



CO-OPERATIVE WIND TURBINE AT SHAFTON TWO GATES Cumulative Wind Energy Developments

Figure 28

KEY



North



Shafton Two Gates Turbine



Shafton Two Gates 10km Study Area Boundary



Consented Turbines

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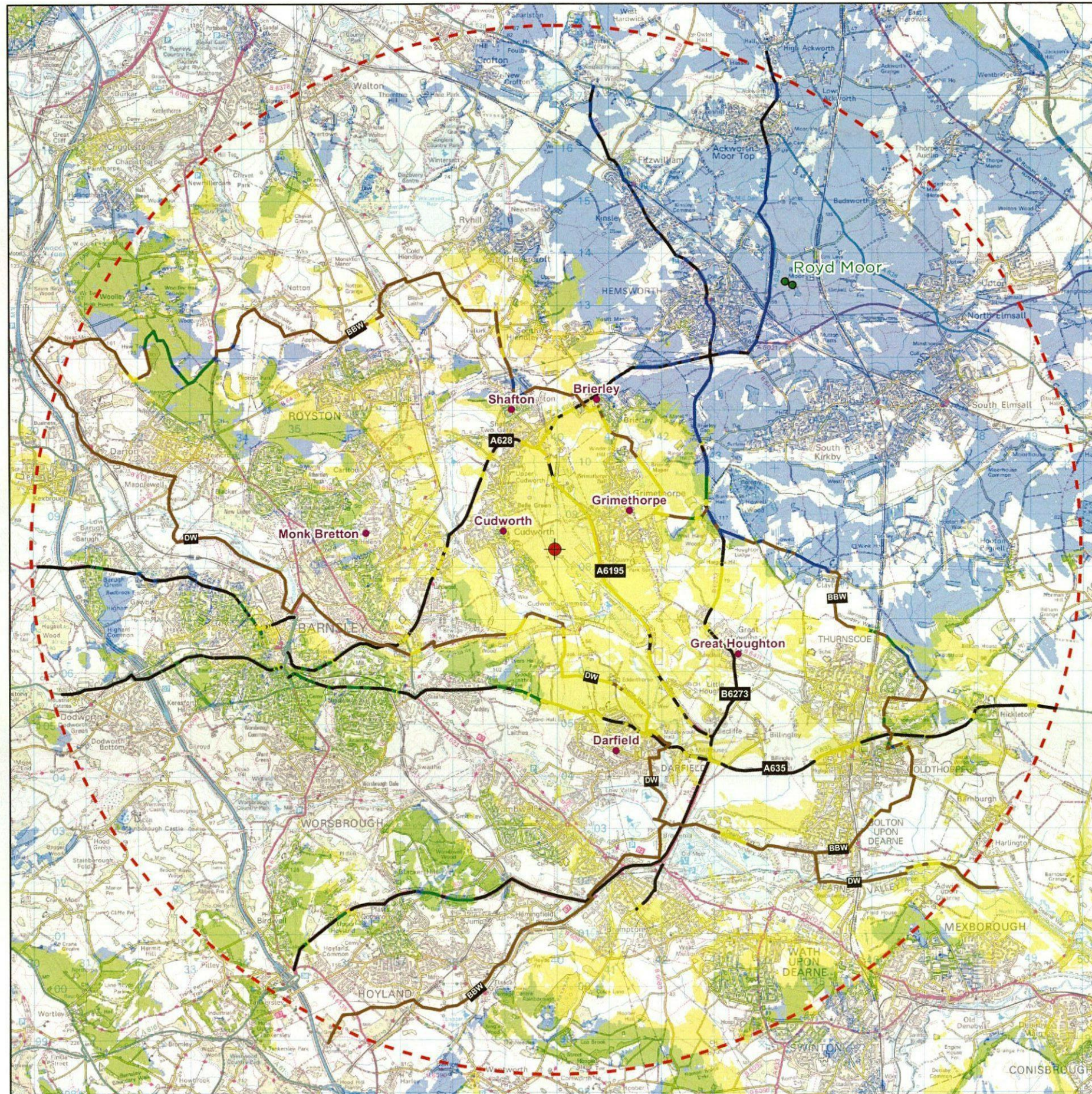
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CO-OPERATIVE WIND TURBINE AT SHAFTON TWO GATES

