Hornsea Project Four: Preliminary Environmental Information Report (PEIR)

Volume 4, Annex 4.6 : Outline Design Vision Statement

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Version 1, A4.4.6

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Section 1

Vision Statement

1.1 - Vision Statement

1.1.1 - The Hornsea Project Four Offshore Wind Farm (here after referred to as Hornsea Four) Design Vision Statement sets out methods of best practice alongside aspirational approaches that will guide the future development of all on-shore infrastructure. The Design Vision Statement helps to ensure sense of place is considered and integrated throughout the design process and adverse environmental effects are mitigated where possible whilst respecting landscape character. This will be achieved through the integration of locally inspired design principles and engineering optimisation. Key factors including the use of materials, colour and landscape treatments will be considered. Proposals seek to bring not only greater visual mitigation as part of Hornsea Four but also encourage ecological and amenity benefits.

The Design Vision Statement illustrates a range of potential overarching approaches with a clear hierarchy between interventions.

This document outlines approaches that fall into two areas:

1. Design commitments that will be secured by the DCO; and
2. Aspirational ideas which will be put forward to future contractors.

Section 2

Local Context Study

2 - Local Context Study

2.0.1 - There are three areas being considered as part of the Design Vision Statement :

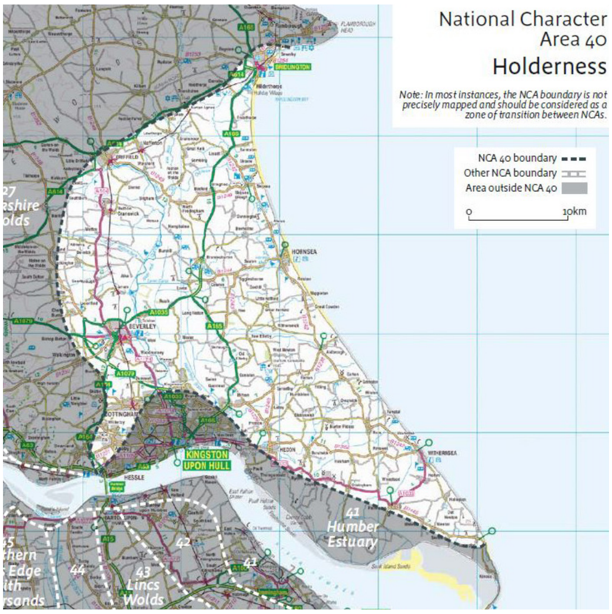
1. The Onshore Substation (OnSS)
2. The Landfall Area
3. The Export Cable Corridor (Onshore ECC)

All 3 elements of the project lie within the East Riding of Yorkshire and are part of the following landscape character areas.

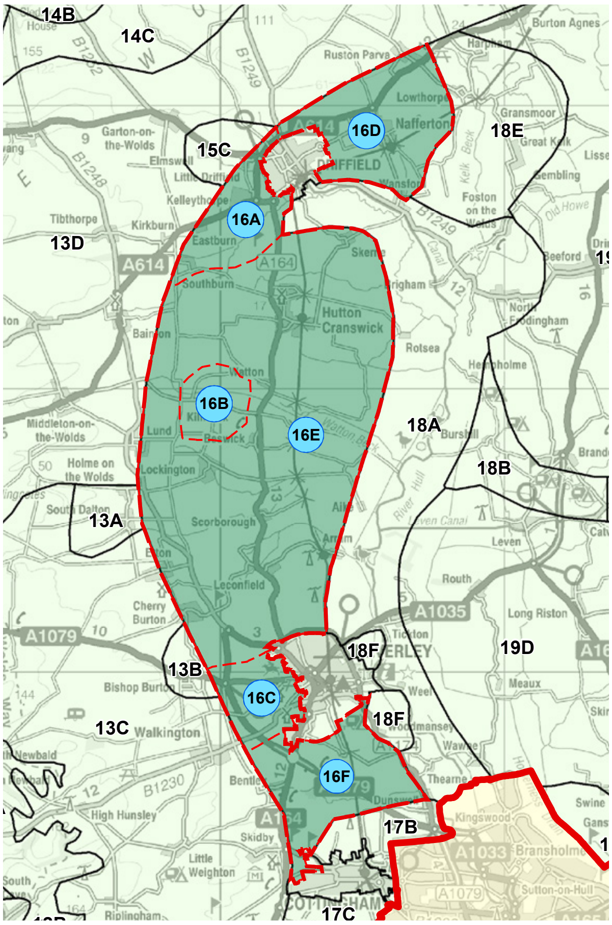
2.0.2 - **National Character Area – Holderness (NCA40)**

Key characteristics include:

- Broad, low-lying plain with few hills, bounded by the curving chalk escarpment of the Yorkshire Wolds and Flamborough Head to the west and north respectively;
- The fertile floodplain of the River Hull is important for agriculture, exhibiting large scale field patterns and linear drainage channels;
- Both arable and livestock farming occur as dominant industries, with farmland interspersed by occasional tree cover in the form of shelter belts and hedgerows;
- Settlements are generally dispersed, traditional style villages linked by a mesh of minor roads; and
- Panoramic views offered as a result of the gentle topography.



National Character Area Mapping



Local Character Area Mapping

2 - Local Context Study

2.0.3 - The OnSS and onshore ECC also sit within the East Riding of Yorkshire Landscape Character Area. The East Riding of Yorkshire Landscape Character Assessment (2018) was prepared to assess the landscape character of the area, to inform its future growth and development. The landscape of the study area is divided into Landscape Character Types (LCTs) reflecting the results of desk study and field survey. These LCTs are then further refined into Landscape Character Areas (LCAs) forming discrete named geographical units.

2.0.4 - **Local Landscape Character - Sloping Farmland (LCT 16) & Beverley Parks Farmland (LCA 16F)**

Key characteristics include:

- Gently rolling landform sloping gradually down to the east;
- Intermittent scattered woodland blocks throughout and hedgerow trees in places;
- Intensively farmed rectilinear arable fields of large to medium size interspersed with less regular early enclosure fields particularly around villages;
- A number of turbine developments within the landscape with others visible beyond. Pylons also a dominant visual feature; and
- The under lying solid geology is chalk from the Cretaceous period.

2.0.5 - Key visual receptors include :

- Nearby settlement and residents in isolated hamlets including Burn Park Farm and Poplar Farm;
- Recreational users of the landscape (residents or visitors);
- Workers operating in nearby industry; and
- Travelling receptors who may be passing through the area by road or railway.

Creyke Beck Substation, approx. 180m east of the site

2.1 - Site Context - OnSS

2.1.1 - The OnSS site is located within a rural arable setting with intermittent scattered woodland and hedgerows. Existing pylons are a dominant feature of the landscape and the Creyke Beck substation and other industrial infrastructure is located to the east and south-east of the OnSS site. An existing public right of way (PRoW) runs through the OnSS site and a cycle route passes to the east. Individual and coupled residential properties are scattered throughout the zone.

Site Constraints

- Overhead Power Lines
- Field Boundaries
- Wide open views
- PRoW
- Existing settlement
- Visual receptors
- Drainage
- Local residential receptors

Site Opportunities

- Rural isolated setting
- Existing woodland/ habitat networks
- Field drains
- Underlying geology
- Hedgerows
- Industrial influences
- Improved accessibility such as improvements to the PRoW network and NCC in accordance with paragraph 98 of the NPPF.

