



DESIGN AND ACCESS STATEMENT

**PROPOSED SITING OF 1 WIND TURBINE WITH A MAXIMUM
TIP HEIGHT OF 67m**

**New Maythorne Farm
Crow Edge
Holmfirth
South Yorkshire
HD9 7TW**

**Our Ref: P1629
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Contact

Sam Dewar
Sam.dewar@earthmill.co.uk

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PREFACE

Context

This Design and Access Statement has been prepared by Earthmill LTD on behalf of I & JL Smith (the "Applicant") to accompany a planning application for the construction of a wind turbine with a tip height of up to 67m, including associated development (the "Proposed Development") at New Maythorne Farm (the "Application Site").

This Design and Access Statement explains the design principles and concepts that have informed the Proposed Development and how transport and access issues have been considered.

The Applicant

Earthmill are a Yorkshire based company and the largest 50-500kW wind turbine supplier and installer in the UK. Specialising in the agricultural industry Earthmill handle every stage of wind turbine projects from site feasibility through to installation.

It is proposed to connect the turbine directly into the existing farm business. The Applicant currently uses in excess

of 60,000 kWh of electricity per year and it is anticipated that this will double to 120,000 kWh over the next 5 years as the agricultural business continues to grow. The farm also uses 10,000 litres of oil each year to provide heating to the farmhouse and outbuildings. Once the turbine is installed oil fired heating/Aga facilities will be converted over to electric. As well as utilising a renewable energy source this will also have other environmental benefits such as reducing the number of deliveries to the farm.

The financial stability of a turbine will also help to bring new investment into the business and facilitate continuing improvements to buildings and infrastructure as well as fund an on-going programme of maintenance of the farm's extensive estate to allow for the next generation of Smith Family to continue working the business.

The Farm is reviewing their current position and intending to be part of a registered Environmental Stewardship Scheme and under this scheme the farm will agree to repair and maintain hundreds of metres of its dry stone walls in order to help protect the distinctive character of the area and

providing suitable walking/bridleways across the estate.

Income generated through the proposed wind turbine will assist the long term repair and maintenance of these important landscape features as well as enable the farm to help further manage its land holding including new hedgerows within the land surrounding the proposed site.

Viable farms are essential if the rural landscape is to continue to be managed; thereby protecting its distinctive character, maintaining its condition and environmental quality and encouraging biodiversity. This is particularly important in the marginal Pennine Fringe in which the farmstead is located.

The 72 Ha livestock (Beef/Sheep/Pigs) farm employs 2 full-time and 1 part time staff and supports other small businesses and sub-contractors in the local supply chain. The farm specialises in high quality produce, and promotes high animal welfare standards and has an environmentally friendly ethos. The proposed turbine is a key component to improve energy efficiency, lower energy costs, reduce reliance on fossil fuel and enable the business to become carbon neutral.

The Farm is a high end energy user, in particular throughout certain seasons i.e lambing season, where a considerable amount of electricity is required for farming activities. The supply of clean and affordable electricity is very important. The turbine will enable the farm to reduce its energy costs, keep its margins low and allow it to supply produce at prices that are attractive to consumers and remain competitive.

The design, construction and project management of the proposed wind development will create an increase in full time jobs (measured as 1 job equal to 50 person weeks and calculated using the former RDA's/ European Commission job creation methodology). A further 1.5 full time jobs will be created over the expected 20 year lifetime of the turbine.

Screening

National Planning Practice Guidance states that 'screening' is a procedure used to determine whether a proposed project is likely to have significant effects on the environment. It should normally take place at an early stage in the design of the project.

Figure 1.1 shows the flowchart process involved for the internal screening and feasibility of each Earthmill project. This is a long and expansive process which then determines whether or not a project requires an Environmental Impact Assessment (EIA).