Cumulative ZTV: Royd Moor (Consented) Wind
Energy Developments
Figure 29

KEY

-  North
-  Shafston Two Gates Turbine
-  Consented Turbines
-  Shafston Two Gates 10km Study Area Boundary
-  Shafston Two Gates Theoretical Visibility
-  Consented Wind Turbine Theoretical Visibility
-  Combined Theoretical Visibility
-  A Road & B Road with No Theoretical Visibility of a Wind Turbine
-  Long Distance Walking Route with No Theoretical Visibility of a Wind Turbine.
BBW = Barnsley Boundary Walk
-  Visual Receptor with Theoretical Visibility of the Shafston Two Gates Turbine
-  Visual Receptor with Theoretical Visibility of a Consented Turbine
-  Visual Receptor with Combined Theoretical Visibility of the Shafston Two Gates Turbine and a Consented Turbine

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The cumulative ZTV was calculated using a digital surface model. This was created by merging OS Profile DTM data with woodland and building features identified in OS Vectormap data. The assessment assumes a building height of 6m, based on an average two-storey house, and a woodland height of 10m, based on professional judgement and the UNFAO definition of woodland.



CO-OPERATIVE WIND TURBINE AT SHAFTON TWO GATES ZTV with Landscape Character

Figure 30

KEY

- North
 - Shafton Two Gates Turbine
 - Shafton Two Gates 10km Study Area Boundary
 - Consented Turbines
 - Landscape Character Area
 - National Character Area
- Barnsley Landscape Character (B)**
Data Source: Barnsley Borough Landscape Character Assessment May 2002
Lowland River Floors
C1 - Elsecar Lowland River Floor
C2 - Lower Dearne Lowland River Floor
C3 - Upper Dearne Lowland River Floor
C4 - Dove Lowland River Floor
Settled Arable Slope
D1 - North East Barnsley Settled Arable Slopes
D2 - East Dearne Settled Arable Slopes
D3 - West Dearne Settled Arable Slopes
Settled Wooded Farmland
E1 - West Barnsley Settled Woodland Farmland
E2 - Barnsley Settled Woodland Farmland
E3 - Grimthorpe Settled Woodland Farmland
E4 - Hoyland Settled Woodland Farmland
- Doncaster Landscape Character (D)**
Data Source: Doncaster Landscape Character Assessment & Capacity Study 2006
Coalfield Farmlands
A2 - Maxborough Coalfield Farmlands
A3 - Barnburgh to Hooton Coalfield Farmlands
Coalfield Corridor
B2 - Dearne Coalfield Corridor
Limestone Plateau
C2 - Cadeby to Adwick Limestone Plateau
C3 - Carcroft to Norton Limestone Plateau
- Rotherham Landscape Character (R)**
Data Source: Rotherham Landscape Character Assessment & Landscape Capacity Study 2010
1a - Wentworth Parklands - Core
1b - Wentworth Parklands - Fringe
2 - Dearne Valley Floor
3a - Wath & Swinton Farmlands - Swinton Racecourse
3b - Wath & Swinton Farmlands - Railway Triangle
4 - Urban
- Wakefield Landscape Character (W)**
Data Source: LDF - Landscape Character Assessment of Wakefield District October 2004
1 - Limestone Escarpment
2 - South East Coalfield
3 - South West Coalfield
4 - Went River Basin

Theoretical Visibility *

Percentage of Turbine Visible

0	35 - 40	70 - 80	Tower & Rotor Sweep Visible
0 - 10	40 - 50	80 - 90	
10 - 20	50 - 60	90 - 100	
20 - 30	60 - 70		
30 - 35			
Blade Only Visible		Hub & Rotor Sweep Visible	
Woodland (estimated height 10m)		Building (estimated height 6m)	

