
<tr>
<td>Moderate beneficial</td>
<td>The net restoration of over 20ha of agricultural land, or net enhancement in value of up to 20ha of agricultural land to best and most versatile quality Subgrade 3a, or better</td>
</tr>
<tr>
<td>Major beneficial</td>
<td>The net restoration or net enhancement in value of over 20ha of agricultural land to Subgrade 3a, or better</td>
</tr>
</tbody>
</table>

3.11 There is limited guidance regarding the significance of the area of agricultural land lost. DEFRA still has a statutory right under the Town and Country Planning (General Development Procedure) Order 1995 to be consulted by a local planning authority on any development that does not accord with the Development Plan and would involve the loss of more than 20ha of best and most versatile land. As this loss introduces the national interest (as represented by DEFRA), it is reasonable to attach a degree of significance to this magnitude of loss of high quality land.

3.12 In order to assess the effect of the Development on the farm affected by it, the criteria set out in Table 2 have been used. Unlike the issue of land quality, there are no definitions in land use planning policy that describe what level of effects on farming businesses are likely to be significant in the national interest. However, the significance criteria set out in Table 2 have been widely accepted by DEFRA, Natural England and the Planning Inspectorate on other development proposals.
Table 2: Significance Criteria for the Effect on Farm Units

<table>
<thead>
<tr>
<th>Significance</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Adverse</td>
<td>The impact of the proposal would be likely to render the whole farm non-viable</td>
</tr>
<tr>
<td>Moderate Adverse</td>
<td>The viability of the unit or enterprise should not be threatened, but significant changes in the day-to-day management may be required</td>
</tr>
<tr>
<td>Minor Adverse</td>
<td>The viability of the unit or enterprise is not threatened: minor changes would be required of the enterprise, and the type and range of enterprise is unaffected</td>
</tr>
<tr>
<td>Neutral</td>
<td>The financial impact would be insignificant in relation to net farm income, and no alteration to the farming system would be needed to absorb the physical impact</td>
</tr>
<tr>
<td>Beneficial</td>
<td>The potential viability of the unit or enterprise could be enhanced by, for example, an increase in the area of land farmed, a reduction to severance, or the removal of traffic from access routes</td>
</tr>
</tbody>
</table>

4. BASELINE CONDITIONS

Site Description

4.1 The total area considered is about 33.5 ha, the boundary being shown in red on Figure RAC 1. The land is bounded to the south by Hall Road, to the east by the built area of Rochford, to the north by a lane, and to the west by other agricultural land. There are no agricultural buildings within the site boundary. The land forms an almost flat plain with very gentle gradients to the north and south.

4.2 The altitude of the site falls between about 7 and 10 m aOD. Microtopography is smooth. Along the southern boundary and northern boundaries the land is slightly lower than elsewhere. There are open ditches along the southern and eastern sides of the land.

Agricultural Land Quality

4.3 Figure RAC2 and Table 3 show the extent and distribution of land in the different ALC grades and sub-grades. All of the land at the site is best and most versatile land in Grade 2 and Sub-Grade 3a.

Table 3: Area of Agricultural Land by Grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Ha</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>27.0</td>
<td>80</td>
</tr>
<tr>
<td>3a</td>
<td>6.5</td>
<td>20</td>
</tr>
<tr>
<td>Total agricultural</td>
<td>33.5</td>
<td>100</td>
</tr>
</tbody>
</table>
Soil Resources

4.4 The soils are deep, predominantly stoneless or very slightly stony, silts soils which are formed on thick, mainly aeolian, silty drift, possibly overlying river terrace or raised beach sands and gravels at depth. The aeolian material is wind-blown, probably carried from continental Europe at the end of the last Ice Age, and deposited on top of gravelly outwash and river terrace deposits.

4.5 The soils form valuable farmland due to their easy working, their high water-holding capacity, and their free drainage for the most part. The silty soils are easy to work, but have an inherent susceptibility to compaction. The soil pattern is generally simple with silty stoneless Hamble series and Hook series soil-types, typical and gleyic argillic brown earths respectively, being present. The Hook series soils have imperfect drainage compared to the good drainage of the Hamble soils, and are found along the northern and southern margins of the land in question.

4.6 These soils provide easy cultivation, though with their propensity to compaction they will require occasional deep loosening. It was frequently found that the lower subsoil was compacted or indurated in some way, leading to difficulty in penetration by auger. Laboratory tests show that the topsoil textures are silt loam to medium silty clay loam, and some medium clay loam.

Land Use and Tenure

4.7 All of the land within the development site is owned by Tabour Farms Ltd, an 810 ha arable farm split between Rochford (610 ha) and Manningtree (200 ha) 45km to the north-east. The vast majority of this land is owner-occupied with only 40 ha rented on an annual licence.

4.8 The main farm unit is based at Sutton Hall near Rochford, with the enterprise operating out of three other units in the area: Mucking Hall and Butler’s Farm to the east and Rochford Hall west of Rochford. Most of the land farmed by Tabour Farms at Rochford is located to the east of the town with only 130 ha farmed on the western side.