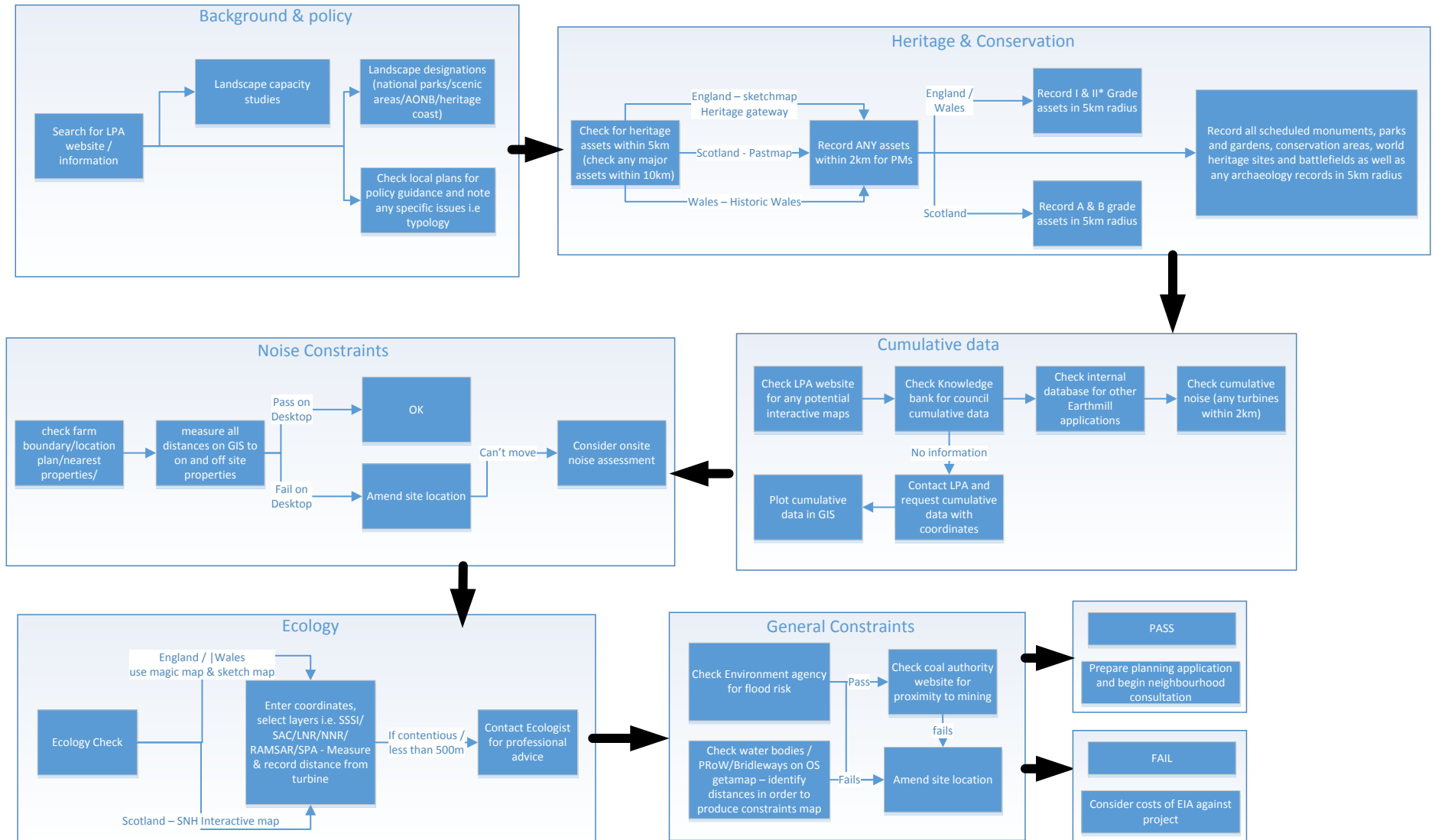
In the vast majority of circumstances Earthmill would not consider a submission of a full EIA as it can have a significant impact upon the viability of the proposal. As such if it is considered that the project is marginal and likely to be above the thresholds stated in Schedule 2 of the planning guidance then a second opinion might be sought with the local planning authority (LPA) in the form of a screening opinion.

In this case and following a full screening and feasibility of the project it was considered that a screening opinion from the LPA was not required as it falls within the thresholds as identified. As such an EIA has not been submitted for the application to be considered by the LPA.



Photograph of existing Earthmill Turbine at a Dairy Farm land holding

Figure 1.1 Earthmill internal screening and feasibility process



Methodology

The design process involved in formulating the design of the Proposed Development has been led by a combination of environmental design and engineering requirements. The aim has been to arrive at an appropriate layout in terms of maximising the energy yield whilst seeking to avoid or reduce environmental effects.

The Design and Access Statement has an important role in contributing to the design process through the clear documentation of design evolution.

Wind turbines are a sustainable form of development and the potential environmental effects are usually associated with the construction period and the temporary effects during the operational period of wind turbines on landscape and visual amenity. The Proposed Development has therefore been developed with environmental considerations at the forefront of both site selection and site design.

The Application

This planning application is submitted in full and in addition to this Design and



Photograph of existing Earthmill Turbine at an arable Farm land holding

Access Statement is accompanied by the following documents, which should be read together:

- Design and Access Statement;
- Site and turbine drawings;
- Candidate noise data; and
- ZTV drawings, photos and Visualisations.

1 INTRODUCTION

1.1 This Design and Access Statement has been prepared to support the proposal by the Applicant for the construction of a wind turbine at New Maythorne Farm, in the local authority boundary of Barnsley Metropolitan Borough Council. The host Parish Council is Dunford Civil Parish.

1.2 The application is accompanied by a full suite of supporting documents. This Design and Access Statement provides important site specific context to be read in conjunction with the Planning Statement and the planning application as a whole.

1.3 Article 2 of the Town and Country Planning (Development Management Procedure (England) Order 2010) seeks to provide a requirement for a Design and Access Statement with all planning applications, the content of which is dependent upon the extent of development, with certain

proposals being omitted from the requirement. It has also taken account of the CABE publication 'Design and Access Statements – How to Write, Read and Use Them'.

1.4 In accordance with the guidelines published by CABE, the proposed wind turbine has been based on the following:

- Design Component including Assessment; Involvement; Evaluation and Design; and
- Access Component

1.5 This Design and Access Statement has been prepared to explain how this development proposal has evolved and an analysis of the proposed site and its context and consideration of design and access principles relevant to a proposal of this nature.

1.6 The Design and Access Statement should explain the design principles and concepts that have been applied to the development, relating to the:

- **Amount** – on site constructed quantities;
- **Layout** – the buildings and the spaces in between and the

relationship of these to the surrounding environment;

- **Scale** – height, width and length of each proposed building and space between;
- **Landscaping** – any landscaping associated with the development;
- **Appearance** of the development – what the finished development will look like; and
- **Access** - how issues relating to access to the development have been dealt with; the reasons for choosing the main point of access to the site; the layout of internal routes; and how features which ensure access will be maintained.

1.7 In light of the above, this Design and Access Statement therefore describes the principles that have shaped and influenced the design of the Proposed Development.

