sheilsflynn


View from north of Stone Lane

Deal Farm, Bressingham

Landscape and Visual Impact Assessment

Refused Scheme with Enhanced Landscape Strategy

June 2023

Contents

1 Introduction

1.1 Study scope

This Landscape and Visual Impact Assessment (LVIA) will consider the landscape and visual effects resulting from the construction and operation associated with the development of an anaerobic digestion facility at Deal Farm, Bressingham.

Figure 1 shows the Site location in the northwest of Bressingham Common bordered by Deal Farm to the south and the west and Common Road to the east.

Landscape and visual effects are independent but related issues; landscape effects are changes in the landscape, its character and quality, while visual effects relate to the appearance of these changes and the resulting effects on specific views and the visual amenity experienced by people. These two components of the LVIA will be assessed separately.

The assessment identifies the components of the landscape likely to be affected by the development – the 'landscape receptors' and considers how and to what extent they might be affected. Similarly, it identifies the people within the vicinity of the development who will be affected by changes to views or visual amenity –the 'visual receptors'.

The LVIA is structured to provide:

- summary of the assessment methodology used, which distinguishes between an assessment of effects on the landscape resource (landscape effects) and on specific views and the visual amenity experienced by people (visual effects);
- an appraisal of the baseline landscape and visual conditions;
- an assessment of predicted landscape effects

Figure 1 - Site location

and visual effects during the construction phase and Post-construction;

- a mitigation and enhancement strategy for the proposed development (which is integrated within the masterplan and landscape layout in order to minimise residual adverse landscape and visual effects).

1.2 Methodology

LVIA is a tool for predicting and evaluating the effects of a development on the landscape itself and on views and visual amenity. The assessment process aims to achieve avoidance, reduction or mitigation of detrimental effects identified, through feeding back into the Site design process.

The LVIA considers the landscape and visual effects resulting from the construction and operation of the proposed development. Landscape and visual effects are independent but related issues. Landscape assessment judges effects on the landscape as a resource in its own right, (regardless of whether it is, or can be, viewed by people or not) and particularly focuses on effects to landscape character. Visual assessment judges the effects on specific views and on the general amenity of the landscape as experienced by people. It explains how particular views of the landscape might change and how the enjoyment and visual amenity of those using it might be affected by the proposals. It also considers whether cumulative impacts from other proposed developments are likely to result. These two components of the LVIA are assessed separately.

The LVIA was carried out in accordance with the approach outlined in the Guidelines for Landscape and Visual Impact Assessment[1]. The full methodology is set out in Annex A.

1.3 Development proposals

The current application is for the construction of an Anaerobic Digestion facility comprising:

- 1 no. digester tank and 1 no. secondary digester/ digestate storage tank, silage clamps;
- liquid and dry feed system;
- digestate separation, handling and pasteurization;
- biogas upgrading and mains gas-grid connection;
- carbon capture;
- CHP;
- agricultural building;
- office buildings;
- weighbridge;
- 2 no. covered digestate storage lagoons;
- and associated plant, vehicular accesses, roads and landscaping (including earth bunds)

1.4 Landscape design principles

Key landscape feature which influences the design proposals is the very open character of the existing plateau landscape, which has resulted from the large-scale removal of hedgerows and trees over recent post-war decades.

The new AD plant will be visible from a number of lanes and PROW that cross the plateau and many of these have lost their associated hedgerow and tree boundaries. There is an opportunity therefore to reintroduce these elements as part of the LVIA-led mitigation strategy whilst at the same time recognising their value in helping to create an interconnected network of habitats for biodiversity and opportunities for sustainable transport and recreation by enhancing the landscape and ecological quality of the existing PROW network.

Figure 2.1 shows how we have compared the historic field pattern with the current situation in order to establish the extent and pattern of new woodland and hedgerows to be introduced to mitigate the impact of the development.

1.5 Detailed landscape proposals

Figure 2.2 and 2.3 illustrates the detailed landscape proposals for the AD plant and the lagoons.

Key points to note are:

Main AD Plant - Native woodland and tree planting provide a screen along the northern and western boundaries of the AD Plant. The existing bund to the east and south of the AD Plant, inside the site boundary, will also be planted with native woodland and trees. Larger feathered trees will also be located within these woodland areas positioned in order to mitigate views from PROW's FP 3 & 4 and in views from Stone Lane, Kenninghall Road & Common Road in the early years before the wider woodland planning will have matured.

[1] Guidelines for Landscape and Visual Impact Assessment, 3rd edition Landscape Institute and Institute of Environmental Management & Assessment, 2013

A second layer of mitigation is intended to further mitigate landscape and visual impacts in longer views in particular to reduce the impact of the eight lightning conductors. A mixed native hedge with native trees along Common Road, Kenninghall Road, and Ladys Lane will introduce screening vegetation close to the users of these routes whilst and the same time reintroducing lost landscape features and biodiversity.

A further line of trees is introduced to the existing hedgerow on Stone Lane in order to mitigate the impacts of the lightning conductors in views from PROW FP4.

Native Woodland will provide a screen around the boundaries of the lagoons mitigating impacts in views from the north and south.

Views from the south are extensive across the open plateau towards the southern lagoon and AD plant. A second layer of mitigation is also therefore introduced in the form of hedgerow and tree planting along Ladys Lane and along PROW's FP9, FP11, and FP12. These new hedgerows will mitigate landscape and visual impacts close to the viewer whilst also reintroducing lost landscape features and adding back biodiversity.

Overall, the strategic objective of the planting is to reintroduce elements of the framework of mature trees and hedges which used to extend across this part of the Great Moulton Plateau Farmland.

Figure 2.1 - Overall mitigation plan - 2015 Google with OS First Edition

Figure 2.2 - Overall mitigation plan - 2015 Google - greenfield

Planning application boundary

Public rights of way

Proposed structures

Proposed embankment

Proposed swale

Proposed digestate lagoon

PROPOSED SOFTWORKS

Native woodland mix
Native understorey mix
60-80 cm ht (40-60 cm ht and 3L for Ilex) at 1000 mm ctrs

Native hedgerow mix
60-80 cm ht (40-60 cm ht and 3L for Ilex)
in double staggered row at 4 nos per m per row

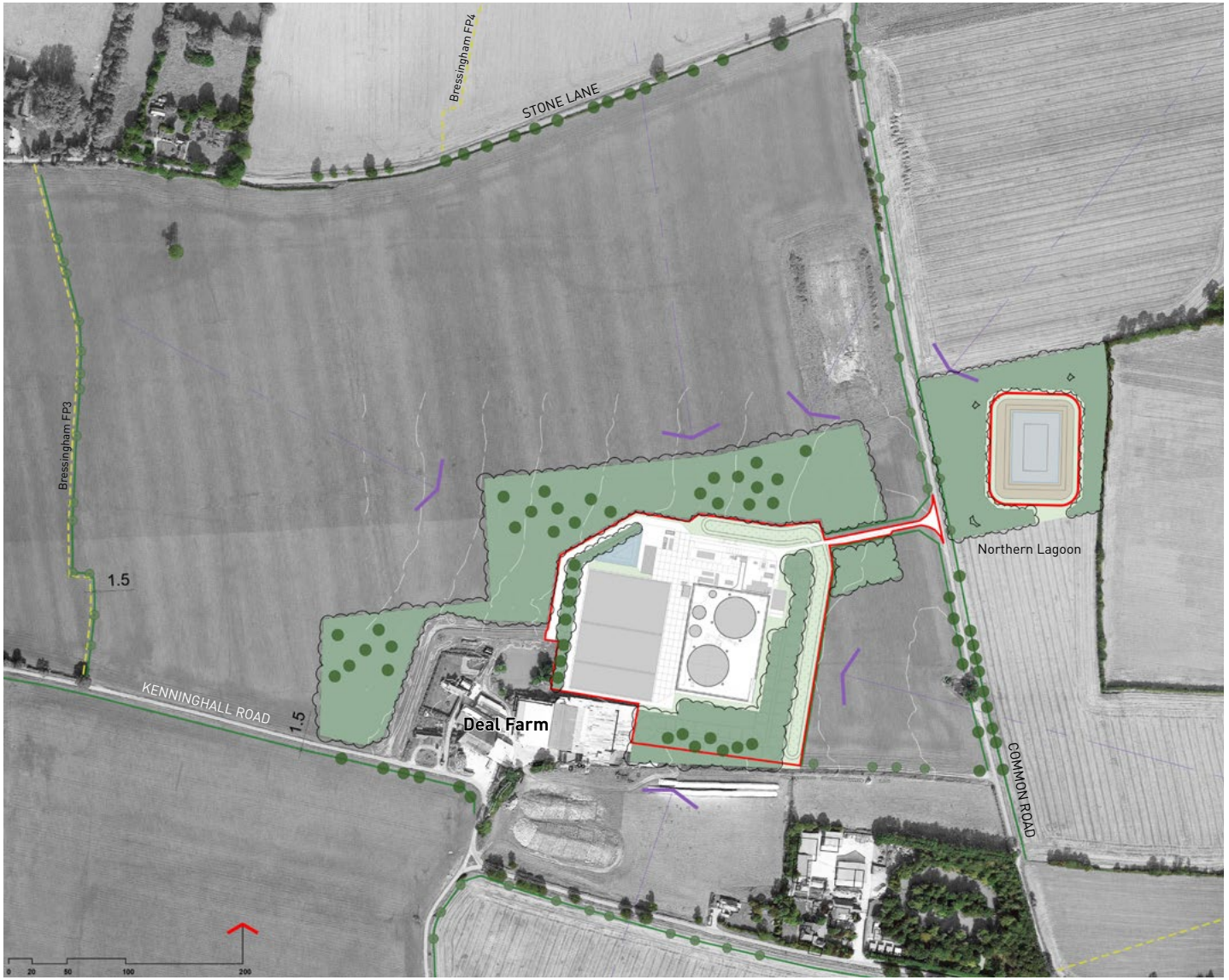


Figure 2.3 - Detail landscape plan (AD Plant)

Planning application boundary

Public rights of way

Proposed structures

Proposed embankment

Proposed swale

Proposed digestate lagoon

PROPOSED SOFTWORKS

Native woodland mix
Native understorey mix
60-80 cm ht (40-60 cm ht and 3L for Ilex) at 1000 mm ctrs

Native hedgerow mix
60-80 cm ht (40-60 cm ht and 3L for Ilex)
in double staggered row at 4 nos per m per row

Figure 2.3 - Detail landscape plan (Southern Lagoon)

2 Landscape context

This section assesses, firstly the wider regional landscape context of the site, and, secondly, the local baseline landscape context which has a bearing on the capacity of the site to accommodate the development. These baseline factors include such elements as the local topography, hydrology, land use, field boundaries, settlement pattern and historic landscape features. These baseline features were analysed based on a combination of desktop research and field walking and visual survey.

2.1 Geographical context

Figure 3 shows the Site within the context of the landscapes to the north west of Diss. The Site for the AD Plant is next Deal Farm which abuts it to the west. The Southern Lagoon is located next to The Oaks farm which abuts in to the north. To the north and south if both facilities the plateau landscape is very open comprised of larger arable fields with limited enclosing vegetation.

2.2 Environmental and heritage assets

Figure 4 – Environmental Designations shows that there are no designations or public rights of way on the Site. There is however an extensive network of PROW's in the wider immediate context of the site.

Nature conservation designations – There are no internationally important nature conservation designations. Figure 4 (page 11) also shows semi-natural ancient woodland and County Wildlife Sites.

Heritage designations – The site is not directly covered by any statutory designations.

There are, however, a number of Grade II listed buildings in the vicinity. Notably, Deal Farmhouse itself, adjacent to the site, is listed as a c. 17th century timberframed house. It is located immediately adjacent to the existing pig farm which partly obscures views of the AD Plant and, in previous consultation with the Council's heritage officer, additional tree planting is proposed immediately east of the pond to further screen the plant from the property to preserve its setting. The Farm house is already heavily impacted by existing farm activities and industrial barn structures.

2.3 Landscape planning policy context

National Planning Policy Framework

The National Planning Policy Framework[1] (NPPF) was published by the Ministry of Housing, Communities & Local Government (MHCLG) and last updated in July 2021. The NPPF includes for: the conservation and enhancement of the natural environment by protecting and enhancing "valued landscapes" and sites of biodiversity or geological value / soils; recognition of the intrinsic character and beauty of the countryside; and the wider benefits of natural capital and other ecosystem services including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.

The National Planning Policy Framework requires that the policies in a Local Plan follow the approach of "a presumption in favour of sustainable development", with clear local policies that will guide how the presumption will be applied locally.