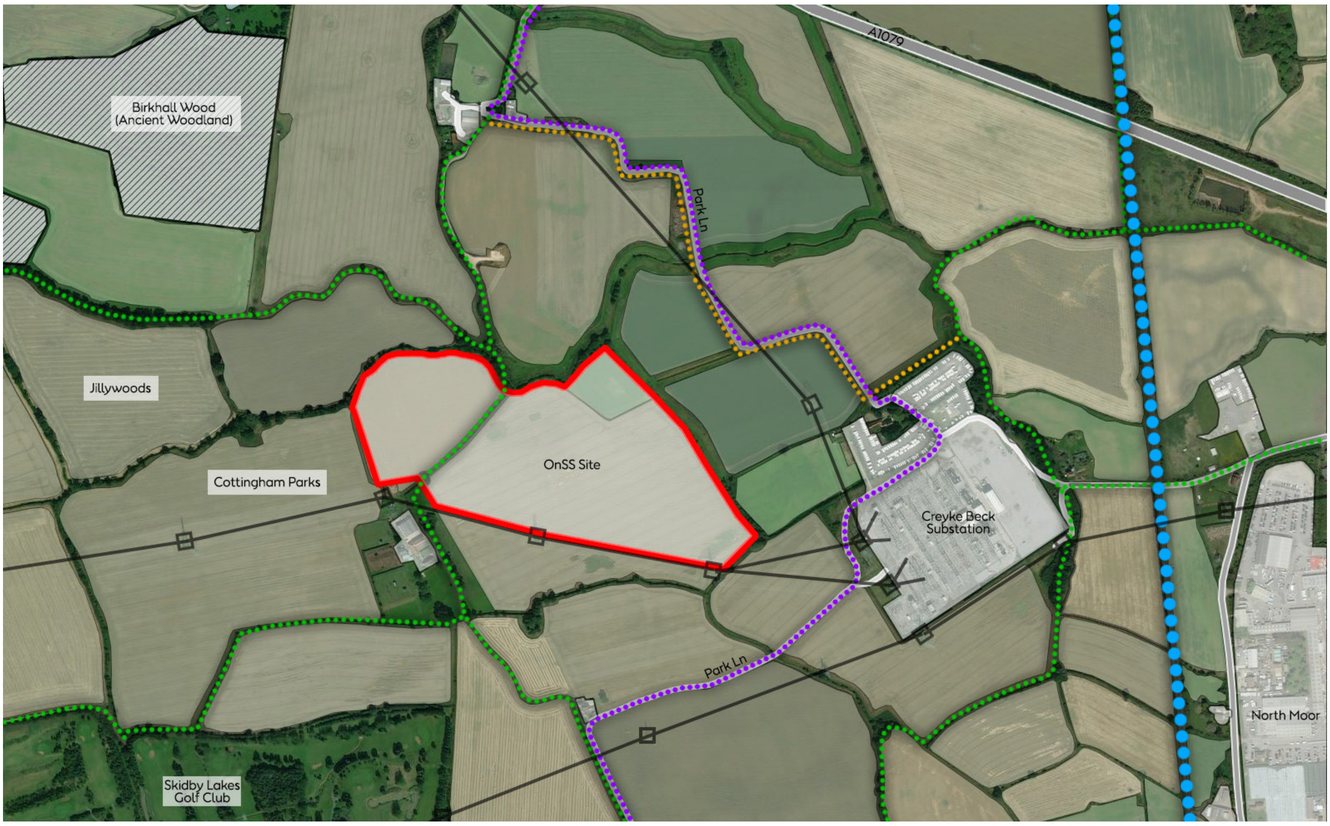
Woodland structures

Mixed native woodland belts

Clustered Woodland

Mature native hedgerows

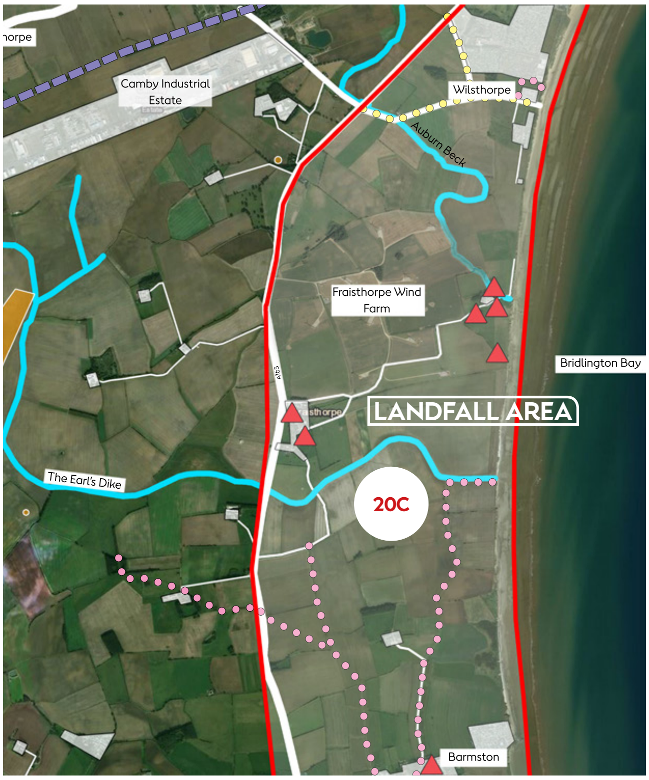
Individual mature trees



Hornsea Four OnSS Site

	Ancient Woodland		Public Footpath		Overhead Powerlines
	Railway Line		Public Bridleway		Cycle route
	Study Area				

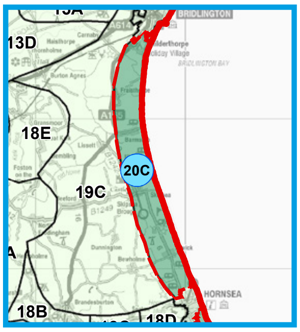
2.2 - Site Context - The Landfall Area



Plan indicating the Landfall Area

Key

- Railway Line
- SAM (Scheduled Ancient Monument)
- PRoW
- Bridleway
- Watercourse
- Listed Building
- Landscape Character Area Boundary



2.2.1 - The Landfall area is located on the coastline between the settlements of Barmston and Wilsthorpe. This area lies within **Landscape Character - Coastal Farmland (LCA 20) and Bridlington to Hornsea Coast (LCA 20C)**

2.2.2 - The **East Riding of Yorkshire Council (ERYC) Landscape Character Assessment (ERYC, 2018)** identifies the following key characteristics:

- Flat to gently undulating topography sloping gently eastwards;
- Boulder clay cliffs eroding into the sea;
- Limited tree cover due to exposed windswept coastal landscape;
- Smaller villages and farmsteads and minor roads threatened by erosion;
- Fragments of historic field pattern around villages and hamlets;
- Tourism development along the coast including static caravan parks are prominent; and
- Large scale turbine development visible within the landscape.

War defences are prominent along the coastline and a historic feature

River mouth of The Earl's Dike meeting Fraisthorpe Sands.

Site Constraints

- Close proximity to Flamborough Head (SAC) and Flamborough Headland Heritage Coast
- Listed buildings and historical war assets
- Coastal footpaths and PRoW
- Residential properties

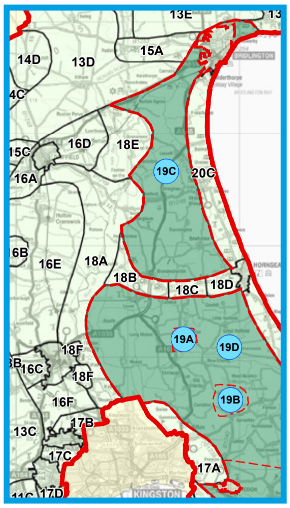
Site Opportunities

- Tourism opportunities
- Existing windfarm and associated infrastructure

2.3 - Site Context - Onshore ECC

Key

- ECC Area
- Study Area
- Earl's Dike



Plan indicating the onshore ECC area

Site constraints

- Scheduled Monuments
- Field drainage ditches and watercourses
- Scattered farmsteads
- Residential properties

Site opportunities

- Limited tree cover
- Flat topography
- Few landscape designations
- Few access routes

Open farmland, flat low lying topography with limited tree cover

The Earl's Dike

Section 3

OnSS Design Code Principles

3.1 - Policy EN1

3.1.1 - The Department of Energy and Climate Changes **Overarching National Policy Statement for Energy - Policy EN1, Section 4.5 - the 'criteria for "good design" for energy infrastructure'**, is an essential reference document and covers the following principles.

Section 4.5.1 covers the 'appearance and sustainability of proposed infrastructure'. **Section 4.5.2** states how 'good design can help mitigate adverse impacts'. **Section 4.5.3** takes into account 'functionality and aesthetics' and promotes the consideration of 'existing landscape character, landform, vegetation and sensitive materials'.

The following general design code principles, landfall and onshore ECC design code principles cover various aspects raised in **Policy EN1**. These include altering the appearance of infrastructure to soften it into the surrounding landscape and modifying the composition and layout to make them more sustainable in terms of building sprawl and functionality. It also significantly references existing landscape character, landform, vegetation and materials as a starting point for proposed interventions, with all of the following design principles aiming to mitigate various impacts on the immediate landscape.