1.8 In doing so it draws upon the technical assessments that have been undertaken as part of the planning application. All of these studies have, to a certain extent, influenced the evolution of the eventual

project assets design and access arrangements, as have the input of various consultees and stakeholders. At each stage of the design process, potential environmental impacts were assessed and elements of the proposals were amended to eliminate, reduce or offset potential adverse effects.

1.9 The site layout plan (extract shown in figure 1.2 below) shows the boundary of the overall Site edged in blue as well as the location of the proposed turbine and cable route. This takes into account all the technical and environmental constraints associated with the project.

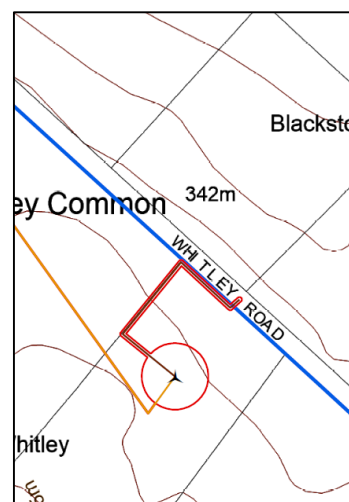


Figure 1.2 Site layout extract

2 SITE LOCATION AND CONTEXT

Site Location

- 2.1 The application site area covers less than 0.1ha and is located on land within the land holding of New Maythorne Farm.
- 2.2 The site within which the turbine is located is primarily used as a livestock farm over a site in excess of 72Ha.

Site Context

- 2.3 The closest settlements to the site are Hepworth and Meal Hill approximately 3.5km to the north west and the larger settlement of Penistone which is located approximately 5.5km to the south east.
- 2.4 The closest off-site properties is Lower Maythorne Farm which is located behind the host property and approximately 680m from the turbine location. All other off-site properties are located over 830m away from the turbine location.
- 2.5 The host property, New Maythorne Farm is situated

approximately 475m to the west of the proposed turbine. Farmland and grassland as well as a number of farm buildings can be found within close proximity.

- 2.6 The application site is located within an area of Green Belt as part of the Barnsley Development Plan. The accompanying planning statement discusses the impact of the proposal on the green belt and demonstrates the Very Special Circumstances that exist.

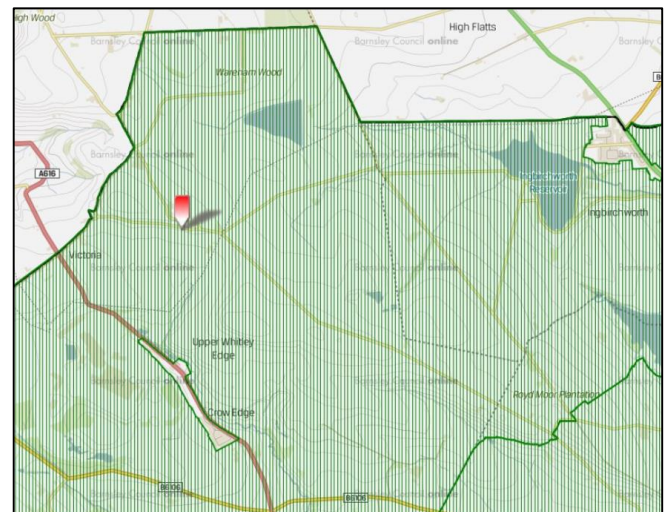


Figure 1.3: Extract from Barnsley MBC Policy Map showing Green Belt allocation

3 USE AND AMOUNT

On Site Works

3.1 The Proposed Development includes the following:

- one turbine up to 67m in height (to tip blade);
- turbine foundation;
- hard-standing areas for erecting crane;
- access tracks; and
- small external turbine transformer meter housing

3.2 All electricity cabling connecting the wind turbine to the farm would be located underground. An existing connection to the local network for surplus energy is already on site and would require minor alteration and improvement by the distribution network operator.

3.3 The proposed development, including the main elements as noted above are presented within this document or shown within the application drawings.

3.4 Once the Proposed Development is constructed,

the land between the turbines will continue to be used for agricultural purposes. A wind turbine development rarely occupies more than 1% land coverage of a total farm landholding.

3.5 The development would be time limited to 25 years from the first date of electricity export and would include a construction phase (approximately 2 weeks), an operational phase (25 years) and a decommissioning phase (approximately 2 weeks).

The Chosen Turbine

3.6 A number of design objectives particular to this development have been established, drawing on the design advice and consultation process. Through this method the Proposed Development has evolved to meet these guidelines.

3.7 Figure 1.4 shows a typical modern wind turbine, comprising a three bladed rotor hub mounted on a nacelle (containing gearbox and

generator), tower and foundation.

