

THORPE MARSH GREEN ENERGY HUB

LANDSCAPE AND VISUAL APPRAISAL



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1. INTRODUCTION

- 1.1 This Landscape and Visual Appraisal (LVA) has been prepared by Mark Simmons, Landscape Architect (BA Honours and Post Graduate Diploma in Landscape Architecture) for Banks Renewables.
- 1.2 The purpose is to carry out an analysis of any potential landscape and visual effects associated with the Thorpe Marsh Green Energy Hub.
- 1.3 The proposed Development is located to the west of Barnby Dun and to the west of the main former Thorpe Marsh Power Station site, east of the Thorpe Marsh Nature Reserve. This LVA has been carried out in accordance with the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3), prepared by the Landscape Institute and the Institute for Environmental Management and Assessment (2013).

CONSULTATION

- 1.4 Pre-application engagement including correspondence with the Doncaster Council Planning Officer and Urban Design Officer has taken place in relation to the Thorpe Marsh Green Energy Hub proposals since March 2022. A site visit took place with Officers and Ward Councillors in November 2021. The general approach to the appraisal, including the extent of the study area along with viewpoint and photomontage locations were agreed with the Council's Urban Design Officer in August 2022.
- 1.5 An initial meeting was held with Doncaster Council to discuss the proposals in April 2021. Engagement with interested parties, including Yorkshire Wildlife Trust who operate the adjacent Thorpe Marsh Nature Reserve, as well as with local residents is ongoing and will continue throughout the determination process.

SCOPE OF APPRAISAL

- 1.6 In line with application 23/00022/FULM, this landscape and visual appraisal has been carried out as an informal assessment (GLVIA3 p4 par 1.3).
- 1.7 In order to establish a study area for this appraisal, best practice guidance suggests that the area of landscape that needs to be covered in the appraisal of landscape and visual effects should be agreed with the competent authority in advance of carrying out the appraisal. This should include the application site and the wider landscape that the proposed development might influence.
- 1.8 Through field work, viewpoint analysis and professional experience, a study area of 2km radius from the boundary of the proposed development is considered to be an appropriate study area for the appraisal of landscape and visual effects from the proposed development. This study area has been agreed with Doncaster Council. Large scale effects are unlikely to extend beyond this distance.
- 1.9 The LVA will consider the potential effects within the agreed 2km study area upon:

Landscape fabric, landscape character and landscape planning designations. Along with visual receptors that will include residential, recreational and transport.

- 1.10 The appraisal will consider the landscape and visual effects which might arise as a result of the proposed development, which involves earthworks including relocation of existing material (part of the PFA bunds) within the Site to create a level platform and a re-profiling of part of the existing bund. The appraisal is a comparison between the existing application site (pre-working) and the initial (temporary) construction and the long term (permanent) operational phase of the proposed Development.

CUMULATIVE ASSESSMENT

- 1.11 No external cumulative development proposals have been identified to form part of this appraisal. There is a proposed development to the south of the Site further south of Fordstead Lane for the excavation of approximately four million tonnes of burgy material, however as this is not a committed development it has not been considered further.

2. METHODOLOGY

- 2.1 The best practice guidance used for this assessment is the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3), prepared by the Landscape Institute and the Institute for Environmental Management and Assessment (2013).
- 2.2 Other relevant guidance documents used are listed below:
- An Approach to Landscape Character Assessment, Natural England (2014);
 - Landscape Character Assessment Guidance for England and Scotland (2002), Countryside Agency in conjunction with Scottish Natural Heritage);
 - Visual representation of development proposals, Landscape Institute Technical Guidance Note 06/19 (17 September 2019);
 - Visual representation of development proposals. Technical Guidance Note;
 - 02/17 (Landscape Institute, March 2017); and
 - GLVIA3 Statement of Clarification 1/13, 10-06-13.
- 2.3 GLVIA 3 and the Statement of Clarification 1/134 make clear that for non-EIA developments the Appraisal should consider all types of effects: adverse and beneficial, direct and indirect, and long and short term, as well as cumulative effects. However, none of these effects should be given a judgement involving the terms 'significant' or 'significance'. GLVIA 3 also stresses that the approach to the assessment needs to be proportionate to the scale of the development being assessed and the nature of the likely effects.
- 2.4 Landscape effects associated with a development relate to changes to the fabric, character and quality of the landscape as a resource and how it is experienced. This requires consideration of the character of the landscape, the elements and features that it contains, and any value attached to the landscape (whether formally or informally).
- 2.5 Landscape assessment studies the following:
- direct effects upon specific landscape elements, especially prominent and eye-catching features;
 - change in character, which is the distinct, recognisable and consistent pattern of elements that creates distinctiveness and a sense of place;
 - subtle effects that contribute towards the experience of intangible characteristics such as tranquillity, wildness and cultural associations; and
 - effects on designated landscapes, conservation sites, and other acknowledged special areas of interest.
- 2.6 Visual effects relate closely to landscape effects, but they concern changes in views and visual amenity. Visual assessment concerns people's perception and response to changes in visual amenity. Effects may result from new landscape elements that cause visual intrusion or new features that obstruct views across the landscape.

- 2.7 Both landscape and visual effects can be adverse, beneficial or neutral, short, medium or long term, permanent or temporary, reversible or irreversible, direct (an effect that is directly attributable to the proposed development) or indirect (effects resulting indirectly from the development as a consequence of the direct effects), and cumulative, relating to additional changes that may arise when the proposed development is considered in conjunction with other similar developments.
- 2.8 With regard to limitations of this appraisal it is not possible to enter the curtilage of private properties without residents' agreement and therefore the assessments are made from the nearby roads and footpaths and with the benefit of a desk-based analysis.
- 2.9 The rationale for the overall judgements about landscape and visual effects must be clear and demonstrate how the initial assessments of susceptibility and value contribute to sensitivity of the receptor and how scale, extent and duration contribute to the magnitude of effects.
- 2.10 The resulting judgements about sensitivity and magnitude are combined to inform judgements about the overall level of the effects.
- 2.11 The overall level of the landscape and visual effects arising from the proposed Development have been classified in the following scale to express the varying level of effects from the proposed Development:

Table 1: Matrix for Overall Level of Effects

Sensitivity of Receptor	Magnitude of Change				
		Substantial	Moderate	Slight	Negligible
High		Major	Major/ Moderate	Moderate	Minor
Medium		Major/ Moderate	Moderate	Moderate/ Minor	Minor/ negligible
Low		Moderate	Moderate/ Minor	Minor	Negligible

- 2.12 This matrix should not be used as a prescriptive tool, but allow for the exercising of professional judgement, which will be set out in a clear and transparent narrative.
- 2.13 Please note where extracts of the representative viewpoints, photo montages and visual study are included within this appraisal, they are for illustrative purposes only. Please refer to the full figure set of Representative Viewpoints drawing EP15, Photo Montages EP17 and Visual Study.

3. PLANNING POLICY AND LEGISLATION

3.1 At the time of writing, the adopted Development Plan comprises:

- a) Doncaster Local Plan – Adopted September 2021; and
- b) Barnsley, Doncaster and Rotherham Joint Waste Plan – 2012;

3.2 A full assessment of the proposed Development against relevant policies in the national and local level is provided in the Planning Statement. The following policies are of relevance to landscape and visual matters and the proposed Development:

- Policy 26 – Green Infrastructure (Strategic Policy);
- Policy 32: Woodlands, Trees and Hedgerows;
- Policy 33: Landscape (Strategic Policy);
- Policy 41: Character and Local Distinctiveness (Strategic Policy) and;
- Policy 48: Landscaping of New Developments

OTHER RELEVANT STRATEGIES, GUIDELINES OR DOCUMENTS SUPPLEMENTARY PLANNING DOCUMENTS

3.3 Doncaster Council has produced Supplementary Planning Documents (SPDs) to provide further guidance about the implementation of specific planning policies. SPDs do not introduce new policies, but rather assist in the interpretation and application of existing policies and proposals. Whilst they do not have the same status as Development Plan Documents (or DPDs), SPDs are a material consideration in the determination of planning applications.

DONCASTER COUNCIL DEVELOPMENT GUIDANCE AND REQUIREMENTS: SUPPLEMENTARY PLANNING DOCUMENT (JULY 2015)

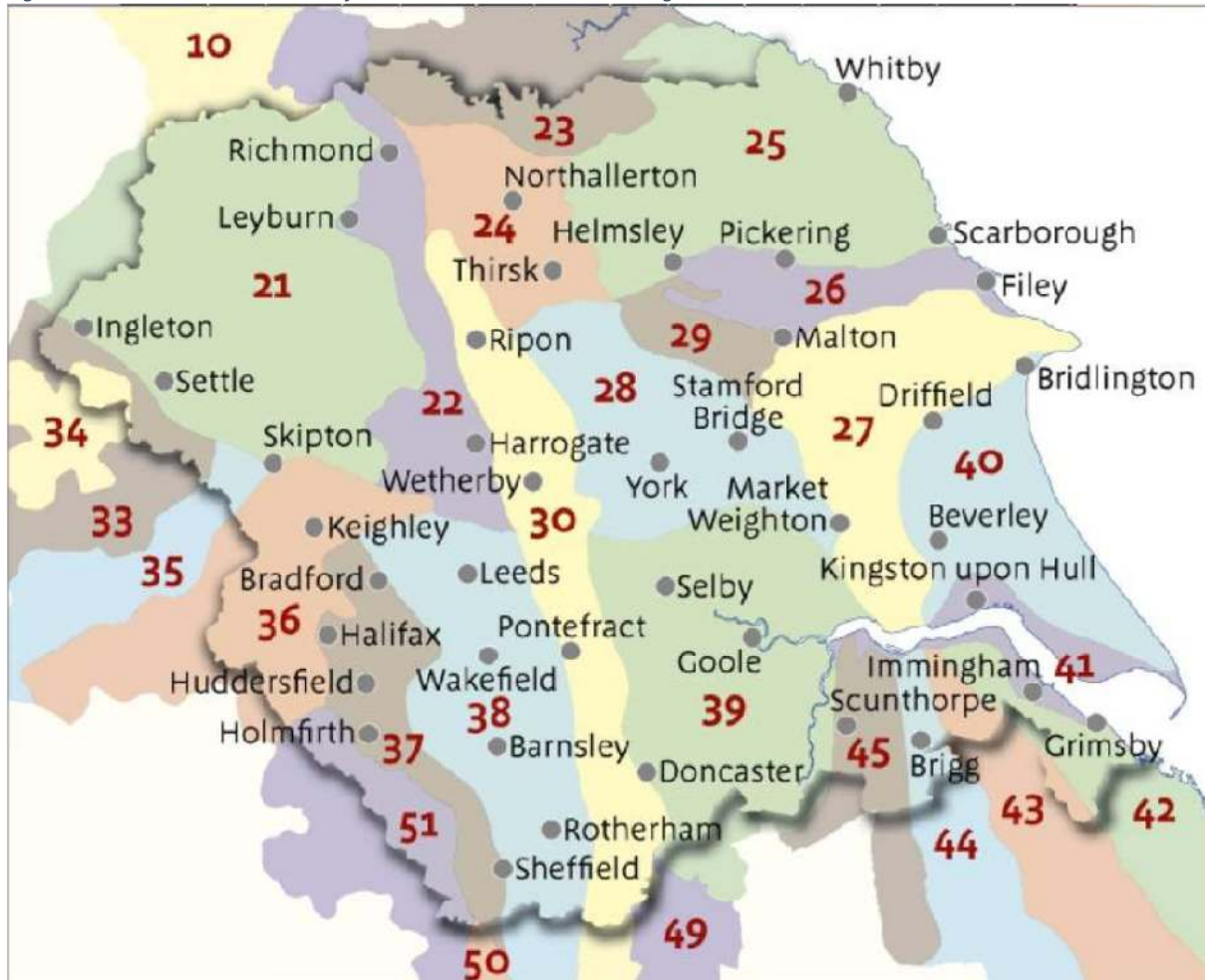
3.4 This SPD sets out detailed requirements and guidelines against which planning applications will be judged, as part of an assessment of wider planning considerations in relation to a site.