As stated in **section 4.5.5**, 'taking further independent professional advice is encouraged' in reference to detailed design proposals.

3.2 - Introduction

3.2.1 - The Hornsea Four OnSS will connect to the Creyke Beck National Grid 400kV substation which is located to the east of the OnSS site near Cottingham. This Design Vision Statement has been produced as guidance to ensure that future proposals are sensitive to the local landscape setting. This statement considers the existing landscape context and explores a series of interventions and best practice solutions to best integrate the development into the surrounding landscape, minimising visual impact where possible. Design principles also seek to strengthen the amenity and ecological potential of the development. It is envisaged that the design principles developed can be applied to the Hornsea Four OnSS during the design and construction phases of the project.

3.2.2 - The assessment criteria aside indicates the evaluation process that will be applied to alternative options. This enables a clear distinction between design principles that are to be avoided and those that are preferred during the detailed design phase of the project.

3.2.3 - Options that are not feasible due to technical requirements, safety concerns or other considerations will be removed from consideration based on set criteria and not included within the Design Vision Statement.

3.2.4 - This Design Vision Statement explores:

- Building form and composition;
- Building materials, colours and finishes;
- Landscape treatments;
- Fencing and boundary treatments;
- SuDS /drainage integration;
- Access, circulation and wayfinding;
- Lighting; and
- Public Engagement.

Poor - not recommended

Good

Very good - Preferred approach

3.3 - Building form, composition & layout

Building Form

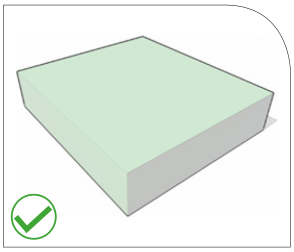
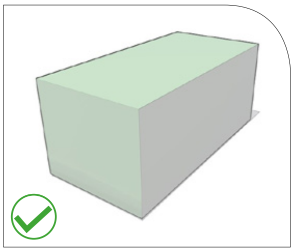
3.3.1 - The following sections outline the design approach to the built form elements of the OnSS, inspired by local vernacular and other examples of best practice in substation design and layout. The key aims of the building form, composition and layout options include:

- Reflecting local agricultural vernacular. This includes clusters of rectangular metal clad structures;
- Reducing the visual impact of the development, particularly from the south of the search area where visual receptors are present;
- Reducing the visual impact on the sky line;
- Visually containing electrical components, avoiding scattered buildings which contribute to visual clutter;
- Allowing for emergency and maintenance access;
- Producing a buildable and operational scheme that satisfies engineering requirements; and
- Creating a cohesive visual environment by adopting a consistent form and layout.

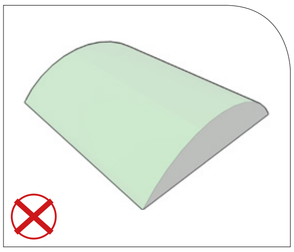
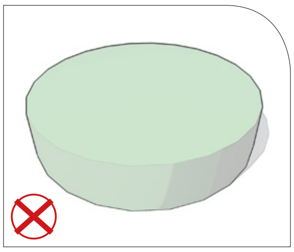
3.3.2 - The three building forms identified include:

- Cube – A functional form that doesn't jar with the surrounding vernacular. This simple building form is also prominent throughout the Creyke Beck Substation Site. The roof-line should be designed to strengthen the linkages to surrounding agricultural structures. Deviation from the cube design would result in increased building footprints and would likely increase visual impact.
- Cylindrical – Aesthetically pleasing form that can be easily constructed. The arched profile also softens the visual impact against the sky line. This cylindrical form is present, though not prominent within the local landscape. This is however not a feasible option due to functionality and housing high voltage plant and equipment without significantly increasing the building size.
- Angular – Typical design layout amongst local farmsteads. The angular forms have limited compatibility with the structured layout of electrical equipment.

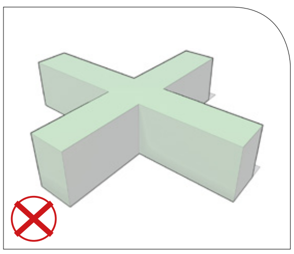
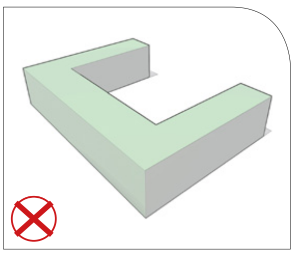
3.3.3 - In conclusion the 'cube' design is the only feasible option due to the spatial requirements .


Cube


Cylindrical

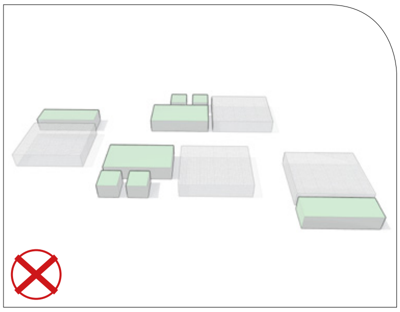

Angular

3.3 - Building form, composition & layout

Building Composition

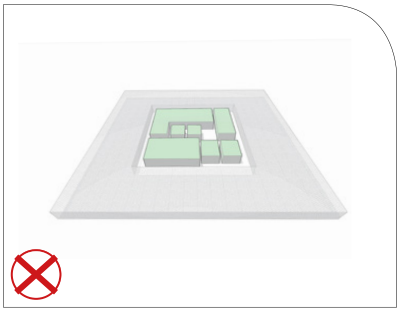
3.3.4 - The composition of the built form in relation to the electrical apparatus is an important design aspect particularly when mitigating the visual impact of the development. A uniform arrangement is encouraged or an approach that places the main built form at the perimeter of the site, thus, acting as visual screening.

3.3.5 - Using the built form as a screening element should be encouraged to the south of the site where visual receptors are present. It is acknowledged that the layout of substation components is constrained by operational requirements however the composition of these elements as a whole should be considered to reduce the visual impact wherever possible.



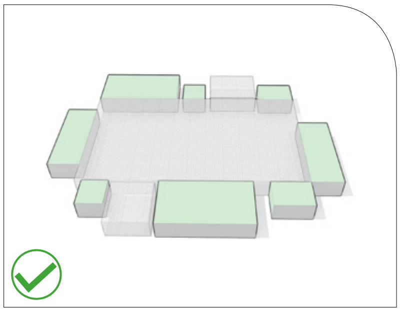
Dispersed

3.3.6 - Increased visual impact due to the large area of development and amount of visual clutter creating and disorder.



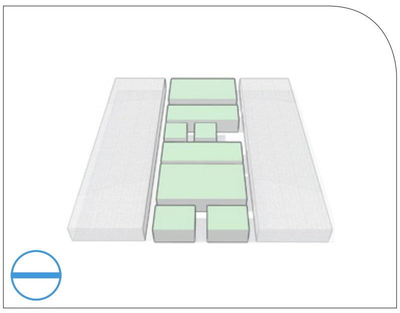
Central

3.3.7 - Placing build form centrally with electrical apparatus at the perimeter of the site reduces visual screening creating a chaotic aesthetic.



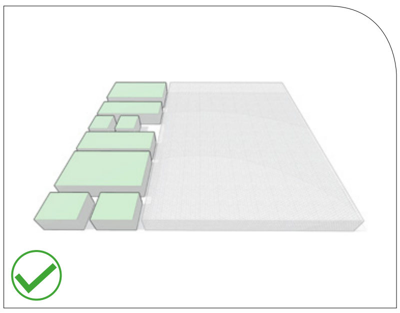
Edge

3.3.8 - Built form located at the edge of the site would provide greater visual screening of the electrical apparatus within the site.



Linear central

3.3.9 - Aligning the built form creates unity and order which would limit any visual impact.



Linear edge

3.3.10 - Similar to the linear approach this arrangement creates order and further reduces visual impact.

