Volume 1: Design and Access Statement

Norfolk – Met Mast Planning Application

08/11/2022

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1. INTRODUCTION

Background

1.1. This Design and Access Statement forms part of a Planning Application submitted to South Holland District Council as Local Planning Authority ("LPA"), on behalf of Victre, ("the Applicant"), for a proposed Meteorological Mast ("Met Mast") (the "Proposed Development") within land north and south of Main Road and east of Dawsmere Road, Gedney Drove End which can be found at Grid Reference E543285 N329303.

Development Description

1.2. The development will consist of a temporary Met Mast up to 140m high. The mast would gather a range of meteorological data during the c. 18-month period as part of the overall feasibility assessment for the Electrolysis, Wind and PV at Jepco, including the repowering of Red House Wind Farm.

Site Description

1.3. The area of the Proposed Development lies at an elevation of approximately 3m Above Ordnance Datum (AOD). It is centred at approximate Grid Reference E543285 N329303 and is located on lands north and south of Main Road and east of Dawsmere Road, Gedney Drove End.

1.4. Located in a single field comprising agricultural land, the site is currently being used for arable farming. The field itself is bound by a mixture of trees, hedgerows and post-and-wire fencing. Access will be gained from the existing entrance off the B1359, to the south of the site. The Application is c. 6.5km North of Long Sutton and c. 8.5km northeast of Holbeach.

ROLE AND PURPOSE OF THE DESIGN AND ACCESS STATEMENT

1.5. This DAS has been prepared in accordance with Article 9 of the Town and Country Planning Act (Development Management Procedure) (England) Order 2015[1] ("the DMPO") and National Planning Practice Guidance ("NPPG") which set out the requirements for Design and Access Statements.

1.6. The NPPG states that a Design and Access statement must:

[1] https://www.legislation.gov.uk/uksi/2015/595/article/9/made

a) Explain the design principles and concepts that have been applied to the proposed development; and

b) Demonstrate the steps taken to appraise the context of the proposed development, and how the design of the development takes that context into account.

1.7. The NPPG also sets out what should be included in a Design and Access Statement and makes the following points:

- *A development's context refers to the particular characteristics of the application site and its wider setting. These will be specific to the circumstances of an individual application and a Design and Access Statement should be tailored accordingly.*
- *Design and Access Statements must also explain the applicant's approach to access and how relevant Local Plan policies have been taken into account. They must detail any consultation undertaken in relation to access issues, and how the outcome of this consultation has informed the proposed development. Applicants must also explain how any specific issues which might affect access to the proposed development have been addressed.*

1.8. The purpose of this document is to demonstrate that the Applicant has fully considered the design and access issues as part of the comprehensive preparation of the scheme prior to submission of the planning application. This report therefore covers the following matters:

- Use – what buildings and spaces will be used for;
- Amount – how much will be built on site;
- Layout – how the buildings and public and private spaces will be arranged on site, and the relationship between them and the buildings and spaces around the site;
- Scale - how big the buildings and spaces would be (their height, width and length);
- Landscaping - how open spaces will be treated to enhance and protect the character of a place;
- Appearance - what the building and spaces will look like, for example, building materials and architectural details; and
- Access - why the access points and routes have been chosen, and how the site responds to road layout

1.9. This Design and Access Statement should be read in conjunction with the accompanying Planning Statement which assesses the planning policy context relating to the design and access issues of the Proposed Development.

2. THE SITE & POTENTIAL ENVIRONMENTAL IMPACTS

THE SITE

2.1. The area of the Proposed Development lies at an elevation of approximately 3m Above Ordnance Datum (AOD). It is centred at approximate Grid Reference E543285 N329303 and is located on lands north and south of Main Road and east of Dawsmere Road, Gedney Drove End.

2.2. Located in a single field comprising agricultural land, the site is currently being used for arable farming. The field itself is bound by a mixture of trees, hedgerows and post-and-wire fencing. Access will be gained from the existing entrance off the B1359, to the south of the site. The Application is c. 6.5km North of Long Sutton and c. 8.5km northeast of Holbeach.

2.3. The location has also been selected so that reasonable access of the highways is afforded without necessitating unnecessary travel distances or effects to the land from vehicles.