4. BASELINE CONDITIONS

4.1 This section firstly reviews the published landscape character information relevant to the 2km study area and the landscape designations and sensitive receptors. The site assessment then informed a description of the existing baseline condition of the area within the vicinity of the Site.

LANDSCAPE CHARACTER

Figure 1: National Character Areas for the Yorkshire and Humber Region



NATIONAL CHARACTER ASSESSMENT

4.2 Natural England published a National Landscape Character Assessment dividing the country into landscape character areas. The Site lies within the Yorkshire and Humber region and within character area 39 Humberhead Levels, which has the following key characteristics applicable to the Site and the surrounding area within the 2km study area:

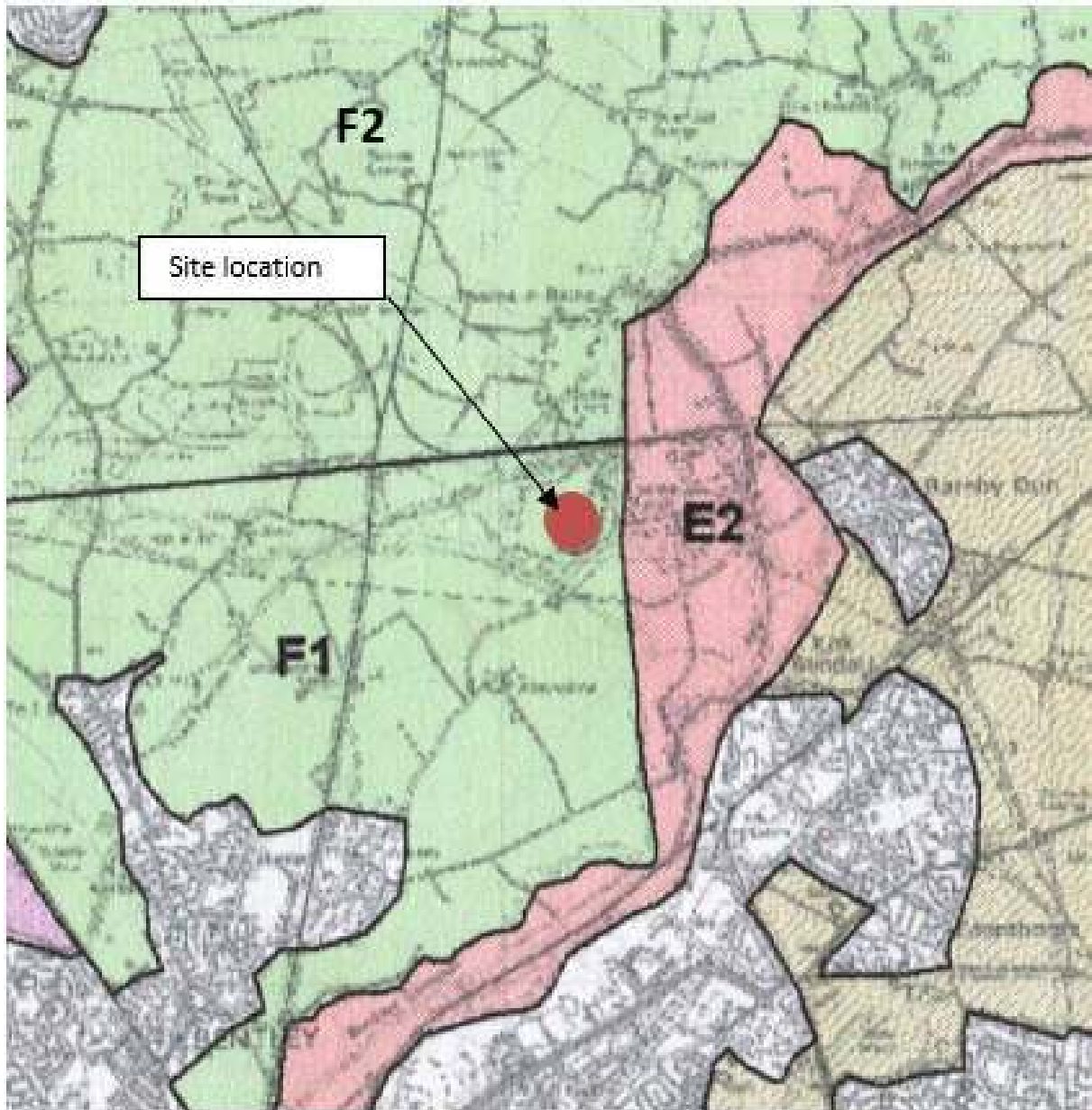
- A low lying, predominantly flat landscape, with large, regular and geometric arable fields without hedges but divided by ditches and dykes, many of which form key habitats and important corridors for species movement.

- Much of the land is at or below mean high-water mark and maintained by drainage, with fertile soils giving rise to one of the most productive areas for root crops and cereals.
- Variations in the underlying deposits create differences within the overall flat farmed landscape, including lowland raised mires and lowland heathland, many of which are of international ecological and historic importance.
- Sandy deposits give rise to lowland heath, which in places supports remnant oak and birch woodlands, with some conifer plantations.
- Heavier soils around Fishlake and Sykehouse result in a smaller scale pastoral landscape, with small thickly hedged fields, ditches and ponds, and a network of small lanes.
- Important historic landscapes include the Isle of Axholm, with evidence of mediaeval open fields, the wraps (land enriched by regular silting) near Goole and cables (long thin strip fields) around Thorne.
- Widespread evidence of drainage history, in particular the extensive drainage from the 17th century, revealed through canalised rivers, dykes, old river courses, canals, bridges and pumping stations.
- Views to distant horizons are often long and unbroken, with big expansive skies and vertical elements like water towers, power stations and wind turbines are very prominent.
- Floodplains, washlands and traditionally grazed alluvial flood meadows (or ings) associated with the major rivers and canals that cross the levels give rise to important wetland habitats, supporting large numbers of wetland birds and wildfowl, especially over winter.
- The waterlogged soils hold internationally important archaeological and palaeo- archaeological deposits.
- Despite settlements, motorways and main roads, there is still a sense of remoteness to be experienced on the Levels, in particular on Thorne and Hatfield Moors and along the Lower Derwent Valley.

4.3 This national level assessment provides a useful contextual overview of the wider landscape character area. However, Doncaster Council have commissioned a more detailed landscape character assessment carried out and published in March 2007, the relevant details of which are set out below.

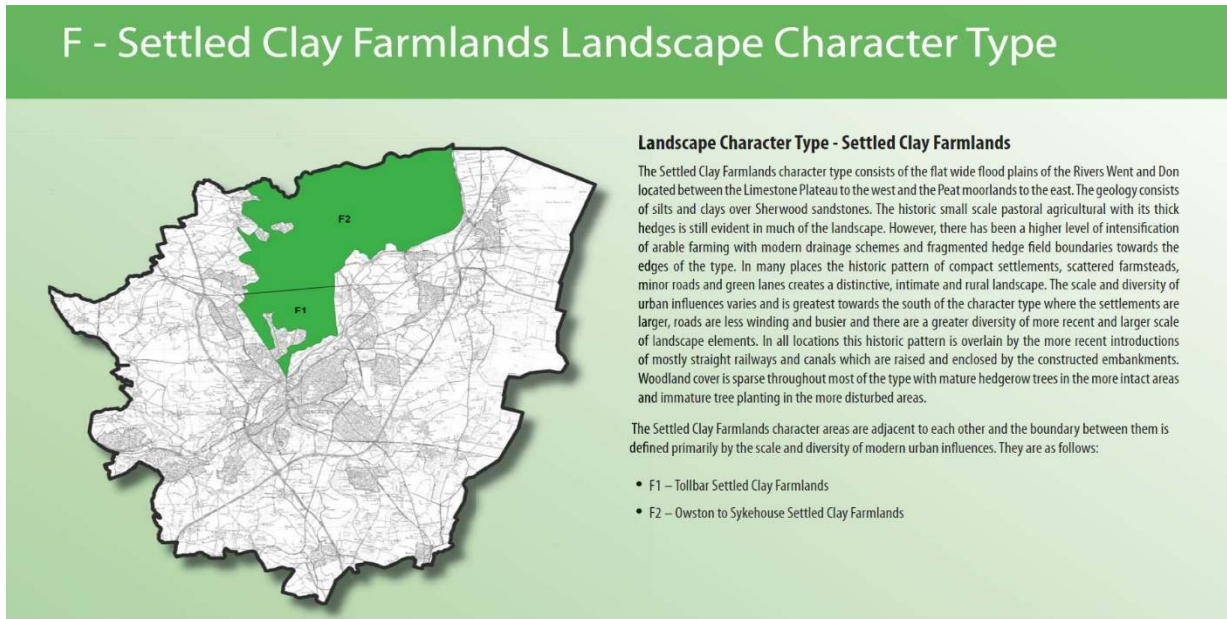
DONCASTER BOROUGH LANDSCAPE CHARACTER AND CAPACITY ASSESSMENT MARCH 2007

Figure 2: Landscape Character Areas for Doncaster Borough Landscape Character Assessment



