

**Assessment of the Impact on Agricultural Interests of
the Allocation of a Site Known as Hedon Haven,
East Riding of Yorkshire
in the Local Development Framework**

for URS



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1 Introduction

- 1.1 Reading Agricultural Consultants Ltd (RAC) is instructed by URS to assess the likely significant effects on agricultural interests of the allocation of a parcel of land at Hedon Haven, in the East Riding of Yorkshire Council's Local Development Framework (LDF).
- 1.2 The report describes the assessment methodology; the current baseline conditions at the site; the likely significant environmental effects; and the mitigation methods required to prevent, reduce or offset any significant adverse effects.

2 Assessment Methodology

- 2.1 The general approach adopted by this assessment has been derived from the present planning advice from central and local Government on the treatment of agricultural issues in development affecting farmland. This advice provides a guide to the factors which ought to be examined in an assessment of the impacts of development proposals upon agriculture, as well as a policy framework within which weight can be attached to the significance of particular impacts.
- 2.2 This assessment assumes that all of the land within the boundary of the LDF allocation would be fully developed and therefore considers a 'worst case' scenario.

National Planning Policy

- 2.3 National land use development policies, which are set out in the National Planning Policy Framework, seek to safeguard scarce natural resources in the long-term national interest. Consequently, policies for development in the countryside give protection to the best and most versatile agricultural land (defined as Grades 1, 2 and 3a in the Agricultural Land Classification). Paragraph 112 of NPPF advises that local planning authorities should take into account the economic and other benefits of the best and most versatile land.
- 2.4 The guidance states that where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use poorer quality land in Grades 3b, 4 and 5 in preference to higher quality land.

2.5 Paragraph 109 of the NPPF puts the protection and enhancement of soils as a priority in the conservation and enhancement of the natural environment. In this regard, the inherent quality of soil, as distinct to its agricultural value, is recognised in the Government's 'Soil Strategy for England – Safeguarding our Soils' (2009) which seeks to encourage the more sustainable management of soil resources. The Strategy sets out 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.

2.6 DEFRA also published a 'Code of Practice for the Sustainable Use of Soils on Construction Sites' in 2009. 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 and operation. 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.

- 2.7 Sustainable use and management of soil resources during construction can help with re-establishment of soil functions following their storage or movement, including food production, habitat provision and support, and cycling of elements such as carbon and nitrogen.
- 2.8 There is no guidance in policy with regard to the effects of development proposals on farm holdings, although Natural England's Technical Information Note (TIN) 049 indicates that land quality is not the sole consideration in how development proposals affect agriculture in the planning system, with other factors, such as the impact on farm size and structure, the use of buildings and other fixed equipment, or any stimulus a development might give to rural economic activity, also being relevant.

Local Planning Policy

- 2.9 There are no local planning policies relating to agricultural land quality or agricultural holdings.
- 2.10 National policy objectives form the basis of the assessment of the effects of the proposed development on agriculture, and have defined the scope of the impacts to be identified and examined in this study. These are:
- the quantity and quality of agricultural land that would be taken;
 - the use and management of soil resources;
 - the impact of land loss on the farming businesses; and
 - the possible loss of agricultural buildings and other fixed farm capital.

3 Significance Criteria

- 3.1 The ALC survey provides a statement of the amount and quality of the agricultural land on the site. The weight and significance to be placed on the loss of the best and most versatile agricultural land should be viewed in light of:
- the need for the development of agricultural land, and the opportunities for using poorer quality agricultural land in preference to higher quality land; and
 - the continued availability of the basic soil resources for a potentially wide variety of uses for future generations.

3.2 The NPPF emphasises that local planning authorities should take into account the economic and other benefits of the best and most versatile agricultural land and that they should seek to use lower quality land in preference to higher quality land. Thus this matter is considered to be of District significance and, in accordance with the criteria to establish the sensitivity of receptors in Table 1, the presence of best and most versatile land is considered to be of medium sensitivity.

Table 1: Sensitivity of Land Use/Receptor

| Receptor | Sensitivity |
|--|--------------------|
| Land use/resources of national/international importance present on the site or in vicinity | Very High |
| Land use/resources of regional/county level importance present on the site or in vicinity | High |
| Land use/resources of district/local importance present on the site or in vicinity | Medium |
| Land use/resources of no importance present on the site or in vicinity | Low |

3.3 The thresholds for the magnitude of impact set out in Table 2 have had regard to the statutory consultation procedures in the Town and Country Planning (Development Management Procedure) Order 2010 in which DEFRA have to consider proposals which individually or cumulatively involve the loss of more than 20 ha of best and most versatile land.