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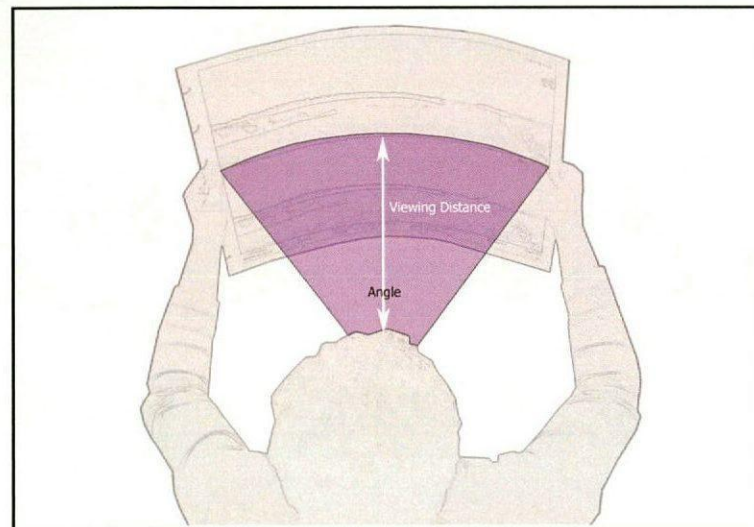
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INTERPRETATION OF VISUALISATIONS

In accordance with best practice guidelines, each visualisation consists of a number of frames that have been spliced together to form a single image. The visualisations have been produced as cylindrical projection.

As illustrated below, in order to view the visualisation correctly, the image must be curved and held at the correct viewing distance - ideally whilst closing one eye.



As detailed on the individual visuals, if printed at A3 the image must be held at the viewing distance stated on the visual information page preceeding each visualisation (32cm for the marked 72 degree horizontal field of view).

A narrower field of view visualisation is also provided for many of the viewpoints. This should be held at 51cm from the viewer.

SUMMARY OF THE METHODOLOGY USED TO CREATE THE VISUALISATIONS

Fieldwork is carried on days when the air is clear (meteorological visibility 'Very Good' or 'Excellent'). Photographs are taken with a digital SLR camera and lens having a vertical field of view equivalent to that of a 50mm lens on a 35mm film camera. The camera is mounted on a panoramic tripod head with a tribrach leveling plate and consistency of camera levels constrained using a spirit level.

Weather and lighting conditions are recorded at viewpoints for which photomontages may be required, commonly using additional photographs showing details of how the light is falling on specific objects in the scene.

Digital processing of the photographs is such as to best represent on paper the scene as experienced in the field, taking particular care that details of the sky are not lost. By reference to orientation data recorded in the field and that derived from topographic maps, the photographs are rectified, re-projected and spliced together to form cylindrical panoramic image with the axis vertical and the projection centered on the horizontal from the camera. The lens and camera-sensor combination has previously been calibrated.

A 3-Dimensional computer model of the study area is created. This includes the local terrain data (and also any terrain beyond the study area that is visible in the photographs) the proposed structures, and other features the location of which have been established. From this model is created a panoramic wireframe panorama with the same parameters as the photographic panorama. Wireframe illustrations for viewpoints where photomontages are not required (or are inappropriate because of, for example, distance from the site or intervening vegetation) are created using the two panoramas.

Photomontages are created by overlaying a computer rendered image of the proposed structures onto the photograph. When there is uncertainty in estimating the lighting conditions at the site (due to clouds, for example, they may not be the same as at the viewpoint) rendering uses parameters which tend to make the turbines more visible on the photomontages, within the range of likely conditions.

The format, field of view, scale and annotation of the final illustrations is consistent with current best practice guidelines, in particular the technical sections of the SNH " Visual Representation of Windfarms: Good Practice Guidance"

VISUALISATION LIST FOR THE CO-OPERATIVE WIND TURBINE AT SHAFTON TWO GATES

Viewpoint 1: Ferrymoor Way

Viewpoint 2: Grimethorpe, Taylor Crescent

Viewpoint 3: Brierley, Cliffe Close / Barnsley Boundary Walk

Viewpoint 4: Shafton Two Gates, Pontefract Road

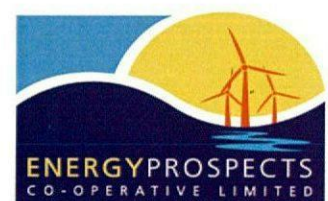
Viewpoint 5: Cudworth, Tippet Lane Public Footpath