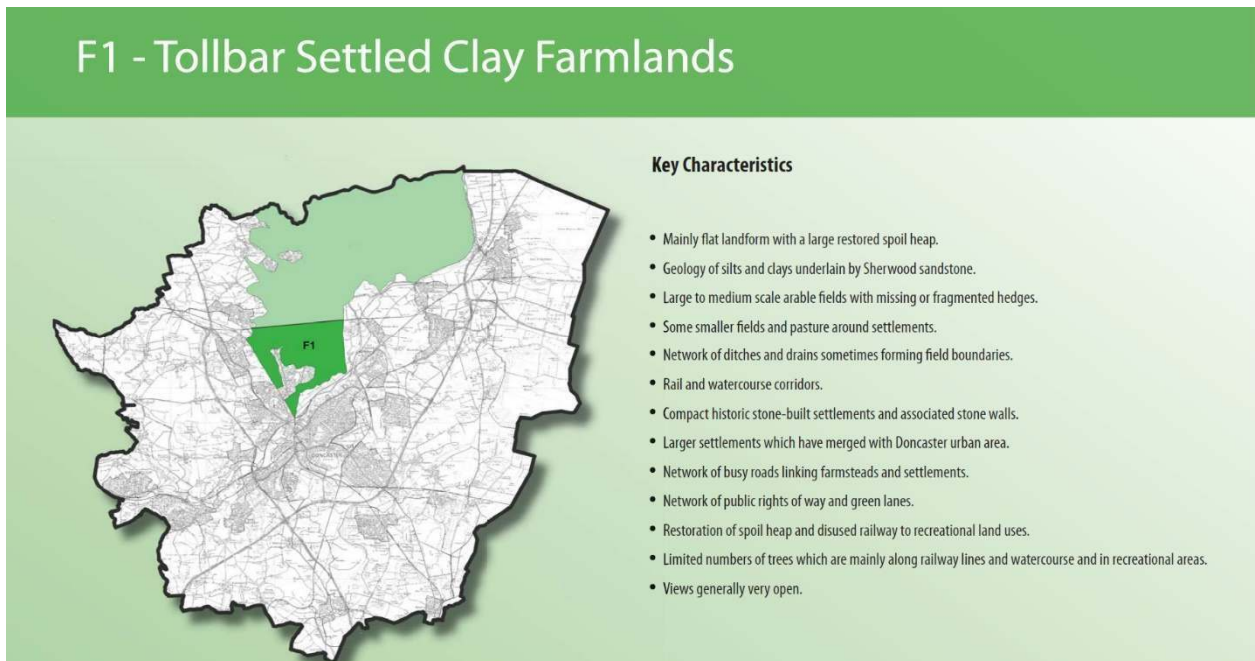
- 4.4 The Site lies within Landscape Character Type F – Settled Clay Farmlands (Figure 2), the overview for this type and location map are set out in Figure 3 (an extract from the Doncaster Landscape Character and Capacity Study).

Figure 3: Overview and location map for landscape character type F



4.5 Landscape Character Type F is divided into two character areas and the Site lies within area F1 Tollbar Settled Clay Farmlands, the key characteristics and coverage of which are shown in Figure 4 below.

Figure 4: Area F1 Tollbar Settled Clay Farmlands, the key characteristics and coverage



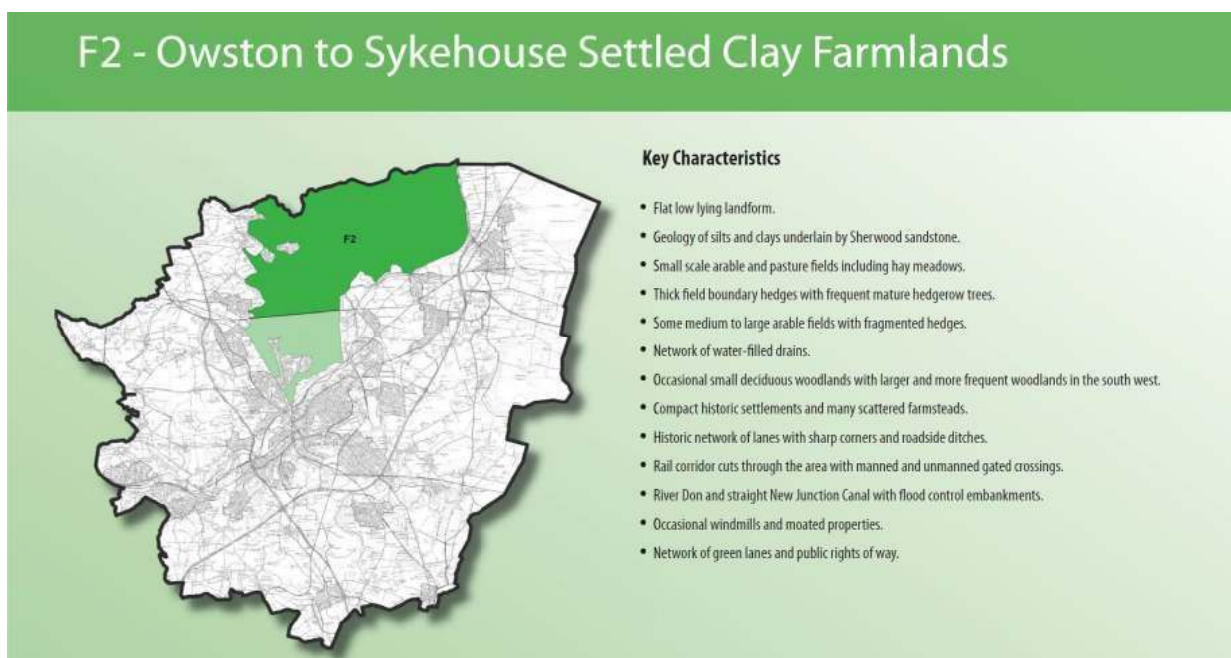
Landscape Value and Quality

This is a moderately distinctive landscape which is slightly fragmented, with a mix of elements and some changing land use. The remaining arable and pasture land is reasonably intact and in good condition. There is a conservation area at Arksey, several large local nature sites and a few other smaller scattered ones. It is a moderately tranquil landscape with some noise from busy roads and visual intrusions of spoil heaps, pylons, and cooling towers. It is considered to have a high landscape value and moderate landscape quality.

The landscape strategy for *F1 – Tollbar Settled Clay Farmlands* is to **Conserve and Strengthen**.

- 4.6 Adjacent to the north of F1 lies the F2 Owston to Sykehouse Settled Clay Farmlands Character Area, the location and key characteristics of which are shown in Figure 5 below.

Figure 5: Location and key characteristics of F2 Owston to Sykehouse Settled Clay Farmlands



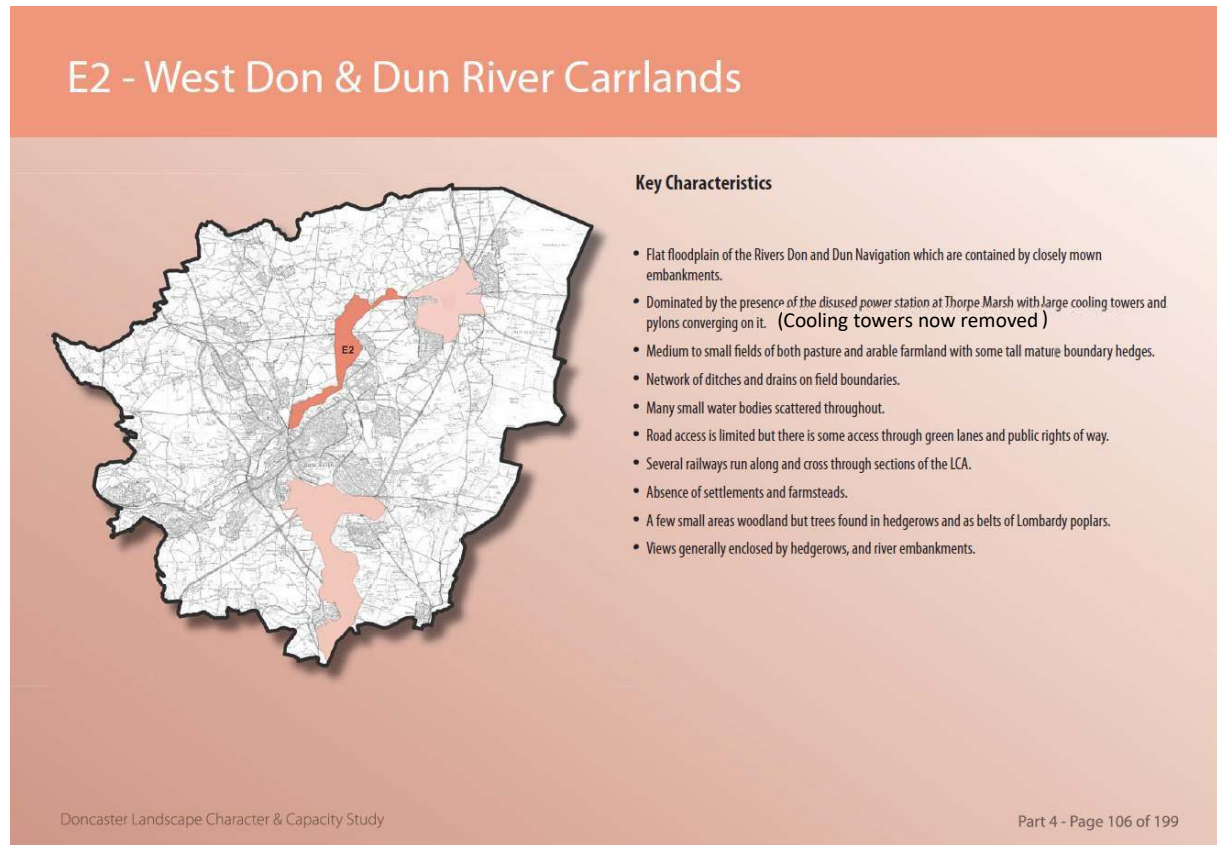
Landscape Value and Quality

This is a strongly distinctive landscape which is relatively intact and in good condition. There is a high concentration of locally designated nature sites and a large proportion of the LCA is currently designated as an Area of Special Landscape Value. In view of this both the landscape quality and value are considered to be high.

The landscape strategy for *F2 –Owston to Sykehouse Settled Clay Farmlands* is to **Conserve**.

4.7 To the east of the two Settled clay farmland areas lies the narrow character area of E2 West Don and Dun River Carr Lands, the location and key characteristics of which are shown in figure 6 below. The former coal stocking yard and access are located within this character area.

Figure 6: Location and key characteristics of E2 West Don and Dun River Carr Lands



Landscape Value and Quality

This is a distinctive and intact manmade landscape. It appears used and well-maintained particularly alongside the rivers. However there are some areas of fly-tipping in lay-bys and track and there is a general appearance of decay around the disused power station. In view of this the landscape quality is considered to be moderate.

There is a high concentration of local designated nature sites, the area is popular for recreation and away from the few roads it feels tranquil. In view of this the landscape value is considered to be high.

The landscape strategy for E2 – West Don and Dun River Carrlands is to **Conserve and Strengthen**.

4.8 The landscape character areas which provide the most detailed level of information in relation to the key characteristics of a particular area have been used in this appraisal, i.e. the local (Doncaster Council) character areas, rather than the National Character Areas.