Table 2: Magnitude of Impact - Land Resources

| Land Resource | Magnitude |
|---|------------------|
| The development would lead to the loss of over 20 ha of best and most versatile agricultural land | High |
| The development would lead to the loss of between 10 and 20 ha of best and most versatile agricultural land | Medium |
| The development would lead to the loss of less than 10 ha of best and most versatile agricultural land | Low |
| No permanent effect on best and most versatile agricultural land | Negligible |

3.4 The significance of effect is then assessed based on the sensitivity of agricultural land and the magnitude of impact, as shown below in Table 3.

Table 3: Significance Matrix

| Sensitivity of Receptor | Magnitude of Effect on Land Use and Land Resources | | |
|-------------------------|--|------------|------------|
| | High | Medium | Low |
| Very High | Major | Major | Moderate |
| High | Major | Moderate | Minor |
| Medium | Moderate | Minor | Negligible |
| Low | Minor | Negligible | Negligible |

- 3.5 There is no standardised method for determining the effects of development proposals on agricultural businesses and thus professional judgement, having regard to relevant guidance and advice, has been used for this assessment. Table 4 sets out the classification criteria.

Table 4: Criteria for Assessing the Significance of Effect on Agricultural Holdings

| Magnitude of Effect on Farm Holdings | Criteria |
|--------------------------------------|--|
| Major Adverse | The impact of the scheme would be likely to render a commercial farm non-viable |
| Moderate Adverse | The viability of a commercial farm should not be threatened but significant changes in the day-to-day management may be required |
| Minor Adverse | The viability of a commercial farm would not be threatened: minor changes would be required |
| Neutral | The financial impact would be insignificant in relation to net farm income |
| Beneficial | The potential profitability of a commercial farm would be enhanced and/or day-to-day management of the unit would be made easier |

4 Baseline Conditions

General features, Land Form and Drainage

- 4.1 The total area considered is approximately 236ha with arable agriculture being the principal land use. Also included within the survey boundary are minor areas of woodland and other non-agricultural uses.
- 4.2 The site is bounded to the north and east by Hull Road, the A1033 and to the south by Farbridge Lane. Beyond the A1033 to the east is the residential area of Hedon. To the north-west is BP's Saltend chemical works and to the south-west, Paull Holme Sands. There are two dwellings, known as the Newton Garth Cottages, on the southern edge of the site.
- 4.3 There are two adjoining public rights of way to the north of the site which provide access to two small wooded areas and a small pond. The Burstwick Drain dissects the site from east to west and drains into the Humber, with a field immediately to the south of the drain bordered by bunds which separate it from adjacent fields. The southern portion of the site is also divided by Paull Road.
- 4.4 The site is level and lies at an altitude of approximately 5m above Ordnance Datum (aOD). Microtopography is smooth to very gently undulating.

Climatic Factors

- 4.5 Local climatic factors have been interpolated from the Meteorological Office's standard 5 km grid point data set for the survey area at a representative altitude. Climatic factors are given in Table 5. Average annual rainfall is moderately low and temperatures are moderately cool. Average moisture deficits are moderately large to large. The Field Capacity Day regime is shorter than the average for lowland England and is considered favourable for providing opportunities for land work.

Table 5: Local climatic factors

| | |
|--|-----------|
| Average annual rainfall (AAR) | 613mm |
| Accumulated temperature (AT0) | 1395 day° |
| Field Capacity Day regime (FCD) | 134 days |
| Average moisture deficit, wheat (MDw) | 113mm |
| Average moisture deficit, potatoes (MDp) | 107mm |

Soil Survey Methods

- 4.6 121 soil profiles were examined using an Edelman (Dutch) auger and spade. The locations of observations are indicated on Figure RAC 5576-1b. Observation density on the agricultural land is approximately 0.5 per hectare. At each observation the following characteristics were assessed for each soil horizon up to a maximum of 120cm or any impenetrable layer:
- soil texture;
 - significant stoniness;
 - colour (including local gley and mottle colours);
 - consistency;
 - structural condition;
 - free carbonate; and
 - depth.
- 4.7 Three topsoil samples were taken for laboratory determination of particle size distribution, pH and the nutrients phosphorus, potassium and magnesium.
- 4.8 Soil Wetness Class (WC) was inferred from the matrix colour, presence or absence of, and depth to, greyish and ochreous gley mottling and/or poorly permeable subsoil layers at least 15cm thick.
- 4.9 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 and droughtiness occurs. 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 1.2m depth considered.