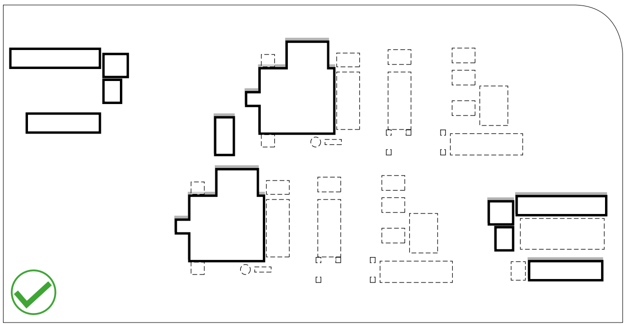
3.3 - Building form, composition & layout

Building Layout

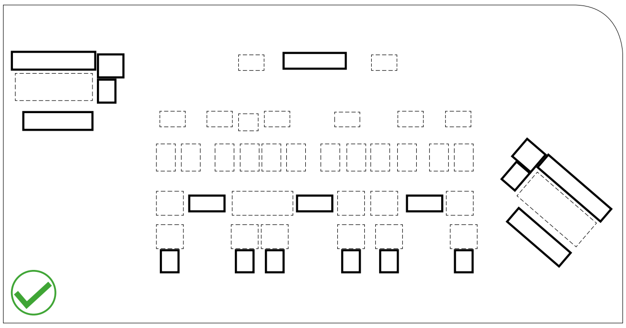
3.3.11 - The building layout should aim to be compact, orderly and linear, minimising visual clutter where possible. Key considerations explored in the alternative spatial options include:

- Use the built form as screening, particularly to the south;
- Create a coherent aesthetic by minimising scattered buildings;
- Take up as little space as possible, reducing sprawl which creates visual clutter;
- Consider the spatial relationship between buildings to reduce the visual impact; and
- Consolidate the built form where possible.

3.3.12 - The OnSS layout and equipment organisation must be set out in sequential order as do all electrical transmission systems. Reorganisation of these components would require a significant increase in OnSS Footprint, in addition to a large increase in connections, cables and complexity. For this reason, only the standard transmission system layout will be considered. Dependant on the capacity of Hornsea Four, every effort will be made to use space as efficiently as possible.



HVDC current indicative layout



HVAC current indicative layout

3.4 - Building materials, colours and finishes

Colour and finishes

3.4.1 - A colour sampling exercise was undertaken to determine the most prominent colours within the local landscape. This has been used to inform the colour palette of the OnSS built form and also influence signage and hard landscape materials. Using colours with a strong local context will help integrate the development into the landscape. Colours have been influenced by dominant local features including infrastructure/cloudcover, skylines, agriculture and geomorphology.

3.4.2 - Given the rural context of the OnSS site, bright, bold colours are not suited for this development since muted shades would create a 'quieter' appearance and soften the visual appearance of the development. Lighter shades towards the roofline would be least visible against the skyline whilst dark brown / green tones at the lower section would blend in with the wooded horizon line.

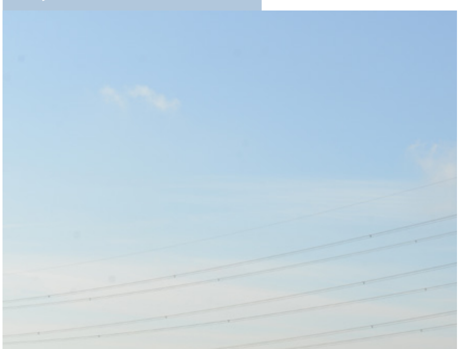
3.4.3 - The colours cool grey, light steel blue, dark olive green and rosy brown were considered to be the most appropriate for the Hornsea Four OnSS. It is considered that the cool grey colour is the most suitable because it would:

- Compliment existing infrastructure (pylons, wind turbines and existing substation);
- Compliment rather than competes with the surrounding palette of landscape colours; and
- Be appropriate throughout the seasons.

Rosy Brown
Geomorphology

Dark Olive Green
Agriculture

Light Steel Blue
Sky



Cool Grey
Infrastructure / Clouds

3.4 - Building materials, colours and finishes

Corrugated Metal Sheeting

Cool Grey

Pros

- Robust , cost effective and generally low maintenance;
- Corrugated form prominent in rural setting;
- Flexible in terms of colour choice; and
- Not flammable and readily available.

Cons

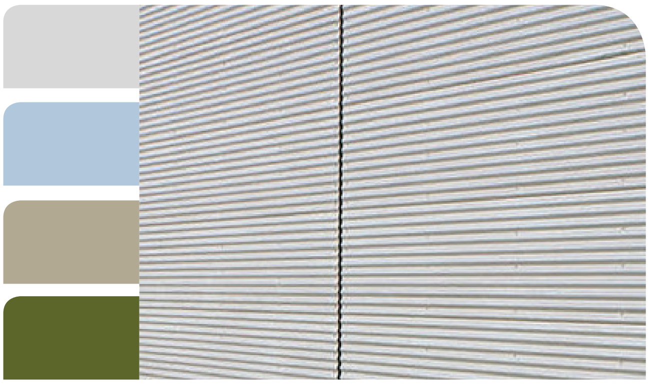
- Reflective paints or treatments to be avoided; and
- Susceptible to change in the long term due to corrosion.

3.4.4 - Whilst corrugated metal sheeting has traditionally been the preferred choice for substation enclosure construction further investigation to improve on the standard corrugated panels will be considered. It has been considered that this is the most appropriate material in terms of colour and functionality.

Corrugated sheeting

3.3 - Building materials, colours and finishes

Building finishes



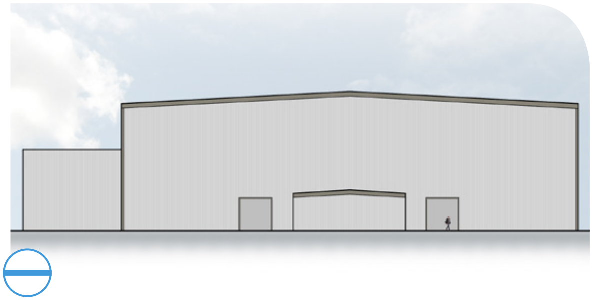
Metal sheet cladding

3.4.5 - **Single colour**

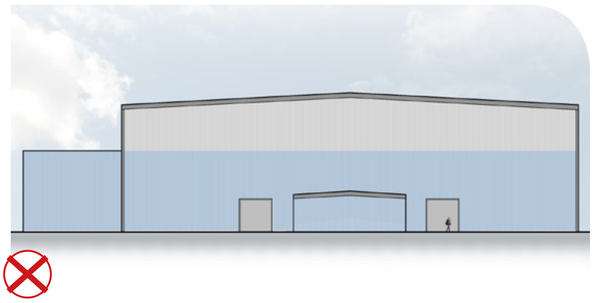
- Simple aesthetic that does not compete with the landscape colours; and
- Limited in visually reducing the mass of buildings.

Two & Three Tone

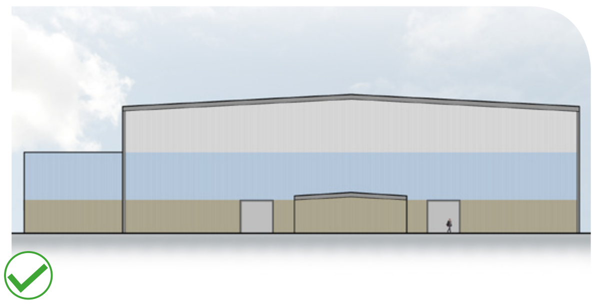
- Lighter shades towards the top of the building tend to be less visible against the skyline;
- Can be effective in visually reducing the mass of buildings;
- Lighter / brighter shades to the footing of the building should be avoided as these will contrast with the woodland, field cover and hedgerows; and
- Colours should be graded to match the colours of the surrounding landscape.



Single colour



Two tone



Three tone

3.5 - Landscape treatments

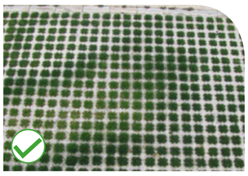
Hard Landscape Treatments

3.5.1 - Following on from the building materials this section explores three options for the hard landscape materials based on a strong aesthetic (green, buff and grey). Where possible the concrete apparatus footing should be minimised as shown.

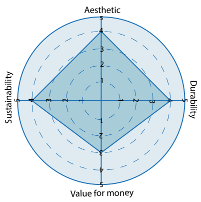
3.5.2 - **Objectives of hard landscape materials include:**

- Free draining surfaces;
- Sustainable;
- Reflect local setting;
- Neutral colours that reduce visual impact;
- Easily maintained;
- Robust and durable; and
- Minimise hardstanding.