The National Planning Policy Framework identifies three dimensions to sustainable development: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:

- an economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;
- a social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and
- an environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

The implications on all three dimensions columns, must be considered in every decision – applying relevant policies from the sections in this document and other

[1] National Planning Policy Framework, Ministry of Housing, Communities & Local Government, July 2021

- Site boundary
- District boundary
- Water bodies
- Woodland
- Contour line (10 m interval)
- Flood plain
- Land lower than 30 mAOD
- Land above 50 mAOD

Access

- Public Rights of Way
- Railway track

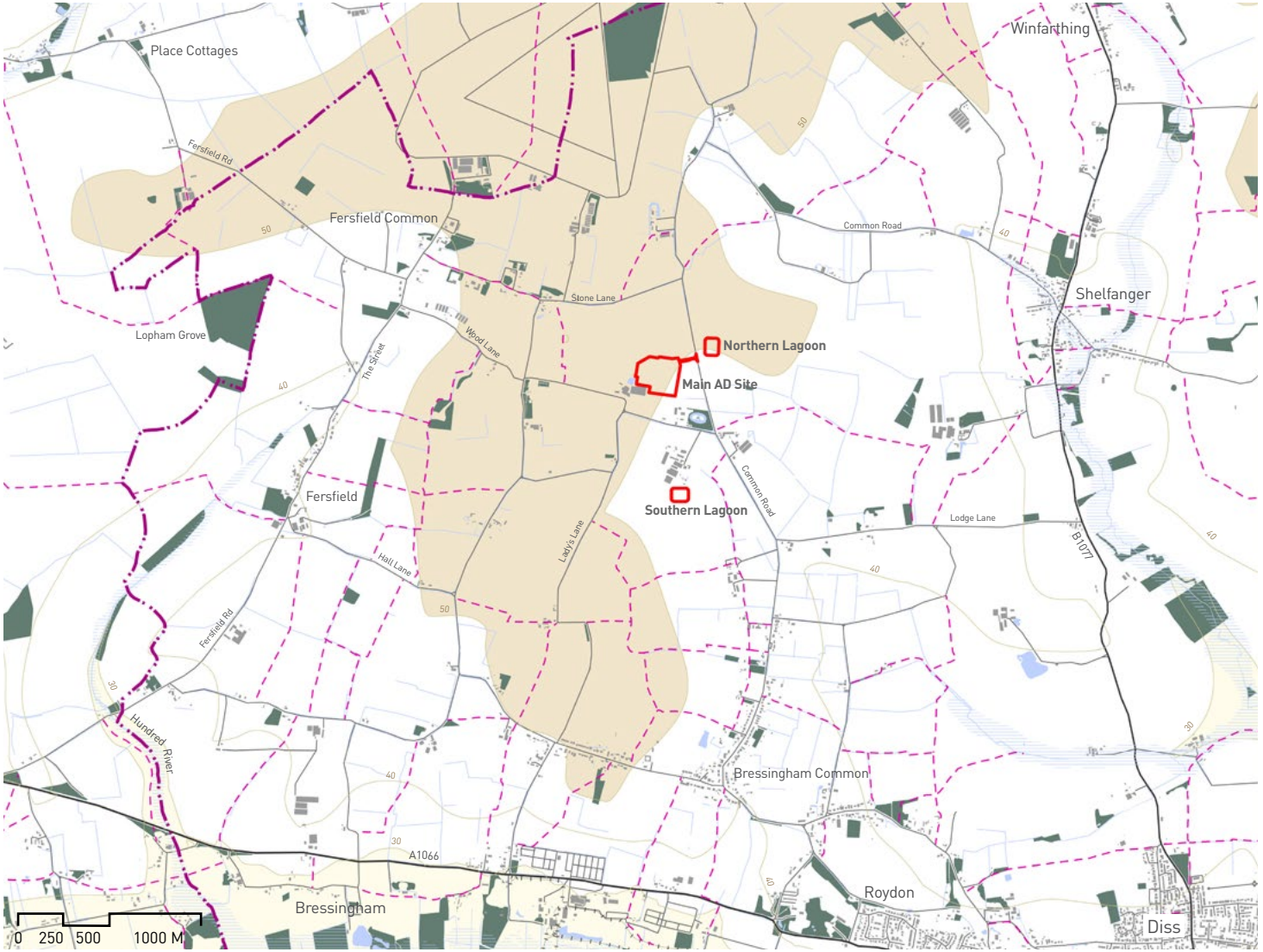


Figure 3 - Landscape context

- Site boundary
- District boundary
- Water bodies
- Woodland
- Contour line (10 m interval)
- Public Rights of Way
- Railway track

Nature conservation designations

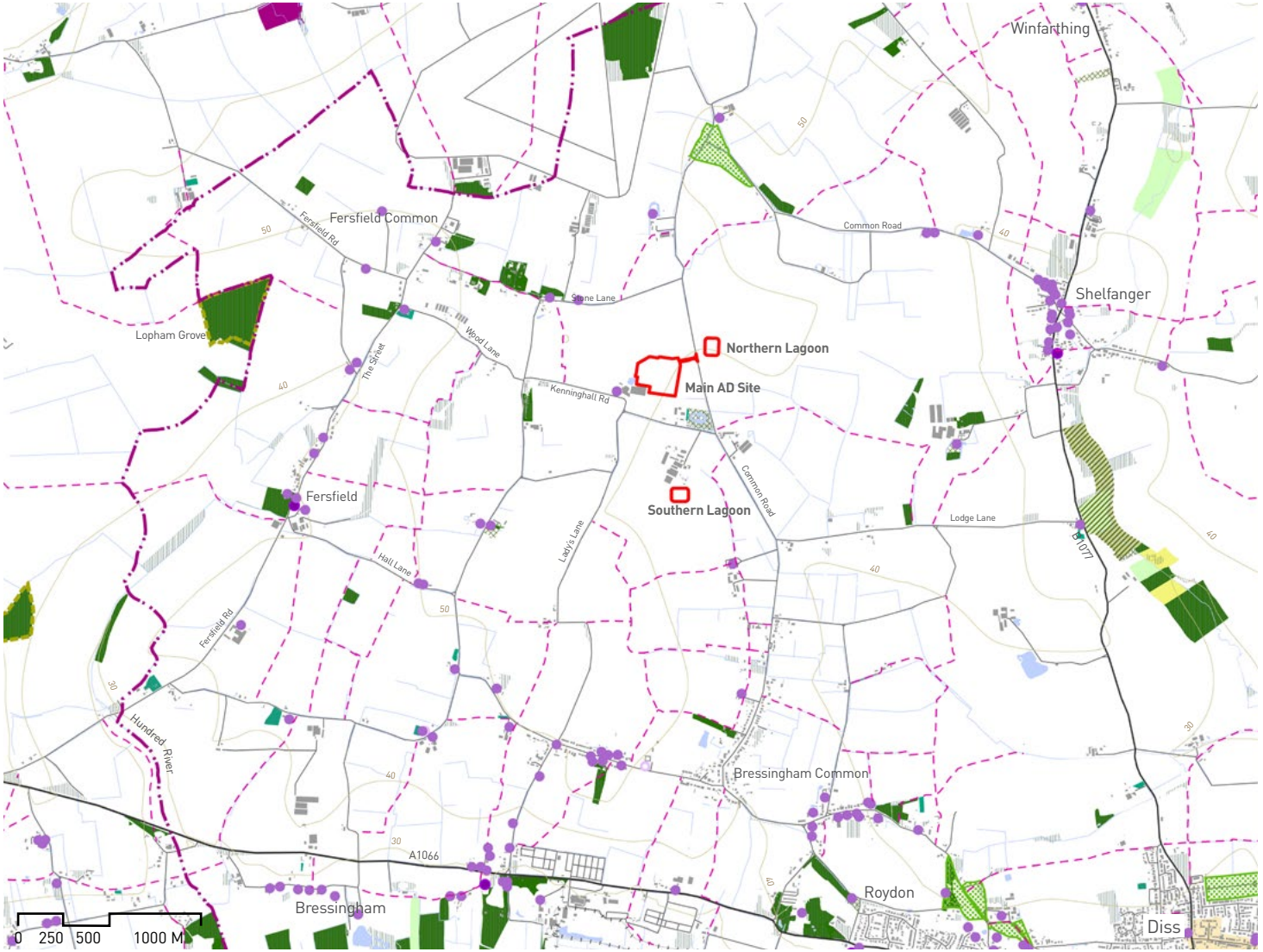
- SSSI*
- County Wildlife Sites**
- Ancient Woodland*

Heritage designations

- Scheduled Monuments*
- Conservation Areas**
- Listed Building* (Grade I / II / II*)

Priority Habitat Inventory*

- Floodplain grazing marsh
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland meadows
- Traditional orchard
- No main habitat but additional habitats present



* https://magic.defra.gov.uk/
** Policies Map 2015, South Norfolk District Council, October 2015

Figure 4 - Relevant environmental designations

relevant material considerations. In accordance with the National Planning Policy Framework the decision makers must make development management decisions to achieve sustainable development by seeking economic, social and environmental gains from all development, "jointly and simultaneously".

Degrees of adverse impact in one or more dimension(s) may be balanced with a degree of positive impact in another dimension(s) – the green and amber areas in each column. The principles of sustainable development seek a net beneficial impact from any development in each dimension.

In relation to conserving and enhancing the natural environment the NPPF states that planning policies and decisions should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

South Norfolk Local Plan Development Management Policies

The Development Management Policies will determine how the Council carries out its development management responsibilities to promote sustainable development and how it will determine planning applications. The policies influence the type and quality of future homes and other new development that is approved by the Council, and will help us conserve heritage assets, biodiversity, geodiversity and the countryside.

Policy DM 1.4 Environmental quality and local distinctiveness

All development proposals should demonstrate that full regard has been given to local circumstances and the distinctive local characters and qualities of the places found in South Norfolk. The National Planning Policy Framework in particular promotes design and environmental quality, including the protection and mitigation of impacts.

Policy DM 3.8 Design Principles applying to all development

The Council will work with applicants to achieve high quality design and positive improvement from all development, protect and enhance the environment and existing locally distinctive character and encourage innovation; the Council will refuse development that fails to take the opportunities for improving the character and quality of an area and the way the area functions.

Planning permission will be granted for development that has been designed to, where relevant to the proposed development:

- respect adjoining structures, spaces, routes and local landscape;
- provide an attractive, accessible and safe environment. Landscaping of the development is designed to retain important existing natural features, reflect the surrounding landscape characteristics of the area and contribute to relevant objectives of the local Biodiversity Action Plan.

Policy DM 3.13 Amenity, noise and quality of life

Development should ensure a reasonable standard of amenity reflecting the character of the local area.

For planning purposes 'amenity' is defined as 'the desirable features of a place that ought to be protected or enhanced in the public interest'. Amenity and environmental quality can be impacted in other ways including by poorly designed and managed lighting. This is a particular issue in rural parts where the relatively 'dark skies' contribute greatly to character and amenity.