Soil Parent Materials and Soil Types

- 4.10 The principal underlying geology is that of the Flamborough Chalk Formation, although this is not present at the surface. The parent material of the soil across the site is mainly superficial Tidal Flat Deposits consisting of clay and silt, although in places these are overlain in the southern portion of the site by superficial sand and gravel outwash deposits which form very slightly higher ground.
- 4.11 The Soil Survey of England and Wales 1:250,000 scale soil association map shows the Newchurch 2 Association is predominant with a small intrusion of the Landbeach Association in the south.
- 4.12 The Newchurch 2 Association is extensive on stoneless clayey marine alluvium and is characterised by pelo-calcareous alluvial gley soils. Soils are typically moderately permeable and assessed as Wetness Class (WC) III or IV, dependent upon local annual rainfall and winter waterlogging. The depth to a slowly permeable subsoil layer is critical to determining the wetness class of these soils. Topsoils across the site are predominantly very dark greyish brown silty clay or silty clay loams varying in thickness from around 25 to 50cm. Subsoils are typically dark brown or greyish silty clay or clay and are mottled in appearance.
- 4.13 The Landbeach soils are typically slightly stony and loamy, and overlie chalky glaciofluvial and river terrace drift. Soils are permeable and well drained, typically WC I or II, and can be moderately droughty.

ALC and Main Limitations on the Agricultural Land

- 4.14 Assessment of quality has been carried out according to the MAFF revised guidelines (1988¹). The main factor affecting land classification at this site is poor soil workability which limits a majority of the site to no better than Subgrade 3b as a result of the combination of non-calcareous silty clay or heavy silty clay loam topsoils in WCIII or IV.
- 4.15 Soils are variably calcareous across the site and, where the topsoils are found to be calcareous, in combination with WCIII, the workability limitation is to Subgrade 3a. This situation is found over about one-quarter of the site.

¹ **MAFF (1988)**. *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications.

- 4.16 Over a small area of the site on Landbeach soils, the land is assessed as being of Grade 2 quality. This is due to the presence of sandy loam, loamy sand and sandy clay loam soil textures and permeable subsoils giving soils of good drainage and easy working, though slightly limited by droughtiness.
- 4.17 The areas of different ALC grades are given in Table 6 and mapped in Figure RAC 5576-2b.

Table 6: ALC of the Application Site

| Grade | Description | Area (ha) | Area (% of agric. Land) |
|---------------------------|-------------------------|-----------|-------------------------|
| 2 | Very Good Quality | 11 | 5 |
| 3a | Good Quality | 89 | 40 |
| 3b | Moderate Quality | 124 | 55 |
| | Best and Most Versatile | 100 | 45 |
| Total Agricultural | | 224 | |
| Non-Agricultural | | 12 | |

Farming Circumstances

- 4.18 All of the agricultural land within the site is owned by Associated British Ports with various agricultural tenancies in place:

H.A. Lambert (Farmers) Ltd

- 4.19 Land within the proposed LDF area farmed by H.A. Lambert (Farmers) Ltd is located at the south of the site and comprises nine fields extending to approximately 160ha, all of which are in arable agriculture and are currently used for growing wheat.

- 4.20 H.A. Lambert (Farmers) Ltd is a wholly arable enterprise based at Low Paull Farm, approximately 1km to the south of the LDF site, and farms some 970ha in the locality. Of this land, approximately 240ha is owner-occupied with the remainder farmed under various rental and contracting agreements. The principal crops grown by the unit include wheat, barley, oil seed rape and field beans.

- 4.21 All of the agricultural land with the proposed LDF area is substantially under-drained and has been entered into Defra's Single Payment Scheme.

H.B. Johnson Ltd

- 4.22 H.B. Johnson Ltd is an arable enterprise based at Danthorpe Hall Farm approximately 9km to the north-east of the proposed LDF area. The holding farms approximately 225ha of which 182ha is owner-occupied, with the remaining land rented at the centre of the proposed LDF site under a long-standing tenancy agreement from ABP.