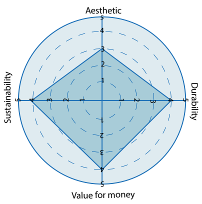
Green



Reinforced chamomile lawn/moss

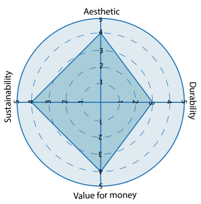


Chamomile lawn/moss

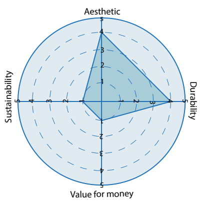


Buff

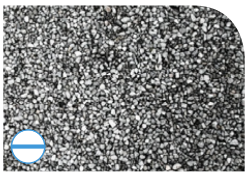
Selfbinding gravel



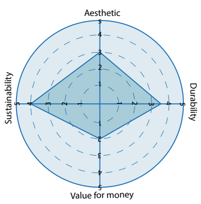
Concrete with exposed aggregate



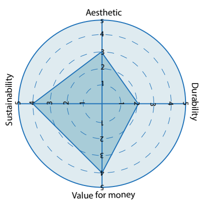
Grey



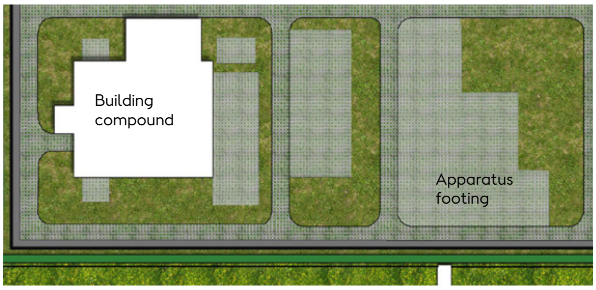
Porous Asphalt



Reinforced gravel



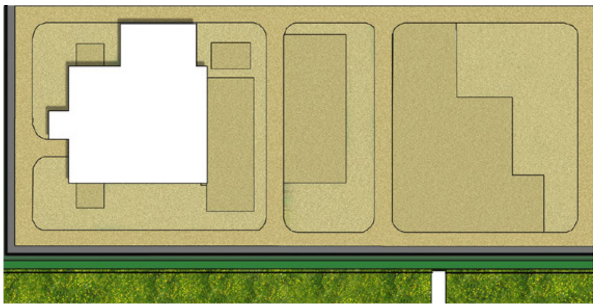
'Green' Application Option



Road and footings- Reinforced chamomile elsewhere - Chamomile lawn / moss

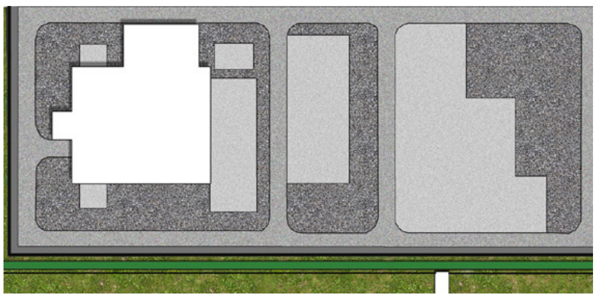
Note: Chamomile lawn or moss has been selected in preference to grass due to maintenance requirements

'Buff' Application Option



Road and Footings - Concrete with exposed aggregate. Elsewhere - Self binding gravel

'Grey' Application Option



Road - Porus asphalt

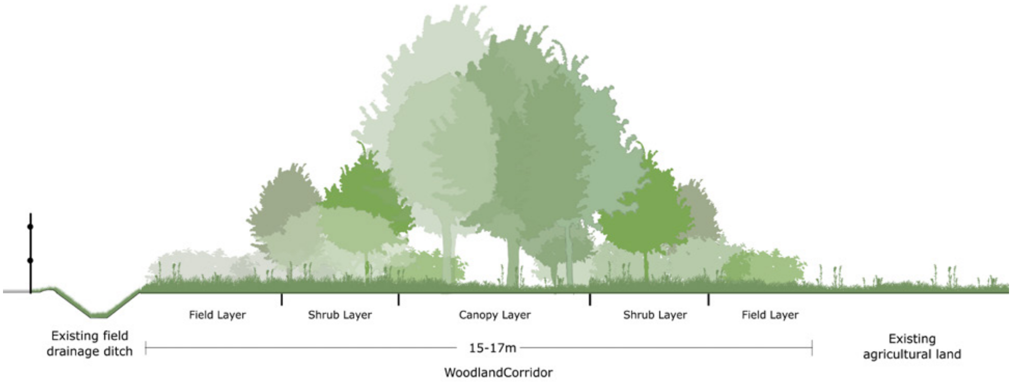
3.5 - Landscape treatments

Soft Landscape Treatments

3.5.3 - The landscape treatments should be informed by local environmental features. These include can vegetation, boundaries, buildings/materials and landform. Landscape treatments in this section are shown for illustrative purposes and are not informed by any assessment.

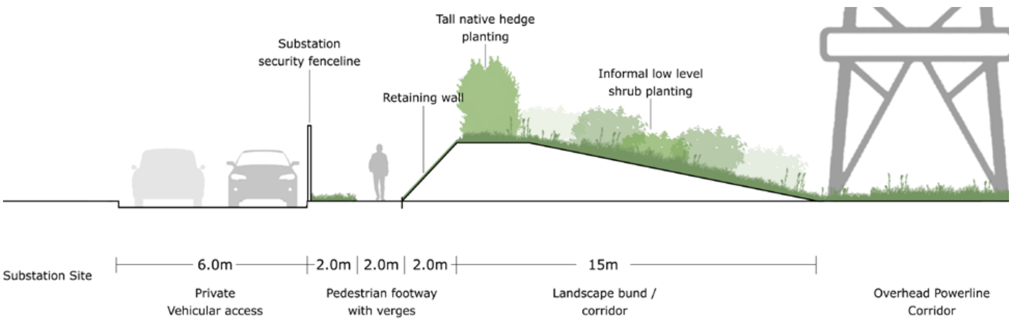
3.5.4 - Landscape treatments should provide visual mitigation around the periphery of the OnSS site whilst considering the site constraints including any overhead powerlines. A minimum clearance of 7.3m is stated in the National Grids technical guidance for clearance between trees and 400kV overhead powerlines. As a result planting adjacent to power-lines will be restricted to groundcover and low level plant species. Taller woodland species should be avoided since they pose a major threat to overhead lines. Visual mitigation should be achieved through tall hedgerows, fencing and subtle earthworks.

3.5.5 - Woodland planting to the perimeter of the OnSS site should involve an organic layout mimicking canopy layers found in the wider countryside. This would help integrate the planting into the wider landscape. The field layer would include native grasslands species and herbs. The shrub layer would introduce native shrub species whilst the canopy layer would include native tree species such as beech, alder and oak.

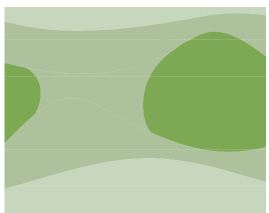


Typical boundary soft landscape treatment

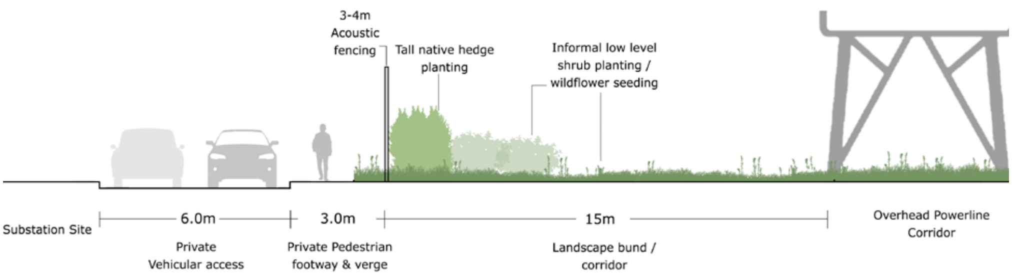
Typical mixed vegetation



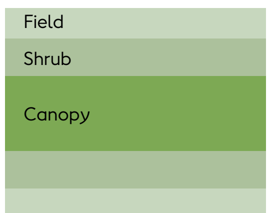
Typical boundary soft landscape treatment adjacent to overhead power lines



Organic Layout



Typical boundary soft landscape treatment adjacent to overhead power lines



Geometric Layout

3.6 - Fencing, screens and planted boundary treatments

3.6.1 - The perimeter of the OnSS site needs to be robust, fit for purpose and provide adequate site security. It may also include a combination of security, acoustic or planted boundaries. Boundary treatments should aim to have a simple design in order to be integrated into the landscape.