- Site boundary
- District boundary
- Water bodies
- Woodland
- Contour line (10 m interval)
- Public Rights of Way
- Railway track

Policy Allocations*

- County Wildlife Sites
- River Valleys
- Hazardous Installation Consultation Zones

* Policies Map 2015, South Norfolk District Council, October 2015

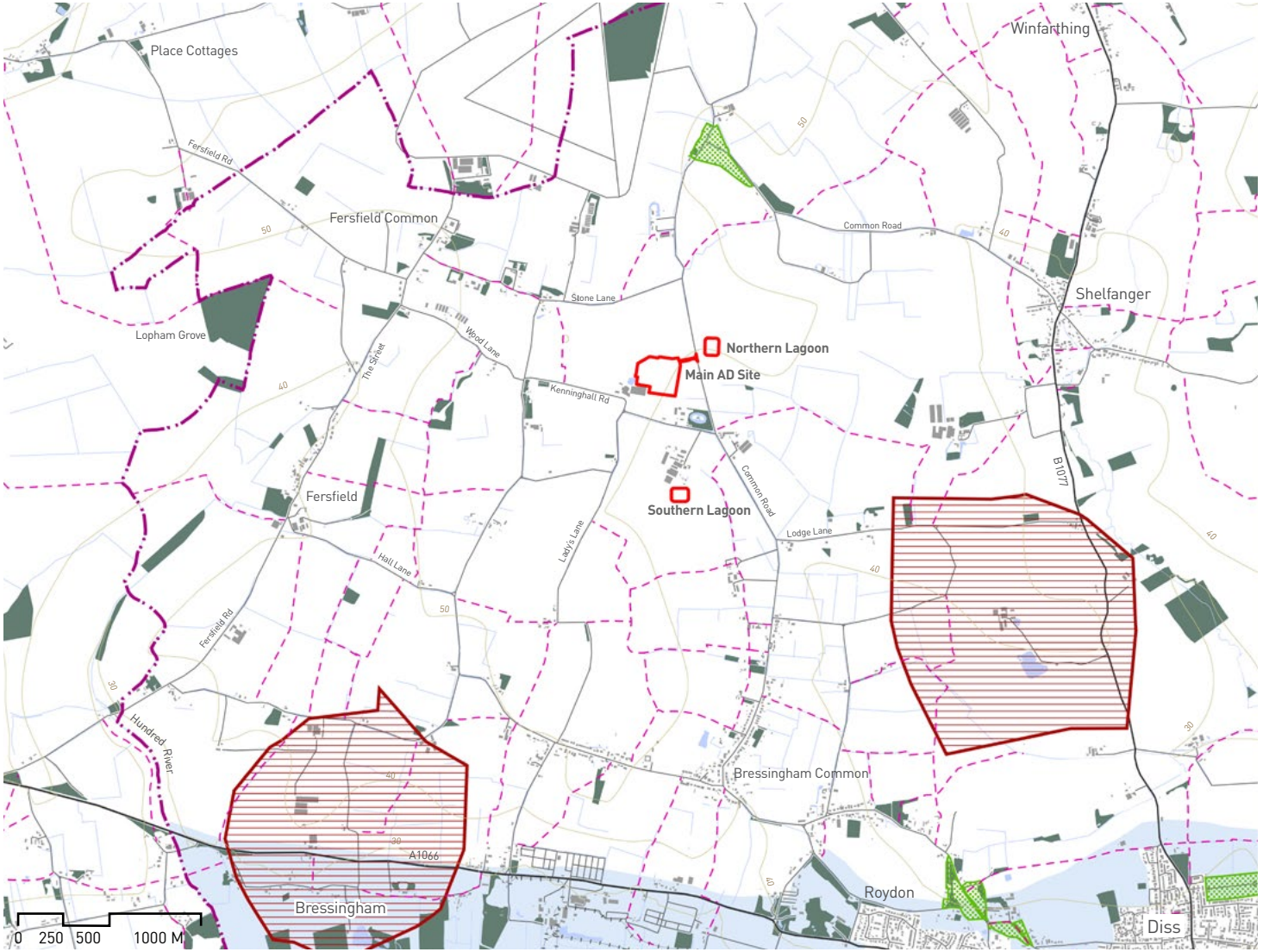


Figure 5 - Landscape planning policy context

Policy DM 4.1 Renewable Energy

The effect of the proposal will be considered on:

- The effect on the character and appearance of the landscape;
- Designated and undesignated heritage assets;
- The amenities and living conditions of nearby residents by way of noise, outlook, and overbearing effect or unacceptable risk to health or amenity by way of other pollutants such as dust and odour.

Policy DM 4.5 Landscape Character and River Valleys

All development should respect, conserve and where possible, enhance the landscape character of its immediate and wider environment. Development proposals that would cause significant adverse impact on the distinctive landscape characteristics of an area will be refused. All development proposals will be expected to demonstrate how they have taken the following elements (from the 2001 South Norfolk Landscape Assessment as updated by the 2012 review) into account:

- The key characteristics, assets, sensitivities and vulnerabilities;
- The landscape strategy; and
- Development considerations.

Policy DM 4.8 Protection of Trees and Hedgerows

The Council expects all development proposals to fully consider the existing trees both on and adjacent to the site. Development will be permitted where it can be demonstrated that there exists a harmonious and sustainable relationship between trees and structures.

Policy DM 4.9 Incorporating landscape into design

Where appropriate, detailed development proposals must demonstrate a high quality of landscape design, implementation and management as an integral part of the new development.

Landscape schemes will be required to respect the character and distinctiveness of the local landscape and should ensure that any land remodelling respects the local topographic character in terms of height, slope, angle and character. Landscape schemes should be clearly and properly specified.

3 Baseline assessment

3.1 Landscape baseline assessment

The importance of understanding the landscape character of all landscapes in England is recognised in the National Planning Policy Framework (NPPF)[1] published by the Ministry of Housing, Communities & Local Government (MHCLG) and last updated in July 2021, which states that planning policies and decisions should contribute to the natural environment by: "recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services". Landscape character assessment is the process which can identify these intrinsic values and unique characteristics of the diverse landscapes in the UK.

Effects on landscape character can be both direct (i.e., on the character area / landscape type that the site is located within), and indirect (i.e., changes to characteristics or perceptions of character that occur beyond the boundary of a character area / landscape type). In addition, effects on landscape character may be positive or negative (i.e., strengthening and enhancing the characteristic patterns and features, or eroding and losing the patterns and features that contribute to landscape character).

3.1.1 Inherent landscape character

The landscape appraisal of the Site commenced with a review of landscape character. Landscape Character Assessment (LCA) is the process of identifying and analysing variation in the character of the landscape. It seeks to identify and explain the unique combination of elements and features (characteristics) that make landscapes distinctive and create a sense of place.

National Landscape Character Areas (NCA)

Nationally, there are 159 National Character Area (NCA) profiles. The descriptions for each are available on the Natural England website[2]. The Site is mostly within the South Norfolk and High Suffolk Claylands National Character Area (NCA 83) which occupies a large area of central East Anglia stretching from just below Norwich in the north down to the River Gipping in the south. The area is bounded to the north by Mid Norfolk and The Broads NCA's and to the east by the sandy heathland of the Suffolk Coast and Heaths NCA. To the west the landscape merges into the drier and more open character of The Brecks NCA and to the south it meets the South Suffolk and North Essex Clayland NCA with its noticeably more undulating topography. 'High' Suffolk originally derives its name from the contrast between this formerly well-treed area and the openness of the adjacent areas to the east and west. Today it is probably better understood as meaning the high and predominantly flat clay plateau that dominates the character of the NCA. The plateau is incised by numerous small-scale wooded river valleys with complex slopes that in places are much unexpected for East Anglia. The underlying geology is chalk, which forms the principal aquifer, and shallow marine deposits overlain with glacial till, buried river gravels, lake sediments and bands of glacial outwash deposits.

Rivers are mostly small and slow flowing, contributing to the character of the landscape as well as providing water for irrigation and public usage. The Waveney, the largest of the NCA's rivers, forms the division between the counties of Norfolk and Suffolk. The river valleys contain an important mosaic of small-scale pasture, wet heath, reedbeds and woodland that provide ecological connectivity into the heart of the claylands. Remnant areas of unenclosed 'semi-wild' valley fens are designated as a Special Area of Conservation and support a great diversity of wetland species including the fen raft spider.

Large areas of woodland are scarce, with most confined to a narrow band on the edges of the plateau. Views are frequently open, only sometimes confined by hedges, hedgerow trees and scattered smaller woodlands that are still notable elements of the landscape. Occasionally there can even be a feeling of exposure, although within the valleys it is possible to find quite confined landscapes with intimate views.

[1] Ref. Footnote 1 on page 8

[2] http://publications.naturalengland.org.uk/category/587130

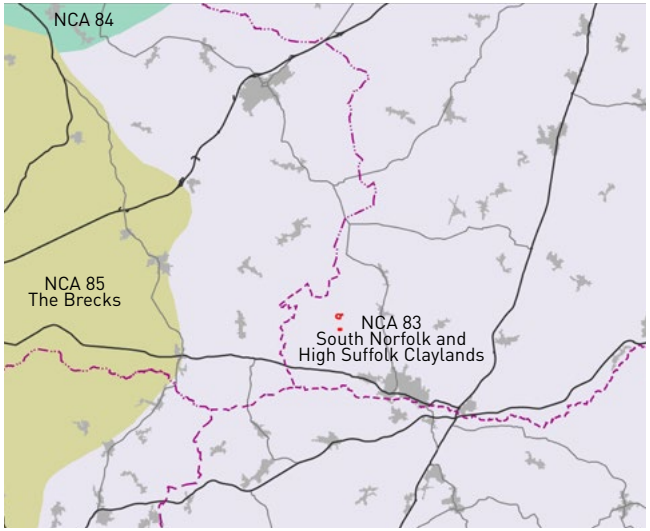


Figure 6 - Site location in relation to the National Character Areas classification

South Norfolk Landscape Character Areas

The description and analysis of landscape character provided in the South Norfolk Landscape Character Assessment[3] gives detailed and relevant information available about the distinctive character and condition of the landscapes which form the context for Deal Farm and Bressingham area.

Figure 7 – Landscape Character shows the relevant part of this landscape classification within the vicinity of the Site. Each landscape character area reflects variations in landscape character which relate to the underlying geology and soils of the area and the evolving patterns of settlement and land use. The district level landscape character areas all 'fit' within the broader landscape types, which reflect the underlying patterns of geology soils, landform and land cover.

3.1.2 Local Landscape Character

The South Norfolk Landscape Character Assessment[4] classifies the Site on the transition between the Landscape Character Areas identified as being the 'Great Moulton Plateau Farmland' and the 'Waveney Tributary Farmland'.

E2: Great Moulton Plateau Farmland

The key characteristics of this character area include:

- *Flat, elevated plateau landform above the 50m contour with little topographic variation.*
- *Extensive arable farmland with large-scale fields and notable absence of boundaries.*
- *A large-scale landscape of openness and exposure.*
- *Isolated and infrequent blocks of mixed woodland, otherwise woodland is confined to tiny farm copses.*
- *A number of greens and commons, some with associated pond habitats.*
- *Expansive skies are a defining feature with distant views and farm buildings visible in the open landscape.*
- *Hedgerows are sparse with fuller enclosure along roadsides.*
- *Hedgerow trees are an important feature, marking the lines of former boundaries.*
- *A140 cuts north-south through the centre of the character area.*
- *Otherwise straight rural roads cut through the area.*
- *Grass verges and occasionally ditches occur along roadsides.*
- *Timber framed houses and moats.*
- *Large scale farm buildings, water towers, telegraph poles exposed in this open landscape and distinct absence of churches.*
- *Sparsely settled with scattered farmhouses, some linear settlement with absence of centre/ core.*

[3] South Norfolk District Landscape Character Assessment, South Norfolk District Council, April 2006.

[4] Ref. Footnote 3.

- Site boundary
- District boundary
- Water bodies
- Woodland
- Contour line (10 m interval)
- Public Rights of Way
- Railway track

Landscape Character Types and Areas

- A - Rural River Valley*
- B - Tributary Farmland*
- B1 - Little Ouse Tributary Farmland**
- B2 - The Buckenhams Tributary Farmland**
- E - Plateau Farmland*
- E2 - Snetterton Heath Plateau**

* South Norfolk Landscape Character Assessment, April 2006
** Breckland District Landscape Character Assessment, May 2007

