



**CLEARSTONE
ENERGY**

DARTFORD ENERGY HUB

LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Prepared by Clearstone Energy & Liz Lake Associates |
December 2024 | Document Reference: R003

Landscape and Visual Impact Assessment (LVIA)

Dartford Energy Hub

On behalf of Clearstone Energy Ltd

December 2024

Prepared by:	Mark Flatman
Position:	Director, Chartered Landscape Architect
Qualifications:	CMLI, Dip(Hons) LA, BA(Hons) LA

File name:	2831 Dartford Energy Hub LVIA 2024 12 18
Date Issued:	2024 12 18
Revision:	FINAL

CONTENTS

1	INTRODUCTION	1
2	METHODOLOGY	3
3	EXISTING SITUATION	4
3.1	Context	4
3.2	Published Landscape Character Assessments	5
3.3	Statutory Designations	8
3.4	Landscape Resource and Contribution of the Site to Landscape Character	10
3.5	Visual Resource	12
4	THE PROPOSALS	14
4.1	General Principles	14
4.2	Proposals and Approach to Mitigation	15
5	ASSESSMENT OF LANDSCAPE EFFECTS	17
5.1	Identifying the Landscape Effects	17
5.2	Sensitivity and Susceptibility	17
5.3	Significance of Landscape Effects	18
6	ASSESSMENT OF VISUAL EFFECTS	20
6.1	Identifying the Visual Effects	20
6.2	Significance of Visual Effects	21
6.3	Identification of Visual Effects	21
7	CONCLUSION	29

APPENDIX A	FIGURES 1-9
APPENDIX B	PUBLISHED LANDSCAPE CHARACTER ASSESSMENTS (EXTRACTS)
APPENDIX C	LLA LVIA METHODOLOGY

1 INTRODUCTION

- 1.1.1 Liz Lake Associates has been commissioned by Clearstone Energy Ltd to prepare a Landscape and Visual Impact Assessment (LVIA) for Dartford Energy Hub, to be referred to hereafter as ‘the Site’. The report is in consideration of a planning application for *“the construction of a battery energy storage system (BESS), consisting of battery units and a substation compound with associated infrastructure, landscaping, security fencing and cameras, access tracks and associated cable connection to the national grid”*.
- 1.1.2 This report has been prepared for the benefit of the Client and the contents should not be relied upon by others without the express written authority of Liz Lake Associates. If any unauthorised third party makes use of this report they do so at their own risk and Liz Lake Associates owe them no duty of care or skill.
- 1.1.3 The report considers the existing baseline conditions and seeks to identify the relevant landscape and visual issues applicable to the Site. A Landscape and Visual Impact Assessment has been undertaken to assess the likely effects upon the landscape resource, specific views and visual amenity.
- 1.1.4 Site visits were undertaken in October and November 2024 to appraise the character and condition of the Site and the landscape context, and to identify the key visual receptors. Once the scheme had been sufficiently developed, the assessment was undertaken by an experienced Chartered Landscape Architect. The weather was clear but with a few patches of cloud for the duration of the visit.
- 1.1.5 All photographs were taken with a digital camera, a Canon EOS 6D (a Full Frame Sensor camera) with a 50mm Focal Length prime lens in accordance with the guidance contained within LI Technical Guidance Note 06/19.
- 1.1.6 Liz Lake Associates is a multi-disciplinary environmental and design consultancy with over 30 years’ experience of master planning, landscape, ecology, urban design,

heritage and environmental impact assessment. The company is a registered practice of the Landscape Institute.

2

METHODOLOGY

- 2.1.1 An LVIA of the Site and the development proposals has been prepared encompassing the 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA), 3rd edition (published by the Landscape Institute and the Institute of Environmental Management and Assessment 2013), and 'Landscape Character Assessment: Guidance for England and Scotland' (published by the Countryside Agency and Scottish National Heritage 2002, and the updated 'Approach to Landscape Character Assessment' (published by Natural England, 2014)), as well as TGN 02/21 'Assessing landscape value outside national designations'. In summary, the approach combines information and desktop reviews with on-site surveys and appraisal.
- 2.1.2 The Site based assessment involves the recording of both objective description and subjective impressions of the landscape, as well as details of the existing landscape condition. It includes an assessment of the extent and nature of views to and from the Site and the type of receptors that experience these views.
- 2.1.3 The following relevant studies and documents have been considered as part of the desk-based review and subsequent assessment:
- Natural England – National Character Areas (2014)
 - Landscape Assessment of Kent (2004)
- 2.1.4 The LVIA of the proposed development has been based upon the proposals illustrated on drawings prepared by the client team, including a Landscape Strategy prepared by Liz Lake Associates.
-

3 EXISTING SITUATION

3.1 Context

- 3.1.1 The Site lies in the wider context to the south of Northfleet on a triangular portion of land that is framed by the A2 nearby to the north (beyond which lies the built up areas of Northfleet and Swanscombe and Ebbsfleet), a branch of the Channel Tunnel Rail Link (CTRL) to the south, and the well wooded disused railway line that ran between Gravesend and Swanley via Betsham, which adjoins the western edge of the Site.
- 3.1.2 Northfleet is a town in the neighbouring district of Gravesham, Kent to the west of Gravesend and on the border with Dartford Borough. The River Fleet (now Ebbsfleet River) which is a tributary of the Thames Estuary gives its name to Northfleet and the nearby village of Southfleet at the other end of the river.
- 3.1.3 The Site is within the jurisdiction of Dartford Borough Council and occupies two broadly triangular parcels of land positioned to either side (north and south) of Station Road, together with a strip of land (identified for the cable route only) across the A2 (Watling Street) forming a linear connection to Northfleet East Grid Substation.
- 3.1.4 The local area within which the Site lies is surrounded by varied land uses with a garden centre (Millbrook), Swallow Aquatics, Pepperhill Recycling Centre, as well as a variety of commercial and logistics centres, close to the A2 interchange around Hall Road and Station Road. Beyond the CTRL link route to the south, urban influences reduce and give way to characteristics which are more rural and typical of the Southfields Arable Lands, with a network of smaller and larger fields, including land used for growing (with polytunnels) and agricultural businesses, where villages and hamlets (such as Southfleet and Betsham) are connected by sunken lanes across agricultural land, which is gently rising to the south from the Thames. The area contains a significant amount of other infrastructure, including pylons and overhead lines, as well as communications (telecoms) tower amongst other features.
-