Security Fencing Options

3.6.2 - Provides a strong industrial appearance that can be visually obtrusive and the general aesthetic needs to be well considered given the rural setting of the site. Mesh fencing would provide a more attractive option however the security of the site would need to be maintained. A simple steel mesh panel fencing would provide an appropriate aesthetic whilst ensuring security qualities are not compromised.

Galvanised steel security palisade fencing

Powder coated paladin mesh fencing

Steel mesh panel fencing

3.6 - Fencing, screens and planted boundary treatments

Screen Options

3.6.3 - An industrial, utilitarian aesthetic should be avoided as this does not reflect the rural setting of the OnSS. Screens should instead seek to use materials that reflect the local landscape such as timber. Colour could be applied to reduce the visual impact particularly along vegetated boundaries. Timber screens would need to be located outside of the security fencing due to fire risk.


High steel panels


Timber acoustic fencing


Painted horizontal timber slat screen

Planted Boundary Options

3.6.4 - They should avoid the use of single, non-native species that present a uniform aesthetic. Planted boundaries should instead take reference from the local native hedgerows that provide varying form, structure and colour. This would aid visual integration of the proposals. Whilst living walls can provide effective screening and a unique aesthetic that could be appropriate in certain areas these are however costly and are unlikely to sit well within the rural setting.


Uniform single species hedgerow. Non-native species


Green walls


Native mixed hergerow

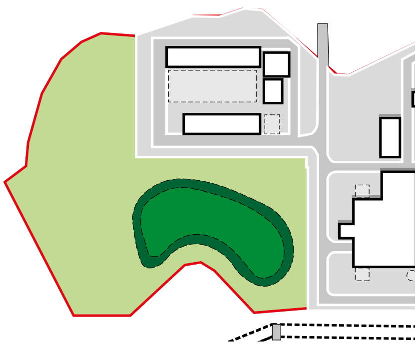
3.7 - Earthworks, landforms and topography

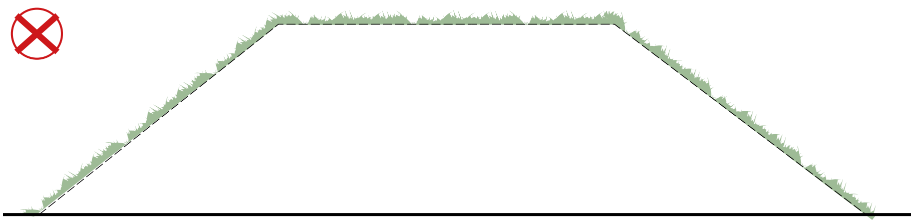
3.7.1 - Acoustic bunds could serve as mitigation primarily for the properties in close proximity to the substation at Burn Park Farm. The existing landform presents a flat, low lying plain with little topographical variation.

3.7.2 - Any proposed acoustic hill should therefore take an organic, sinuous form with soft edges that create a subtle feature within the landscape opposed to a hard edged, engineered hill.

3.7.3 - An acoustic hill could also serve as a platform for displaying sculpture in order to draw attention away from the substation, and be seeded with wildflower and grasses to increase biodiversity.

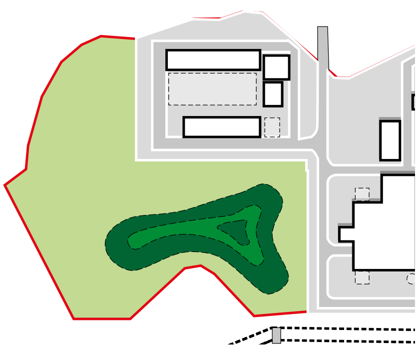
3.7.4 - Whilst an acoustic bund is often more preferable than an acoustic screen since it can be easily integrated into the landscape, the OnSS is located within an area of gently undulating and level landscape. An acoustic bund at this location would therefore stand out as a man-made feature in this landscape and should therefore be avoided.

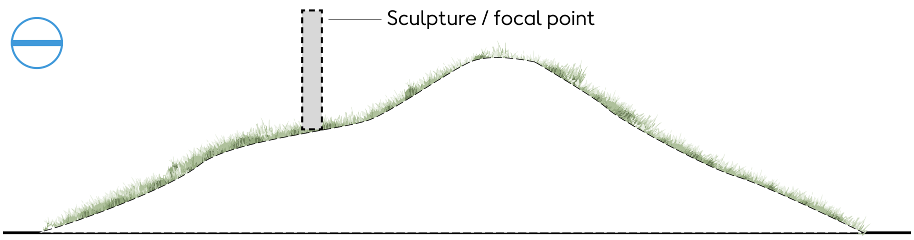




Note : The location of the bund shown is not based on assessment work, and is only indicative of various design approaches.

Formal angular approach





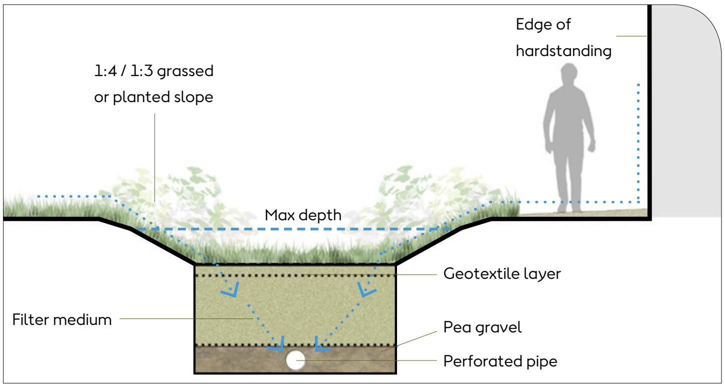
Informal organic approach

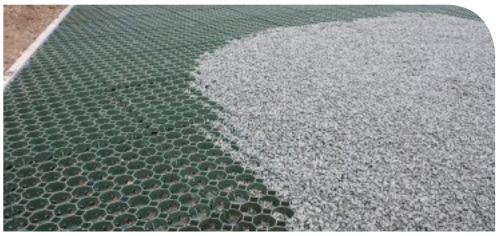
3.8 - SuDS / drainage integration

3.8.1 - This section identifies the opportunities to integrate SuDS within the OnSS site, however further investigation is required to define the feasibility of these options. This approach seeks to utilise linear spaces as well as hardstanding surfaces. This technique aims to control the site drainage and protect adjacent agricultural land and habitats.

Linear dry swales

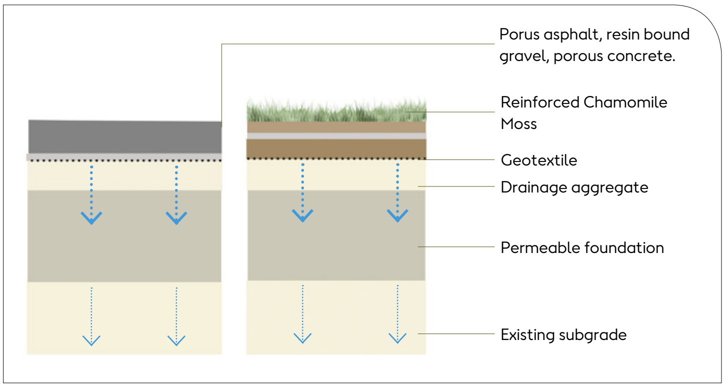
3.8.2 - Integrated into linear spaces treating surface water run-off from perimeter access roads and edges of hardstanding areas.





Porous pavements

3.8.3 - Incorporated within access routes, hardstanding and parking areas. Applicable given light traffic levels.