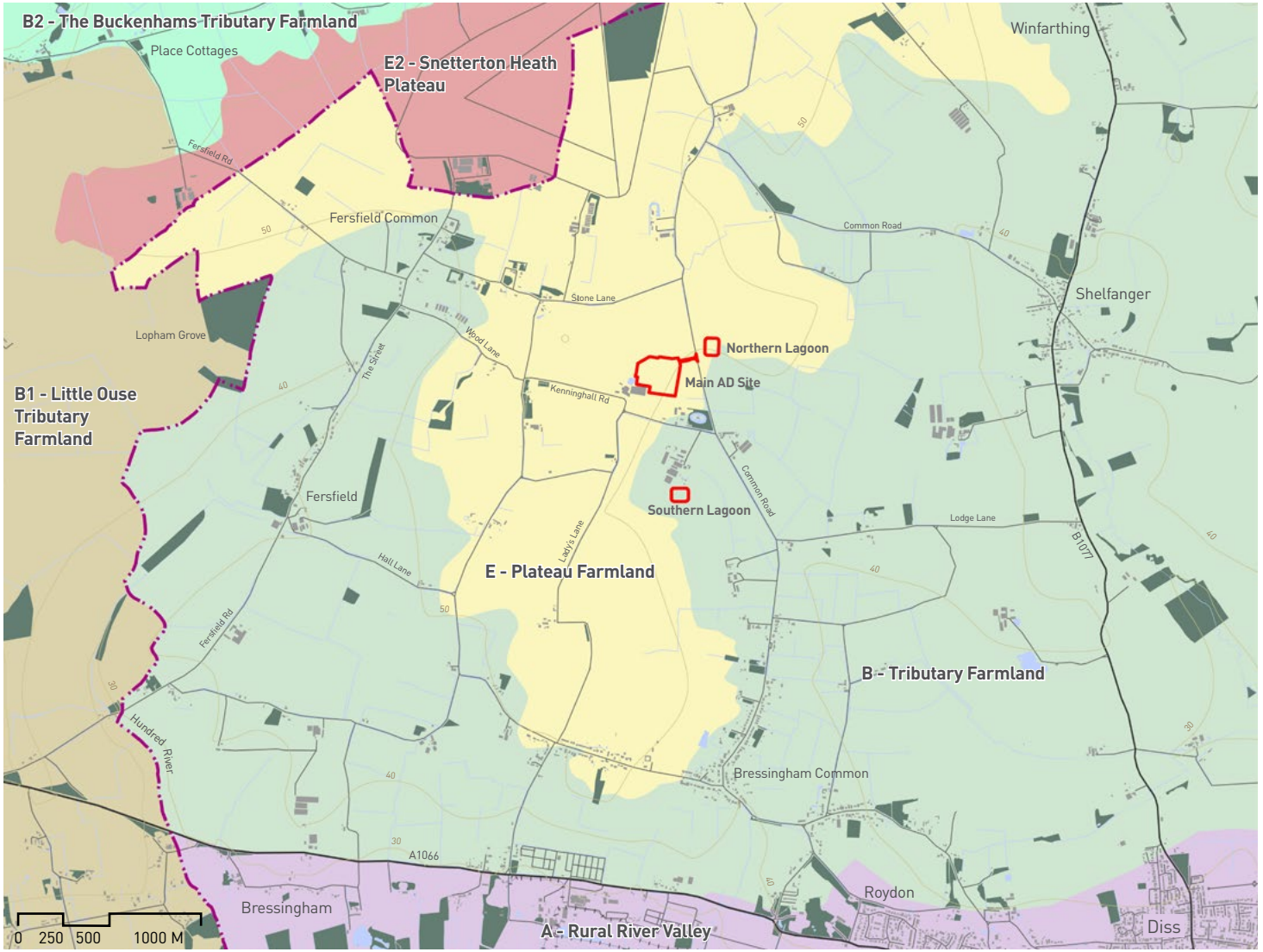


Figure 7 - Landscape character

- *Disused airfields are a feature of the plateau at Shelton and Pristow Green.*

Great Moulton Plateau Farmland Land Cover and Biodiversity

This is a simple and uniform landscape, dominated by arable farmland with large-scale, regular, geometric fields. There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the scale and openness of the plateau. Where hedgerows do occur as field boundaries they tend to be fragmented however alongside roads hedgerows tend to be fuller and provide a sense of enclosure. Remnant hedgerow trees, primarily oak, are characteristic and an important indicator of former field boundaries. Grass verges and sometimes ditches occur alongside the rural roads which dissect this area. Water is not a significant feature with minor ditches/ tributaries and small field ponds occurring but not distinctly visible.

Great Moulton Plateau Farmland Sensitivities and Vulnerabilities

The principal sensitivities and vulnerabilities of the Great Moulton Plateau Farmland include:

- *strong sense of openness, long views and expansive skies and open views, particularly from the edge of the plateau;*
- *the blocks of ancient woodland where they remain;*
- *the setting of historic halls and moats;*
- *the network of quiet, straight rural lanes that cross the plateau;*
- *mature hedgerow oaks and hedgerow boundaries where they remain;*
- *the sparse and small scale settlement patterns and individual identity of the settlements;*
- *the need to maintain the characteristic hedgerow trees and prevent further degradation of boundaries.*

Great Moulton Plateau Farmland Landscape Strategy

The overall strategy is to conserve the Great Moulton Plateau Farmland with its expansive skies, created by its elevated landform, dominance of arable farming and lack of settlement. It would be beneficial to consider:

- *conserve and maintain grass verges alongside roads;*
- *re-instate hedgerows alongside roads and as field boundaries. Also maintain and promoting hedgerow trees;*
- *conserve and manage the existing large blocks of woodland.*

B4: Waveney Tributary Farmland

The Key Characteristics of this character area include:

- *Transitional landscape occupying the mid ground between the upland plateau (Great Moulton Plateau Farmland) and the main river valley (Waveney Valley).*
- *Undulating landform to the south of the area where it is dissected by tributaries. Land is higher and flatter towards the north of the character area adjoining the Great Moulton Plateau Farmland.*
- *A large-scale open landscape on the higher ground with some distant views.*
- *Pockets of enclosure and intimacy associated with the tributaries.*
- *Narrow streams, drainage channels (within grass verges) ponds and moats are characteristic. Ditches occur along road sides and in places divide fields.*
- *Predominantly arable farmland with a varied field pattern. Fields are small to the south of the character area, larger on the higher plateau areas.*
- *Mature hedgerow trees are very distinctive especially large mature oaks.*
- *Hawthorn/ blackthorn hedges divide fields.*
- *Scattered blocks of woodland with some larger blocks having SSSI designations.*
- *Pockets of parkland and remnant parkland occur.*
- *Diversity of ecological assemblages including grassland, wet habitats, woodland, some of which are SSSI.*
- *Round tower and isolated churches are distinctive landmarks. Moats and earthworks are a feature.*
- *Settlement occurs throughout the character area. Villages are frequently linear along roads with some villages set around greens.*
- *Large farm units and processing units are present*

plus pylons which cut through this area.

- *The A140 and the Norwich-Diss railway line cut across the character area north south. Otherwise winding rural roads, and sunken lanes dissect the rural area.*
- *A peaceful and rural landscape.*

In common with much of South Norfolk, land cover is predominantly arable farmland. The field pattern is varied with small/ medium fields becoming larger towards the higher plateau land. Fields are irregular in shape, divided by hawthorn/blackthorn hedges and occasionally ditches. Hedgerow trees are a feature, particularly large mature oaks. These sometimes occur alongside the grass verges, which flank rural roads forming distinctive 'avenues'. Small areas of grazed pasture are associated with the tributary valleys; these are infrequent, but nevertheless an important local landscape feature. Numerous streams, ditches and drainage channels occur and along with the moats and ponds these are a significant and defining characteristic.

Waveney Tributary Farmland Sensitivities and Vulnerabilities

The principal sensitivities and vulnerabilities of the Waveney Tributary Farmland include:

- *the hedgerows and woodlands, which create pattern and variety in the landscape and contribute to a more intimate and enclosed character in some areas;*
- *the distinctive character and form of the individual small villages and settlements (linear and set around village greens) and the rural setting of villages;*
- *small-scale local vernacular features including the black and white fingerposts, black lane signs, and distinctive tributary crossing points;*
- *the rural road verges and lines of hedgerow trees which are especially sensitive to upgrading;*
- *the diversity of habitats especially those sensitive to development, fragmentation and change in water level/quality;*
- *the characteristic water features in this landscape and the threat of loss through drainage/ infilling;*
- *the views to and setting of the distinctive and prominent churches;*
- *the historic field pattern around Dickleburgh;*
- *the overall peaceful, rural character and absence of visual and aural intrusion.*

Waveney Tributary Farmland Landscape Strategy

The overall strategy is to conserve the rural, peaceful quality of the Waveney Tributary Farmland with its strong farmland character, threaded by small tributary watercourses, and mix of more intimate, wooded, enclosed valleys contrasting with more open landscapes.

There are opportunities to enhance the landscape to reinforce local character:

- *maintain and manage moats, field ponds and drainage ditches;*
- *protect and manage rural grass verges;*
- *maintain areas of pasture within the tributary valleys and seek opportunities to extend pastures along watercourses;*
- *maintain the stock of hedgerow trees, particularly along roadsides and encourage new generations of hedgerow trees to replace existing stock;*
- *consider opportunities to reinstate hedgerows where they have been lost, and particularly along roadsides;*
- *manage woodlands to conserve character and enhance biodiversity and consider opportunities to extend and link woodland, including the creation of new woodlands around villages;*
- *conserve and restore historic parkland landscapes;*
- *conserve the distinctive small-scale historic field pattern around villages as at Alburgh, Dickleburgh, Denton and Burston.*

Waveney Tributary Farmland Development Considerations

The SNC Landscape Character Assessment states that any development in the area must respect the character of Waveney Tributary Farmland and in particular consider the following:

- *conserve the rural peaceful character, with the pattern of small villages and settlements set within the agricultural landscape, but not dominating it;*
- *conserve the character and individual identity of the villages either set around greens or*

loosely following roads. Infilling or extension of settlements could result in a change to a more compact character and merging of settlement and loss of individual identity;

- *seek to maintain the soft grass verges and open frontages that characterise the settlements along rural roads and avoid creation of hard boundaries or surfaces which would impart a more urban character;*
- *conserve village greens and commons;*
- *conserve the local vernacular features that contribute to the rural character including the distinctive road signs and road names.*
- *conserve the quiet, rural character of the narrow lanes that cross the area;*
- *consider potential effects of potential large-scale developments (for example relating to airfield sites).*

3.1.3 Landscape context

The wider context for this Site is a landscape of large open arable fields which, on the plateau farmland, are the result of the large-scale removal of old boundary hedgerows and trees. The main AD plant site is immediately east of Deal Farm and physically connected to it. The Oaks farm cluster just to the south of Kenninghall Road adds to a sense that this is very much an intensive agricultural landscape. The topography of the plateau is relatively flat, with the site sitting in a shallow valley at 50/55m AOD. The land rises away from the main AD site to the northeast, northwest, and south. The maximum height of the plateau is just over 60m AOD at the junction of Kenningham Hall Road and Stone Lane. The landform further to the east and west begins to fall away into the adjacent shallow river valley where the landscape has a more settled and enclosed character.

The Southern Lagoon south of The Oaks farm cluster will be relatively discrete in its context sitting low in the landscape abutting the edge of the cluster of existing farm buildings.

3.1.4 Landscape of the Site

Figure 8 shows the structure of the existing landscape in the immediate vicinity of the Site.

3.1.5 Landscape receptors

BOX 1 on page 22 shows the list of landscape receptors, or components of the local landscape that are likely to be affected by the proposed development. This list has been drawn up with reference to the key characteristics of the Great Moulton Plateau Farmland landscape character area in the area of the Site and the Waveney Tributary Farmland

Therefore, the landscape receptors chosen relate to the specific landscape context of the site and the key characteristics identified in the LCA which are relevant to this. In addition, to the individual landscape character receptors' the overall landscape context is assessed as are the specific site characteristics of the plot.

The LVIA process requires an assessment of the sensitivity of each of the landscape receptors that are to be used as criteria to judge the degree of impact the development proposals can be predicted to have on the local landscape.

The process of assessing the sensitivity of the landscape receptors involves combining judgements about their susceptibility to the changes arising as a result of the proposed development and the value attached to these components of the landscape. Refer to Table A1.1 in Annex A (Methodology) which sets out the criteria for judging the sensitivity of landscape receptors. Table B1.1 in Annex B1 shows the judgements involved in assessing the sensitivity of the landscape receptors.

However, GLVIA3[5] (Para 3.36) makes clear that *there should be more emphasis on narrative text describing the landscape and visual effects and the judgments made about their significance* and thus in the following sections 3.1.5.1 - 3.1.5.9 the assessment of the sensitivity of landscape receptors is described.

[5] Guidelines for Landscape and Visual Impact Assessment, 3rd edition Landscape Institute and Institute of Environmental Management & Assessment, 2013

Figure 8 - Existing local landscape structure

BOX 1 - Landscape receptors

Locally distinctive landscape elements and features and perceptual aspects of landscape character and setting which form the context to the site and are relatively sensitive to development.

Landscape context

- Overall landscape context of the Site

Landscape character assessment relevant key characteristics

Key natural features

- *Flat, elevated plateau landform above the 50m contour with little topographic variation.*
- *Extensive arable farmland with large-scale fields and notable absence of boundaries.*
- *Mature blocks of ancient woodland, hedgerow oaks and hedgerow boundaries where they remain - prevent further degradation.*
- *Grass verges and occasionally ditches occur along road sides.*

Key cultural features

- *Sparsely settled with scattered farmhouses, some linear settlement with absence of centre/core.*
- *The network of quiet, straight rural lanes that cross the plateau.*

Key perceptual features

- *Expansive skies are a defining feature with distant views*

Landscape of the Site

- Landscape elements of the site

3.1.5.1 Overall landscape context of the Site

Susceptibility to proposed change

This is a simple and uniform landscape, dominated by arable farmland with large-scale, regular, geometric fields. There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the scale and openness of the plateau. Where hedgerows do occur as field boundaries they tend to be fragmented however alongside roads hedgerows tend to be fuller and provide a sense of enclosure. Remnant hedgerow trees, primarily oak, are characteristic and an important indicator of former field boundaries. Grass verges and sometimes ditches occur alongside the rural roads which dissect this area. Water is not a significant feature with minor ditches/tributaries and small field ponds occurring but not distinctly visible.