POTENTIAL ENVIRONMENTAL IMPACTS

Landscape & Visual

2.4. The Proposed Development is within the **Fens National Character Area (NCA 46) and Character Zone WSH4 (Reclaimed Wash Farmlands within The Wash Character Area)** situated southeast of Boston Town. Major roads such as the A17, c. 4.0km south southeast of the site at its closet point and the B1359 c. 1.7km south of the site at its closest point, often providing distant views across the landscape.

2.5. As identified in the National Character Area Profile for the UK[2], the site, (situated within NCA 46) comprises of highly fertile fields, typically of medium-large to large-scale, flat, open landscape with extensive vistas to level horizons.

2.6. The proposed development site will be physically altered by the introduction of the proposed met mast. Parts of the site may be excavated to accommodate foundations at the mast location and ground anchors will be constructed to secure the mast via guy wires. The construction of the mast will introduce a new human-made feature to the baseline landscape.

2.7. Beyond this intervention, the construction and operation of the proposed met mast will make limited physical alteration to the site. The footprint of the proposed changes comprises a

[2] http://publications.naturalengland.org.uk/publication/6229624?category=587130

small area of land and will be exerted over a short timeframe. The physical disturbance to the site is wholly reversible and a commitment is in place to remove all foundations/ anchor points and restore the disturbed land to its previous condition.

2.8. Although the proposed met mast represents a new, tall structural element of the baseline landscape, it is designed to be slender and unobtrusive by virtue of its form, materials, and colour. Where the met mast forms an evident component of the landscape character:

- Near the site - visibility would be limited to the upper portions of the met mast and frequently restricted by intervening vegetation; and
- In longer distance viewing opportunities - particularly where the NCA 46 forms a backdrop to more settled/populated areas such as in the vicinity of Holbeach Town, although a visible component of the skyline the met mast would not have sufficient mass to form a defining element of the landscape.

2.9. Beyond a viewing distance of 1.5 – 2.5 km a met mast of this height may be a discernible feature of the wider landscape; however, the limited mass of the design and the matt finish of the tubular construction mean they lack the substance to significantly alter the setting or appreciation of the baseline landscape conditions.

2.10. **Overall significant landscape and visual effects resulting from the introduction of the Proposed Development on landscape and visual receptors are considered unlikely.** Given the flat elevated topography of the land, nearby residential receptors, limited visual effects are not predicted upon the residential visual receptors, road users or recreational users.

Ecology

2.11. The proposed mast location and access routes have been appraised using survey information gathered by Avian Ecology during their 2021 Phase 1 Habitat Survey performed on the 11th of May 2021. The survey data includes full coverage of the proposed met mast location.

2.12. The met mast will be positioned on arable and horticulture habitat, which is not a priority habitat, nor holds any significant ecological importance. This habitat is not considered to present constraint to the Proposed Development.

Ornithology

2.13. Multiple ornithology surveys were undertaken from the 26th of January 2021 until the 14th of June 2022, the area surveyed includes the Proposed Development site. Based on the species present, no additional collision risk modelling will be required over what is necessary for the Proposed Development of the wind farm, which is being undertaken by Avian Ecology.

2.14. Mitigation outlined in NatureScot's 'Guidance - assessment and mitigation of impacts of power lines and guyed meteorological masts on bird' can be considered if required, including the installation of bird diverters on the guy wires to further reduce potential collision risk.

Geology, Hydrology & Hydrogeology

2.15. The Proposed Development is located within an area which would be at risk from coastal flooding if no formal flood defences were in place. However, there are defences in place which are in 'fair' condition and reduce the risk of flooding to a 1 in 150 chance each year. Taking into account the 1 in 200 year breach flood event, the maximum depth of flooding at Application Site is likely to be 0.5m to 1.0m depth.

2.16. Although the Proposed Development isn't outlined within any of the vulnerability guidelines, it is considered appropriate for this to be classed as 'Water Compatible' as it is merely a mast with guy ropes. The minimum height of the weather equipment will be approximately 30m AGL and therefore won't be affected by any flooding. Using the 'Flood Risk Vulnerability' Classification, 'Water Compatible' infrastructure is appropriate in any flood zone.

2.17. There will be no requirement for any formal drainage due to the negligible amount of land take form the Proposed Development.

Historic Environment

2.18. As part of a wider development encompassing the area of the proposed mast, a walkover survey and Historic Environment Record search has been undertaken for the proposed development site. No recorded archaeology or heritage assets are located within close proximity to the proposed mast, while the walkover survey similarly did not identify any features of archaeological interest in its vicinity.