3.9 - Access, Circulation and Wayfinding

Access and circulation

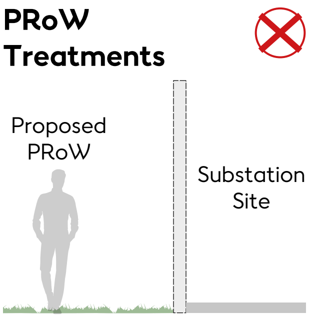
3.9.1 - Any PRoW that run through the OnSS site would need to be diverted to ensure access is maintained. Details of any proposed diversion would be arranged and agreed through consultation. This route would need to be designed as an attractive access corridor. The proposals seek to divert any PRoW from the OnSS and any nearby properties, utilising existing hedgerow boundaries where possible. The **PRoW & Planning Guidance**, states *'for routes that run through open space / green corridor the surfaced path should be 2m wide, with a minimum of 2m on either side of green space'*.

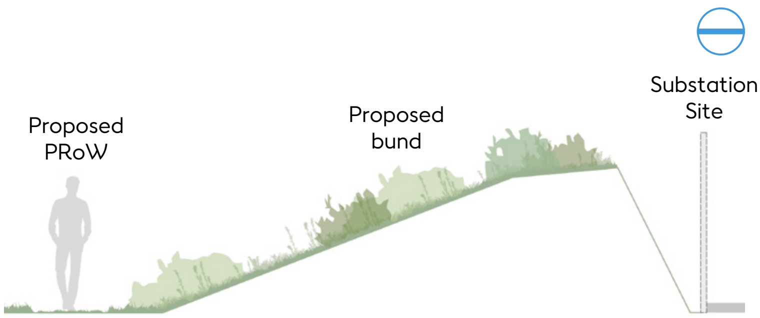
3.9.2 - If a diverted PRoW crosses open agricultural land there is opportunity to implement a hedgerow corridor as part of the proposal. This will provide an attractive route and ecological corridor whilst also providing additional visual screening once the hedgerow has reached maturity. This will also establish a new field boundary. If a PRoW is adjacent to an existing hedgerow this should be utilised as part of the PRoW, as it will provide visual screening by providing a buffer between pedestrians and the OnSS.

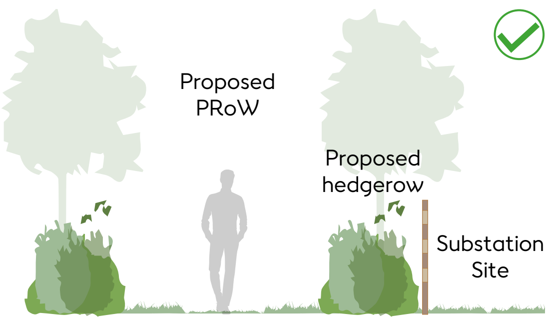
3.9.3 - Aims of the diverted public right of way :

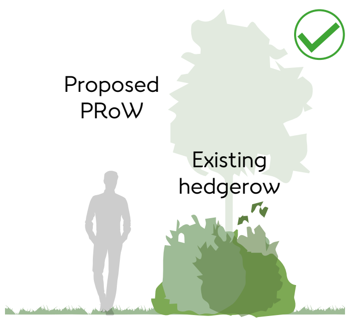
- Utilised existing habitat networks (hedgerows);
- Ensure a direct route is still achieved;
- Create a green corridor;
- Divert footfall from properties;
- Take pedestrian movement away from vehicular routes;
- Maintain views out towards the open countryside; and
- Screen views into the OnSS.

PRoW Treatments









Note : Exact details of any PRoW diversions will be agreed through consultation with key stakeholders and will be undertaken in accordance with paragraphs 96 - 100 of the NPPF.


Access directly adjacent security fencing


Access integrated with existing hedgerow


New native hedgerow planting creating wildlife corridor

3.9 - Access, Circulation and Wayfinding

Wayfinding

3.9.4 - The key aims of the signage and wayfinding are to:

- Consider location, orientation and height to avoid visual clutter. It could also be Integrated into the floorscape /wall mounted where possible;
- Provide a consistent brand and identification within the site;
- Be clear, concise and fit for purpose (long lasting / legible);
- Identify key buildings and be consistent with the overall materiality of the substation;
- Define key access points; and
- Avoid the use of multiple signs and consolidate information where possible.

Low key signage outside of site in- keeping with the wider agricultural setting

Simple timber monolith signage with multiple layers of information

Building signage integrated into facade

Using public art to mark access routes and divert attention away from the substation

Signage integrated into the floorscape to reduce visual clutter

Local sculpture creating a focal point and aiding wayfinding

3.10 - Lighting

3.10.1 - Lighting at the Hornsea Four OnSS site should aim to:

- Ensure that permanent lighting is reserved for essential areas only;
- Fulfil the operational requirements at night time (minimal light levels that permits and guidelines allow);
- Avoid the use of cool light and instead use warm white LED to minimise visual impacts;
- Provide a safe environment for users;
- Be integrated with the existing infrastructure and avoid the use of additional columns and visual clutter;
- Produce minimal levels of overspill into the surrounding countryside;
- Maintain unlit areas where there is existing vegetation for ecological reasons;
- Light only essential areas such as key routes and building entrances; and
- Light wayfinding and signage to aid orientation at night.

Wall mounted lighting

3.10.2 - Wall mounted lighting should be carefully located to prevent unnecessary illumination of the site and the surroundings due to excessive lighting spill.

Floodlighting

3.10.3 - Lighting columns should offer directional lighting to key areas and routes. These should also provide minimal spill and glare to reduce visual impact.

Section 4

Landfall Design Code Principles

4.1 - Introduction

4.1.1 - The landfall area is located within a coastal landscape to the south of the seaside town of Bridlington. The characteristics of the landscape character type, Coastal Farmland, in which the site is located includes undulating landscape, limited tree cover, fragments of historic field pattern, boulder clay cliffs and tourism development along the coast. The proposals should therefore seek to complement and enhance the existing landscape character and mitigate any impact of the landfall development. There are particular opportunities to enhance the tourism offer in this location by enhancing the setting of the war defences which are a prominent feature along this part of the coastline.

Landfall Area
(this does not represent the accurate boundary of the landfall area)

Existing Attributes / Elements

River mouth of The Earl's Dike emptying across Fraisthorpe Sands

There are PRoWs, paths and bridleways in the area

There is a large parking area at Barmston, giving access to Fraisthorpe Beach

There are multiple listed buildings including religious, agricultural and war defence structures

War defences are a prominent and historic feature along the coast, including Fraisthorpe Beach

4.2 - Mitigation, reinstatement & treatments

4.2.1 - The mitigation proposals associated with the landfall location should seek to enhance the tourism offer in the area. This could include enhancing the existing local heritage assets to create new heritage destinations focussing on the wartime beach front defences, as well as the attractive surrounding coastal environment. Proposals should include new seating, interpretation and wayfinding along the existing and future PRoW routes. These could include notable local wartime events, outlining the significance of the coastal defences. All proposed interventions should be sensitively designed to reflect the coastal environment. Materials should be locally sourced natural high quality materials such as timber and local gravels and stone. The design of new features should be in-keeping with this rural environment, and distinct local character.

Access & Wayfinding

4.2.2 - PRoWs will largely be left open during the construction phase. Existing routes will be reinstated after construction works. Wayfinding should be improved to highlight existing PRoWs and historic assets in the local area.

Heritage Assets

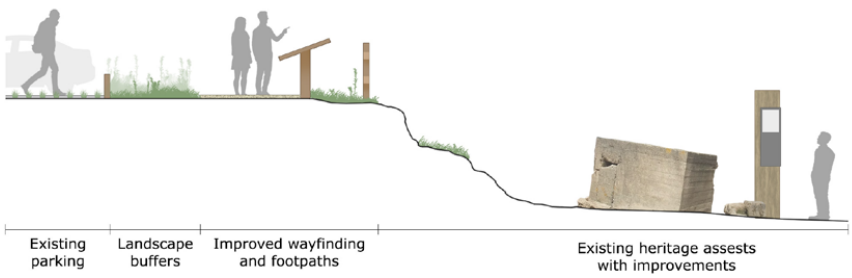
4.2.3 - Fraisthorpe Beach has numerous heritage assets including wartime beachfront defences and pillbox guard posts inland. There is the potential to accentuate and enhance these heritage assets whilst laying the landfall infrastructure.