Deal Farm and The Oaks Farm clusters of buildings are a notable feature in the local landscape with the older farmhouses now dominated by modern agricultural sheds. The proposed AD plant and lagoons will largely read as extensions of these existing farm groups which already have a semi-industrial character with their long liner metal clad barn roofs.

Native woodland and tree planting provide a screen around the boundaries of the AD Plant. The bund to the east and south of the AD Plant, inside the site boundary, will also be planted with native woodland and trees. Native woodland will also provide a screen around the boundaries of the lagoons mitigating impacts in views from the north and south. New hedgerow and tree planting will also be introduced along a number of local lanes and PROW reestablishing lost landscape features and creating opportunities for more connected biodiversity. However, this planting strategy will be a long-term strategy that will take time for trees to establish so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.
Natural heritage - The lost landscape structure of plateau landscape offers an historic landscape reference which can be used to create a new landscape structure.
Cultural heritage - The Site has no important cultural heritage.
Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the scale and openness of the plateau. Where hedgerows do occur as field boundaries they tend to be fragmented.
Associations - There are no known landscape connections with notable people, events and the arts
Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics
Recreational - The Site has no recreational value although many PROW crisscross the wider plateau
Perceptual (Wildness and tranquillity) - The wide-open skies and distance to any larger settlements create a perception of space and tranquillity.

The overall value of the *overall landscape context of the Site* is deemed to be **low** and therefore the **sensitivity**

of the landscape receptor is MODERATE-LOW.

3.1.5.2 Flat, elevated plateau landform above the 50m contour with little topographic variation

Susceptibility to proposed change

This is a simple and uniform landscape, in which any larger buildings are distinctive features especially those outside the villages and hamlets. Any man-made structures including landform/bunds are also likely to be distinctive and discordant in this landscape if not carefully located.

With this in mind, the proposed lagoons are carefully located next to the existing farm cluster on the lower part of the immediate plateau context. The lagoons are backdropped by the existing buildings. Native Woodland will also provide a screen around the boundaries of the lagoons mitigating impacts the lagoons may have on the wider landform context.

The main AD plant will be a distinctive new feature on the plateau but a further landform bund is carefully located inside the boundary site in close proximity to the new infrastructure with the aim of screening ground-level clutter. In views from the east and south, This bund will be relatively discrete as it is backdropped by the new facilities and will also be planted with native woodland and trees as part of the wider woodland planting strategy for the site. However, this planting strategy will be a long-term strategy that will take time for trees to establish so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designations.

Natural heritage - There are no natural heritage implications

Cultural heritage - The Site has no cultural heritage implications

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the topography of the plateau.

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics

Recreational - The Site has no recreational value, but PROW crisscross the wider landscape

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - The wide-open skies and distance to any larger settlements create a perception of space and tranquillity

The overall value of flat, elevated plateau landform above the 50m contour with little topographic variation is deemed to be **moderate**, and therefore **the sensitivity of the landscape receptor is MODERATE.**

3.1.5.3 Extensive arable farmland with large-scale fields and notable absence of boundaries

Susceptibility to proposed change

This is a simple and uniform landscape, dominated by arable farmland with large-scale, regular, geometric fields. There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the scale and openness of the plateau. Where hedgerows do occur as field boundaries they tend to be fragmented however alongside roads hedgerows tend to be fuller and provide a sense of enclosure. Remnant hedgerow trees, primarily oak, are characteristic and an important indicator of former field boundaries. Grass verges and sometimes ditches occur alongside the rural roads which dissect this area. Water is not a significant feature with minor ditches/ tributaries and small field ponds occurring but not distinctly visible.

Deal Farm and The Oaks farm clusters of buildings are a notable feature in the local landscape with the older farmhouses now dominated by modern agricultural sheds. The proposed AD plant and lagoons will largely read as extensions of these existing farm groups which already have a semi-industrial character with their long liner metal clad barn roofs.

Native woodland and tree planting provide a screen around the boundaries of the AD Plant. The bund to the east and south of the AD Plant, inside the site boundary, will also be planted with native woodland and trees. Native woodland will also provide a screen around the boundaries of the lagoons mitigating impacts in views from the north and south. New hedgerow and

tree planting will also be introduced along a number of local lanes and PROW reestablishing lost landscape features and creating opportunities for more connected biodiversity. However, this planting strategy will be a long-term strategy that will take time for trees to establish so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.

Natural heritage - The are no natural heritage implications.

Cultural heritage - The Site has limited cultural heritage.

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the topography of the plateau.

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics

Recreational - The Site has no recreational value.

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - Because of the wide-open skies and absence of field boundaries and distance to any larger settlements create a perception of space and tranquillity.

The overall value of *the extensive arable farmland with large-scale fields and notable absence of boundaries* is deemed to be **low**, and therefore **the sensitivity of the landscape receptor is MODERATE-LOW.**

3.1.5.4 Mature blocks of ancient woodland, hedgerow oaks and hedgerow boundaries where they remain - prevent further degradation

Susceptibility to proposed change

The site is in a simple and uniform landscape, dominated by arable farmland with large-scale, regular, geometric fields. There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the scale and openness of the plateau. The development of the AD plant and lagoons will not impact any existing woodlands, trees, or hedgerows. New woodland, hedgerow, and tree planting will be introduced around the site and along a number of local lanes and PROW re-establishing lost landscape features and creating opportunities for more connected biodiversity. However, this planting strategy will be a long-term strategy that will take time for trees to establish so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.

Natural heritage - The arable field itself has limited value.

Cultural heritage - The Site has limited cultural heritage.

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics

Recreational - The Site has no recreational value.

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - Because of the wide-open skies and absence of field boundaries and distance to any larger settlements create a perception of space and tranquillity

The overall value of the *mature blocks of ancient woodland, hedgerow oaks and hedgerow boundaries* is deemed to be **moderate**, and therefore **the sensitivity of the landscape receptor is MODERATE.**

3.1.5.5 Grass verges and occasionally ditches occur along road sides

Susceptibility to proposed change

The access road into the main AD plant will require a new entrance of Common Road and there will be a number of minor verge adjustments to verges along the haul route. These changes are relatively minor in nature and will be complemented by the introduction of new roadside hedgerows and trees on a number of lanes around the site, therefore the susceptibility to the

proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.

Natural heritage - No natural heritage implications.

Cultural heritage - No cultural heritage.

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery.

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics.

Recreational - The Site has no recreational value.

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - Because of the wide-open skies and absence of field boundaries and distance to any larger settlements create a perception of space and tranquillity.

The overall value of *grass verges and occasionally ditches occur along road sides* is deemed to be **low**, and therefore **the sensitivity of the landscape receptor is MODERATE-LOW.**

3.1.5.6 Sparsely settled with scattered farmhouses, some linear settlement with absence of centre/core

Susceptibility to proposed change

This is a simple and uniform landscape, dominated by arable farmland with large-scale, regular, geometric fields. There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the scale and openness of the plateau. Where hedgerows do occur as field boundaries, they tend to be fragmented however alongside roads hedgerows tend to be fuller and provide a sense of enclosure.

Deal Farm and The Oaks farm clusters of buildings are a notable feature in the local landscape with the older farmhouses now dominated by modern agricultural sheds. The proposed AD plant and lagoons will largely read as extensions of these existing farm groups which already have a semi-industrial character with their long liner metal clad barn roofs. The site will not impact any other existing settlements, but the main AD plant and lagoons will cumulatively add to the development in the plateau landscape.

Native woodland and tree planting provide a screen around the boundaries of the AD Plant, and lagoons mitigating impacts on the character of the landscape. New hedgerow and tree planting will also be introduced along a number of local lanes and PROW re-establishing lost landscape features and creating opportunities for more connected biodiversity. However, this planting strategy will be a long-term strategy that will take time for trees to establish so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.

Natural heritage - No natural heritage implications.

Cultural heritage - No cultural heritage.

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery.

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics.

Recreational - The Site has no recreational value.

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - Because of the wide-open skies and absence of field boundaries and distance to any larger settlements create a perception of space and tranquillity

The overall value of *sparsely settled with scattered farmhouses, some linear settlement with absence of centre/core* is deemed to be **low**, and therefore **the sensitivity of the landscape receptor is MODERATE-LOW**

3.1.5.7 The network of quiet, straight rural lanes that cross the plateau

Susceptibility to proposed change

Several narrow lanes cross the plateau and from which the AD Plant and Lagoons will be visible. These include Stone Lane to the north, Common Road to the east, Lady's Lane, and Kenninghall Road to the south.

Native woodland and tree planting provide a screen around the boundaries of the AD Plant. The bund to the east and south of the AD Plant, inside the site boundary, will also be planted with native woodland and trees. Native woodland will also provide a screen around the boundaries of the lagoons mitigating impacts in views from the north and south. New hedgerow and tree planting will also be introduced along a number of local lanes and PROW re-establishing lost landscape features and creating opportunities for more connected biodiversity. However, this planting strategy will be a long-term strategy that will take time for trees to establish so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.

Natural heritage - No natural heritage implications.

Cultural heritage - No cultural heritage.

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery.

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics

Recreational - The Site has no recreational value.

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - Because of the wide-open skies and absence of field boundaries and distance to any larger settlements create a perception of space and tranquillity.

The overall value of *the network of quiet, straight rural lanes that cross the plateau* is deemed to be **moderate**, and therefore **the sensitivity of the landscape receptor is MODERATE.**

3.1.5.8 Expansive skies are a defining feature with distant views

Susceptibility to proposed change

This is a simple and uniform landscape, dominated by arable farmland with large-scale, regular, geometric fields. There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery and the scarcity of hedgerows accentuates the scale and openness of the plateau.

Deal Farm and The Oaks farm clusters of buildings are a notable feature in the local landscape with the older farmhouses now dominated by modern agricultural sheds. The proposed AD plant and lagoons will largely read as extensions of these existing farm groups however the new AD plant digester tanks and associated lighting conductors will in some views break the skyline.

Native woodland and tree planting provide a screen around the boundaries of the AD Plant. The bund to the east and south of the AD Plant, inside the site boundary, will also be planted with native woodland and trees. Native woodland will also provide a screen around the boundaries of the lagoons mitigating impacts in views from the north and south. New hedgerow and tree planting will also be introduced along a number of local lanes and PROW re-establishing lost landscape features and creating opportunities for more connected biodiversity. However, this planting strategy will be a long-term strategy that will take time for trees to establish so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.

Natural heritage - No natural heritage implications.

Cultural heritage - No cultural heritage.

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics

Recreational - The Site has no recreational value.

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - Because of the wide-open skies and absence of field boundaries and distance to any larger settlements create a perception of space and tranquillity.

The overall value of *expansive skies are a defining feature with distant views* is deemed to be **moderate**, and therefore **the sensitivity of the landscape receptor is MODERATE.**

3.1.5.9 Landscape elements of the site

Susceptibility to proposed change

The landscape structure proposed for the main AD plant will reinforce the existing and strengthen the eastern, northern, and western boundaries of the Site by introducing a native woodland planting mix with larger specimen trees located to have some impact in the early. The landscape strategy for the lagoons follows the same strategy with significant belts of native woodland planting which will eventually provide year-round provide screening. In order to mitigate the impact of the development, in particular the lightning masts, in longer views new native hedgerows and trees along certain roads, lanes, and PROW will reintroduce lost landscape features and which will in turn increase ecological connectivity across the plateau. However, the planting will take years to establish and mature so the susceptibility to the proposed change is deemed to be **moderate**.

Value

Designations - No environmental/landscape designation.

Natural heritage - No natural heritage implications.

Cultural heritage - No cultural heritage.

Landscape condition - There has been wide-scale removal of boundary vegetation to accommodate modern farm machinery.

Associations - There are no known landscape connections with notable people, events, and the arts.

Distinctiveness - This is a uniformly quite open landscape with limited other distinctive characteristics

Recreational - The Site has no recreational value.

Perceptual (scenic) - The Site has limited scenic value.

Perceptual (Wildness and tranquillity) - Because of the wide-open skies and absence of field boundaries and distance to any larger settlements create a perception of space and tranquillity.