3.2 Published Landscape Character Assessments

3.2.1 A brief summary of the published landscape character assessments in the context of the Site is detailed below.

National Character Area Profile, Natural England, 2014

3.2.2 The Site is situated within National Character Area (NCA) Profile 113: North Kent Plain. The North Kent Plain forms a strip of land between the Thames Estuary and the Kent Downs. The area is described as

“...open, low and gently undulating. It is a very productive agricultural area...characterised by arable use.”¹

Although, the NCA is characterised by arable use, there is a strong urban influence from built up areas around London and the Medway towns.

3.2.3 Key characteristics of NCA 113 of relevance to the Site and the proposals include:

- *“An open, low and gently undulating landscape, characterised by high-quality, fertile, loamy soils dominated by agricultural land uses.*
- *Large arable/horticultural fields with regular patterns and rectangular shapes predominating, and a sparse hedgerow pattern.*
- *Orchards and horticultural crops characterise central and eastern areas, and are often enclosed by poplar or alder shelterbelts and scattered small woodlands.*
- *Woodland occurs on the higher ground around Blean and in smaller blocks to the west, much of it ancient and of high nature conservation interest.*
- *Large settlements and urban infrastructure (including lines of pylons) are often visually dominant in the landscape with significant development around Greater*

¹ Natural England, National Character Area Profile 113 North Kent Plain, 2015. Pg 3

London and the Medway Towns, as well as around towns further east and along the coast. Major rail and road links connect the towns with London.”²

County: Kent County Landscape Character Assessment, 2004

3.2.4

The Site is situated within the Southfleet Arable Lands Character Area as identified by the Landscape Assessment of Kent. The Southfleet Arable Lands is described as

“...It is a mix of flat and undulating landform which is sloping generally towards the Thames estuary at Gravesend and Dartford from the edge of the Darenth Downs and Betsham.

“On the remnant wooded hill-tops the lanes are deeply cut and old villages such as Betsham nestle in a seemingly tranquil rural landscape. Elsewhere, the landscape is more open with a mix of remnant orchards and a few shelterbelts, but increasingly the landcover is a mix of cabbages and arable crops. The flatter land is particularly open with many hedgerows removed or neglected”.

“This openness results in the busy A2(T) dominating both visually and audibly over a wide area extending into the northern tip of the Ash Downs. Elsewhere, in the elevated, wooded farmlands to the east of the area, it is the noise that is the most intrusive and detracting element. Some attractive views looking back towards the Downs can be seen from this higher land”.

“North of Southfleet, the landscape is heavily influenced by transmission lines and development on the rises at Northfleet and the Gravesend suburbs. With many hedges removed, the arable fields, old windbreak and roadside lighting all stand out”.

“The Channel Tunnel Rail Link (CTRL) is located adjacent to the A2, skirting Gravesend, before swinging north to travel under the Thames. This has resulted in a trapped section of land (termed the ‘sandwich land’) between the road the rail-link. A spur route down the disused railway linking Gravesend to the Longfield line passes

² Natural England, National Character Area Profile 113 North Kent Plain, 2015. Pg 6

close to Southfleet and Betsham. The rail link impacts on these communities on the eastern boundary of this character area.”³

3.2.5 Characteristic Features of the Southfleet Arable Lands include:

- *“Good quality soils developed on the Tertiary Beds overlying the chalk. A generally open arable landscape.*
- *Open landscape allowing transport routes, pylons and settlement to dominate many areas.*
- *Remnant unkept hedgerows, shelterbelts and woodland copses giving a scruffy and unmanaged feel.*
- *Long views to the busy A2 (T) and Kent Thames-side beyond.”⁴*

3.2.6 The Condition of the landscape is Very Poor being described as,

“...a coherent landscape where the large-scale rural land use reflect the good quality soils. There are, however, many visual detractors which dominate the view, such as transmission pylons, trunk road and CTRL. Remnant rural heritage features such as hedgerows, orchards and shelterbelts are few and are in poor condition...The condition of this area is considered to be very poor.”⁵

3.2.7 The sensitivity of the Southfleet Arable Lands is Moderate, being described as,

“The undulating landform is apparent in the open views over the landscape area. Visibility is therefore high. The main inherent characteristics which make up the landscape pattern have become indistinct. The historic features of hedgerow enclosure and the more recent shelterbelts are now indistinct element of the landscape. Building forms on the edge of settlements do not contribute to local distinctiveness and there is very little time-depth to the landscapes current dominant

³ Landscape Assessment of Kent, Kent County Council, 2004. Southfleet Arable Farmlands

⁴ Landscape Assessment of Kent, Kent County Council, 2004. Southfleet Arable Farmlands

⁵ Landscape Assessment of Kent, Kent County Council, 2004. Southfleet Arable Farmlands

features. The routes of established highways, which are considered to be of ancient origin, no longer have a great impact on the landscape.”⁶

3.2.8 Overall, because condition (Very poor) and sensitivity (Moderate) are combined it results in a Summary of Landscape Actions to Restore and Create, since,

“This is a large-scale landscape which has become fragmented with redundant and diverse elements, and denuded of characteristic features. It requires simplification, but also acknowledgement of new functions...”