Material Palette

4.2.4 - Material choice and construction technique should be sensitive to the surrounding natural environment and heritage assets. Materials should be locally sourced and natural materials.

Vegetation

4.2.5 - Vegetation removed from the landfall area should be reinstated or replaced with the same or similar types of vegetation. For example mature trees should be replaced with at least heavy standards. Locally native species should also be used.



Example landfall area

Section 5

ECC Design Code Principles

5.1 - Introduction

5.1.1 - The onshore ECC extends from Fraisthorpe to Cottingham crossing the local landscape character areas of Open Farmland (LCA 19) and North Holderness Open Farmland (LCA 19C). The key characteristics of these landscape types include a gently undulating topography containing clusters of woodland, various waterbodies, drainage ditches and native hedgerows. Where the onshore ECC results in the loss of such habitat and landscape features within the confines of the route, these should be reinstated to preserve and protect the landscape character. In some instances when pedestrian routes come into contact with the onshore ECC there is additional opportunity to improve seating, interpretation and wayfinding.

Onshore ECC Area

Existing Attributes / Elements

Clusters of mixed native woodland and individual mature trees in proximity to the onshore ECC area

Native hedgerows create ecologically rich field boundaries in proximity to the onshore ECC

PRoW, paths and bridleways in proximity to the onshore ECC

Various waterbodies sit in and around the onshore ECC including Bealey's Beck, Scorborough Beck and Skerne Wetlands

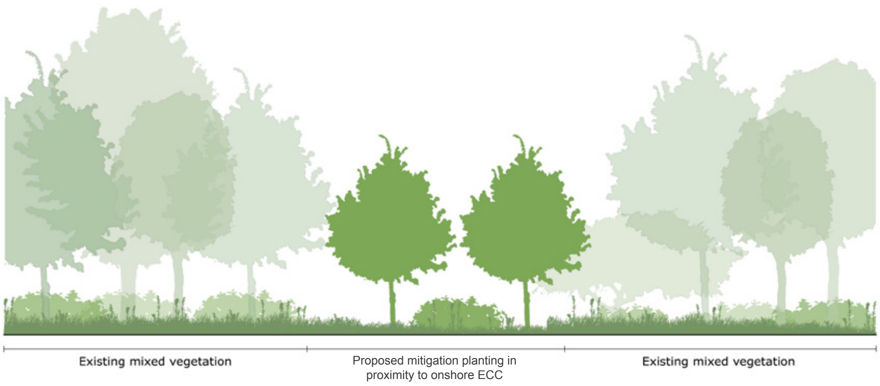
There are multiple listed structures, heritage assets and places of interest in proximity to the onshore ECC

5.2 - Mitigation, reinstatement & treatments

5.2.1 - Appropriate landscape interventions should be introduced to mitigate the impact of the ECC route on existing features. This could include the reinstatement of any lost woodland or vegetation. Interventions could include introducing wayfinding, public art and focus attention towards heritage assets and local destinations along the route. This would create an opportunity to improve pedestrian connectivity where the route passes between Fraisthorpe and Cottingham.

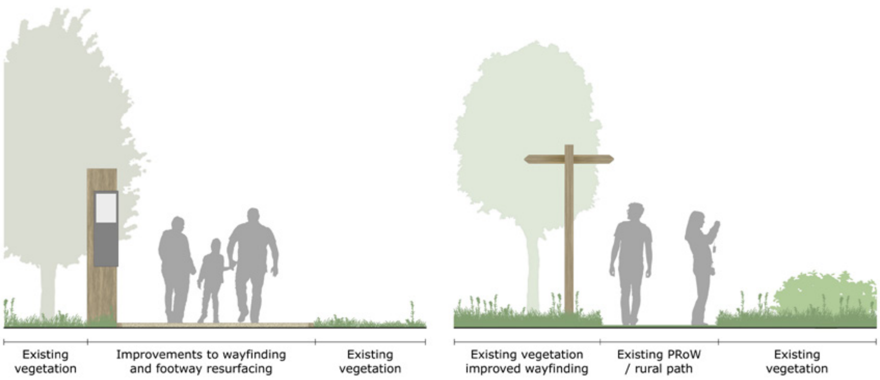
Vegetation

5.2.2 - Vegetation removed along the onshore ECC should be reinstated or replaced with the same or similar types of vegetation. For example mature trees that are lost should be replaced with locally native species to match those removed.



Access

5.2.3 - PRoWs or pathways directly effected along the onshore ECC route should be replaced with similar or improved materials. Sigange could also be improved along these PRoW routes to generally improve wayfinding to surrounding local destinations.



Places of Interest

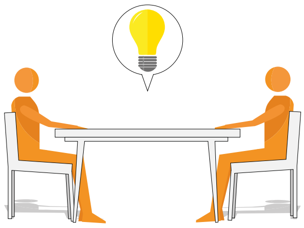
5.2.4 - Places of interest, listed structures and heritage assets along the onshore ECC should be circumvented if possible. There is potential to enhance these locations with new signage or other infrastructure.

5.3 - Public Engagement

Example of public consultation for all design areas.

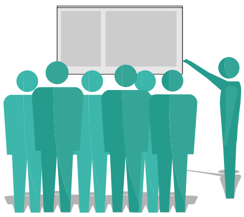
Research and Investigation

Thorough background research and baseline studies will be undertaken to provide a strong evidence base to the engagement



Confirm Consultation Approaches

Consultation approaches will be confirmed at an early stage guided by the target audience key outcomes to be achieved

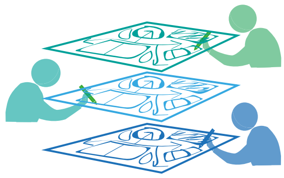


Formal Presentations

Presentations held in March and MAy-June with the OnSS working group and Local Interest Groups will allow direct engagement and a platform to educate the audience

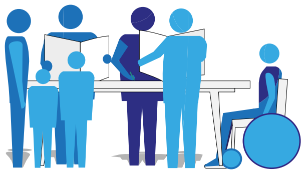
Online surveys and questionnaires

Online surveys and questionnaires hosted on Commonplace, remove barriers to engagement and allow for easy participation and quick information gathering



Workshops and technical sessions

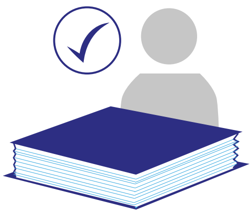
Workshops will allow for direct public participation and input into the design process during the DCO submission and between Section 42 and 47 of consultation



Open Exhibitions

Open public events showing scheme proposals and narrating the design process will allow the public to full engage and understand the proposals. specialists will discuss and answer questions from the public. Notable these include :

- Monday 2nd at Barmston and Fraisthorpe Village Hall, YO25 8PG
- Tuesday 3rd at Lockington Village Hall, YO25 9SN
- Wednesday 4th at Cottingham Civic Hall, HU16 5QG
- Saturday 7th at Foston on the Wolds Village Hall, YO25 8BJ



Final Reporting

Ensure comments are fed back into the final design and shown as a clear narrative in the report.

Section 6

Summary

6.1 - Summary

6.1.1 - Reflecting on the design principals outlined in this document :

- The most appropriate forms are simple, low level structures that can be arranged to provide additional screening of electrical aparatus. Consolidating the built form into fewer, larger buildings will help create a cohesive aesthetic. Smaller scattered buildings should be avoided as they can create visual clutter.
- The built form offers the opportunity to introduce more than one colour / texture to the OnSS. The use of two/three colours will assist in breaking up the overall visual mass of the buildings whilst helping to integrate them into the wider rural setting. Muted colours most notably greys, browns and greens are most effective for visually mitigating the built forms.
- The hard landscape should also be integrated into the rural setting through the use of free draining surfaces and neutral colours. The use of concrete across the site for apparatus footings., access roads etc. should be minimised where possible to reduce the impact on the landscape.
- Landscape treatments should reflect the local rural setting and include only native species. This should be used at the periphery of the site to provide additional screening.
- Any earthwork treatments should create subtle, organic forms and aim to avoid hard edges that would conflict with the gently undulating local landscape. Any diverted PRoW should utilise existing hedgerows and additional planting should create an attractive green corridor creating an attractive setting for the diverted route as well as providing visual mitigation of the OnSS site.

Section 7

References

7.1 - References

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