The overall value of *landscape elements of the site* is deemed to be **moderate**, and therefore **the sensitivity of the landscape receptor is MODERATE.**

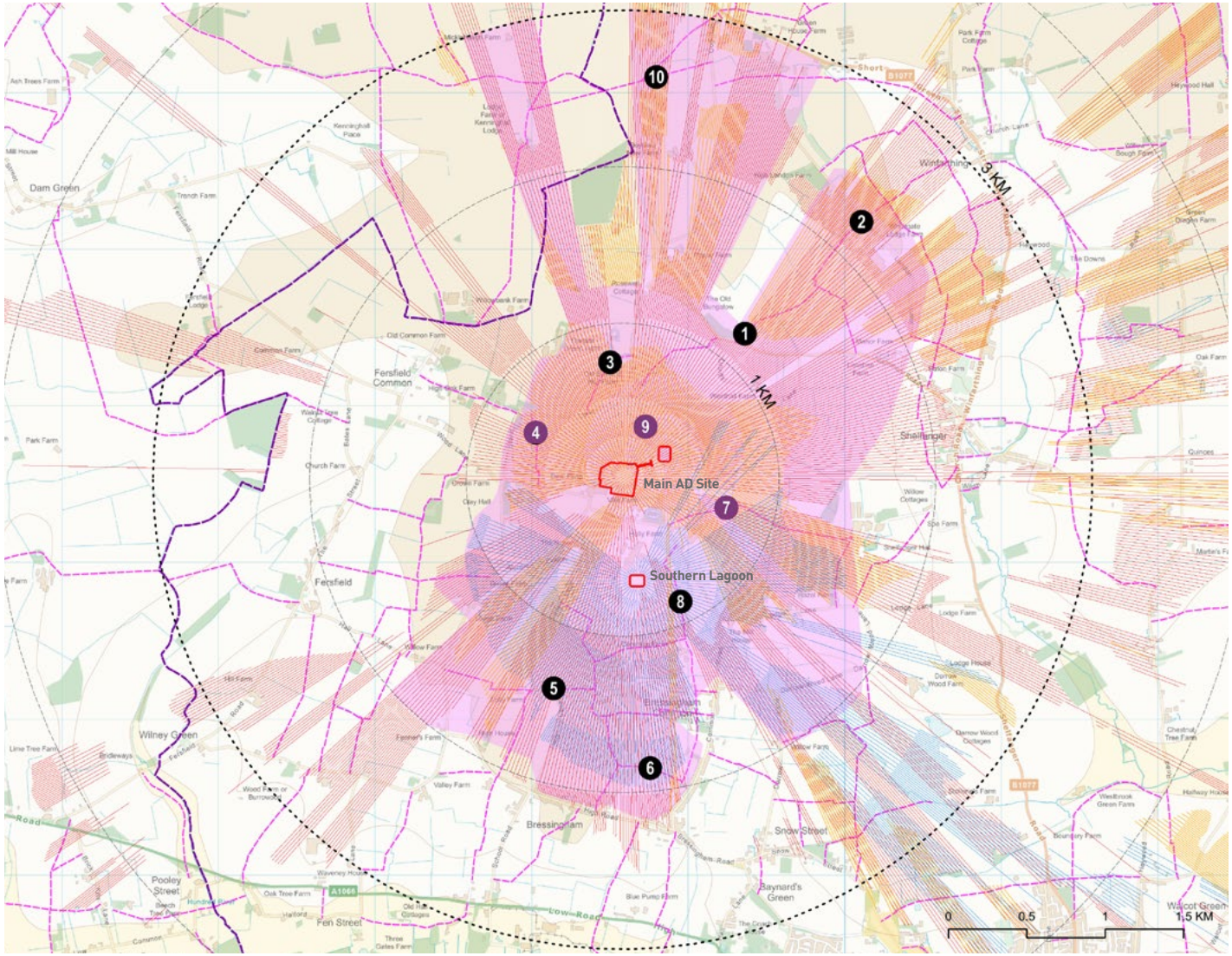
3.1.6 Sensitivity of landscape receptors

The baseline study shows that all the identified landscape receptors have a **moderate-low or moderate** susceptibility to the type of change that is predicted to occur as a result of the development proposals.

This landscape is not notable for its distinctive landscape character and/or sensitivity within the adopted landscape character assessment and it is not subject to any landscape related designations. Therefore, the value of the landscape has been assessed by review of a series of different factors as outlined in the LI TGN 'Assessing the Value of Landscapes Outside National Designations' 02-21. As with the susceptibility, all the identified landscape receptors have a **low or moderate** value.

Overall, all (nine) of the landscape receptors are judged to have MODERATE or MODERATE-LOW sensitivity to the proposed development.

- Site boundary
- District boundary
- Land above 50 mAOD
- Public Rights of Way
- Representative view points
- Representative view points where Northern Lagoon is visible
- Zone of Theoretical Visibility (ZTV) of Secondary Digester Building
- Zone of Theoretical Visibility (ZTV) of Southern Lagoon
- Zone of Theoretical Visibility (ZTV) of Northern Lagoon
- Approximate extent of Zone of Visibility (ZV)



These Zone of Theoretical Visibility (ZTV) have been generated using specialist computer software and are set at 1.6 m height visibility above ground level to compensate for potential inaccuracies in digital terrain data and to 'ensure' that the worst case is represented.

These ZTV spin points height are positioned at the centre of the secondary digester building (red spin point), north lagoon (orange spin point) and the centre of south lagoon (blue spin point).

These spin points have been modeled using a target point at the highest point of each structures: secondary digester building 61.36 mAOD, north lagoon 53.50 mAOD and south lagoon 48.50 mAOD.

These ZTVs have informed the extent of visual effect considering the screening effect of existing woodland vegetation (12.00 m hgt) and urban areas (8.00 m hgt)

Figure 8 - Zone of Visibility

3.2 Visual baseline visual assessment

The existing visibility of the Site was assessed by a desktop study of Ordnance Survey maps and Google aerial photograph coverage in order to identify the area in which the development may be visible, the different groups of people who may experience views of the development, the viewpoints where they will be affected and the nature of views at those points. The assessment process is described in the Methodology (Annex A). It can be summarised as:

Step 1 - a computer generated Zone of Theoretical Visibility (ZTV) to shows areas from which the development proposal may theoretically be visible on the basis of combined data for topography ('bare earth') and manually input data for buildings (8 m) and woodland (12 m).

The ZTV mapping is the desk study component of the visibility analysis and cannot be relied upon to demonstrate the actual visibility of the site because many other factors, particularly hedgerows in this landscape, influence visibility.

Step 2 - Scoping Viewpoints. Figure C1.1 in Annex C1 shows the ZTV and the location of Scoping Viewpoints, which were visited to test and explore the visibility of the Site 'on the ground'. Annex C1 also presents photographs of the views from each of these Scoping Viewpoints, to indicate the degree to which the site is visible.

Step 3 - Zone of Visibility and Representative Viewpoints - Figure C1.2 in Annex C1 shows the Zone of Visibility (ZV) for the Site. This is drawn based on the actual visibility of the Site, as experienced 'on the ground' during the field survey. It defines the area within which receptors might reasonably expect to be visually affected by the development. The extent of the ZV was influenced by the ZTV and the analysis of Scoping Viewpoints. The ZV has been drawn on the assumption of a 12.3 m high secondary digester building and 4 m high lagoon. It has also been drawn conservatively, in that it shows the broad area over which it is possible to see the Site, including glimpsed views.

Figure 8 on page 28 summarises the visual assessment. It shows both the ZTV and the ZV. Within the ZV, the people who are likely to experience the changes in views and visual amenity (visual receptors) are:

- motorists travelling along local roads and lanes.
- walkers and cyclists using the local footpaths
- cyclists and pedestrians using the local roads and lanes

Figure 8 also identifies ten Representative Viewpoints which have been selected to represent the places from which the proposed development will be seen by these different groups. The viewpoint numbers correspond with the photographic analysis presented in Figure C1.3 in Annex C1. The selected Representative Viewpoints are those that provide the clearest views of the site and are also the most accessible to the public.

The Viewpoints record the way the Site is currently perceived by 'local receptors' within its landscape context and thus provide a baseline visual assessment for use as a point of comparison when considering the effects of the development. Only publicly accessible viewpoints are used (i.e. views from roads, public rights

BOX 2

Judgements about the relative sensitivity of visual receptors are influenced by the:

- Location and context of the viewpoint, for example viewpoints which are closer to the site are generally more sensitive.
- The numbers of viewers who commonly use the viewpoint. Some viewpoints are commonly used by the public, such as formal viewing areas, picnic areas or recreational rights of way. Other viewpoints may be difficult to gain access to.
- The nature of the viewpoint and the expectations, occupation or activity of the receptor. Residential properties are sensitive to visual impacts as the residents experience the impacts on a regular and prolonged basis. Public footpaths can also be sensitive, since the users attention is often focused on the landscape. By contrast views from transport routes or places of work are less sensitive.
- Movement of viewers at the viewpoint. More transitory views for example from a motorway or train, are generally less sensitive than views experienced from residential properties and footpaths
- The importance or cultural significance of the view/viewpoint, including its appearance in guidebooks, tourist maps, or cultural and historical associations.

of way and/or open access land).

Judgements about levels of visual sensitivity take account of the extent to which the site is visible, the relative sensitivity of its visual receptors and the accessibility of the views to members of the public. The criteria which influence judgements about the sensitivity of visual receptors are summarised in BOX 2 on page 29 The assessment of visual sensitivity for each of the representative viewpoints is described in the following paragraphs on pages 30 - 31.

Viewpoint 1 - A partial representative view from the northeast looking southwest towards the Site from the western end of public right of way Shelfanger FP2 where it meets Common Road. The Deal Farm complex to the southwest of the site (and immediately adjacent to it) is completely screened from view by the gradually rising ground in the middle distance. This is one of a sequence of views moving southwest along the PROW and the upper portions of the taller AD plant structures will be visible just beyond the landform horizon.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE**.

Viewpoint 2 - A distant representative view from the northeast looking southwest towards the Site from the eastern end of public right of way Shelfanger FP2 where it meets High London Lane. The Deal Farm complex to the southwest of the site (and immediately adjacent to it) is visible on the distant horizon backdropped by vegetation beyond. This is the first of a sequence of views moving southwest along the PROW and taller AD plant structures just to the left of the existing farm buildings will be visible and will break the horizon line. Even though it is a distant view, the new AD plant structure may break the horizon line formed by the more distant vegetation.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE.**

Viewpoint 3 - A partial representative view from the north looking south towards the Site from the northern end of public right of way Bressingham FP4 where it turns south towards Common Road. The taller structures of the Deal Farm complex to the southwest of the site (and immediately adjacent to it) are just visible but the cluster of the building is otherwise screened by the gradually rising ground in the middle distance. This is one of a sequence of views moving south along the PROW and the upper portions of the taller AD plant structures will be visible just beyond the landform horizon.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE.**

Viewpoint 4 - A full representative view from the northwest looking southeast towards the Site from the northern end of public right of way Bressingham FP3 just south of where it meets Stone Lane. The Deal Farm complex immediately adjacent to the southwestern boundary of the site is clearly visible. This is one of a sequence of views moving south along the PROW and the proposed AD plant structures will be visible to the left of the farm buildings and will break the skyline formed by the background vegetation.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE.**

Viewpoint 5 - A distance representative view from the south looking north towards the Site from the western end of public right of way Bressingham FP12 where it meets Folly Lane. The existing farm complexes immediately adjacent to the southwestern boundary of the site (Deal Farm) and the southeast of the site (The Oaks) are clearly visible. This is one of a sequence of views looking north moving east/west along the PROW. The proposed AD plant structures will be visible in the centre of the view between the two farm clusters. Whilst this is a distant view the new AD Plant structures will be visible and will break the background horizon line. The proposed Southern Lagoon may also be visible in

the view adjacent to The Oaks farm cluster low to the ground.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE.**

Viewpoint 6 - A distance filtered representative view from the southeast looking north towards the Site from the public right of way Bressingham FP7 just to the north of Chestnut Tree Farm on the edge of Bressingham village. The existing farm complex to the south of the site (The Oaks) is visible between the groups of trees and vegetation. This is one of a sequence of views looking north moving east/west along the PROW. Whilst this is a distant view, the new AD Plant structures will be visible beyond "The Oaks" farm cluster and will break the background horizon line. The proposed Southern Lagoon may also be visible in the view low to the ground next to The Oaks.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE.**

Viewpoint 7 - A full representative view from the east looking west towards the Site mid-way along the public right of way Bressingham FP6. The Deal Farm complex immediately adjacent to the southwestern boundary of the site is just visible through the hedgerow vegetation. This is one of a sequence of views moving west along the PROW and the proposed AD plant structures will be visible to the right of the farm buildings and will break the skyline. The northern lagoon will also be visible to the right of the view, particularly during construction and early years.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE.**

Viewpoint 8 - A full representative view from the southeast looking northwest towards the Site of the Southern Lagoon at the northern end of the public right of way Bressingham FP7. The Oaks Farm complex is clearly visible in the centre of the view and will likely screen the main AD plant in this view, but the Southern Lagoon will be clearly visible immediately in front of The Oaks Farm complex. This is one of a sequence of views moving north along the PROW.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE**.