4.23 The principal crops grown by the unit include wheat and oil seed rape with the unit also undertaking contracting work. All of the agricultural land at the site is under-drained, with significant new drainage works having taken place in the last 10 years. All of the land has been entered into Defra's Single Payment Scheme.

G.L. Barr Esq

4.24 All of the agricultural land under the control of the holding is within the proposed LDF area and amounts to approximately 22ha. The fields to the north and east of the site are rented on a longstanding tenancy agreement from ABP are used for cereals and for taking a hay crop. The fields in the north-western corner of the site are sub-let by BP under an informal agreement are also used for growing cereals.

4.25 The holding has no buildings or equipment, with all farming undertaken by a contractor. All of the land is under-drained and has been entered into Defra's Single Payment Scheme.

5 Effects

Effect on agricultural land quality

5.1 As discussed above, this assessment assumes that all agricultural land within the LDF allocation area would be lost to development. As such, the LDF developments at the site would involve the loss to agriculture of approximately 224ha, including approximately 100 ha of best and most versatile quality land.

5.2 Given that it is for local planning authorities to decide whether best and most versatile agricultural land can be developed, this resource is of District or local significance and thus of medium sensitivity in Table 1. According to Table 2 the magnitude of change is assessed as high so that, from Table 3, the development will have a direct, permanent, adverse effect on best and most versatile agricultural land of moderate significance prior to the implementation of mitigation measures.

5.3 Construction at the site would disrupt and displace the soil resources with the in-situ agricultural capabilities of the soils being lost. The effect of this is reflected in the assessment of the loss of agricultural land.

5.4 There is also the risk of long-term damage to soil structure, and the loss of potentially valuable soil, if there is uncontrolled trafficking of land and soil by heavy machinery, especially wheeled machinery. Trafficking of areas that are not to be built on or hard surfaced should be avoided.

- 5.5 Topsoils from areas of built development should be used as and when required on site, for example for green spaces and garden areas, although any development may displace a surplus of topsoils.

Effect on the Farm Holdings

H.A. Lambert (Farmers) Ltd

- 5.6 Development of the site would entail the loss of 160ha of agricultural land farmed by H.A. Lambert (Farmers) Ltd, which amounts to 16% of the land farmed. Using the criteria in Table 4, it is considered that the development would have a direct moderate adverse effect on the agricultural enterprise.

H.B. Johnson Ltd

- 5.7 Development of the site would entail the loss of 43ha of agricultural land farmed by H.A. Lambert (Farmers) Ltd, which amounts to 19% of the land farmed. Using the criteria in Table 4, it is considered that the development would have a direct moderate adverse effect on the agricultural enterprise.