3.2.9 In order to restore and create, a series of landscape actions are suggested. Those are:

- *“Create a simplified pattern within the landscape using large blocks of woodland, large areas of arable fields*
- *Create an edge to the urban area – restore some enclosure, using characteristic rural features*
- *Create functional agricultural features*
- *Create ecologically rich corridors*
- *Restore the positive impact of historic highway features*
- *Restore open and controlled views across open farmland.”⁷*

3.3 Statutory Designations

3.3.1 Green Belt: The Site lies within the Green Belt, which extends to the edge of the A2 from the south. (Refer to **Figure 4: Environmental and Cultural Context with Public Rights of Way**). Green Belt and Green Belt Openness matters are considered further within the planning report(s).

⁶ Landscape Assessment of Kent, Kent County Council, 2004. Southfleet Arable Farmlands

⁷ Landscape Assessment of Kent, Kent County Council, 2004. Southfleet Arable Farmlands

- 3.3.2 **Conservation Areas:** The Site is not located within any Conservation Area; however, Southfleet Conservation Area is located c.0.85km to the south-west of the Site. (Refer to **Figure 3: Environmental and Cultural Context with Public Rights of Way**).
- 3.3.3 **Scheduled Monuments:** There are no scheduled monuments within the Site itself. 'Springhead Roman site' (List Entry Number 1005140) is located between Millbrook Garden Centre and the A2. 'Roman enclosure SE of Vagniace' (List Entry Number 1004226) is located to either side of New Barn Lane, to the east of the Site. There are also other SMs located in the area. (Refer to **Figure 3: Environmental and Cultural Context with Public Rights of Way**, and the heritage report which accompanies the application).
- 3.3.4 **Listed Buildings:** There are no Listed Buildings within the Site. The closest Listed Building is 'North End Farmhouse' (List Entry Number: 1099179) is located c.0.7km to the south west of the Site. There are a number of other Listed Buildings located within the smaller settlements in the wider landscape. (Refer to **Figure 3: Environmental and Cultural Context with Public Rights of Way**).
- 3.3.5 **Registered Parks and Gardens:** The Site is not covered by a Registered Park or Garden designation. Gravesend Cemetery (List Entry Number: 1001633) is located c.2km to the north-east of the Site. (Refer to **Figure 3: Environmental and Cultural Context with Public Rights of Way**).
- 3.3.6 **Sites of Special Scientific Interest (SSSI):** The Site is not covered by a SSSI. Swanscombe Peninsula SSSI is located c.0.5km to the north west of the Site on the north side of the A2, beside Ebbsfleet International. (Refer **Figure 2: Statutory Designations**).
- 3.3.7 **National Nature Reserve (NNR):** The Site is not covered by any NNRs. The closest NNR is Swanscombe Skull Site c.2.6km to the north west of the Site. (Refer **Figure 2: Statutory Designations**).
- 3.3.8 **Environmental Designations:** There are no Environmental Designations across the Site. Some blocks of Ancient Woodland are found in the wider landscape,

predominantly to the west of the Site, beyond 1.5km. (Refer to **Figure 3: Environmental and Cultural Context with Public Rights of Way**).

3.3.9 Public Rights of Way: There are no Public Rights of Way (PRoW) that cross the Site. A number of PRoWs are located within the surrounding landscape, including, but not limited to (Refer to **Figure 3: Environmental and Cultural Context with Public Rights of Way**):

- Public footpaths DR131, 132 and 325 located along the southern edge of the CTRL.
- Restricted byway DR129 located to the west of the Site.
- Public footpaths NU14, 19 and 17 located to the north of the Site.

3.3.10 National Cycle Network: Cycle Route 177 is located to the north of the Site along the northern edge of the A2 connecting to Cycle Route 1 which continues west alongside the A2 and with connections north through Northfleet and Gravesend. (Refer to **Figure 3: Environmental and Cultural Context with Public Rights of Way**).

3.4 Landscape Resource and Contribution of the Site to Landscape Character

3.4.1 The local area within which the Site lies is surrounded by varied land uses with a garden centre (Millbrook), Swallow Aquatics, Pepperhill Recycling Centre, as well as a variety of commercial and logistics centres, close to the A2 interchange around Hall Road and Station Road. Beyond the CTRL link route to the south, urban influences reduce and give way to a more rural characteristics which are also typical of the Southfields Arable Lands, with a network of smaller and larger fields, including land used for growing (with polytunnels) and agricultural businesses, where villages and hamlets (such as Southfleet and Betsham) are connected by sunken lanes across agricultural land, which is gently rising to the south from the Thames

3.4.2 The Site occupies two broadly triangular parcels of land positioned to either side of Station Road, together with a strip of land across the A2 (Watling Street) forming a linear connection to Northfleet East Grid Substation. The undulating Station Road

lies between the two parcels of land and is fringed by mature hedgerow and tree vegetation along both sides, albeit with some gaps evident. A series of high voltage powerlines criss-cross the wider landscape, including across the northern part of the Site itself in a south easterly to north westerly direction, converging on the nearby substation.

- 3.4.3 The northern parcel of the Site is situated alongside the former Gravesend to Swanley railway branch line, which ran through Betsham, and lies between DGP Logistic Services compound and Millbrook Garden Centre and Aquatics and Pepperhill Recycling Centre (to the north east). The former railway line is now defined by a strong belt of mature linear woodland that runs along the western edge of the northern parcel and contains views. Smaller belts of mature vegetation follow the north eastern edge of the Site, adjacent to and encompassing Millbrook Garden Centre. Beyond the A2 is the settlement of Northfleet, which merges with Swanscombe and Ebbsfleet to form a near continuous band of higher density residential development, commercial sites and mixed land uses, as well as other infrastructure (road and rail) small pockets of small greens, parks and linear green spaces.
- 3.4.4 The southern parcel of the Site lies to the south of Station Road with strong belts of mature vegetation adjacent to the railway line, which runs along much of the southern edge. The eastern edge of the parcel is open and the grassland (with some pastoral qualities) undulates gently towards a shallow valley and into a corridor occupied by road and rail infrastructure (Ebbsfleet Valley). This forms the basis of some historic / cultural associations (through Scheduled Monument listings nearby), including those explored at Springhead (Roman settlement) arising as part of the CTRL construction corridor nearby in previous years.
- 3.4.5 Overall, the field parcel which contains the Site is considered to make a positive contribution to the local landscape character, since the land exhibits attributes or characteristics that are representative of the local landscape, including the agricultural land use and a gently undulating landform providing a landscape with a simple vegetation pattern at the edge of the character area. However, there are a number of elements (overhead wires and pylons, a substation to the north,

settlement, aquatics and garden centre, recycling and other commercial, industrial and logistics uses, together with roads and rail infrastructure) which temper and cause a dilution of the local character, especially given their proximity to the Site and its containment.