Viewpoint 6: Monk Bretton, Burton Road / Public Footpath

Viewpoint 7: A6195, Engine Lane

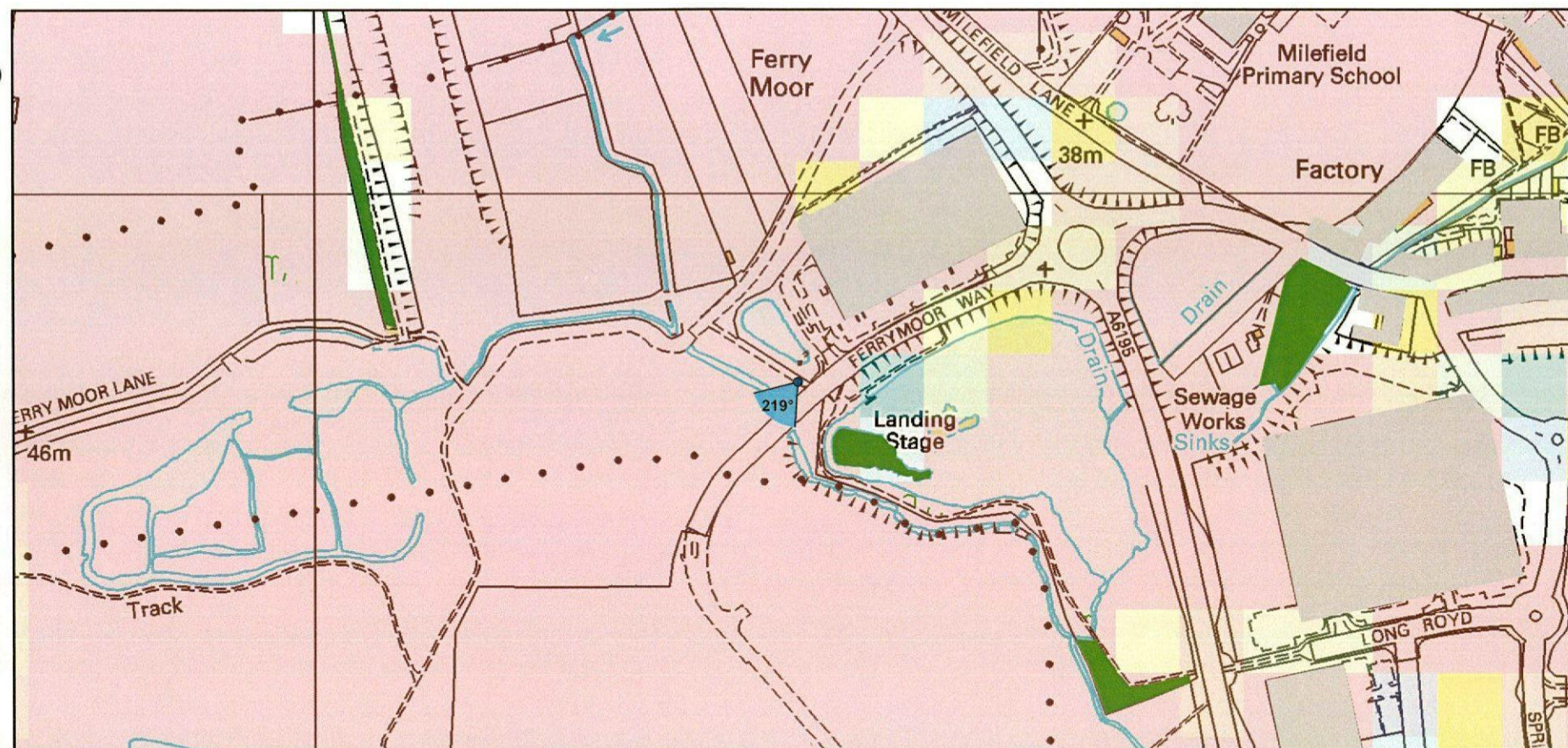
Viewpoint 8: A6195, Ferrymoor Flash

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Scale 1:5,000 at A3

Viewpoint 1: Ferrymoor Way

KEY



North



Shafon Two Gates Turbine



Buildings (Estimated height of 6m)