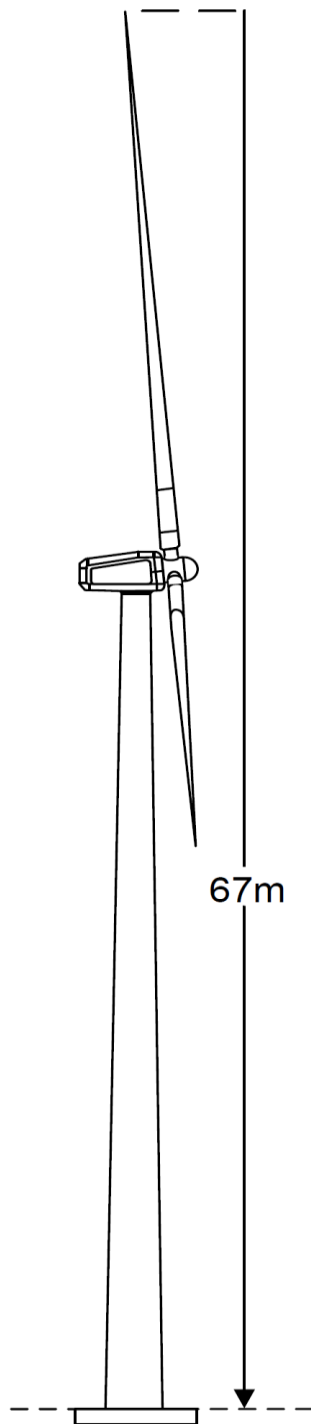


Figure 1.4 Proposed wind turbine

3.8 There are many factors which normally determine the amount of development (i.e. turbine numbers and height) proposed for a wind turbine. In this case, these factors are primarily the need to achieve maximum distances from nearby residential properties, the nature of the local landscape and need for an appropriate composition.

Wind Turbine Operation

Operational Timescale

3.9 Following construction and commissioning, the wind turbine would be operational and generating electricity for a period of up to 25 years, after which time it would be decommissioned.

Maintenance

3.10 Wind turbine maintenance would be carried out by the turbine supplier and later by suitably qualified contractors who would visit the site to carry out regular inspection and maintenance activities. The following wind turbine

maintenance would be carried out, along with any other maintenance required by the supplier's specifications:

- initial trial run and service;
- routine and non-routine maintenance and servicing; and
- blade inspection.

3.11 Routine servicing and maintenance would include the performance of tasks such as maintaining bolts to the required torque, adjustment of blades and inspection of welds in the tower. In addition, oil sampling and testing from the main gearbox would be required and oil and components replaced at regular intervals.

3.12 In the event of any unexpected breakdowns on-site, such as the failure of a generator or gearbox, appropriate maintenance works would be carried out immediately.

3.13 On-going track maintenance, should it be required, would generally be undertaken in the summer months when tracks

are dry. Safe access for maintenance purposes would be maintained all year round.

Decommissioning

3.14 Decommissioning phase will take approximately two weeks and consists of the following:

- Reinstatement of access tracks;
- Break out of foundation slab and substation plinth and disposal of waste concrete;
- Removal and disposal of substation housing;
- Isolation and removal of electrical supply and cabling with the Distribution Network Operator;
- Turbine break down and removal;
- Access track excavation where necessary; and
- Disposal and recycling of tower, blades, cables and electrical components.
- Following completion of the decommissioning phase, the land will be returned to its original state.

4 LAYOUT

Technical Constraints and Parameters

4.1 The starting point for the design of the site is the preparation of a detailed constraints map which sets out all relevant buffer distances, key features and other factors that constrain the location of wind turbines.

4.2 This process plays an important role in this process as it enables all the technical constraints to be identified which could restrict the location of wind turbines.

4.3 The following technical parameters were taken into account in the design process:

- taking into consideration topography and local 'roughness' to ensure the most 'wind appropriate' location for turbine;
- over-sailing distance from the site boundary (15m buffer inside the site boundary based on the potential rotors/blades under consideration);

- distance to residential properties;
- statutory distances to nearest adopted roads;
- statutory distances to ecological constraints such as (consistent) hedgerows, tree lines, woodlands and watercourses;
- statutory distance to any mains gas pipeline or electricity transmission lines;
- over-sailing distance from any footpaths and bridleways or any other public rights of way;
- consideration of flood risk zones;
- check status of coal mining history,
- consideration of other turbines in the area;
- appropriate distances to any cultural heritage assets; and
- any other buffer and statutory distances required to sensitive site specific receptors.

4.4 Figure 1.5 below shows an extract from the desktop site

constraints exercise that was undertaken. It shows how the turbine was positioned to ensure that there are no detrimental impacts upon the aforementioned factors.

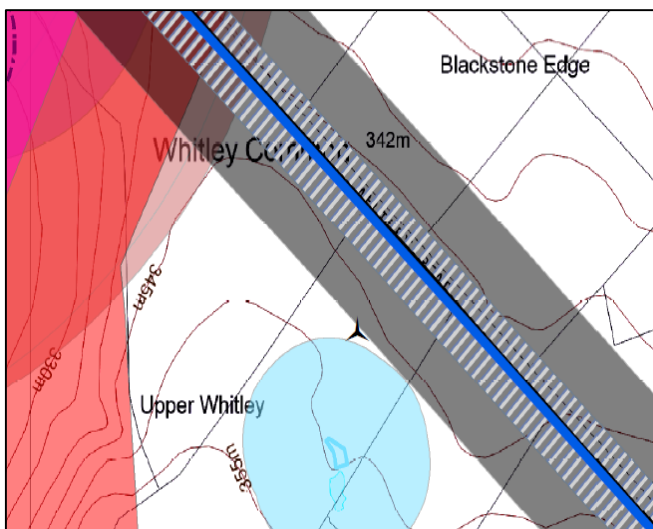


Figure 1.5: Extract from desktop site constraints drawing showing some buffer examples

4.5 The full drawing is shown in the appended drawing pack which forms part of the planning application. The reader's attention is drawn to the key which shows the buffer distances that have been applied to each constraint conforming to both local and national guidance.

Land Use

4.6 Consideration has been given to minimising the loss of farmland and the effects on farming practises during construction and operational phases of the development.