DETAILED BASELINE LANDSCAPE CHARACTER DESCRIPTION OF THE SITE AND ITS IMMEDIATE SURROUNDS

Figure 7: Aerial photograph of the site area



- 4.9 The proposed Development occupies the site of the former ash disposal mound (within F1 character area) and part of the former coal stocking area associated with the disused Thorpe Marsh Power Station (within the E2 character area). Thorpe Marsh Drain runs through the Site and to the south of the Site before heading west.
- 4.10 The former ash disposal mound forms a 'U' shaped landform up to approximately 25m AoD in height, the open end of which faces north, where the freight rail line that served the former power station runs east-west along the northern edge of the Site and forms the division between character areas F1, containing the Site and F2 to the north.
- 4.11 To the west of the Site lies the Thorpe Marsh Nature Reserve, which is made up of small-scale fields similar to those north of the rail line within F2 character area, with strong hedgerows, hedgerow trees and areas of scrub and field trees. There are also a number of ponds, the largest of which (Thorpemere) was made when the ash bunds were first created and the Thorpe Marsh Nature Reserve was set up. There is also a disused railway line cutting across the Reserve, which supports a significant area of trees and scrub, as do the other railway lines in the area.

- 4.12 The land to the south of the Site is characterised by large scale arable fields with remnants of hedgerows and is typical of the F1 character area.
- 4.13 The 'U' shaped landform of the Site rises in a series of 3 steps along the highest section and has access tracks on each of the steps including around the base. There are a number of rectangular blocks of woodland located around the landform along with trees planted on one or both sides of the access tracks. There is also a large area of birch regeneration across the northern area of the Site. This vegetation has softened the engineered appearance of the landform in the wider landscape over the years and which now has the appearance of being covered with trees (Figure 9). However it does exaggerate its height in the surrounding flat landscape.

Figure 8: Viewpoint 1 - Fordstead Lane south of the Site



- 4.14 The land within the bunded landform is flat and divided into two fields by a track running east-west (Ash Field Road) bounded by a strong double hedgerow. There is a shallow seasonal wetland area at the southern edge of the fields, beyond which the land rises unevenly up to the surrounding bunded landform, this area being where the final infill of the bunded landform was taking place when the power station ceased to operate.

Figure 9: View of the central area of the Site within the PFA landform (Visual study viewpoint 2)



- 4.15 An area across the open northern edge of the Site between the railway line and the flat fields is bordered by another access track (Field Station Road). This area contains dense scrub which opens to a third small field in the northwest corner of the Site.

Figure 10: Vegetation across the northern edge of the Site (Visual study viewpoint 3)



- 4.16 The Thorpe Marsh Drain separates the Site from the main area of the disused power station in the east. This part of the Site is located within the E2 West Don and Dun River Carrlands. This area no longer contains the cooling towers and in fact little remains of the power station except the National Grid substation areas with associated pylons, transformers, switching yards and buildings.

Figure 11: View from Thorpe Bank at an old access to the power station (Visual study viewpoint)



- 4.17 There is a large flat area of land that housed the cooling towers and adjacent coal stocking area, which have a general appearance of neglect and decay. The former coal stocking area is gradually regenerating with scrub and holds water across a large part of its surface, with levels fluctuating throughout the year.
- 4.18 There are also the three reservoirs to the south of the former coal stocking area that have developed a dense vegetation cover of water plants and provide wetland habitat.
- 4.19 In general, the Site represents an historic industrial feature within the F1 and E2 Character Areas and at a localised level, the Site detracts from the quality of these character areas.

LANDSCAPE PLANNING DESIGNATIONS

Registered Parks and Gardens

- 4.20 None

Designated areas of landscape value

- 4.21 Doncaster have designated 7 Areas of Special Landscape Value (ASLV) to help control development and preserve the most highly valued landscapes of the Borough. Part of the F2 Owston to Sykehouse Settled Clay Farmlands (which lies to the north of the site) falls within one of these designated areas.

Green Belt and Countryside

4.22 The proposed Development does not lie within the Green Belt but is located within Doncaster's Countryside Policy Area. There is nothing in Policy 25 (Development in the Countryside Policy Area) that precludes this type of development in principle, subject to consideration of its effects. The policy test is not to have a significant adverse effect on the landscape.

VISUAL RECEPTORS

4.23 Categories of visual receptors that have the potential to be affected by the proposed Development are:

- Residents in individual and groups of dwellings and settlements;
- Road users on Motorways, A class, B class and minor roads; and
- Recreational receptors including walkers, cyclists and horse riders on public rights of way or National Trails; and leisure and tourism facilities such as café's, public houses, restaurants and nature reserves.

REPRESENTATIVE VIEWPOINTS

4.24 In order to best illustrate the landscape and visual effects of the proposed Development a number of viewpoints were selected to represent a range of landscape and visual receptors at locations that may experience the highest level of adverse effects (see EP15 Representative Viewpoint Location Plan). All the viewpoints are publicly accessible and are listed in Table 2 below.

Table 2: Representative Viewpoints

Viewpoint number	Viewpoint	Distance from the Battery Storage elements of the site	Landscape Character area	Visual receptors
1	Fordstead Lane, south of the Site	640m	F1	Road users
2	Fordstead Lane at the powerstation access, southwest of the Site	893m	F1	PRoW users / Road users
3	Thorpe Bank, east of Thorpe in Balne	564m	F2	PRoW users / Road users
4	Joan Croft Lane, south of Thorpe in Balne	535m	F2	Trans Pennine Trail users / Road users / Residents
5	Public footpath Thorpe in Balne 2 to the southeast of the Site adjacent to Thorpe Drain	168m	F2	PRoW users

6	Thorpe Marsh Nature Reserve - western hide on Thorpemere	233m	F1	Recreational users
7	The Paddock, Barnby Dun	1478m	Eastern edge of E2	Residents

BASELINE VISABILITY

- 4.25 The visual baseline focuses on the extent of the proposed Development's visibility within the 2km study area..
- 4.26 Computer generated ZTV's (Zone of theoretical visibility, Drawing EP16) have been used as a starting point to establish the visibility of the Site. Due to the flat nature of the landscape and the amount of screening vegetation present, which does not show up on the ZTV's, it has been necessary to carry out a more detail desk study along with field work.
- 4.27 This detailed desk study and field work have informed the locations of the representative viewpoints that along with a wider visual study will help illustrate the baseline visibility of the Site. The locations of these are shown on drawing EP15.
- 4.28 The retained part of the raised landform will surround the proposed Development on three sides, with a taller section of landform along the southern edge of the Site. This restricts the visibility of the battery storage facility, and along with the extent of the retained willow and birch scrub and vegetation along the railway line across the north of the Site (see Site Layout Plan PA04), means that the battery energy storage facility would be almost entirely screened from views in the surrounding landscape.

Figure 12: Visual study viewpoint 4 from flood embankment on Thorpe Marsh Drain

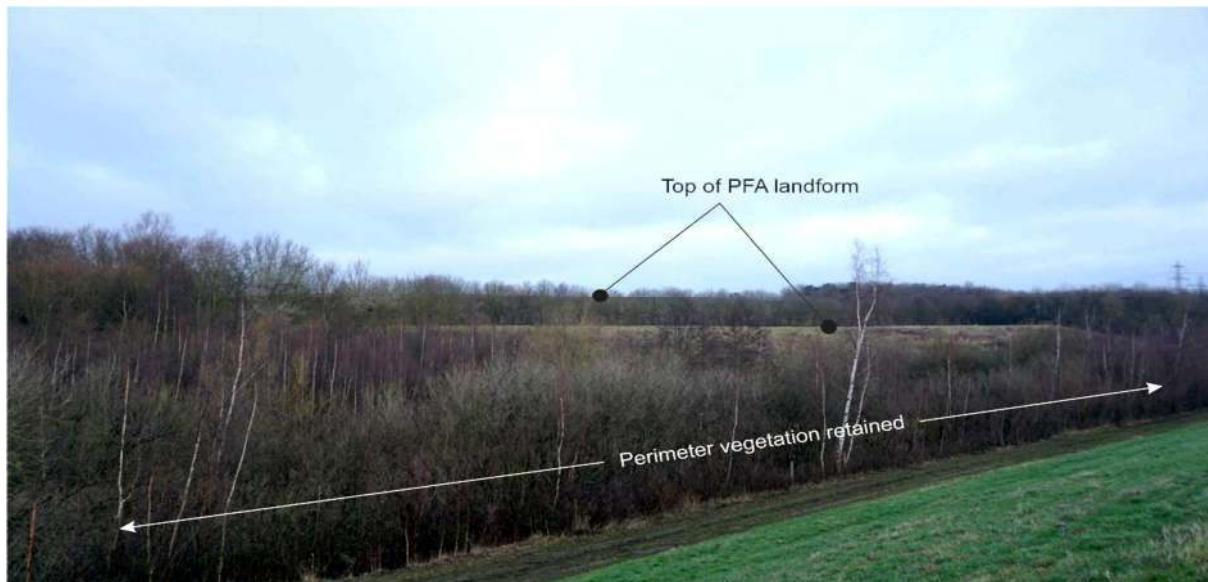


Figure 13: Representative Viewpoint 5 from a viewing hide on the west side of Thorpemere within the nature reserve



5. APPRAISAL OF LANDSCAPE AND VISUAL EFFECTS

THE PROPOSED DEVELOPMENT AND MITIGATION

5.1 The proposed Development which is the subject of this LVA comprises reclamation through construction and operation of a Green Energy Hub comprising of battery energy storage with associated infrastructure including inverters, transformers, access tracks and substation compound as well as fencing, security camera and cabling. This is to be achieved through earthworks including the relocation of existing material within the Site (pulverised fuel ash 'PFA') to create a level platform and re-profiling of part of the existing PFA mound. A railhead will also be constructed to serve the Site.

The proposed Development is an alternative to that proposed under application 23/00022/FULM. Application 23/00022/FULM involves recovering the Pulverised Fuel Ash (PFA) from the site of the proposed battery energy storage scheme (BESS) footprint but involves exporting the PFA off-site. The proposed Development does not include, for commercial reasons, PFA removal from site and instead involves the movement of this material to the southern part of the Site to create a level platform for the BESS with a subsequent re-profiling of part of the existing PFA mound. This proposal forms the basis of this LVA.

5.2 The proposed Development is described more fully in the Planning Statement which accompanies the planning application but the visible components whose effects have been studied in this appraisal are summarised below.

5.3 The anticipated overall construction period for the proposed Development would be approximately 24-36 months, during this time there would be the following operations:

- Relocation of existing material (pulverised fuel ash 'PFA') within the Site and re-profiling of a proportion of the remaining bund (estimated timescale between six and twelve months).
- The relocation of the existing material within the Site would create a level platform on which a green energy hub could be built.

5.4 The installation of a battery energy storage facility with a power capacity of up to 1400MW (energy storage capacity of 2800MWh) consisting of up to around 788 containerised batteries with a maximum height of 3 metres would then take place. Around 394 Power Control Systems for the batteries containing inverters and transformers with a maximum height of 3m and associated plant including:

- 1 no. 400kV substation and 6 no. 132kv substations; switchyards and buildings;
- The former rail head located adjacent and to the north of the Site will be recommissioned and brought back into use;
- Horizontal directional drill (HDD) of the 400kV export cable;
- Cable trenching;

- Ventilation and cooling units will be located either within containers or on exterior of containers. Re-use of existing access tracks and new access tracks;
- Operational control room with office, storage and welfare facilities
- Sustainable Urban Drainage systems including attenuation ponds; and
- Security fencing (up to 3m high around perimeter of Site, up to 4.2m high around substations, lighting and CCTV).