3.4.6 The Site contains no features or attributes of rarity and there appear to be no associations connecting the Site with notable people, historical events or the arts. The Site has a limited degree of remoteness or tranquillity due to its proximity to the settlement and local infrastructure, including the existing substation, pylons and overhead lines, roads and rail network.

3.4.7 Although, the Site does not form part of a valued landscape for the purposes of the NPPF, taking into account the few value attributes of the Site features on the open land, the Site itself is recognised as having some value overall, which is considered to be medium-low.

3.5 Visual Resource

3.5.1 The visual amenity experienced by people (visual receptors) in the locality of the Site differs according to many factors. Visual receptors of higher sensitivity with a greater susceptibility to change include residents at home (private viewpoints), people engaged in outdoor recreation (including the use of PROWs), visitors to heritage assets and other attractions, travellers on recognised scenic routes (public viewpoints) and people at their workplace where views are an important contributor to the setting and quality of their working life. Travellers on road, rail or other transport routes are considered less sensitive to changes in visual amenity.

3.5.2 Consideration of the study area, via desk research and field survey, has identified a number of locations from which the Site (proposed scheme) will potentially be visible. However, this has been refined through ZTV and field survey to review and appraise the extent of visibility of the Site in the landscape.

3.5.3 A number of specific, representative and illustrative photographs selected for inclusion in the report and to illustrate the visual effects of the proposed scheme

range from receptors including, local roads, public rights of way and representative private views are shown on **Figure 7: Photo Location Plan** and **Figure 8:**

Photographic Sheets. The visual receptors are considered to illustrate a fair representation of receptor groups with varying sensitivity/susceptibility to change in their visual amenity.

3.5.4

Initial consideration of the study area, via desk research, covered a broad sphere of 2-3km; however, this has been refined through field survey to review and appraise the extent of visibility of the Site in the landscape as follows;

- Views from the north are in part generally limited by the alignment of the strong belt of trees that form the line of the dismantled railway; although there are some views from the more elevated residential area at the edge of the settlement at Pepper Hill.
 - Views from rising ground to the south are generally limited by the trees on the site boundaries, including those bordering the CTRL link line to the south of the Site, although there may be glimpses of taller elements visible in gaps in or above the vegetation cover.
 - Views from the east are more open; however, visibility is limited by a relatively flat landform which comprises emerging and established linear tree belts along the A2 Watling Street/ CTRL corridor, and that limit views to those closest to the Site in the vicinity of New Barn Road and Station Road.
 - View from the west are generally limited by the strong belt of mature trees that form the line of the former (now dismantled) railway.
-

4 THE PROPOSALS

4.1 General Principles

4.1.1 This section of the report considers the results of the initial baseline work in the context of future development of the Site.

4.1.2 The design of the proposed development should be as well-integrated into the landscape as possible and seeks to maintain the qualities of the transition between the rural landscape to the south of the CTRL and the built environment in and around the A2 and Northfleet. The treatment of the Site boundaries and the structural spaces will be key to maintaining and enhancing the quality of that transition.

4.1.3 To assist the design process, the following general opportunities have been applied to the emerging proposals. These are based upon Site investigations, published landscape character assessments and visual effects considerations.

4.1.4 The Kent County guidance series of Landscape Actions of Restore and Create for the Southfleet Arable Lands LCA are to:

- *“Create a simplified pattern within the landscape using large blocks of woodland, large areas of arable fields*
- *Create an edge to the urban area – restore some enclosure, using characteristic rural features*
- *Create functional agricultural features*
- *Create ecologically rich corridors*
- *Restore the positive impact of historic highway features*
- *Restore open and controlled views across open farmland.*⁸

⁸ Landscape Assessment of Kent, Kent County Council, 2004. Southfleet Arable Farmlands

- 4.1.5 By taking on board and implementing these points as part of the emerging layout and strategy for the Site, it would provide beneficial opportunities for the land and integration into the wider area, having the potential to deliver benefits for landscape enhancement and green infrastructure in keeping with local landscape character for the area.
-

4.2 Proposals and Approach to Mitigation

- 4.2.1 The proposed development scheme, which is shown on consultant team drawings, includes the following elements:

- Development comprising a series of individual containerised battery stores and inverter/transformer skids (circa 2-3m high), substation including primary transformers and inverters (circa 9m-13.5m high, some housed in a building on the lowest part of the Site in the northern parcel, close to other buildings including the nearby Garden Centre), along with ancillary equipment including switch rooms, storage containers and access tracks with gravel finish.
- Where possible visible elements will be powder coated/ finished in an appropriate RAL colour (for example green tone to be agreed) to recede.
- The proposals will be fenced with a 2.4m high security perimeter fence, cctv, and accessed from the edges of the existing fields along Station Road via new tracks.
- The proposals include native planting (trees and structure planting) to help assimilate the proposed scheme into the undulating landform and also to provide structure and some height over time.
- An attenuation basin feature will also be provided to the east edge of the battery storage on the northern field as part of the drainage proposals for the scheme.
- An area (to the eastern end of the southern field) in line with that identified as having potential surface water flows (in the flood risk assessment), will incorporate planting more suitable for wetter ground.