2.19. The only designated asset present within a 1km study area is the Grade II listed Wiles Farmhouse (1359232), located c. 700m to the north of the proposed mast. The walkover survey identified that the farmhouse is well screened in this direction and views with the mast are therefore unlikely.

2.20. A total of five non-designated assets from the Historic Environment Record are present within 1km, including:

- 1635 Sea Bank, Gedney Dawsmere (MLI80730), located c. 500m to the east-northeast
- Wiles Farmhouse, Gedney (MLI94578), located c. 700m to the north (duplicate of the Grade II listed building)
- Parklands, Gedney Dawsmere (MLI90052), located c. 800m to the west-northwest
- Fleet Light Railway (MLI22107), located c. 800m to the northwest

- Norfolk House, Gedney (MLI94409), located c. 890m to the southeast

2.21. The features are all located far from the proposed mast and will not be directly impacted. Similarly, no sub-surface archaeology is expected to be at risk of direct impacts from the proposed mast. Indirect effects upon the above, as well as all other heritage assets in the surrounding landscape, are anticipated to be negligible.

3. DESIGN DETAILS

3.1. The development will consist of a temporary Met Mast up to 140m high. The mast would gather a range of meteorological data during the c. 18-month period as part of the overall feasibility assessment for a future wind farm proposal. The mast would involve steel guy wires connected to anchors to secure the mast in place.

3.2. A meteorological monitoring system would be mounted onto the mast fixed to horizontal booms. This would consist of a series of anemometers, wind vanes and a data logger, solar panels, temperature sensor and antenna. The equipment would gather a range of meteorological data during in order to provide a detailed understanding of the area's wind characteristics.

3.3. While is it possible to monitor wind regimes with digital equipment that utilise sonar or radar technology, the quality of the data and therefore the accuracy of the predictions flowing from it are less compared to physically monitoring the wind resource at a range of heights using a static tall mast. For the purposes of design, impact assessment and project financing, particularly with high wind speeds that occur at this site, a meteorological mast is necessary.

3.4. The met mast would be centred at approximate Grid Reference E543285 N329303 which has been selected to ensure that accurate and representative measurements can be taken, Figure 2 shows the site layout.

3.5. The met mast will be a steel tube with a matt finish supported by guy wires/ropes, designed to not be obtrusive by virtue of its form, materials and colour. It will be fitted with monitoring equipment to record wind direction and speed and other data as follows:

- Wind speed at mast top;
- Wind speed measurements at intervals along mast body allowing for accurate measurement of wind shear;
- Wind direction;
- Temperature difference between top and bottom (~2 m) of mast;
- Absolute temperature measurement at bottom of mast (~2 m);
- Humidity;
- Rainfall; and
- Pressure.

3.6. Figure 4 shows an indicative met mast elevation drawing.

3.7. The wind data will be collected through a meteorological monitoring system which will be mounted to the mast by fixing it to small horizontal booms (supports on which equipment will sit). The meteorological monitoring system will include but not be limited to anemometers and wind direction sensors, thermometers and barometers. The anemometers would be located in accordance with International Standard (IEC 61400-12-1:2017), namely on booms separated by at least 20m with no booms below 30m, plus a top anemometer. This would provide up to 7 measurement heights with booms on either side or in some cases only on one side of the mast. The orientation of the booms will likely be fixed at 90 degrees in a horizontal position to the predominant wind direction.

3.8. A lighting rod would be fixed to the top of the met mast to protect the tower against any potential lighting strikes.

3.9. The met mast would be secured by either a raft or concrete foundation at the mast point and will usually be secured in-situ by at least three guy ropes connected to the ground.

3.10. The met mast is proposed as part of the application for the Electrolysis, Wind and PV at Jepco, including the repowering of Red House Wind Farm. It is standard practice for a wind farm development to seek separate permission for a met mast as part of the wind farm development process. The met mast is required to gather data about the wind conditions on the site including speed, direction, pressure, and temperature.

3.11. The Applicant has chosen this location for the development of a wind farm for a number of reasons including good wind resource across the site. The met mast will not inform the layout of the proposed Electrolysis, Wind and PV at Jepco, including the repowering of Red House Wind Farm but is required for due diligence.