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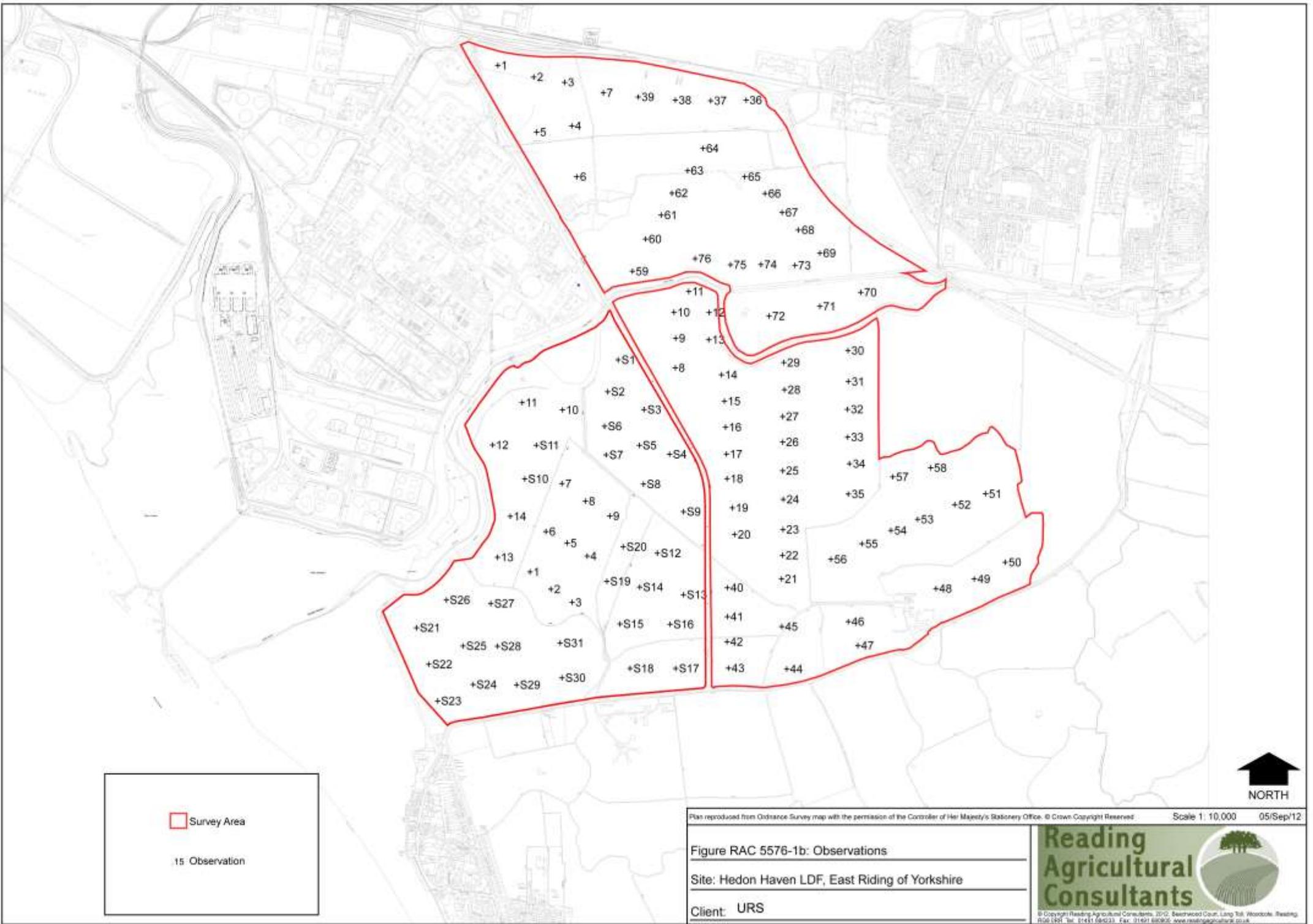
- 5.8 Development of the site would entail the loss of all of the land controlled by the farm holding. Using the criteria in Table 4, it is considered that the development would have a direct major adverse effect on the agricultural enterprise.
- 5.9 Overall, it is considered that the development of the site would have a direct moderate adverse effect on agricultural holdings.
- 5.10 In the event that agricultural activity is retained in proximity to construction activity, there will be the need for construction activity to be sensitive to the potential of fugitive dust, noise, spillages or polluted water on adjoining agricultural land, and to minimise interference with any necessary movements of farm traffic. Control of these matters is susceptible to normal measures of best environmental management practice, and it is not, therefore, anticipated that the significance of any potential effects, which would be of temporary nature, would be more than negligible.

6 Mitigation

- 6.1 There are no universally applicable 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 soils displaced during construction at the site in landscaping and open spaces, including formal and informal recreational uses;
 - to dispose of any surplus soils thereafter in a sustainable manner (i.e. as close to the site as possible to an afteruse appropriate to the soil's quality) in accordance with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (DEFRA, 2009); 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.

7 Summary

- 7.1 The development of the whole site would involve the loss to agriculture of approximately 224ha, of which approximately 100ha are classified as the best and most versatile quality land (in Grades 2 and 3a).
- 7.2 The loss of best and most versatile land is assessed as a direct, permanent adverse effect of moderate significance.
- 7.3 Topsoils from areas of built development will be used as required on site but a surplus is possible. There should be no residual impact on the soil resource if mitigation measures are followed correctly, principally the re-use of as much of the surplus soil on the site, the re-use or disposal of soil resources thereafter in a sustainable manner and the maintenance of soil quality by following best practice guidance on soil handling during construction.
- 7.4 Development of the whole site would have an overall direct moderate adverse impact on agricultural holdings. Good environmental management practice during any construction works would ensure that any off-site effects on agricultural activity would be negligible.



□ Survey Area

15 Observation

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Scale 1: 10,000 05/Sep/12

Figure RAC 5576-1b: Observations

Site: Hedon Haven LDF, East Riding of Yorkshire

Client: URS

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