Viewpoint 9 - A full representative view looking south along Common Road. The Deal Farm complex is visible to the right of the view and the new AD plant will be clearly visible in front and to the right of this cluster. The access route linking to Common Road will also likely be visible for this slightly elevated location. The Northern Lagoon will also be clearly visible to the left of the view - just east of Common Road.

Visual receptors would be motorists and cyclists on Common Road. Their susceptibility is judged to be moderate as they are travelling on a local, rural lane and may potentially have some appreciation of the surrounding scenery (for instance, compared to motorists on a commuter route). The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE-LOW.**

Viewpoint 10 - A long-distance glimpsed representative view from the north looking south towards the Site midway along footpath Shelfanger FP11. The higher structures of the main AD plant will be located in the centre of the view and visible glimpsed views through gaps in the hedgerows and trees. This glimpsed view will be typical if others through gaps in the vegetation looking south from the PROW.

Visual receptors would mainly be walkers on the public right of way. Their susceptibility is judged to be high as they are likely to be walking for recreational purposes. The value of the view is judged to be low as it is not subject to any planning designations. Overall visual receptor sensitivity is judged to be **MODERATE**.

4.1 Predicted landscape effects

4.1.1 Magnitude of landscape effects

Table B2.1 in Annex B2 shows the judgements involved in assessing the magnitude of landscape effects during the construction phase; years 1 to 5; and after 15 years when any new planting can be expected to have matured. Each effect on landscape receptors is assessed in terms of its size or scale, the geographical extent of the area influenced, its duration and reversibility. Refer to Table A2 in Annex A (Methodology) which sets out the criteria for judging the magnitude of landscape effects. The magnitude of landscape effects as outlined in detail in Table B2.1 in Annex B2 is summarised for years 1-5 and 15 in the following sections in 4.1.1.1 to 4.1.1.9.

4.1.1.1 Overall landscape context

At completion, the development of the main AD would be perceived as a distinctive new cluster of structures in the landscape with the dome shape of the top of the two digester tanks contrasting with the adjacent more traditional and angular agricultural architecture. At year one, the landscape would be immature and the newly built infrastructure including the lagoons would seem widely prominent. However, groups of larger specimen and feathered trees will be planted (in the proposed woodlands and hedgerows) to soften the structures and the earth bund will provide early screening. The overall landscape will need time to mature before it provides any significant landscape benefit.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MAJOR-MODERATE ADVERSE effect.

As it matures, the new woodland around the site boundary and along the nearby roads and PROW would assist to integrate the new structures within the wider context. There would be a change in the open character of the local landscape as a result of the development to a more enclosed landscape but this should be considered in the context of the loss in recent decades of many of the historic hedgerows and trees which would have created a more enclosed character in any case.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MODERATE ADVERSE effect.

4.1.1.2 Flat, elevated plateau landform above the 50m contour with little topographic variation

The structural landscape around the main AD plant structures and the lagoons will assist to integrate the Site with its surroundings and reduce the visual impact of all associated infrastructure but it will change the character of the flat open plateau landscape adding infrastructure and clutter. The earth bund along the eastern boundary of the main AD site and the lagoons is a somewhat discordant landform on the otherwise flat plateau although it does provide, in the short term, effective screening, of ground level clutter in the site in the views from the east.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.

Once mature, the planting associated with the proposed development would integrate and screen views to the AD plant and the lagoons, but the planting will change and disrupt long views and therefore reduce awareness of the elevated plateau landscape. Therefore, there will be a slight adverse effect on the landscape setting.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.

4.1.1.3 Extensive arable farmland with large-scale fields and notable absence of boundaries

The local plateau landscape has in recent decades (post-war) been denuded of the majority of its historic hedgerows and trees. PROWs have been ploughed over and fields have become very large and intensively managed. Arable field margins that are managed to provide benefits for wildlife, hedgerows and small woodlands together provide a valuable inter-connected network of habitat. At completion, the new immature planting around the boundaries of the main AD plant, the lagoons and off-site along the reinstated PROWs would have limited effect on the character of the open landscape and the new structures will look raw However, the woodland and off-site hedgerow corridors along some PROW will add back some elements of lost field boundaries creating also a much more diverse range of habitats than currently exists.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.

In the long term, as it matures, the woodland habitat proposed to the boundaries of the main AD plant site and the lagoons would contribute positively to the biodiversity of the plateau landscape. The off-site hedgerow and tree planting along the PROW when combined with these woodlands will extend and strengthen the woodland habitat and ecological network, in line with green infrastructure best practice. This overall network of habitats should provide a richer and better-connected series of ecological corridors.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MODERATE-MINOR ADVERSE effect.

4.1.1.4 Mature blocks of ancient woodland, hedgerow oaks and hedgerow boundaries where they remain - prevent further degradation

The development will not impact any existing woodlands trees or hedgerows. The LVIA mitigation strategy will introduce new structural woodlands and reinstate some host hedgerows along local roads and PROW.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible NEGLIGIBLE NEUTRAL

As it matures, the new boundary woodlands and off-site hedgerows and trees would integrate the new development within the wider landscape and reverse the process of hedgerow and woodland degradation across the local plateau.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR BENEFICIAL effect.

4.1.1.5 Grass verges and occasionally ditches occur along road sides

The new vehicular access into the main AD plant off Common Road will impact on the road verge. However, the new hedgerow corridor along the road is otherwise set back to protect the verge and overtime will provide a strong enclosing character at the back of the verge.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MINOR ADVERSE effect.

Once mature, the planting associated with the proposed development would better integrate the access and provide as stronger definition of the roadside verge.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible NEGLIGIBLE NEUTRAL effect.

4.1.1.6 Sparsely settled with scattered farmhouses, some linear settlement with absence of centre/core

The AD plant and the lagoons will not directly impact any existing settlements. The adjacent Deal Farm farmhouse is surrounded to the north and east by extensive modern barn structures abut the western boundary of the main AD plant site. Similarly, The Oaks Farm house southeast of the main AD plant site on Kenninghall Road has also been significantly expanded by a series of large agricultural barns to the south. The overall impact of these existing very visible building clusters is to create a semi-industrial character which the AD plant and lagoons will significantly extend.

The boundary woodland planting and new hedgerows and trees will reduce the impact of the new AD infrastructure, but it should also be noted that the wider planting associated with the Southern Lagoons and off-site along the PROW will also serve to mitigate the impact of the existing industrial farm structures.

The overall landscape will need time to mature before it provides any significant landscape benefit.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.

Once mature, the planting associated with the proposed development would integrate and screen

views to the AD plant and farm buildings significantly decluttering the wider context by creating a more enclosed landscape context.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.

4.1.1.7 The network of quiet, straight rural lanes that cross the plateau

The AD plant and the lagoons will not directly impact the quiet network of local rural lanes on the plateau but the haul route to and from the facility will be subject to localised minor adjustments enabling the necessary vehicles to access the site. The new AD plant itself will be visible from some local lanes.

The boundary woodland planting will reduce the impact of the new AD infrastructure but it should also be noted that the wider planting of hedgerows and trees along local lanes, around the lagoons and off-site along the PROW will serve to mitigate the impact of the existing industrial farm structures and the new AD plant structures, re-establishing a sense of the more enclosed landscape which used to exist before the more recent decades of agricultural intensification.

The overall landscape will need time to mature before it provides any significant landscape benefit.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.

Once mature, the planting of hedgerows and trees along local lanes and off-site along the PROW will also serve to mitigate the impact of the AD plant and the lagoons. These new roadside features will re-establish a sense of the more enclosed landscape which used to line the local lanes before the more recent decades of agricultural intensification.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.

4.1.1.8 Expansive skies are a defining feature with distant views

The structural landscape around the main AD plant structures and the lagoons will assist to integrate the Site with its surroundings and reduce the visual impact of all associated infrastructure but it will change the character of the flat open plateau landscape. In the short term, however, the new planting will not have matured to have a significant impact and the new digester silos will in some views break the skyline. In some cross-plateau views the lighting conductors will also be visible against the skyline impacting some skyline views.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MAJOR-MODERATE ADVERSE effect.

Once mature, the planting associated with the proposed development would integrate the AD plant and the lagoons but this planting will also change the local landscape character creating a more enclosed landscape with less expansive views of the sky from some lanes adjacent to the site.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MODERATE -MINOR ADVERSE effect.

4.1.1.9 Landscape elements of the Site

The landscape structure proposed for the main AD plant will reinforce the existing and strengthen the eastern, northern and western boundaries of the Site by introducing a native woodland planting mix with larger specimen trees located to have some impact in the early.

The landscape strategy for the lagoons follows the same strategy with significant belts of native woodland planting which will eventually provide year-round provide screening.

In order to mitigate the impact of the development, in particular the lightning masts in longer views new native hedgerows and trees along certain roads, lanes and PROW will reintroduce lost landscape features and which will in turn increase ecological connectivity across the plateau. However, the planting will take years to establish and mature.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.

Once mature, the planting associated with the proposed development would better integrate the AD plant structures and the lagoons. Most views of the former arable field would be screened by the mature landscape scheme and in addition, the planting would improve the overall green infrastructure network.

The magnitude and nature of effect in the long term

(after 15 years) would be an irreversible MODERATE BENEFICIAL effect.

4.1.2 Significance of landscape effects

Judging the significance of landscape effects requires a systematic assessment of each identified effect in terms of the sensitivity of the landscape receptors and the magnitude of the effect on the landscape. Table B2.1 in Annex B shows how the separate judgements about sensitivity of the landscape receptors and the magnitude of the predicted landscape effects have been combined to provide an overall judgement about whether each predicted landscape effect is significant (Refer also Table A.4 in the LVIA Methodology provided in Annex A) which shows the matrix that has been used to combine these judgements.

For the purpose of this LVIA only high (red) or medium-high adverse effects are judged to be significant although effort should be made to mitigate medium (orange) and medium-low (yellow) adverse effects. In addition, effects that are of a temporary nature (i.e. those that occur during construction and in the years immediately after completion before any new planting can be expected to provide an effective visual screen) are given less weight than any permanent residual effects which remain after new planting has matured.

Refer to Table 1 on page 36 which summarises the significance of effect on each landscape receptor in the medium term and long term.

4.1.3 Conclusion

As Table 1 on page 36 shows, there are not predicted to be any significant residual adverse landscape effects: all the predicted landscape effects are judged to be low, neutral, or beneficial in the long term i.e. after fifteen years.

The landscape strategy overall creates an inner screen of new native woodlands around the AD plant and lagoons the shape and form of which are inspired by lost smaller-scale plateau field patterns. A secondary layer of mitigation re-establishes lost hedgerows and trees along adjacent lanes and PROW which crosses the plateau. These landscape interventions will over time change the character of the plateau around the AD plant and lagoons to become more enclosed and intimate and one which is more connected visually and ecologically.

Overall, therefore, it is considered that the development is acceptable given that the long-term impacts are judged to range between low and beneficial.

Landscape Receptor	Significance of effects Medium Term	Significance of effects Long Term
Overall landscape context		
Overall landscape context of the Site	MEDIUM-LOW	LOW
Landscape character assessment relevant key characteristic		
Flat, elevated plateau landform above the 50m contour with little topographic variation	MEDIUM-LOW	LOW
Extensive arable farmland with large-scale fields and notable absence of boundaries	LOW	LOW
Mature blocks of ancient woodland, hedgerow oaks and hedgerow boundaries where they remain - prevent further degradation	NEUTRAL	BENEFICIAL
Grass verges and occasionally ditches occur along road sides	LOW	NEUTRAL
Sparsely settled with scattered farmhouses, some linear settlement with absence of centre/core	LOW	LOW
The network of quiet, straight rural lanes that cross the plateau	MEDIUM-LOW	LOW
Expansive skies are a defining feature with distant views	MEDIUM	LOW
Landscape of the Site		
Landscape elements of the site	MEDIUM-LOW	BENEFICIAL

Table 1 - Impact significance for landscape receptors

4.2 Predicted visual effects

4.2.1 Magnitude of visual effects

The tables in Annex C2 show the judgements involved in assessing the magnitude of visual effects during the construction phase; years 1 to 5; and after 15 years when any new planting can be expected to have matured. For each of the selected representative viewpoints, the effect on visual receptors is assessed in terms of its size or scale, the geographical extent of the area influenced and its duration and reversibility. Refer to Table A3 in Annex A (Methodology) which sets out the criteria for judging the magnitude of visual effects.

The judgements summarising the magnitude of the residual visual effects at completion and after 15 years for each viewpoint are outlined in the following paragraphs.

Viewpoint 1 - At completion, the middle skyline of this view would be altered by the construction of the taller AD plant structures the upper portions of which are likely to be visible. All of the mitigation associated with the Site such as the new woodland planting to the east of the site to include roadside hedgerows will not have matured to have an impact.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.