4.7 The land will continue to be farmed during and after construction as normal with the turbine and infrastructure occupying less than 1%.

Noise

4.8 The Site has been developed to ensure that minimum standoff distances can be achieved. The development is within the acceptable noise criteria set out in the Guidance document ETSU R-97.

4.9 Submitted with this planning application is a cumulative desktop noise assessment based on the emission data for a candidate EWT machine.

4.10 Two different locations were assessed whilst the design iteration process was underway. The predicted noise level of the proposed turbine is less than the cumulative noise

levels of the existing turbines at surrounding residential noise receptors for both 'T1' and 'T1 Alt' proposed locations.

4.11 It is considered that any impact from the proposed turbine would be 'masked' by noise from the existing turbines at these properties using either of the proposed locations.

4.12 Therefore it is considered that there will be no perceptible change in noise levels at residential noise receptors due to the turbine that is proposed.

Ecology and Ornithology

4.13 The proposed development will not have any adverse effects on key receptors that are significant in planning terms. The turbine is far enough away from hedgerows and treelines to ensure that there are no detrimental impacts upon bat foraging areas.

Archaeology and Cultural Heritage

4.14 Due to the application sites rural location the number of cultural heritage assets in close

proximity are limited. There are a number of Grade II listed buildings within 2km however these are primarily residential farm buildings.

Design iterations

4.15 The evolution of design has as such, been informed by all the proceeding matters as stated, including stand-off distances to, ecological constraints, public roads, public rights of way and landscape designations.

4.16 In one of the first design iterations the turbine was located closer to the south western boundary of the site on the edge of a prominent ridgeline. Not only was this location within the buffer zone for the adjacent bridleway but it was also evident from undertaking the visualisations that this was the most prominent part of the site.

4.17 Other locations were considered but again would have made the scheme very prominent in landscape amenity terms. As such it was considered that moving the

turbine back into the site and closer to the existing turbines it could be associated more within an existing group and as such would minimise its overall visual impact on the landscape.

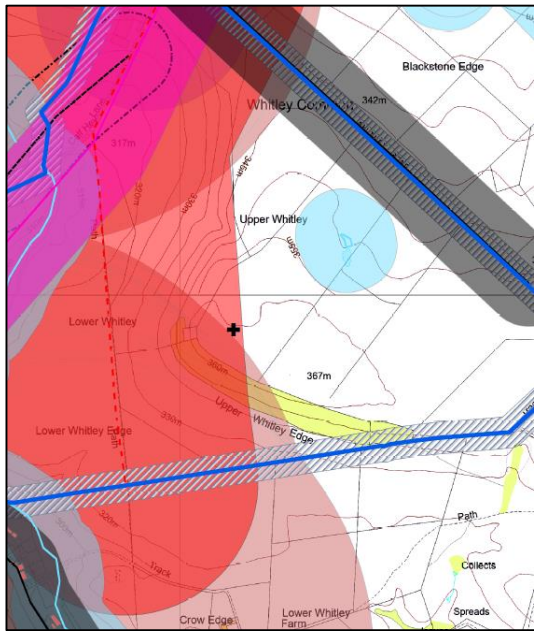


Figure 1.6: First design iteration of proposed turbine

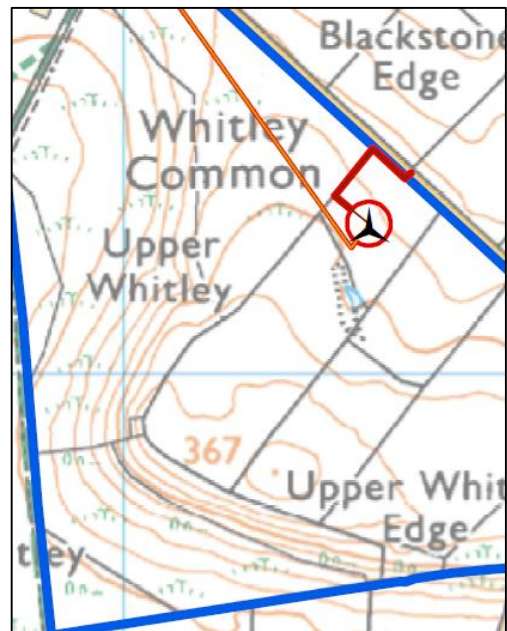


Figure 1.7: Final site location of proposed turbine

5 SCALE

Tracks

- 5.1 All on site tracks will be of compacted aggregate at a depth of approximately 370mm, a typical surface width of 4.5m with localised widening on curves and at junctions.

Topography

- 5.2 The topography of the site and the characteristics of the local landscape were a key consideration in the design of the project. Consultation responses received from the local community and other stakeholders affirmed the importance of ensuring the careful consideration of landscape effects in the design of the proposal.
- 5.3 Wireframe and visualisation analysis has been utilised to design a layout which relates well to the scale and landform of the site and its surroundings in order to minimise landscape and visual effects. The design provides a balanced and well composed layout.

Shadow Flicker

- 5.4 The effect referred to as 'shadow flicker' was similarly considered in the design process. Under certain combinations of geographical position and time of day, the sun may pass behind the rotors of a wind turbine and cast a shadow over nearby properties. It is not considered that shadow flicker will be an issue at this site due to the small scale nature of the proposed wind turbine.

Turbine Scale

- 5.5 The turbine proposed is for a machine with a maximum tip height of 67m. It is expected that a condition will be agreed with the Council to provide turbine details before work commences on site. This ensures maximum flexibility with turbine choice post planning allowing the applicant to remain competitive in the market and provide the most efficient turbine at the time of construction. This is particularly important as the planning

process can be particularly long.