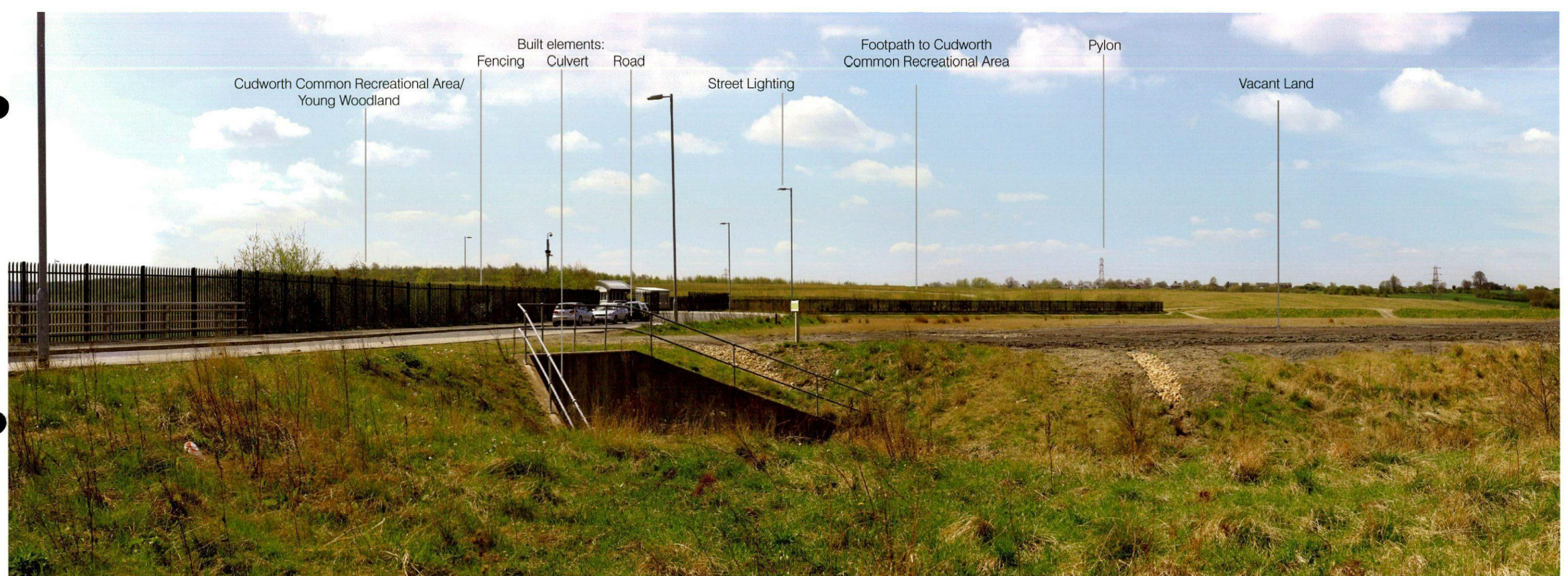


Woodland (Estimated height of 10m)

Theoretical Visibility of the Shafon Two Gates Turbine

Percentage of Turbine Visible





Cudworth Common Recreational Area/
Young Woodland

Built elements:
Fencing Culvert Road

Street Lighting

Footpath to Cudworth
Common Recreational Area

Pylon

Vacant Land

Existing view from Ferrymoor Way

Distance to centre of Shafton Two Gates turbine: 0.664 km

Camera: Canon EOS 5D Mark II

Focal Length: 50mm

Horizontal Field of View: 72 degrees

Camera Height: 1.5m

Date: 02/05/13

Time: 11:56



Shafton Two Gates (0.664 km)

Viewpoint 1
Ferrymoor Way

Computer generated wireframe showing the proposed Shafton Two Gates turbine in red.



Photomontage view showing the proposed Shafton Two Gates wind turbine

Important Viewing Instructions

This is a composite image made up of 5 No 50mm photographs joined together horizontally to form an overall field of view which is wider than that seen in detail by the human eye. For correct perspective viewing, this photograph, photomontage and wireline must be viewed at an exact distance of 314 mm with one eye whilst curving the image in and exact arc of 72 degrees.

This image should only be assessed in the real landscape from the same viewpoint.

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Viewpoint 1
Ferrymoor Way



Photomontage view

Distance to centre of Shafton Two Gates turbine: 0.664 km

Camera: Canon EOS 5D Mark II

Focal length: 50 mm

Horizontal Field of View : 45 degrees

Camera Height: 1.5 m

Date: 02/05/13

Time: 11:56

This image should be viewed with both eyes from a distance of approximately 500mm*

Viewpoint 1
Ferry Moor Way