4.9 Most of the land farmed by the enterprise is used to grow winter wheat with other crops including winter oil seed rape, field peas and potatoes. The farm business also operates a DIY/full livery for 35 horses. Four people are employed by the farm full-time with an additional four employed during harvest periods.

4.10 The northern edge of the development area has field drains which were installed approximately 30 years ago which drain towards the site’s northern boundary. The Development Area also has an irrigation pipe which runs across the south-western corner of the site which feeds a 46 ha parcel to the north-west. This land is accessed by the track which runs north from Hall Road.

Agri-Environment Schemes

4.11 All of the land within the proposed development area has been entered into Defra’s Entry Level Stewardship scheme (ELS). This is designed to encourage large numbers of farmers to participate in agri-environment schemes and requires relatively straightforward environmental management, though at a level above that required for cross-compliance under the Single Payment Scheme. The scheme aims to conserve wildlife, enhance the landscape and protect natural resources. It is non-competitive and open to all farmers provided that the scheme requirements are met, with agreements lasting for five years.
5. ASSESSMENT OF IMPACTS

Agricultural Land and Soil Resources

5.1 The Proposed Development will involve the permanent and irreversible loss of approximately 21.2 ha of agricultural land in Grade 2 and 1.9 ha in Sub-Grade 3a. Development which is considered to be irreversible includes residential, parking and roads. According to the criteria in Table 1, this is considered to be a moderate adverse effect prior to the implementation of mitigation measures.

5.2 The principal potential direct impact on soil would be loss of quality if it were handled inappropriately (for example, handled or trafficked when wet; and by the mixing of topsoil and subsoil on stripping). However, provided soil recovery is carried out carefully, to avoid this potential impact, there would be no significant direct impact on the soil resource.

5.3 The indirect adverse effect on the soil resource would accrue mainly from the re-use of soil off-site in a manner inappropriate to its quality. The quality of the resource would be described and documented to accompany its removal, to facilitate appropriate re-use of the soil.

Land Use and Tenure

5.4 The principal direct impact caused by the construction of the proposed development would be caused by the loss of agricultural land.

5.5 Construction of the Proposed Development will involve the loss of 33.5 ha of land from Tabour Farms Ltd. This land only represents a small proportion (5%) of the Rochford holding, the loss of which is not expected to significantly affect the daily operation of the unit.

5.6 A track to the western side of the development site is used to access a 46 ha parcel of land farmed by the holding. The severance of this land in addition to that taken by the scheme will result in a 13% reduction in the size of the holding. Construction works on the proposed Development Site will also require rerouting an irrigation pipe which feeds the severed farmland.

5.7 Using the criteria in Table 2, the proposed development is likely to have a direct, permanent effect on farm holdings of moderate adverse effect prior to the implementation of mitigation measures.

5.8 The principal impact to the on-going management of agri-environment schemes would be as a result of the loss of land and features which were eligible for entry. A reduction in the amount of qualifying land will result in a corresponding reduction in payments. Penalties for breaking agreements before the end of the five year term are also in place.

6. MITIGATION

Agricultural Land and Soil Resources

6.1 There are no effective measures available to mitigate the direct loss of agricultural land.

6.2 The primary measures to mitigate the loss of soil resources will be to re-use as much of the surplus resources on-site in the detailed design of gardens, buffer zones, amenity and open spaces; to dispose of any surplus soils thereafter in a sustainable manner (i.e. as close to the site as possible and to an afteruse appropriate to the soil’s
quality) in accordance with the Code of Practice; and to ensure that the quality of soils retained on-site and disposed off-site (if required) is maintained by following best practice guidance on soil handling.

**Land Use and Tenure**

6.3 Provision of a new access to the severed block of land from either Hall Road or Ironwell Lane will mitigate the loss of 46 ha of land. Re-routing the irrigation pipe around the development area will allow this parcel to continue to be irrigated. With regards to land within the development site, other than financial compensation, there is no effective mitigation available for the loss of land to farm holdings.

6.4 Other than financial compensation to the current claimants, there is no effective mitigation available for the loss of land and features eligible for agri-environment schemes.

7. **SUMMARY**

7.1 Agricultural land at the site is a mixture of 80% Grade 2 (very good quality) and 20% Subgrade 3b (good quality).

7.2 The irreversible loss of 21.2 ha of Grade 2 and 1.9 ha of Sub-Grade 3a best and most versatile land, is considered to be a moderate adverse effect.

7.3 There is likely to be a direct, temporary, short-term minor adverse effect on soil resources following the implementation of mitigation measures. These measures would principally involve the re-use of as much of the surplus resources on site, the disposal of any surplus soils thereafter in a sustainable manner and the maintenance of soil quality by following best practice guidance on soil handling during construction.

7.4 Following the implementation of mitigation measures, the proposed development would not change the viability of the farm holding at the site. The loss of agricultural land would likely to have an overall minor adverse effect on farm holdings.
REFERENCES