MITIGATION

5.5 Mitigation measures are required in order to prevent / avoid, reduce, remedy or compensate for any adverse effects of the proposed Development. The measures that have been utilised in the Thorpe Marsh Green Energy Hub proposals are set out below:

SITE DESIGN

- 5.6 Where possible existing vegetation has been retained around the periphery of the Site. This helps to screen the proposed Development in views from the surrounding landscape. In particular the majority of birch woodland in the north of the Site is to be retained, also the vegetation along the ditches of Thorpe Marsh Drain and the vegetation along the western boundary of the Site between the proposed Site boundary and the Thorpe Marsh Nature Reserve. This along with the partial retention of the PFA landform along the western boundary screens almost entirely the Nature Reserve from the proposed Development.
- 5.7 Retention of the majority of the PFA landform around the southern boundary of the Site and the majority of the vegetation that has established on this will screen the proposed battery energy storage facility in views from the southeast round to the southwest.
- 5.8 There will be a small increase in the overall height of the landform (up to 1m maximum in the overall height) due to the relocation of existing material (PFA) within the site, with an extension of the mound at this level over a small section of the lower mound in the eastern corner of the retained mound (see indicative drawing PA05). This is in order to ensure that there is minimal increase in the maximum height of the overall landform. These changes will be screened from view by the retention of existing vegetation on the outer flanks of the landform.
- 5.9 Areas both on and off site (but immediately adjacent to the Site) have been set aside to mitigate for the loss of habitats as a result of the removal of small sections of PFA in the east and west, along with reprofiling of part of the existing PFA mound and construction of the battery energy storage facility, along with the installation of the rail sidings and hardstanding within the old coal stocking area. These include wetland creation and management, and the planting of new areas of scrub and woodland.
- 5.10 Site lighting design will utilise modern lighting units and be located to minimise adverse effects. There are also a number of mitigation options including additional accessories that can be fitted to light units to further reduce light spill and glare.

APPRAISAL OF LANDSCAPE EFFECTS

- 5.11 This section examines the landscape effects arising as a result of the proposed Development , with particular reference to the potential direct effects on the landscape within the Site (landscape fabric) and the indirect effects on the landscape character of the surrounding area (the Site's setting).
- 5.12 An appraisal of effects on landscape character as described above makes a judgement of the sensitivity of the landscape receptors in combination with the magnitude of the effects to arrive at an assessment of the level of the potential effects on landscape character.

LANDSCAPE SENSITIVITY

- 5.13 The sensitivity of the landscape receptors needs to be assessed in terms of their susceptibility to the type of change or development proposed and the value attached to the landscape.

A primary consideration when assessing the direct effects on landscape character is that the proposed Development is on brownfield land. The fabric of the landscape within the Site is made up of elements that are not characteristic of the F1 and E2 landscape character areas. There are a number of historic, restored mining tips within F1 and the power station site is referred to in the E2 description, however the Site's landform is not in keeping with the character of the surrounding area. This, along with the derelict nature of parts of the unfinished ash tip and power station site, would have a negative effect on the landscape character of both F1 and E2 character areas. Reducing its susceptibility to adverse effects from the proposed Development.

Figure 14: Visual Study viewpoint 14 across the southern internal PFA landform



- 5.14 The sensitivity of landscape receptors within the Site is therefore considered low.
- 5.15 The sensitivity to the indirect effects from the proposed Development on the surrounding landscapes of F1 and E2 with a high value and moderate quality (as set

out in the Doncaster Borough Landscape Character and capacity Assessment March 2007) is considered to be moderate.

MAGNITUDE OF LANDSCAPE EFFECTS

- 5.16 Each effect on landscape receptors needs to be assessed in terms of its size or scale, the geographical extent of the area influenced and its duration and reversibility.
- 5.17 The direct effect of the proposed Development on the landscape fabric would be some loss of trees and birch scrub, along with the partial loss of hedgerows along Ash Fields Road (to the east of Thorpe Mere Road) and agricultural grassland, that would have a negative effect on the landscape fabric of the Site, which would be permanent. However, the proposed restoration scheme for the Site will include areas of woodland, scrub and wetland that would mitigate the negative effects on the landscape fabric of the Site.
- 5.18 There would also be the partial relocation of the existing material (part of the PFA bunds to the east and west of the landform), into the central southern area of the landform, with a slight increase in the overall height of the southern landform (see indicative drawing PA05). This will create a level surface to allow a development platform within the central area of the Site, followed by the installation of the battery storage facility along with associated infrastructure (see indicative drawings PA03 and PA04).
- 5.19 During the construction phase there would be construction vehicle movements and storage of materials within a compound area at the northern end of the former coal stocking area to the east of Thorpe Drain. Temporary construction compounds would also be located within the main BESS site (see indicative drawing PA03).

Potential landscape effects upon the landscape character areas during construction.

- 5.20 The construction period for the proposed Development would be short to medium term and temporary in nature. The construction would affect both the physical characteristics of the Site, such as the land use, land cover and pattern of the Site, and the perceptual characteristics of the local area, such as tranquillity and rural character.
- 5.21 Some indirect effects on the wider area would arise from the visual effects associated with the construction works. However, during this time, most effects of the construction activities on the landscape character of the Site and the surrounding area would be of a highly localised nature, temporary and therefore, assessed as slight adverse.
- 5.22 Once the construction elements are removed, the additional temporary disturbance would cease.

Potential effects upon the landscape character of the completed development

- 5.23 Landscape effects during the operation of the proposed Development would arise from the built form of the metal containers, the transformers, substation buildings, switching yards, pylons and perimeter fencing. These are similar in appearance to those present within the National Grid site to the east and so would not be uncharacteristic of the surrounding landscape. The relocation of PFA material onto the existing landform will increase its height by a maximum of 1m and extend a small section of the eastern leg of the landform, but these changes would be almost entirely screened from view by

retained vegetation. There would be a loss of agricultural grassland and small areas of woodland, with permission sought for the proposed Development in perpetuity.

- 5.24 The overall magnitude of direct effects on the landscape character of the Site are considered to be of a moderate (adverse) magnitude.
- 5.25 Visibility of the battery storage facility in the surrounding landscape would be negligible due to the retained perimeter vegetation and PFA landform. The scale of the Site (geological extent) within the F1 Tollbar Settled Clay Farmlands and E2 West Don and Dun River Carrlands is small and so the magnitude of the potential negative effects on the wider landscape character is considered negligible (adverse).
- 5.26 Due to the screening effect from the extent of the retained woodland across the northern area of the Site, the proposed Development would not be visible from the adjacent F2 Owston to Sykehouse Settled Clay Farmlands and there would be no effects on this character area and area of special landscape value.

LEVEL OF LANDSCAPE EFFECTS

- 5.27 As stated in 2.10/2.11 the resulting judgements about sensitivity and magnitude are combined to inform judgements about the overall level of the effects resulting from the proposed Development.
- 5.28 The level of the landscape and visual effects have been classified in the following scale to express the varying level of effects resulting from the development:

Table 3: Matrix for overall level of effects

Sensitivity of Receptor	Magnitude of Change				
		Substantial	Moderate	Slight	Negligible
High		Major	Major/ Moderate	Moderate	Minor
Medium		Major/ Moderate	Moderate	Moderate/ Minor	Minor/ negligible
Low		Moderate	Moderate/ Minor	Minor	Negligible

- 5.29 The sensitivity of the direct effects on the landscape character of the Site to the proposed Development has been assessed as low with an overall moderate (adverse) magnitude of effects.
- 5.30 It is felt that this would have a moderate / minor level of adverse effects on the landscape character of the Site itself.
- 5.31 The surrounding F1 / E2 landscape character areas were assessed as having a high sensitivity with a negligible (adverse) magnitude and this would give rise to a minor level of adverse effects.

APPRAISAL OF VISUAL EFFECTS

- 5.32 This section examines the visual effects arising as a result of the proposed Development of the Thorpe Marsh Green Energy Hub, with particular reference to the potential direct effects on the visual receptors.
- 5.33 The assessment of effects on visual receptors makes a judgement of the sensitivity of the visual receptors in combination with the magnitude of the effects to then make an appraisal of the overall level of visual effects.

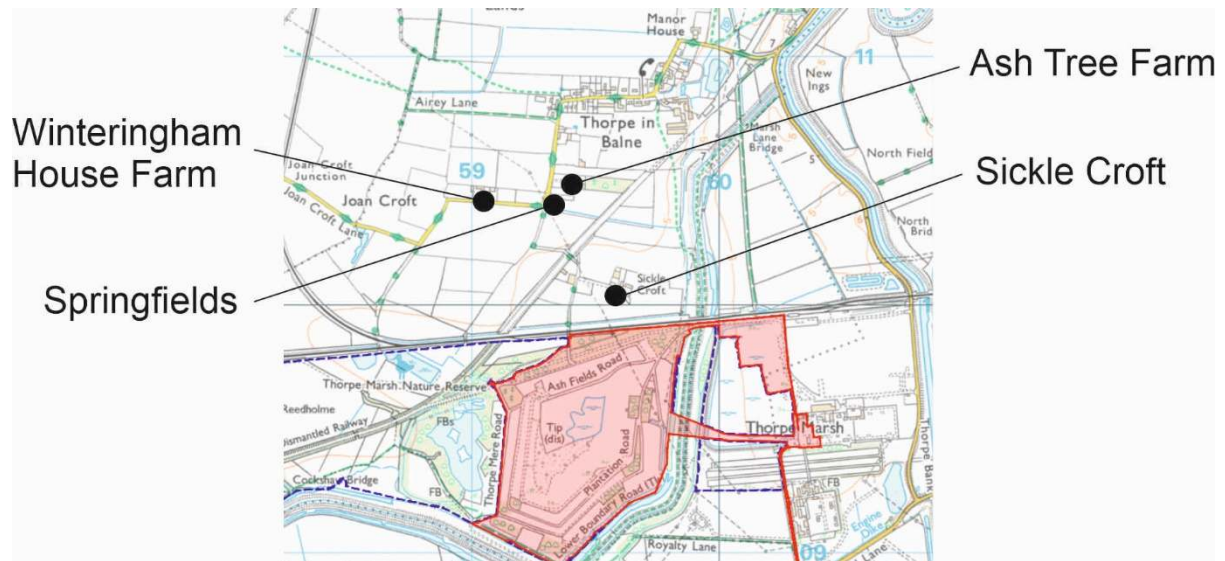
SENSITIVITY OF VISUAL RECEPTORS

- 5.34 Categories of visual receptors that have the potential to be affected by the proposed Development are:
- Residents in individual and groups of dwellings and settlements. Residential receptors are generally considered to have a high susceptibility and high value, leading to a high sensitivity to the type of development proposed, unless stated otherwise;
 - Road users on Motorways, A class, B class and minor roads. The sensitivity of road users depends both on the value of views from the road and the susceptibility of the receptor to the type of change proposed;
 - The local roads assessed are considered to have a medium value and medium susceptibility as a result of their intended use / speed of travel and the scenic value of views available;
 - Recreational receptors including walkers, cyclists and horse riders on public rights of way. Users of public rights of way (PRoW) are considered to have both a high value and high susceptibility to change, resulting in a high sensitivity overall; and
 - Leisure and tourism facilities such as cafés, public houses and restaurants, which includes Thorpe Marsh Nature Reserve. Users of these facilities are considered to have both a high value and high susceptibility to change, resulting in a high sensitivity overall.