- 4.2.2 A landscape scheme will be implemented to minimise the effects of change to the character of the Site and the localised views and also seek to secure biodiversity enhancements. The proposed landscape scheme will include:

- Carefully widen the irregular patchwork of native scrub and tree (wooded) planting within the fields, in keeping with the character of the tree planting and vegetation adding height and which is associated with a simplified pattern.
- Provide a new tree structure where practical outside the developable footprints and utility easements to help restore a stronger sense of enclosure, provide depth and height, both as a means to soften the scheme and provide a layering effect where possible. Tree clusters will connect to existing features and help soften the scheme (it is accepted little can be done to alleviate the existing taller pylons).
- The area below the overhead wires and around pylon bases in the northern parcel will be enhanced with a mosaic of native scrub and species rich grassland, extending the patchwork of low level planting into the centre of the Site.
- Areas of grassland in the southern parcel will be enhanced to provide greater pastoral qualities on the undulating part of the landform to the east.
- New planting will seek to add some height and structure along both sides of the road corridor on Station Road, in order to deliver a stronger impact to the planting of highway features.

4.2.3

In consideration of the landscape and visual issues relevant to the Site, an approach to the mitigation of the proposed scheme has been considered, incorporating the principles outlined above (and as reflected on the Landscape Strategy Plan). The landscape strategy would be developed in further detail as part of the planning conditions and would successfully ensure that the identified landscape and visual effects are minimised.

5 ASSESSMENT OF LANDSCAPE EFFECTS

5.1 Identifying the Landscape Effects

5.1.1 The effect of the proposed changes to the Site, specifically on the identified landscape receptors (attributes) has been reviewed, including consideration of changes to the existing landscape resource, the introduction of new elements within the landscape and changes to local perceptions of the Site.

5.1.2 This section of the report considers the results of the initial baseline work in the context of future potential development at the Site. The landscape effects are the changes to the Site, quantitative or qualitative, compared with a scenario without the Proposals. Effects can be adverse or beneficial, direct, indirect, or cumulative. The following assessment of landscape effect should be read in conjunction with the approach to mitigation (refer Chapter 4).

5.2 Sensitivity and Susceptibility

5.2.1 An important element in identifying the effects of a Proposal is to assess the ability (the susceptibility) of the existing landscape to accommodate the specific proposed changes with regards to the consequences on the local landscape character.

5.2.2 The Site (landscape resource) has been deemed to be of medium-low susceptibility to accommodate the proposed development, since it is an established location where well considered change of an appropriate nature could be absorbed without loss of key characteristics, individual elements or features and specific aesthetic or perceptual aspects of overall landscape character. Indeed, it is recognised that this is in the context of a landscape with a recognisable presence of energy related development and infrastructure.

5.2.3 Accordingly, the sensitivity of the Site is considered to be medium-low when value (medium-low) and susceptibility (medium-low) are combined.

5.3 Significance of Landscape Effects

- 5.3.1 Effects can be adverse or beneficial. Where the Proposals are judged to cause deterioration to the landscape resource / local landscape character this is described as an adverse effect. Where the Proposals are judged to increase the value of the Site to the landscape resource / local landscape character this is described as a beneficial effect.
- 5.3.2 The proposed scheme will result in some noticeable effects during the construction period, which include the presence of (for example) construction vehicles, materials, stockpiles, parking/ welfare facilities and associated safety fencing, which are acknowledged to be temporary effects during the construction phase.
- 5.3.3 The proposals would result in a direct change in the nature of the Site itself from one of agricultural grassland to one of infrastructure resource, enhanced species rich grassland/ meadow and new planting, which would be apparent locally and it is acknowledged that the proposed development brings new built elements and features into an area of the Site that is undeveloped and open.
- 5.3.4 There will be an inevitable change to the open character of the agricultural field itself. However, it is considered that the proposals to accommodate the new battery energy storage units and associated infrastructure elements will be present in the existing context of energy and utility provision, together with built development and road and rail infrastructure on adjacent land (which also help contain the Site). The development of the Site will inevitably represent a noticeable change to the Site itself on a relatively small part of the LCA, which is already influenced by infrastructure and development. The proposed scheme includes for new planting to help provide softening of the battery energy storage facility and help integrate it into the landscape.
- 5.3.5 Overall, the scale and degree of change on a small part of the Southfields Arable Lands local landscape would be recognised, but alongside existing features that have already influenced the landscape in this location. Accordingly, the overall significance of the landscape effect with regard to the proposed scheme is

considered to represent a Moderate to Slight Adverse effect locally, with limited harm to the wider character of the area.

5.3.6 Once an appropriate landscape management scheme has established the significance of the landscape effects in the longer term will change and is considered to represent a Slight Adverse Effect to the landscape resource and landscape character.

5.3.7 It is also noted that the effects of the scheme are reversible, as at the time the Site ceases to operate the land will be restored to its current condition; however, this will occur beyond 15 years (being the time for the effects of the established scheme to be assessed) given the 40 year planning permission being sought. That being the case, the operational equipment from the Site would subsequently be removed, leaving much of the key Green Infrastructure elements as maturing landscape features in the location, together with a mosaic of enhanced grassland, scrub and meadow pasture.

6 ASSESSMENT OF VISUAL EFFECTS

6.1 Identifying the Visual Effects

- 6.1.1 The visual effects are the changes to the Site, quantitative or qualitative, compared with a scenario without the Proposals. Effects can be adverse or beneficial, direct, indirect or cumulative. The assessment involves a systematic identification and description of the visual effects, supported by plans and photographs. The following assessment of visual effects should be read in conjunction with the approach to mitigation (refer to Chapter 4).
- 6.1.2 The likely value placed upon views by people, or the visual amenity of the locality is evaluated to help assess the effects of the proposed development.
- 6.1.3 Whilst Site visits have been undertaken in winter months when deciduous vegetation has no leaf cover, the assessment has endeavoured to make informed judgements applicable to visual amenity throughout the year and the consideration of seasonal views during summer months.
- 6.1.4 An important element in identifying the visual effects of a proposal is to assess the existing visual receptors (people who see the view) and their susceptibility to changes in views and visual amenity. The susceptibility of different visual receptors to changes in views and visual amenity is mainly a function of:
- *“The occupation of activity of people experiencing the view at particular locations; and*
 - *The extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations.”⁹*
-

⁹ Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Para 6.32 (2013)

6.2 Significance of Visual Effects

Assessment of the significance of visual effects relating to the proposed development is considered with regard to the sensitivity of the visual receptor, the value attached to the views or visual amenity and the magnitude of change in view. The magnitude of change in view is considered in light of:

- The sensitivity of the visual receptor (the viewer);
- The value attached to the views or visual amenity;
- The size and scale of the development;
- The geographical extent of the area influenced;
- Duration; and
- Reversibility.