- 5.6 Considerations of scale relate to the physical size of the proposed development. In deciding upon the size of turbine to install there is a balance to be struck between the aims of maximising power generation and ensuring that the environmental effects of the proposals are acceptable, bearing in mind landscape and visual effects (and potential concomitant noise emissions / shadow flicker effects).
- 5.7 Turbine size is a function of the height of the tower i.e. hub height and the radius of the rotor. The rated power increases exponentially as the rotor radius increases. Similarly, an increase in wind speed results in an exponential increase in power. For any given location wind speed rises with elevation above ground because of the effects of wind shear. Raising the hub height of machines can increase energy capture at any given site. In addition, nearby obstacles will

increase the turbulence in the wind.

- 5.8 Hence, from a power generation perspective there is a strong economic argument to install the wind turbines with the largest rotors at the highest possible hub height. However, the developer has balanced this economic factor against the need to ensure that the environmental effects of the proposed development are acceptable.
- 5.9 The main concern with wind developments is often considered to be the visual and landscape effects of the turbines which tends to increase with turbine size.
- 5.10 The scale of the wind turbine for the Proposed Development has been considered through the production and analysis of a comprehensive series of visualisations and wireframes for several different options.
- 5.11 The design process required several months of study and deliberation with refinements of the design being implemented

at a number of stages. This design process has involved input from all professional consultants that have participated.

- 5.12 The following section explores the Landscape Impact of the proposal with particular reference to the submitted ZTV drawings and accompanying visualisations.

6 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

6.1 The principal design objectives of the Proposed Development were as far as possible to:

- design the wind turbine and associated infrastructure to respond to the local landscape character, having particular regard to the content of the published landscape character assessments for the area, and provide an acceptable design solution in terms of scale, layout and visual composition;
- minimise landscape and visual effects on views from local residential properties and communities;
- achieve a simple, balanced, rational and coherent image when viewed in the local and wider landscape;
- minimise landscape and visual effects from recreational routes; and

- minimise landscape and visual effects from main transport routes.

Visualisations Methodology

6.2 The methodology used in preparing and producing the landscape and visual impact assessment follows the key standards and practices as recommended within Scottish Natural Heritage Guidance (SNH).

6.3 The photographs have been taken with a Canon EOS 5D mk2 full-frame DSLR camera at the focal length of a 50mm. The Horizontal field of view of each photograph is 39.6 degrees. The vertical field of view of each photograph is 27 degrees and the diagonal field of view is 46.8 degrees.

6.4 The visualisations have been produced using the industry GL Garrad Hassan WindFarmer software (version 5.2.11.0) using Digital Terrain Data: OS Land-Form PANORAMA, Version 04/2010. They have been produced using the principles of the Landscape

Institute Photography Advice Note 01/11, and Visualisation Standards for Wind Energy Development, Highland Council (May 2013).

6.5 The proposed candidate turbine modelled in the visualisations is based on a turbine with a hub height of 40m and a tip height of 67m. This is for the purposes of the visualisations as the planning consent seeks only a maximum tip height.

6.6 The visualisations form part of this planning application and show what the proposal would look like from 6 different viewpoints in the appropriate locations surrounding the proposal site.

6.7 Visualisations are used as an aid for the assessor to be read alongside the planning application to understand the perceived impact of the proposal in the landscape.

6.8 The viewpoints are taken from key receptors that have been identified on the submitted Zone of Theoretical (ZTV),

starting from the middle of the application site and working outwards across the ZTV to encompass all practical viewpoint directions.

6.9 The ZTV analysis takes account of topography that can only be referred to as "bald earth". No account is taken for the effects of existing vegetation, buildings and other structures. In reality these elements will provide significant screening of the proposed wind development. The hub height (nacelle) has been used to analyse the ZTV as this is the most prominent element of the turbine. The zone has been calculated to represent the area from which the turbine is theoretically visible.

6.10 The list of viewpoints and the brief reasons behind the receptor location is shown in figure 1.8 below.

Viewpoint (Grid reference Eastings and Northings)	Distance and Direction*
1 - Taken from the nearest neighbour - Lower Maythorn Barn (418784, 405610)	671.4m, NW
2 - Taken from the Victoria Crossroads (417855, 405336)	1456m, W
3 - Taken from a Public Right of Way near Hepshaw (417679, 405051)	1629.4m, W
4 - Taken from a Public Right of Way near Sledbrook Farm (418433, 404926)	907.4m, SW
5 - Taken from the Bents Road Junction on the A616 (419377, 403476)	1709.6m, S
6 - Taken from Swinden Walls on the Thurlstone Moors (419459, 401527)	3660.3m, S

Figure 1.8: List of viewpoints and reasons for selection

Viewpoint 1 – Nearest offsite property – Lower Maythorne Barn

6.11 This viewpoint was chosen because it attempts to illustrate the view from the nearest off site property at Lower Maythorn Barn. In this view you can clearly see New Maythorne Farm (onsite property) in the foreground and the proposed turbine over the hill in the background. At this viewpoint, the turbine is the most prominent feature but if you were to pan to the left of this photo you would see the larger scale turbines of Spicer Hill and Royd Moor Windfarms which largely dominate the landscape in this area. It is for this reason that the proposed turbine location has been moved to a more Northerly

position as it is therefore anticipated that the proposed turbine would not largely change the current view seen from the nearest neighbour and residential amenity as a whole.