VISUAL APPRAISAL OF RESIDENTIAL PROPERTIES

- 5.35 Residential properties within the 2km study area that potentially would have views of the proposed Development are set out below and located on Figure 15.

Figure 15: Location of residential properties within 2km of the proposed Development that could have views of the proposed Development



- Sickle Croft – 190m to the north of the proposed Development; Winterringham House Farm - 590m to the north of the proposed Development;
- Springfields – 558m to the north of the proposed Development; and
- Ash Tree Farm – 600m to the north of the proposed Development.

5.36 Views to the Site from these properties are screened by the birch and willow scrub along the northern edge of the Site, along with the raised embankments of the disused railway line and associated vegetation further to the north and trees and hedgerows within the intervening fields. Due to the screening of the Site by this intervening vegetation (see PA04), any adverse visual effects would be of a negligible magnitude in relation to a receptor of high sensitivity that would have minor overall level of effects on visual amenity.

Figure 16: Representative viewpoint 4 from Bell Croft Lane to the west of the junction with Applehurst Lane



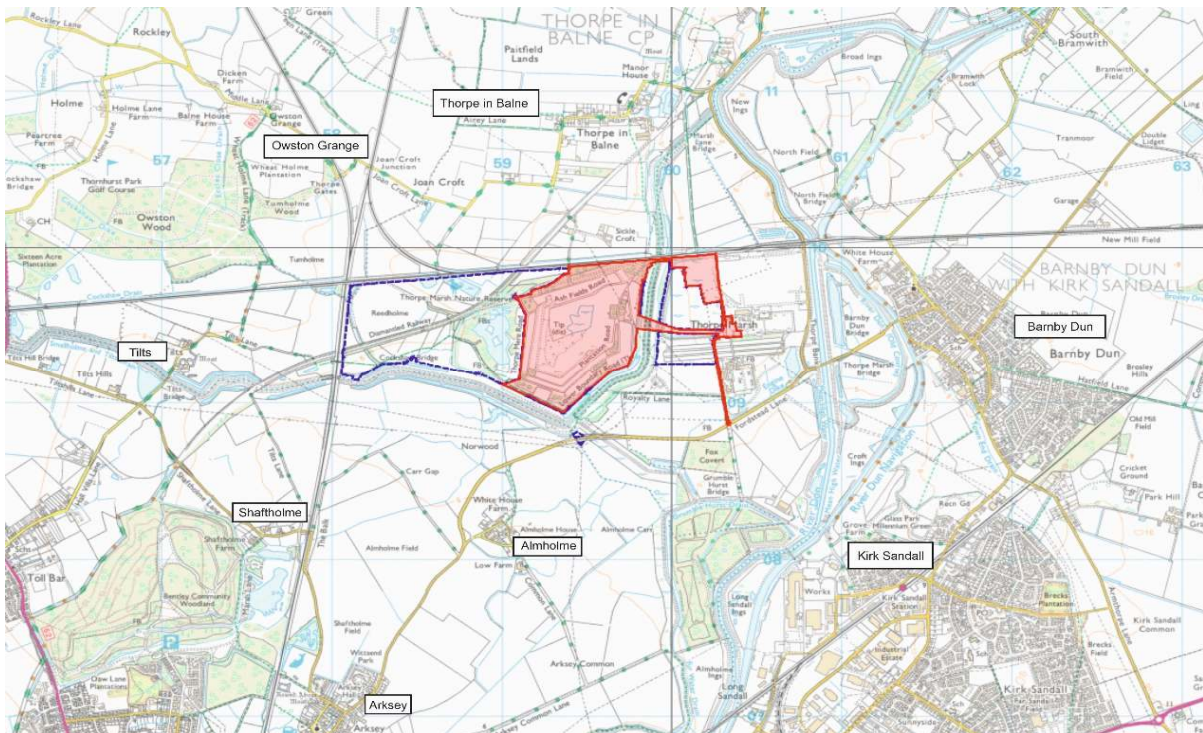
Figure 17: Aerial photo showing location of intervening vegetation



VISUAL APPRAISAL OF SETTLEMENTS

5.37 Settlements within the 2km study area that potentially could have views of the proposed Development are set out below.

Figure 18: Location plan showing settlements within the 2km study area



- Thorpe in Balne – 800m to the north. Views to the Site from this settlement are screened by vegetation around the village and the embankment and trees along the disused railway line to the south. Any localised views would be screened by the extent of the retained birch and willow scrub along the northern edge of the proposed site boundary (see PA04) along with vegetation to the north of the railway line. Due to the lack of visibility of the Proposed Development, there would be no adverse effects on visual amenity at this settlement.
- Owston Grange – 1.7km to the northwest. Views to the Site are screened by intermittent vegetation across the fields towards the Site and the extent of the birch and willow scrub along the northern edge of the proposed site boundary (see PA04). Due to the screening by intervening vegetation and its distance away from the Site, there would be no adverse visual effects on properties at Owston Grange.
- Tilts – 1.8km to the west. Views to the Site are screened by vegetation directly adjacent to properties along with trees and scrub along the disused railway line and east coast railway line to the east and within the Nature Reserve beyond this further to the east. Due to the screening by intervening vegetation and its distance from away from the Site, there would be no adverse visual effects on properties at Tilts.
- Almholme – 745m to the south of the Site. There are trees and vegetation directly adjacent to properties at Almholme as well as further to the northeast between the Site and this settlement, which screen the majority of views of the southern edge of the Site. The retention of the southern edge of the PFA landform would mean that there would no views of the battery energy

storage facility from Almholme and there would be no adverse effects on visual amenity. As part of the earthworks, it is proposed to relocate the existing material within the Site leading to a small increase in the overall height of the existing landform. This would have a negligible effect on visual amenity during the construction phase, caused by the potential visibility of plant, but once completed there would be no adverse effects as the increase in height to the landform would be screened by the retained vegetation.

- Barnby Dun – 1.5km to the east of the Site. Views to the Site are screened by intervening retained vegetation and structures within the disused power station site directly to the east of the Site. Due to the distance from the Site and the intervening vegetation there would be no adverse visual effects on Barnby Dun from either the battery storage facility or the re-profiling of the existing PFA mound following completion of earthworks.

Figure 19: Representative viewpoint 6 from the Paddock on the western edge of Barnby Dun

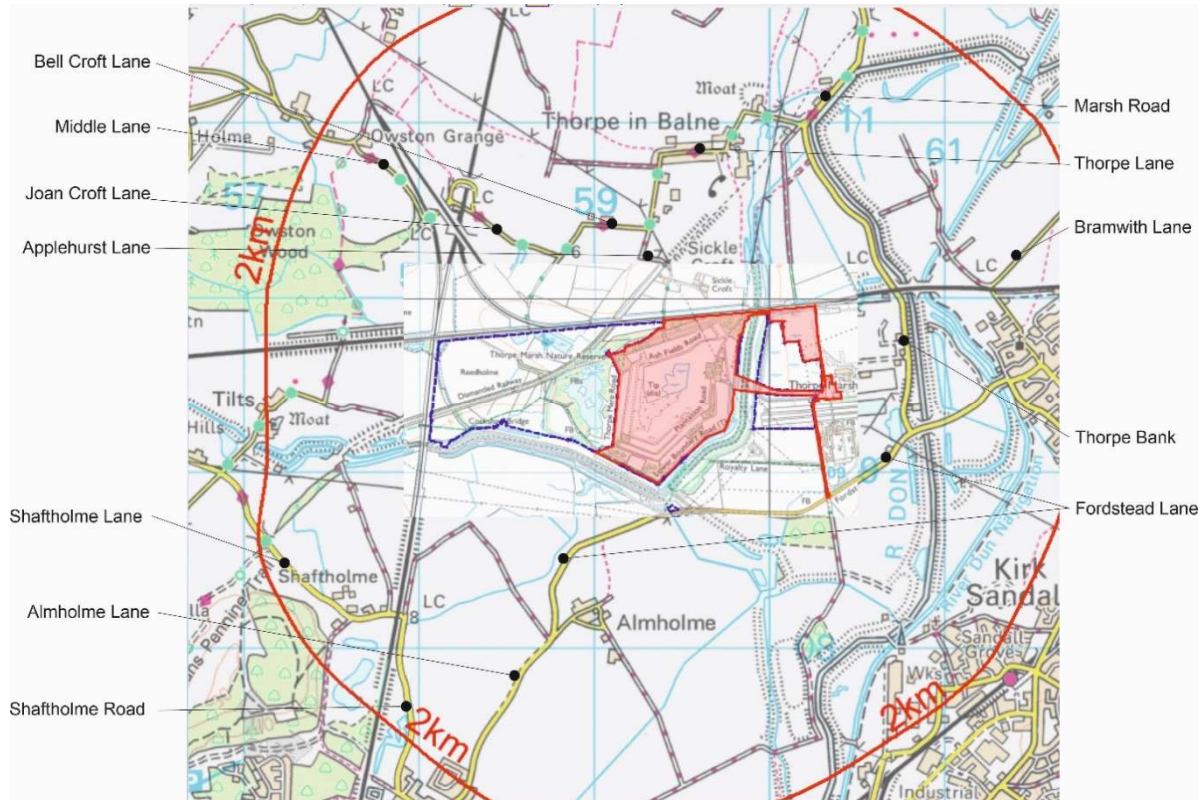


- Arksey – 1.9km to the southwest of the Site. Views to the Site are screened by buildings and vegetation within the village. Any localised views would be broken up by intermittent vegetation across the fields towards the Site. Due to the lack of views to the Site and its distance from the settlement, there would be no adverse effects on visual amenity.
- Shaftholme – 1.5km to the southwest of the Site. Views to the Site are screened by vegetation directly adjacent to properties along with trees and scrub along the railway line to the east, therefore there would be no adverse effects on visual amenity.
- Kirk Sandall – 1.6km to the southeast of the Site. Views to the Site are screened by woodland to the west of the River Don along with vegetation across the intervening fields towards the Site. Any views of the proposed battery storage facility would be screened by the retained PFA landform along the southern edge of the Site and there would be no adverse effects on visual amenity. It is proposed to increase the height of the PFA landform, which would have a negligible effect on visual amenity during the

construction phase, caused by the potential visibility of plant, but once completed there would be no adverse effects as the increase in height to the landform would be screened by the retained vegetation.