6.2.1 For the identified viewpoints the degree of change which the Proposals will engender is described and assessed. The following section identifies the primary viewpoints and people or visual receptors within the area that are likely to be affected by the change in views and visual amenity resulting from the proposed scheme. The significance of the visual effect has been assessed upon completion of the scheme and once established (i.e. 15 years plus), although it is acknowledged that new woodland and tree planting will continue growing to maturity over a longer period of time beyond the establishment period.

6.3 Identification of Visual Effects

6.3.1 The following section identifies a range of typical receptors within the area which are likely to be affected by the change in views and visual amenity resulting from the proposed development.

6.3.2 It should be noted that for some views the effects are considered to be short lived, largely because they occur on transient routes – e.g. local roads – in these locations, views are often short lived or periodic glimpses whilst moving along a route.

- 6.3.3 It is recognised that the proposed scheme is for the most part approximately 2.5-3m high (battery storage, fencing and most of the kit); although the substation housing and its ancillary kit which is located in the lowest part of the Site (on the northern parcel and closest to existing buildings (Millbrook Garden Centre)), is between c. 9m-13.5m high overall.

Private Receptors

Views from Pepper Hill, north east of the Site (refer example photo 11) - High Sensitivity

- 6.3.4 Some residents with an outlook across open fields to the south west are likely to experience views of the proposed development, due to the orientation and layout of the residential estate and its elevated position overlooking the countryside towards Southfleet and Istead; however, where visible the new proposals would be seen partly in a context where there are already some commercial and industrial influences experienced, and although new planting will help soften the scheme to a degree, it will take some time for planting to establish.

- Scheme completion (year 1): Moderate to Slight Adverse Effect
- Established scheme (+15 years): Slight Adverse Effect

Public Receptors

Views from overbridge to A2 Bridleway 0328/NU48/1, east of the Site (refer example photo 1) - High Sensitivity

- 6.3.5 Albeit elevated over the A2, users of the overbridge (vehicles, cyclists and pedestrians) are unlikely to gain clear views of the proposed development from the road; parts of the bridge structure and emerging vegetation patterns along the CTRL corridor in the foreground mean they are very unlikely to perceive a change in their visual amenity. Views directed towards the proposed scheme are generally seen in the context of busy road and rail infrastructure in the foreground, together with active commercial and residential land uses at the edge of Northfleet.

- Scheme completion (year 1): Negligible Effect
- Established scheme (year 15): Negligible Effect

Views north from PRow 325/DR132/2 (refer example photo 4, 21) - High Sensitivity

6.3.6 Users of the footpath may experience a few limited glimpses of elements of the proposed development from the road through a gap in the vegetation along the southern field's boundary with the CTRL, when walking north from Southfleet through part of the shallow valley; however, the proposed planting along the eastern edge of the parcel will add to the well treed backdrop, and ensure the profile of the shallow valley form beyond the rail line is maintained.

- Scheme completion (year 1): Slight Adverse to Negligible Effect
- Established scheme (year 15): Negligible Effect

Views west from Millbrook Garden Centre (refer example photo 3) – Medium to Low Sensitivity

6.3.7 Visitors to the Aquatics Business and Garden Centre are likely to experience a few limited glimpses of elements of the proposed development from the car park (particularly in winter months) and more clearly from a gap in the vegetation along the northern field's eastern boundary (along the garden centre access), from where the substation will be visible albeit seen in an environment with existing infrastructure and built forms; however, the proposed new wooded planting along the north eastern edge and corner of the parcel will help filter and soften the scheme to a degree, although it will take some time for planting to establish.

- Scheme completion (year 1): Moderate to Slight Adverse Effect
- Established scheme (year 15): Slight Adverse to Negligible Effect

Views north from PRow DR133/2 and St Nicholas Church churchyard (refer example photo 6) - High Sensitivity

- 6.3.8 Users of the footpath are unlikely to experience clear glimpses of elements of the proposed development from the path at the western end of the churchyard, where views are generally more open that would result in change in their visual amenity, when walking away from or towards Southfleet.
- Scheme completion (year 1): Negligible Effect
 - Established scheme (year 15): Negligible Effect

Views northeast from PRow DR137/1 extending away from Westwood Road (refer example photo 7) - High Sensitivity

- 6.3.9 Users of the footpath are unlikely to experience glimpses of elements of the proposed BESS scheme from the footpath as foreground hedgerow limits views to the north, even from under the existing pylon infrastructure.
- Scheme completion (year 1): Negligible Effect
 - Established scheme (year 15): Negligible Effect

Views east from PRow DR/25/3, Bean (refer example photo 8) - High Sensitivity

- 6.3.10 Users of the footpath heading east between Bean and Betsham are unlikely to experience glimpses of elements of the proposed BESS scheme from much of the elevated sections of footpath as foreground hedgerows limit views to the east. Occasional gaps in the vegetation or open sections of path allow longer views across to Northfleet (and beyond), where the view is dominated already by settlement, infrastructure and industrial/commercial development, and if glimpsed the BESS proposals would be visible in this context. As such, there wouldn't be a notable change to path user's visual amenity.
- Scheme completion (year 1): Negligible Effect
 - Established scheme (year 15): Negligible Effect

Views west from cyclopark and cycle route (refer example photo 12) - High Sensitivity

6.3.11 Users of the cyclopark, or the cycle route that runs beside it, are unlikely to experience any change in their visual amenity as a result of the proposed BESS scheme, as the emergence of vegetation patterns in the linear corridor of the A2 and CTRL are establishing to help soften the presence of local infrastructure.