Viewpoint 2 – Victoria Crossroads

6.12 This viewpoint was chosen because it shows how the turbine would be visible from the crossroads situated near to residential properties. From this view you can clearly see that the existing Spicer Hill and Blackstone Edge turbines dominate the current landscape. There are also electricity pylons and farm buildings from this viewpoint which reduce the impact from the proposed turbine.

6.13 It is anticipated that the visual impact of the proposed turbine

would be limited from this viewpoint as the eye is drawn to the larger turbines in the background. The impact is largely masked by the much larger installed turbines and other infrastructure and as such the net impact of the proposal would be minimal.

- 6.14 Overall it is considered that the new site location enables the turbine to be seen as a group with the existing turbines which further helps minimise the overall impact of the proposal.

Viewpoint 3 – Public Right of Way near Hephshaw

- 6.15 This viewpoint was chosen because it shows the adopted view from a Public Right of Way. From this viewpoint you can see a mix of vegetation, mainly trees, and major industry to the right which is anticipated to clearly drown out any noise coming from the proposed turbine. Again, as with viewpoint 2, there are the Blackstone Edge, Spicer Hill and Royd Moor Windfarms in the background which dominate

the view. Due to the scale of the chosen turbine it is expected that it will largely be in proportion with the currently installed turbines due to its proximity and location and would have very little impact on the view.

Viewpoint 4 – Public Right of Way near Sledbrook Farm

- 6.16 This viewpoint was chosen because it shows the adopted view from another Public Right of Way and a neighbouring farm (Sledbrook Farm).
- 6.17 In this view you can clearly see that it is largely obstructed by electricity pylons and one of the Blackstone Edge turbines just over the hill. The proposed turbine would sit just over the hill so that only the blades and some of the tower would be visible from this viewpoint.
- 6.18 It is clear from the photograph that the installed turbine would have a much bigger impact on this view than the proposed turbine.

Viewpoint 5 – Bents Road junction on the A616

- 6.19 This viewpoint was chosen because it shows the potential impact from the nearest A road (A616). From this viewpoint there are many electricity/telephone pylons coupled with vegetation and an undulated landscape.
- 6.20 The original turbine siting, on the end of the hill, would have been visible from blade tip to base and justifies why it has been moved further down the hill towards the existing turbines. The proposed turbine in the new location is largely hidden by this undulating landscape and therefore, only the two of the blades would be visible from this viewpoint.

Viewpoint 6 – Taken from Swinden Walls on the Thurlstone Moors

- 6.21 This viewpoint was chosen because it shows a visible viewpoint from the Thurlstone Moors National Park. In this viewpoint you can see over flat farmland of which is inundated

with hedgerows and drystone walls. The proposed turbine is only just visible from here with only the blades towering over the hill in the distance. It is anticipated that the eye would not be drawn to the turbine from this viewpoint, especially as the Blackstone Edge turbines sit on higher land and are a much more prominent feature from this viewpoint

Landscape Designations

- 6.22 The application site is located within an area of Green Belt as part of the Barnsley Development Plan. The accompanying planning statement discusses the impact of the proposal on the green belt and the Very Special Circumstances that exist.

7 LANDSCAPING

- 7.1 The Proposed Development would result in the loss of a small amount of grazing land. There will be limited vegetation removal in order to create both the tracks within the site and to locate the wind turbine.
- 7.2 Due to the small scale nature of the proposal it is not considered that new planting is a particular requirement, since the loss of vegetation is minimised by the small footprint occupied by the wind turbine and associated infrastructure.
- 7.3 It is not considered that a landscaping proposal would benefit the scheme from a visual amenity perspective.



Photograph showing existing Earthmill turbine on open arable land

8 APPEARANCE AND DESIGN

The Wind Turbines

- 8.1 The wind turbine is manufactured using industry standard neutral matte paints. The appearance of the wind turbine would be optimised by ensuring that the turbine would be painted an off white/grey (the final specification of which would be determined in consultation with the Council).
- 8.2 Wind power-related research by Government has shown that the best colour for turbines when seen against Northern European skies is light grey or off-white and that non-reflective finishes are the best treatment for the surface of materials. This would help to reduce visual impact.
- 8.3 The turbine towers would be of tapering tubular steel construction. The blades would be likely to be made from a fibre reinforced epoxy material.



Photograph showing typical Earthmill nacelle and blades

- 8.4 Each turbine requires a small kiosk electric communications and transformer building which is located at the base of the turbine.