VISUAL APPRAISAL OF ROAD USERS

Figure 20: Location of roads within the 2km study area



5.38 The study area contains only C class roads and a number of unclassified roads.

5.39 Roads within the study area that may have views of the proposed Development are set out below and shown on figure 20:

- Thorpe Bank / Marsh Road – Located to the east of the Site and running north / south adjacent to the River Don. Views to the Site on the southern section of the road are screened by roadside hedgerows and vegetation within the disused power station site. To the north of the railway line, views open up over farmland to the west, but views to the Site are screened by vegetation along the railway line and along the northern edge of the Site. This is also the case on Marsh Road further to the north. There would be no adverse effects on visual amenity for users of these roads.

Figure 21: Representative viewpoint 3 from Thorpe Bank



- Thorpe Lane / Bell Croft Lane and Applehurst Lane – Located to the north of the Site at Thorpe in Balne, the lane runs from Thorpe Bank / Marsh Road in the east through the village and south to its junction with Applehurst Lane where it becomes Bell Croft Lane and heads west. Views to the Site are screened by roadside vegetation and the buildings within Thorpe in Balne from its start at Thorpe Bank until south of the village at the junction with Applehurst Lane. Here views open south across the farmland towards the Site. Views of the Site itself are screened by vegetation and embankment along the disused rail line and the extent of the retained woodland along the northern edge of the proposed site boundary that would be retained by the Development proposals (see PA04). This also applies to views from Applehurst Lane. Due to the lack of views to the Site from this road, there would be no adverse effects on visual amenity.

Figure 22: Representative viewpoint 4 from Bell Croft Lane to the west of the junction with Applehurst Lane



- Joan Croft Lane – This extends west from its junction with Bell Croft Lane and crosses the railway line at Joan Croft Junction. Views of the Site are screened by vegetation along its northern edge (see PA04) and west along the railway line. Due to the screening of the Site by adjacent vegetation this road would not receive adverse effects on visual amenity.
- Middle Lane – This extends north from the end of Joan Croft Lane through Owston Grange and continues northwest. Views of the Site are screened by vegetation along its northern edge (see PA04) and west along the railway line. Due to the screening of the Site by adjacent vegetation this road would not receive adverse effects on visual amenity.
- Bramwith Lane – Located on the northern edge of Barnby Dun, heading north to South Bramwith. The majority of views to the Site are screened by roadside hedgerows and vegetation to the east and north of the Site. There is a limited partial view to the Site from a short section of the road just north of Barnby Dun, but any views of the proposed Development would be screened by retained vegetation along the eastern and northern edges. Due to the lack of views of the Development from this road, there would be no adverse effects on visual amenity.

Figure 23: Visual study viewpoint 7 from Bramwith Lane at the level crossing north of Barnby Dun



- Fordstead Lane– Located to the south of the Site and starting in the east at the River Don on the edge of Barnby Dun and heading west to end at Almholme. From the River Don in the east, views of the Site are screened by roadside vegetation. From the old power station access (Marsh Lane) there are intermittent views to the southern edge of the Site heading west, becoming more open directly to the south of the Site until reaching Almholme. Views into the Site are screened by the retained PFA landform to the southern edge of the site. It is proposed to increase the height of the PFA landform, which would have a negligible effect on visual amenity during the construction phase, caused by the potential visibility of plant, but once completed there would be no adverse effects as the increase in height to the

landform would be screened by the retained vegetation and there would therefore be no adverse effects on the visual amenity of user of this road.

Figure 24: Representative viewpoint 1 from Fordstead Lane south of the Site



- Alholme Lane – This extends northeast from Arksey to Alholme, heading directly towards the Site. The majority of views to the Site are screened by buildings and vegetation at Alholme and any views of the Development would be screened by the retained PFA landform (see figure 25). It is proposed to increase the height of the PFA landform, which would have a negligible effect on visual amenity during the construction phase, caused by the potential visibility of plant, but once completed there would be no adverse effects, as the increase in height to the landform would be screened by the retained vegetation. Due to the lack of views of the proposed Development from this road, there would be no adverse effects on visual amenity.

Figure 25: Visual Study viewpoint 11 from adjacent to Alholme Lane



- Shaftholme Road / Lane – This extends from Arksey, north to Shaftholme where it becomes Shaftholme Lane and heads northwest towards Tilts. There is a 750m length of the road to the north of Arksey before the level-crossing that has open views towards the Site (see figure 26). The retained PFA landform and vegetation along the western edge of the Site and within Thorpe Marsh Nature Reserve would screen views into the proposed Development. It is proposed to increase the height of the PFA landform, which would have a negligible effect on visual amenity during the construction phase, caused by the potential visibility of plant, but once completed there would be no adverse effects, as the increase in height to the landform would be screened by the retained vegetation. There would therefore be no adverse effects on the visual amenity for users of this road.

Figure 26: Visual Study viewpoint 10 from Shaftholme Road north of Arksey



VISUAL APPRAISAL OF RECREATIONAL ROUTES, PUBLIC RIGHTS OF WAY AND VISITOR DESTINATIONS

5.40 Designated recreational routes, public rights of way (PRoW) and visitor destinations such as public parks and open space within the study area that may have views of the proposed Development are set out below and shown on figures 27 and 31:

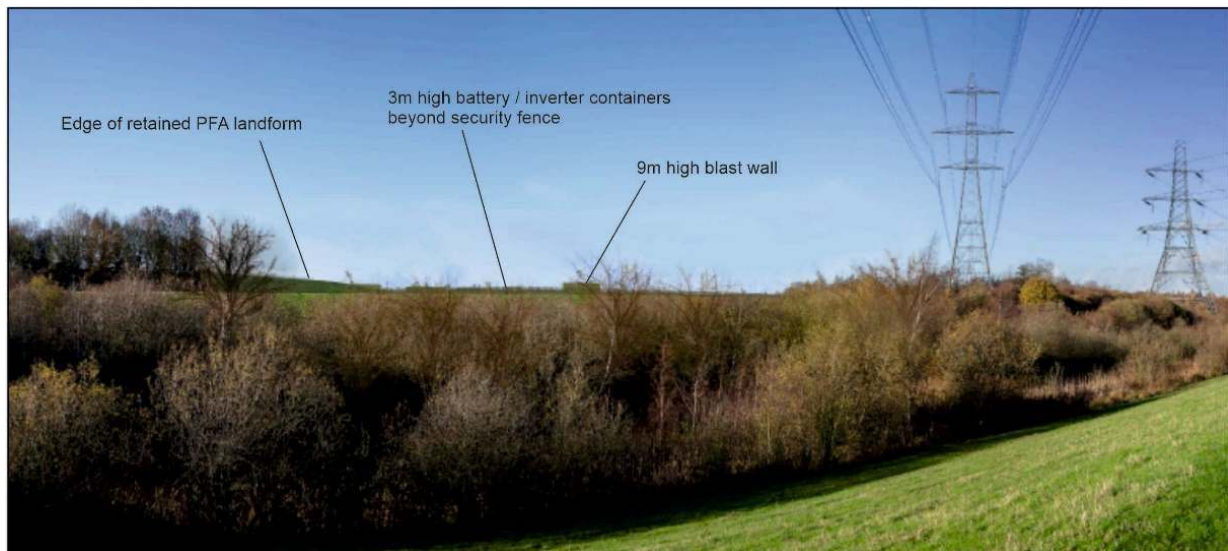
Footpaths / Bridleways to the South, West and East of the Site

Figure 27: Location of footpaths / bridleways within the southern section of the 2km study area



- Footpaths Thorpe in Balne 2 and 13 run on either side of the Thorpe Marsh Drain to the east of the site down to the south where they merge to become footpath Bentley with Askern 24 to the south of the drain, which continues to Fordstead Lane and then continues south approximately 390m to the west and ends at Almholme. Any views into the Site from the southern sections of these paths would be screened by the retained PFA landform. Further to the north, the extent of the retained vegetation in the east of the Site would screen views, but there is the potential for views from a short 350m section of the paths directly to the east of the main site. Visible elements of the Site would include the battery and inverter storage containers, the 9m high blast walls, the bushings of the Transformers and the buzzbars associated with the switchyard set behind the security fencing of up to 4.2m in height. The battery storage containers would be a low element in views set behind the 3m perimeter security fence with the transformer bushings being taller isolated elements in views along a 350m section of the paths. Views of these elements would be broken up with foreground vegetation (see figure 28 and photo montage). The extended section of the PFA landform would be visible, but softened by foreground vegetation and once grassed would not be out of place in views from these paths. Views to the compound area to the east of Thorpe Marsh Drain would be screened by retained vegetation, The overall effects on the paths during the construction of the extended section of the landform would be moderate, but this would reduce to negligible in magnitude once completed and grassed. Users of the footpath would have a high sensitivity to the proposed Development, which would give rise to an overall minor level of effect on the visual amenity of these two paths.

Figure 28: Photo montage from Representative Viewpoint 5 on footpath Thorpe in Balne 2 on the top of the flood defence embankment



- Footpath Bentley with Arksey 24 runs from Thorpe Marsh Drain to Fordstead Lane for 170m where it continues 330m to the west along the lane, heading south to Almholme. Views to the Site from the section of the path between Fordstead Lane and Thorpe Marsh drain are screened by the grassed flood protection bunds on either side of the drain and vegetation nearer to the road. The section of path to the south of the road has a dense hedgerow adjacent to it that screens views to the Site and the proposed Development is further screened by the PFA landform and retained vegetation on the outer

slopes. It is proposed to increase the height of the PFA landform, which would have a negligible effect on visual amenity during the construction phase, due to the potential visibility of plant operating on the landform, but once completed there would be no adverse effects, as the increase in height to the landform would be screened by the retained vegetation. Due to the lack of views of the proposed Development from this path, there would be no adverse effects on its visual amenity.

Figure 29: Visual Study viewpoint 9 from footpath Bentley with Arksey 24



- Bridleway Barnby Dun with Kirk Sandall 2 starts at the southern access road to the power station site. It then heads west until it reaches the Thorpe Marsh Drain where it becomes Thorpe in Balne 9 heading south to cross the drain and loop around the southern edge of the Site and into Thorpe Marsh Nature Reserve. It curves round to the south to re-join the Thorpe Marsh Drain heading west, crossing the railway line towards Tilts Lane. The sections of the paths to the east and south of the Site have open views of the Site to the PFA landform and retained vegetation, which would screen any views of the proposed battery storage facility. Further to the west within the Nature Reserve views to the PFA landform are more screened by vegetation. Due to the screening of views into the proposed Development none of these PRowWs would receive any adverse effects on visual amenity.
- Balk Lane (Other route with public access) starts from Fordstead Lane to the east of Almholme and heads northwest for 230m, then turns southwest to the railway line where it runs south to Shaftholme Road. There are open views to the existing PFA landform in the south from much of this track's length, however views of the proposed battery storage facility would be screened by the retained PFA landform and foreground vegetation from the southern section of the track. It is proposed to make a slight increase in the height of the PFA landform (1m max), which would have a negligible effect on visual amenity during the construction phase, due to the potential visibility of plant, but once completed there would be no adverse effects, as the increase in height to the landform would be screened by the retained

vegetation. Further to the north there would be views of the taller bushings of the transformers (maximum height of 11.5m) and 9m high blast walls above the foreground vegetation, which would be small elements in any views at over 1.3km away. Any adverse effect on visual amenity would be negligible in magnitude and have a minor level of effect on this high sensitivity receptor.