- Scheme completion (year 1): Negligible Effect
- Established scheme (year 15): Negligible Effect

Views northwest from PRow 0328/NU23/1 (refer example photo 17) - High Sensitivity

6.3.12 Footpath users are unlikely experience views of the proposed BESS scheme from the footpath as the presence of polytunnels in the foreground, together with the alignment of vegetation associated with the embankments of the CTRL, which form the backdrop and limit views to the northwest, providing enclosure and screening.

- Scheme completion (year 1): Negligible Effect
- Established scheme (year 15): Negligible Effect

Views southeast from PROW 0263/DS20/3 Near Observatory (Ebbsfleet) (refer example photo 10) - High Sensitivity

6.3.13 Users of the footpath network near the observatory now form part of the urban environment at Ebbsfleet, and given the recently developed context are unlikely to experience clear open views of elements of the proposed development from these elevated sections of footpath at this long distance, as the view is dominated by housing, together with pylon infrastructure running through the middle. Generally, lower lying elements in the Ebbsfleet Valley and A2/ CTRL Corridor are lower lying and less visible, when combined with the existing vegetation patterns. If glimpsed the BESS proposals would be seen in this overall context. As such, there wouldn't be a notable change to path user's visual amenity.

- Scheme completion (year 1): Negligible Effect
- Established scheme (year 15): Negligible Effect

Transport Receptors

Views along Station Road (example photos 22, 14, 20) - Medium Sensitivity

6.3.14

Albeit slightly elevated from the Site at each end, users of Station Road (vehicles, cyclists and pedestrians) approaching the Site from east and west will be likely to experience views of the proposed development from the road; parts of the new structures would be seen or glimpsed through hedgerow gaps or open sections of the roadside edges, and including the new openings created for access to the two parcels either side of the road. Views extend west to the point of the former railway line (at DPC Logistics) where the lanes are well vegetated, whilst to the east views extend back to the roundabout with New Barn Road, where it is more open and the proposals in the southern field will be visible until new planting establishes. The proposals include new planting to help reinforce the linearity of the road frontages and help integrate the scheme over time.

- Scheme completion (year 1 winter): Moderate Adverse Effect
- Established scheme (+15 years summer): Slight Adverse to Negligible Effect

Views northwest from Warren Road (refer example photo 5, 15) - Medium Sensitivity

6.3.15

Road users (vehicles, cyclists or pedestrians) are unlikely experience views of the proposed BESS scheme from the road, as the more elevated eastern end of the road is typical of well vegetated (often sunken) lanes in the area, being enclosed by vegetation, and any filtered gaps through (e.g. in winter) (photo 15) are glimpsed to polytunnels extending up the slopes to meet Warren Road. To the west on the lower lying part of the road (the head of the shallow valley) (photo 5) views of the proposed BESS scheme are limited by the existing belts of wooded vegetation running along the upper parts of the valley side.

- Scheme completion (year 1): No Effect
- Established scheme (year 15): No Effect

Views east from Foxhounds Lane (nr Park Corner Rd) (refer example photo 9) - Medium Sensitivity

6.3.16

Users of the road (vehicles, cyclists and pedestrians) heading east towards Station Road from Park Corner Road may experience glimpses of elements of the proposed BESS scheme from the elevated sections of road, which affords open views towards Northfleet; however, the view is influenced already by settlement, infrastructure and industrial/commercial development and the existing substation at Northfleet, and if glimpsed the lower lying BESS proposals would be visible in this context amongst tree cover. As such, there wouldn't be a notable change to the road user's visual amenity. Proposed vegetation as part of the proposals will help add to the tree cover in the locality and the integration of existing and new development in the locality.

- Scheme completion (year 1): Slight Adverse to Negligible Effect
- Established scheme (year 15): Negligible Effect

Views northwest Downs Rd (refer example photo 19) - Medium Sensitivity

6.3.17

Users of Downs Road (vehicles, cyclists and pedestrians) near Istead are unlikely to experience glimpses of elements of the proposed BESS scheme from these open elevated sections of road at this long distance, as the view is dominated by pylon infrastructure and the merging of vegetation on the slopes. Generally, elements in the Ebbsfleet Valley and A2/ CTRL Corridor are lower lying and not visible, when combined with the existing vegetation patterns. If glimpsed the BESS proposals would be seen in this overall context. As such, there wouldn't be a notable change to road user's visual amenity.

- Scheme completion (year 1): Negligible Effect
- Established scheme (year 15): Negligible Effect

Views east from New Barn Road (refer example photo 2, 20) - Medium Sensitivity

6.3.18

Users of the road (vehicles, cyclists and pedestrians) heading east towards the A2 may experience glimpses of elements of the proposed BESS scheme from a few limited gaps in the roadside vegetation; however, the view and context is influenced already by nearby settlement, infrastructure and industrial/commercial development, and if glimpsed the lower lying BESS proposals would be visible in this context amongst tree cover. As such, there wouldn't be a notable change to the road user's visual amenity. Proposed vegetation as part of the proposals will help add to the tree cover in the locality and the integration of existing and new development in the locality.

- Scheme completion (year 1): Slight Adverse to Negligible Effect
- Established scheme (year 15): Negligible Effect

Views south west from Hall Road and A2 overbridge (refer example photo 16) - Medium Sensitivity

6.3.19

Users of the road (vehicles, cyclists and pedestrians) heading south over the A2 may experience glimpses of elements of the proposed BESS scheme from a few limited gaps in the commercial building (Millbrook Garden Centre and Pepperhill Recycling Centre, seen from the rear); however, the view and context is influenced already by nearby settlement, infrastructure and industrial/commercial development, and if glimpsed the BESS proposals would be visible in this context amongst tree cover. As such, there wouldn't be a notable change to the road user's visual amenity. Proposed vegetation as part of the proposals will help add to the tree cover in the locality and the integration of the proposed scheme.