After 15 years, the woodland planting around of the main site and lagoons would have been established to provide substantial tree belt. The tree belt is likely to screen all but the taller AD plant structures. The foreground hedgerow and tree planting along Druids Lane will partially screen the impact of the taller lighting conductors.

Given the main structures of the development are likely to be well screened and the new woodland will provide an enclosing landscape feature on the horizon the impact overall is judged to be minor adverse.

The magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.

Viewpoint 2 - A level 3 type 3D visualisation has been produced for this long distance view in order to test visual impacts and the effectiveness of the proposed mitigation strategy - refer to Annex D1. Post-construction, the development will read as an extension of the adjacent Deal Farm cluster of buildings. The taller AD Plant structures will however likely break the skyline with the dome-shaped structures catching the eye. The mitigation consisting of a substantial tree belt will not be visible from this viewpoint - the planting will not have matured to the point where it was visible.

Given the scale of change in the distant view, **the magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.**

After 15 years, it is likely that the woodland planting to the northern and eastern boundary of the site and around the northern lagoon would have been established to provide a substantial tree belt. The woodland planting belt is unlikely to screen all the taller AD plant structures including the lighting conductors.

Given that the top of the main structures of the development are unlikely to be screened by the new woodland which will otherwise provide a landscape feature on the horizon, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.**

Viewpoint 3 - At completion, the middle of this view would be altered by the construction of the taller AD plant structures with the upper portion of the digester domes and the lightning conductors visible. All of the mitigation associated with the site such as the new woodland planting to the north of the site will not have matured to have an impact. Some additional mature trees planted along Stone Lane will provide a more immediate effect to break up the mass of the structures.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MAJOR ADVERSE effect.

After 15 years, the woodland planting to the north of the site and trees along Stone Lane would have been established. The woodland planting is likely to screen all but the very top of the digester domes and the lighting conductors.

Given that the top of the main structures of the development are unlikely to be screened by the new woodland which will otherwise provide a landscape feature reinforcing the existing hedges and trees on the horizon, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MODERATE ADVERSE effect.**

Viewpoint 4 - At completion, the larger AD plant structures will be clearly visible in the view. Although the Site is backdropped by the existing vegetation and the Deal Farm cluster of buildings the tallest new structures will likely break the skyline. The new native woodland and tree planting around the northern lagoon and around the main AD plant would be relatively immature and although it would have a softening effect, it would be ineffective in terms of a visual screen. Some more mature trees planted amongst the whips will provide a more immediate effect to break up the mass of the structures.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MAJOR ADVERSE effect.

After 15 years, the woodland planting around of the main site and lagoons would have been established to provide substantial tree belt. The tree belt is unlikely to screen all of the taller AD plant structures and the lighting conductors. In addition, the foreground hedgerow vegetation aligned along the PROW will further screen impacts in particular of the taller lighting conductors. During winter months the site structures will be more visible.

Given the top of the main structures of the development are likely to be visible despite the new woodland and hedgerows providing landscape features reinstating lost field boundaries, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MODERATE ADVERSE effect.**

Viewpoint 5 - A level 3 type 3D visualisation has been produced for this long distance view in order to test visual impacts and the effectiveness of the proposed mitigation strategy - refer to Annex D2.

Post-construction, the development including the Southern Lagoon will read as an extension of the adjacent Deal Farm & The Oaks Farm cluster of buildings. The taller AD Plant digester domes will likely break the skyline, catching the eye. The mitigation consisting of substantial width of woodland planting along the boundaries of the site and around the Southern Lagoon will not be visible from this viewpoint - the planting will not have matured to the point where it was visible as a backdrop. The new hedgerow and tree planting along this PROW (FP12) and further north along FP9 and FP11 will also not have matured to significantly impact the foreground of the view.

Given the scale of change in the distant view it is judged that **the magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.**

After 15 years, the woodland planting around of the main site and lagoons would have been established to provide substantial tree belt forming a backdrop to the AD plant structures integrating them into their landscape context. The woodland planting around the Southern Lagoon will screen it from view and also serve to integrate The Oaks farm cluster into its wider landscape context. The foreground hedgerow and tree planting along PROWs FP12, FP9 & FP11 will screen all the taller AD plant structures including the lighting conductors.

Given all but the top of the digester domes are likely to be well-screened and the hedgerows and trees will provide a landscape feature in the open and denuded foreground landscape, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.**

Viewpoint 6 - Post-construction, the development will read as an extension of The Oaks Farm cluster of buildings. The taller AD Plant digester domes will likely break the skyline, catching the eye in gaps in the existing hedgerow and tree planting. The mitigation consisting of substantial width of woodland planting along the northern boundary of the site will not be visible from this viewpoint - the planting will not have matured to the point where it was visible as a backdrop.

The new hedgerow and tree planting further north along FP12, FP9 and FP11 will also not have matured to significantly impact the foreground of the view.

Given the scale of change in the distant view, **the magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.**

After 15 years, the woodland planting along the northern site boundary would likely have been established to provide substantial width of woodland planting belt forming a backdrop to the AD plant structures integrating them into their landscape context. The foreground hedgerow and tree planting along PROWs FP12 & FP 11 will screen all but the very top of the digester domes and the lighting conductors.

Given the main structures of the development are likely to remain visible and whilst the hedgerows and trees will provide an enhancement of the existing landscape features in the foreground, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.**

Viewpoint 7 - At completion, the larger AD plant structures will be clearly visible in the view with the tallest new structures breaking the skyline above the landform bund. The new native woodland and tree planting along Common Road and around the northern lagoon would be relatively immature and although it would have a softening effect, it would be ineffective in terms of a visual screen. Some more mature trees planted amongst the whips will provide a more immediate effect to break up the mass of the structures.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MAJOR ADVERSE effect.

After 15 years, the woodland planting to the eastern boundary of the site would have been established on the landscape bund to provide substantial width of woodland planting belt. The woodland belt is likely to screen all the taller AD plant structures with the exception of the lighting conductors.

The new woodland will provide landscape features reinstating lost landscape. Given the lighting conductors will remain visible in the longer term, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.**

Viewpoint 8 - At completion, the Southern Lagoon will be clearly visible in the view backdropped by The Oaks Farm cluster of buildings. The new native woodland and tree planting around the Southern Lagoon would be relatively immature and although it would have a softening effect, it would be ineffective in terms of a visual screen. Some more mature trees planted amongst the whips will provide a more immediate effect to break up the mass of the Southern Lagoon landform. During winter months the Southern Lagoon is slightly more visible.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MODERATE ADVERSE effect.

After 15 years, the woodland planting around the boundaries of the Southern Lagoon would have been established to provide a substantial width of tree belt. The tree belt is likely also to serve to screen The Oaks farm cluster linking it to its landscape context reducing its untidy visual impact and adding richness and biodiversity back into the landscape.

Given the Southern Lagoon and existing farm are likely to be well screened and the new woodland and hedgerows will provide landscape features, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR-BENEFICIAL effect.**

Viewpoint 9 - A level 3 type 3D visualisation has been produced for this close view in order to test visual impacts and the effectiveness of the proposed mitigation strategy - refer to Annex D3.

At completion, the AD plant structures will be clearly visible in the view. Although the Site is backdropped by the existing vegetation and the Deal Farm cluster of buildings the tallest new structures will likely break the skyline. The new native woodland and tree planting around the lagoon, along Common Road and the northern boundaries of the main AD plant would be relatively immature and although it would have a softening effect, it would be ineffective in terms of a visual screen. Some more mature trees planted amongst the whips and roadside hedgerow will provide a more immediate effect to break up the mass of the landform and structures.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible SEVERE ADVERSE effect.

After 15 years, the roadside hedgerow along Common Road, the woodland planting around the Northern Lagoon and to the north of the main AD plant site would have been established to provide substantial widths of new tree belts. These tree belts in combination with layered landscape features will largely screen all AD plant structures including the lighting conductors. However, in winter, the taller structures on the site including the lighting conductors will be visible in glimpsed views through the foreground hedges.

The main structures of the development are likely to be well screened and the new woodland and hedgerows will provide landscape features reinforcing field boundaries, however, because of the risk of glimpsed winter views remaining of the taller AD plant structures, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MODERATE ADVERSE effect**.

Viewpoint 10 - At completion, the middle-distance skyline of this view would be slightly altered by the construction of the taller domed AD plant digesters, the upper portions of which are likely to be visible in glimpsed views through gaps in the intervening vegetation. All of the mitigation associated with the site such as the new woodland planting to the northern boundary of the site will not be visible in this view and will not have matured to have an impact. Some additional mature trees planted along Stone Lane will provide a more immediate effect to break up the mass of the structures.

The magnitude and nature of effect in the medium term (at completion - 5 years) would be an irreversible MINOR ADVERSE effect.

After 15 years, the woodland planting along the northern boundary of the site and trees along Stone Lane would have been established. The woodland planting is likely to screen all the taller AD plant structures with the exception of the lighting conductors.

Given the higher parts of the main structures of the development are likely to remain visible on the horizon, **the magnitude and nature of effect in the long term (after 15 years) would be an irreversible MINOR ADVERSE effect.**

4.2.2 Significance of visual effects

The tables in Annex C2 show how the separate judgements about sensitivity of the visual receptors and the magnitude of the predicted visual effects have been combined to provide an overall judgement about whether each predicted visual effect is significant

For the purpose of this LVIA only high (red) or medium-high adverse effects are judged to be significant although effort should be made to mitigate medium (orange) and medium-low (yellow) adverse effects. In addition, effects that are of a temporary nature (i.e. those that occur during construction and in the years immediately after completion before any new planting can be expected to provide an effective visual screen) are given less weight than any permanent residual effects which remain after new planting has matured.

4.2.3 Conclusion

As Table 2 shows, there are predicted to be no significant residual adverse visual effect in the longer term (after 15 years).

As the assessment in the Annex C2 tables shows, there are predicted to be medium-high visual impact for three viewpoints (viewpoints 3, 4 & 7) for the medium term only (up to 5 years).

After 15 years when the new planting around the AD plant and lagoons will have matured, which, when combined with the additional hedgerow and tree planting along lanes and PROW reduces the visual impact significance for all three views.

There is also predicted to be a high impact for viewpoint 9 for the medium term only (up to 5 years). However, because of the comprehensive nature of the landscape strategy which includes foreground hedgerow planting, the visual impact significance is judged to be reduced to low after 15 years.

Overall, therefore, it is considered that the development is acceptable given that the long-term impacts are judged to range between medium-low, low and beneficial.

Viewpoints	Impact significance – Completion to Year Five	Impact significance – Year Fifteen
Representative Viewpoint 1	MEDIUM-LOW	LOW
Representative Viewpoint 2	MEDIUM-LOW	LOW
Representative Viewpoint 3	MEDIUM-HIGH	MEDIUM-LOW
Representative Viewpoint 4	MEDIUM-HIGH	MEDIUM-LOW
Representative Viewpoint 5	MEDIUM-LOW	LOW
Representative Viewpoint 6	MEDIUM-LOW	LOW
Representative Viewpoint 7	MEDIUM-HIGH	LOW
Representative Viewpoint 8	MEDIUM-LOW	BENEFICIAL
Representative Viewpoint 9	HIGH	LOW
Representative Viewpoint 10	LOW	LOW

Table 2 - Impact significance for views

5 Summary and mitigation

5.1 Mitigation measures

The majority of the adverse landscape and visual effects are predicted during the construction stages and at completion when the landscape and built development are 'raw' and the planting immature. It is acknowledged that the site construction process, with the use of mobile cranes and scaffolding and the need for multiple vehicular movements and stockpiled materials, will cause some temporary adverse landscape and visual effects.

Since the LVIA has been developed as an integrated component of the design process, the key mitigation measures for the proposed development have been 'designed' into the scheme. They are summarised in BOX 3.

BOX 3 - Summary of mitigation measures

- Establish new screening boundary woodlands to the AD plant and lagoons
- Establish new screening woodland on the bund with the site boundary to the east-south of the AD plant structures
- Establish a second line of mitigation along plateau lanes and PROW to create more effective mitigation in longer views and in particular views of the eight lightning conductors
- Locate specimen native trees in the existing hedgerow and long Stone Lane to mitigate impacts in views from further north and in particular PROW Bressingham FP4
- In setting out the LVIA mitigating strategy reference has been made to historic field patterns recognising the opportunity to reestablish a connected network that will also enhance biodiversity.

5.2 LVIA conclusion

The LVIA demonstrates that the proposed development is acceptable given that the long-term landscape impacts are judged to range between low and beneficial, and the long-term visual impacts are judged to range between medium-low and beneficial.

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