Figure 30: Visual Study viewpoint 12 from The Balk to the north of Almsholme Lane



- 5.41 Other routes with public access and public rights of way (PRoW) further to the south and west generally are screened from views of the Site by intervening vegetation in the landscape, with the retained PFA landform screening views of the proposed battery storage facility. Due to the screening of the Site by intervening vegetation in the wider landscape and the PFA landform these routes would not receive adverse effects on visual amenity.
- 5.42 The Trans Pennine Trail heads generally north-south, to the east of Shalfholme, passing through Tilts and heading north to Owston Grange. Views to the Site are screened by adjacent vegetation to this route, in particular, along the east coast rail line and there would be no adverse effects on visual amenity from the proposed Development.

Footpaths / Bridleways to the North of the Site

Figure 31: Location of footpaths and bridleways to the north of the Site



- 5.43 Views to the Site from footpaths and bridleways to the north of the Site are screened by vegetation along the northern edge of the Site (see PA04) along with vegetation in the wider landscape in particular along the disused railway line to the north of Sickle Croft. Due to the screening of views to the Site and lack of visibility of the proposed development, none of these PRoW's would receive any adverse effects on visual amenity as a result of the proposed development.

Leisure and tourism facilities such as café's, public houses, restaurants and golf courses

- 5.44 There are a number of horse-riding facilities in Thorpe in Balne to the north of the Site and as mentioned earlier, views from this area are screened by vegetation along the northern edge of the Site and in the wider landscape and there would be no adverse effects on visual amenity.

Figure 32: Representative Viewpoint 4 from Bell Croft Lane to the west of Applehurst Lane



- 5.45 Thorpe Marsh Nature Reserve lies directly adjacent to the western edge of the Site. There are large areas of woodland and scrub around Thorpemere Pond and across large parts of the reserve which screen the majority of the views to the western flank of the Site. There are small sections of the western edge of the Site visible from the viewing hide on the western edge of Thorpemere (see figure 33), as well as from the footpath entering the Nature Reserve in the southeast corner and the viewing hide here. Views from the footpath would be screened by the retained edge of the PFA landform and associated vegetation.
- 5.46 Open views into the proposed Development from the western hide would be screened by the blocks of woodland on the ground sloping up to the edge of the Site and retained hedgerow along the site boundary, but there would be some filtered views of the construction phase of the development, including relocation of part of the PFA landform and the installation of the battery and inverter containers, but which would be screened during the operational phase by the retained hedgerow along the boundary of the Site, with a small section of the slightly elevated landform visible through adjacent vegetation (see Figure 33 and photomontage at EP17).
- 5.47 Views from the hide in the southern corner of the reserve would be screened by the installation of a short section of 2m high close boarded fence to the north of the hide, which would screen views into the development, while allowing views out over the Reserve.
- 5.48 Visual effects within the Nature Reserve would be very localised giving rise to negligible adverse effects, that would have a minor level of effect overall on the visual amenity of the Thorpe Marsh Nature Reserve, which has a high sensitivity to the development.

Figure 33: Photo montage from representative Viewpoint 5 at a viewing hide on the west side of Thorpemere within the nature reserve



LIGHTING EFFECTS

- 5.49 The baseline assessment for lighting in the area shows that there are areas of lighting around the National Grid facilities within the power station site to the east (see figures 35 and 36).

Figure 34: Location plan showing areas of lighting within the National Grid site

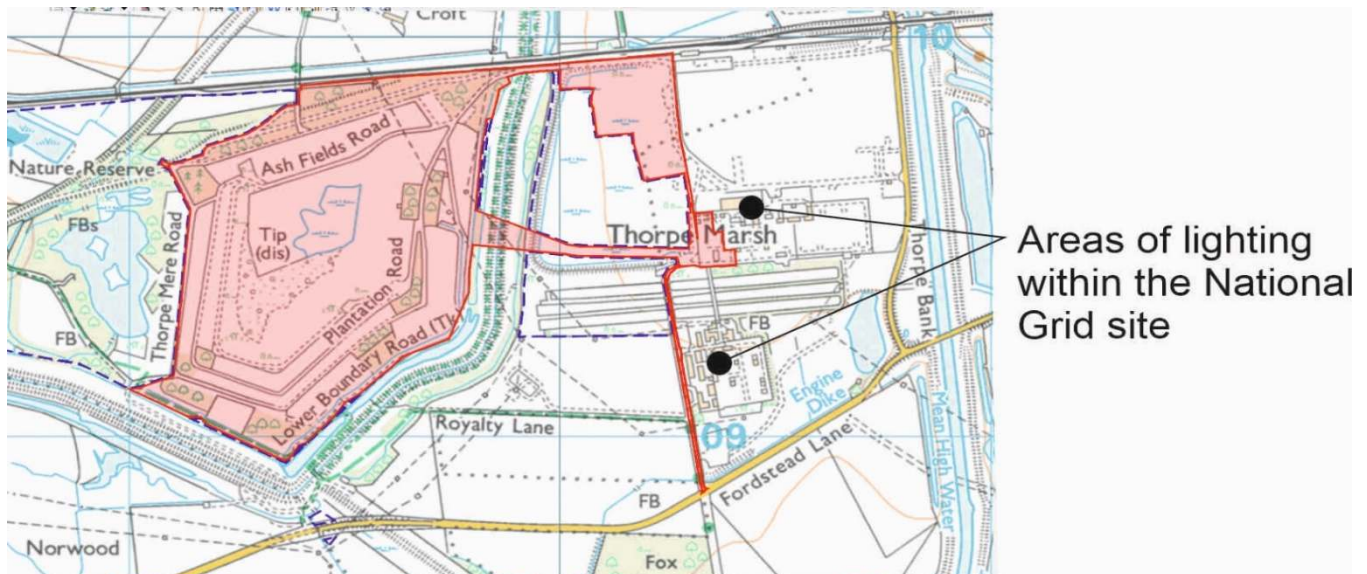


Figure 35: Visual Study viewpoint 16 from Fordstead Lane to the west of Marsh Lane



Figure 36: Visual Study viewpoint 15 from Thorpe Bank at the old power station access



- 5.50 There would be some site lighting required during the construction phase, which would be from mobile lighting units. The would be downward facing and located to minimise any effects on the surrounding area.
- 5.51 Full details of the proposed site lighting during the operational phase will be provided by planning condition, however indicative locations are shown on the proposed indicative Operational Layout Plan (PA04). Lighting columns up to 6 metres high would be located in positions across the Site during the operational phase of the Development. These would be downward facing and cowled to reduce sky glow and visibility of the lights from outside the Site. Final details of the proposed lighting arrangements will be provided by planning condition.
- 5.52 Generally direct views of any proposed lighting on the Site would be screened by the retained landform and surrounding vegetation. There would be some visibility of lighting from Shaftholme Road, to the west of the Site. The 6m high columns would be seen at a distance of 1.7km and the baseline for views from this area has views of the lighting at the National Grid facility to the east of the Site along with Barnby Dun further to the east.
- 5.53 It is felt that the site lighting would have a negligible adverse effect on landscape and visual amenity.

ASSESSMENT OF CUMULATIVE EFFECTS

- 5.54 The GLVIA3 defines cumulative effects as follows:

“the additional changes caused by a proposed development in conjunction with other similar developments or as a combined effect of a set of developments, taken together” (SNH, 2012:4);

- 5.55 Cumulative landscape effects as *“effects that ‘can impact on either the physical fabric or character of the landscape, or any special values attached to it’* (SNH, 2012:10);

Cumulative visual effects as *“effects that can be caused by combined visibility, which ‘occurs where the observer is able to see two or more developments from one viewpoint’ and / or sequential effects which ‘occur when the observer has to move to another viewpoint to see different developments”* (SNH, 2012:11).

5.56 No external cumulative development proposals have been identified to form part of this appraisal.

SUMMARY AND CONCLUSION

5.57 The potential adverse landscape and visual effects resulting from the proposed Development have been assessed and identified out to a 2km radius from the proposed site boundary.

5.58 These potential adverse effects on landscape and visual amenity have been given consideration in the design of the Development so as to mitigate where possible adverse effects from the Development. As a result of this design process, these have been minimised and are summarised below.

- **Landscape Fabric and Character** - The effects on the landscape character of the study area resulting from the proposed Development would be up to minor/moderate adverse within and immediately surrounding the Site itself. Effects on the wider landscape character of the F1 Tollbar Settled Clay Farmlands and E2 West Don and Dun River Carrlands would be negligible adverse overall. This is due to the lack of visibility of the Site area and proposed Development in the wider landscape and the landscape of the Site is not characteristic of the wider F1 Tollbar Settled Clay Farmlands and E2 West Don and Dun River Carrlands, reducing its sensitivity to the direct effects of the Development.
- **Designated Landscapes** – The Site is located within Doncaster's Countryside Policy Area. The relevant part of the policy test for this is for the Development not to have a significant adverse effect on landscape, which this appraisal has found to be the case.
- **Visual Amenity of Residential Receptors** - The proposed Development would not be visible from any of the residential properties or settlements surrounding the proposed site and it would not result in adverse effects on any of these properties.
- **Visual Amenity of Road Users** – The proposed Development would not be visible from any of the roads surrounding the proposed site and it would not result in adverse effects on visual amenity of road users in the area.
- **Visual Amenity of Recreational Receptors** – The majority of recreational receptors will not be affected by the proposed Development. There are however two locations adjacent to the Site that will have some visibility of the proposed Development. This would be from footpaths Thorpe in Balne 2 and 13 which run on either side of the Thorpe Marsh Drain to the east of the main site area, which have a moderate adverse level of effect resulting from the proposed Development. The second location is the Thorpe Marsh Nature Reserve to the west of the Site, which would receive a minor level of effect overall on visual amenity. A third location, further from the Site, is the path along the Balk to the southwest of the Site, which would receive a minor level of adverse effect.
- **Effects from Site Lighting** - The assessment finds that adverse effects on landscape character and visual amenity from site lighting would be negligible.

- **Cumulative Landscape and Visual Effects** - No external cumulative development proposals have been identified to form part of this appraisal.

CONCLUSION

5.59 Through sensitive siting and design, and appropriate mitigation measures where needed, the proposed Development will not cause any unacceptable effects on visual amenity, or on any key landscape elements and features, or the composition or quality of the local landscape character.