4. ACCESS DETAILS

4.1. Vehicular access to the site will be taken via the B1359. It is anticipated that the mast will travel to site via the A17 then onto the B1359. The Access Point can be seen on Figure 2. Access will be gained from the existing entrance off the B1359, to the south of the site.

4.2. The mast will be brought to site using 4 x 4 all-terrain vehicles with trailers. No specialist vehicles, cranes or lifting equipment are expected to be required for the installation. Transport of staff and equipment onto the site will also be by 4 x 4 all-terrain vehicles by the most direct route. It is expected that of the order of two vehicles will access the site per day during the installation, i.e. one vehicle plus trailer for equipment plus another vehicle carrying the installation team.

4.3. During the operational phase, the meteorological data will be gathered through a data logger, downloaded and analysed remotely via a GSM or satellite connection, reducing the requirement for frequent visits to the site. The only visits required would be for inspection and maintenance purposes to ensure the safe operation of the met mast. The operation of the mast will not therefore give rise to any significant additional traffic.

4.4. Access will also be required for the dismantling of the mast at the end of the temporary period. This will be carried out by similar vehicles to those used during installation. Following the temporary operational period, the mast would be removed from site and the land restored to its former (current) condition. The process of decommissioning would be the reverse of the construction phase.

5. SUMMARY

5.1. Victre are proposing to erect a temporary wind monitoring mast of up to 140m in height for a period of up to c. 18 months as part of the overall feasibility assessment for the Electrolysis, Wind and PV at Jepco, including the repowering of Red House Wind Farm.

5.2. The area of the Proposed Development lies at an elevation of approximately 3m Above Ordnance Datum (AOD). It is centred at approximate Grid Reference E543285 N329303 and is located on lands north and south of Main Road and east of Dawsmere Road, Gedney Drove End.

5.3. Located in a single field comprising agricultural land, the site is currently being used for arable farming. The field itself is bound by a mixture of trees, hedgerows and post-and-wire fencing. Access will be gained from the existing entrance off the B1359, to the south of the site. The Application is c. 6.5km North of Long Sutton and c. 8.5km northeast of Holbeach.

5.4. The appropriateness of the location and design of the project has been considered, taking into account environmental, technical and safety issues. The proposed wind monitoring mast is considered to represent an acceptable development in design and access terms. The proposed location of the mast is shown in Figure 1 and has taken into consideration technical, and environmental constraints as follows:

- Technical suitability: the Applicant has chosen this location for the development of a wind farm for a number of reasons including good wind resource across the site. The met mast will not inform the layout of the proposed Electrolysis, Wind and PV at Jepco, including the repowering of Red House Wind Farm but is required for due diligence.
- Land use: the mast will be located on land that is currently used for sheep grazing. Existing activities can continue at the site as no other development will take place at ground level.
- Ground conditions: ground conditions are suitable for the installation of the mast and secure anchors.
- Ecology: The proposed mast location and access routes have been appraised using survey information gathered by Avian Ecology during their 2021 Phase 1 Habitat Survey performed on the 11th of May 2021. The survey data includes full coverage of the proposed met mast location. The met mast will be positioned on arable and horticulture habitat, which is not a priority habitat, nor holds any significant ecological importance. This habitat is not considered to present constraint to the Proposed Development.

- Ornithology: Multiple ornithology surveys were undertaken from the 26th of January 2021 until the 14th of June 2022, the area surveyed includes the Proposed Development site. Based on the species present, no additional collision risk modelling will be required over what is necessary for the Proposed Development of the wind farm, which is being undertaken by Avian Ecology.
- Geology, Hydrology & Hydrogeology: There will be no requirement for any formal drainage due to the negligible amount of land take form the Proposed Development.
- Landscape: Significant landscape and visual effects resulting from the introduction of the Proposed Development on landscape and visual receptors are considered unlikely. Given the flat elevated topography of the land, nearby residential receptors, limited visual effects are not predicted upon the residential visual receptors, road users or recreational users.
- Site restoration: no restoration will be required following removal of the mast from site.
- Access: The location has also been selected so that reasonable access of the highways is afforded without necessitating unnecessary travel distances or effects to the land from vehicles.

6. APPENDICES

- Figure 1: Site Location Plan
- Figure 2: Site Layout Plan
- Figure 3: Site Block Plan
- Figure 4: Elevations
- Figure 5: Viewpoints with ZTV
- Figure 6: Wireframes and Photomontages