- Scheme completion (year 1): Slight Adverse to Negligible Effect
- Established scheme (year 15): Negligible Effect

7 CONCLUSION

- 7.1.1 The Landscape and Visual Impact Assessment has reviewed the existing landscape and visual resource of the land at Dartford Energy Hub (the Site) in consideration of the proposed scheme for a new battery energy storage facility and associated infrastructure.
- 7.1.2 The Site lies to the south of Northfleet on a triangular portion of land that is well contained by the A2 to the north (beyond which lies the built up areas of Northfleet and Swanscombe and Ebbsfleet), a branch of the Channel Tunnel Rail Link (CTRL) to the south, and the well wooded disused railway line that ran between Gravesend and Swanley via Betsham, which adjoins the western edge of the Site
- 7.1.3 The local area within which the Site lies is surrounded by varied land uses with a garden centre (Millbrook), Swallow Aquatics, Pepperhill Recycling Centre, as well as a variety of commercial and logistics centres, close to the A2 interchange around Hall Road and Station Road. Beyond the CTRL link route to the south, urban influences reduce and give way to characteristics which are more rural and typical of the Southfields Arable Lands, with a network of smaller and larger fields, including land used for growing (with polytunnels) and agricultural businesses, where villages and hamlets (such as Southfleet and Betsham) are connected by sunken lanes across agricultural land, which is gently rising to the south from the Thames
- 7.1.4 Overall, the field parcel which contains the Site is considered to make a positive contribution to the local landscape character, since the land exhibits attributes or characteristics that are representative of the local landscape, including the agricultural land use and a gently undulating landform providing a landscape with a simple vegetation pattern at the edge of the character area. However, there are a number of elements (overhead wires and pylons, a substation to the north, aquatics and garden centre, recycling and other commercial, industrial and logistics uses, and settlement, together with roads and rail infrastructure) which temper and cause a

dilution of the local character, especially given their proximity to the Site and its containment.

- 7.1.5 The proposed scheme will result in some noticeable effects during the construction period, which include the presence of (for example) construction vehicles, materials, stockpiles, parking/ welfare facilities and associated safety fencing, which are acknowledged to be temporary effects during the construction phase.
- 7.1.6 The proposals would result in a direct change to the Site itself from one of agricultural grassland to one of infrastructure resource, grassland and new planting, which would be apparent locally and it is acknowledged that the proposed development brings new built elements and features into an area of the Site that is undeveloped and open. There will be an inevitable change to the open character of the agricultural field itself. However, it is considered that the proposals to accommodate the new battery energy storage units and associated infrastructure elements will be present in the existing context of energy and utility provision, together with built development and road and rail infrastructure on adjacent land (which also help contain the Site). The development of the Site will inevitably represent a noticeable change to the Site itself on a relatively small part of the LCA, which is already influenced by infrastructure and development. The proposed scheme includes for new planting to help provide softening of the battery energy storage facility and help integrate it into the landscape.
- 7.1.7 Overall, the scale and degree of change on part of the Southfields Arable Lands local landscape would be recognised, but alongside existing features that have already influenced the landscape in this location. Accordingly, the overall significance of the landscape effect with regard to the proposed scheme is considered to represent a Moderate to Slight Adverse effect locally, with limited harm to the wider character of the area. Once an appropriate landscape management scheme has been established the significance of the landscape effects in the longer term will change and is considered to represent a Slight Adverse Effect to the landscape resource and landscape character.

- 7.1.8 It is also noted that the effects of the scheme will be reversible, as at the time the Site ceases to operate the land will be restored to its current condition; however, this will occur beyond 15 years (being the time for the effects of the established scheme to be assessed) given the 40 year planning permission being sought. That being the case, the operational equipment from the Site would subsequently be removed, leaving much of the key structural and perimeter Green Infrastructure elements as maturing landscape features in the location, together with a mosaic of enhanced grassland, scrub and meadow pasture.
- 7.1.9 Overall, the visual effects range from Moderate Adverse to Negligible and No Effect, although it has been identified that users of a short section of the roadside (to the south of the Site and to the east of the Site) will experience the most apparent effect on views and visual amenity both during construction and immediately following implementation, when drivers, cyclists and walkers are particularly close to the Site, albeit seen in the local context of an area which has pylons and overhead lines crossing and other infrastructure and built development; however, the effects (where experienced) are recognised as diminishing over time as the mitigation scheme establishes, reducing the effects to range from Slight Adverse to Negligible or No Effect generally.
- 7.1.10 It should be noted that for some views the effects are considered to be short lived, largely because they occur on transient routes – e.g. roads – in these locations the views are often periodic views experienced whilst moving along a route in an undulating landform, where the presence of infrastructure, overhead wires and pylons, built development, roads and rail are characteristic of the local landscape. As such, the change experienced is not always the focus of the view.
-

Stansted:
Unit 1, The Exchange,
9 Station Road,
Stansted, CM24 8BE

t +44 (0)1279 647044
e office@lizlake.com
www.lizlake.com

Bristol:
The Engine Shed,
Station Approach,
Bristol, BS1 6QH

t +44 (0)1174 527460
e office@lizlake.com
www.lizlake.com

LIZ LAKE
ASSOCIATES
LANDSCAPE ARCHITECTS

- Landscape Design
- Urban Design
- Residential
- Public Realm
- Masterplanning
- Landscape Planning
- Heritage Landscapes
- Gardens and Estates
- Restoration and Conversion
- Places of Worship
- Expert Witness
- Hospitality
- Education
- Retail / Office
- Community
- Ecology
- Arboriculture
- 3D / Graphic Design