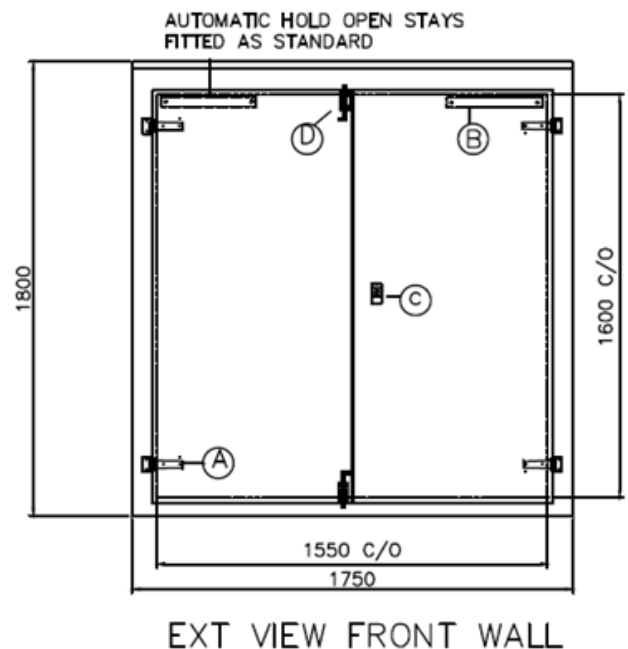
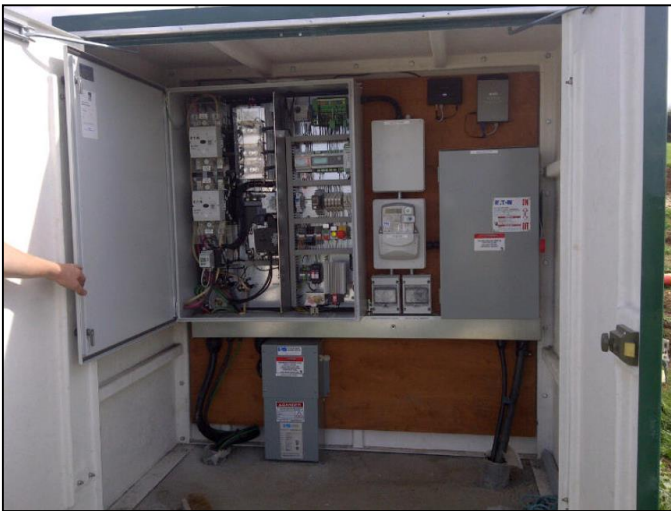


Figure 1.9 Drawing extract of typical transformer housing and communication building

8.5 The turbine is connected to the kiosk which contains various electronic equipment as shown below. It is at this point electricity both imports into the turbine and exports from the turbine into the local grid network.



Photograph showing drawing of typical transformer housing and communication building

Other On-Site Infrastructure

8.6 The construction of the site access tracks will be kept to a simple method i.e. crushed stone aggregates. Grasses will be allowed to establish themselves naturally over the track surfaces which will assist in reducing any visual effects of the tracks.

8.7 The cables between the wind turbines and the substation will be buried below the access tracks and there would be no visual impacts associated with cables. Following construction, the temporary site compound and storage area would be removed.

8.8 The wind turbine would be established for 25 years which allows time for construction, operation and decommissioning of the project.

9 ACCESS

Main Access Route

- 9.1 It was determined that road transport is the most feasible and routes for delivery vehicles, with the preferred route coming from the north east via the A629 from Huddersfield from the M62.
- 9.2 Both identified routes into site can be achieved with turbine components being delivered at Liverpool Docks.
- 9.3 The existing access into the application site at New Maythorne Farm will be sufficient for delivering the turbine components due to the standard size of the vehicles.
- 9.4 No highway issues have been identified, primarily due to the use of a standard HGV flatbed vehicle.

Construction Period

- 9.5 The principal effects would be felt during the construction period. For a proposal of this size this can be over a small period of 9-12 days. The first 5-7 days are concerned primarily

with civil ground works with the turbine installation taking place over the following 4-5 working days.



Photograph showing turbine blades being delivered to another Earthmill site

- 9.6 Any deliveries to the site would be strictly managed, both in terms of route choice and the timing of deliveries. Deliveries would be scheduled, as far as possible, to occur outside peak periods, and penalties would be enforced if routing arrangements were not obeyed.

Civil Works (5-7 days)	13T excavator (kept on site)
	Vibrating roller (kept on site)
	2 no. 4x4 or vans transporting civils team (daily)
	Small transit Flatbed delivering reinforcing steel (Day 1)
	Small transit Flatbed delivering portable toilet (Day 1)
	Concrete jaeger (8 deliveries during Day 4)
	Concrete jaeger (2 deliveries during Day 5)
Turbine Installation (4-5 days)	3 no. 4x4 or vans transporting install team (daily)
	55 tonne city crane (2 days)
	80 tonne city crane (3 days)
	Telehandler (kept on site)
	2 x Standard road going articulated vehicles with 14m trailers delivering tower sections (Day 1)
	2 x Standard road going articulated vehicle with 40ft trailer delivering nacelle and blades (Day 1)
	1 x Small skip delivery (1 day)
	1 no. 7.5T Flatbed lorry with collection of shipping frames to return to factory

Figure 1.10 Typical construction timetable

9.7 Turbine components are delivered to site on a standard flatbed HGV – two for each section of the tower and one containing the blades and nacelle.

9.8 Stakeholder involvement is proposed throughout the planning process to ensure local conditions, seasonal events and any proposed or

ongoing road works are taken into account in the proposals. This would ensure that delays are kept to a minimum and that highway safety is maintained.

9.9 Local conditions have been assessed and the percentage increase in traffic generation identified for each of the potential routes to the site.

9.10 For the majority of routes assessed, the percentage increases in traffic (both total volumes and heavy vehicles) is negligible. This is due to the temporary time scales of change, and the low number of, or sensitivity of receptors.

9.11 There will be no real requirement for on-site parking although any vehicles will be able to temporarily park at the site either at the land adjacent to the turbine or at the yard adjacent to the farmstead. This yard is capable of storing any equipment associated with construction.

9.12 During the development's lifetime, access is required to the turbine occasionally for

operation and maintenance purposes by a 4 x 4 or equivalent size vehicle. However, visits are likely to be infrequent and so there will be a limited amount of additional traffic to the site during the operation phase. It is estimated that this would equate to three to four vehicle movements per year.

