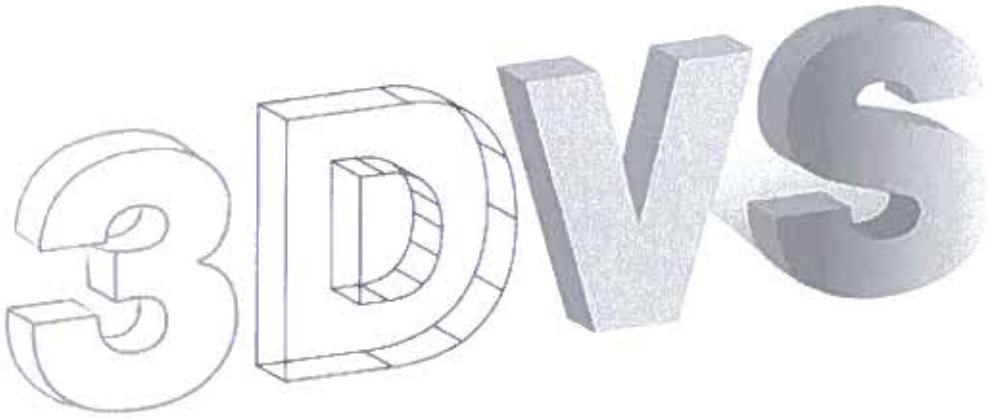


VISUAL IMPACT ASSESSMENT FIELD REPORT

WESTFIELD FARM

ROYD MOOR LANE

THURLSTONE

S36 7RD

19TH DEC 2012

THIS REPORT IS PREPARED IN ACCORDANCE WITH THE GUIDELINES IN ' GUIDELINES FOR LANDSCAPE AND VISUAL IMPACT ASSESSMENT. PUBLISHED BY THE LANDSCAPE INSTITUTE & THE INSTITUTE OF ENVIRONMENTAL MANAGEMENT & ASSESSMENT ' & 'VISUAL REPRESENTATION OF WINDFARMS: GOOD PRACTICE GUIDE'. PUBLISHED BY SCOTTISH NATURAL HERITAGE.



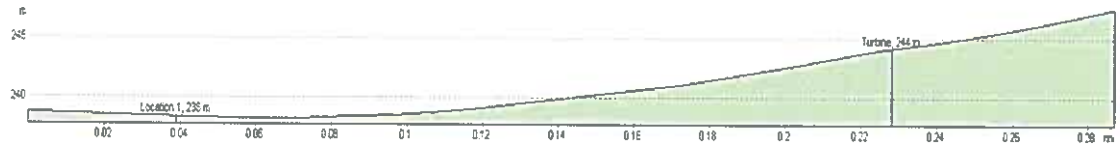
Location 5. OSGB: SE25703 - 04347 Lat/Lon: 53 32.108 - 001 36.820 Distance to site = 2947m (2.9km). 825' AOD (GPS).
View looking approx west. Bearing 260 deg.

Terrain Profile: Location 1 to Site

Summary

Profile Distance: 287 m
Total Ascent: 9 m Total Descent: 0 m

Elevation Profile



Waypoints

Leg	Name / Position / Elevation	Bearing	Distance	Ascent	Descent	Comments
0	WP0801 SE 23007 03935 239 m					
1	Location 1 SE 22973 03916 238 m	241°T	39.1 m	0 m	0 m	Location 1. Distance to site = 193m. Cross section running southwest.
2	Turbine SE 22797 03847 244 m	248°T	189 m	6 m	0 m	Turbine
3	WP0804 SE 22742 03825 247 m	248°T	59.1 m	0 m	0 m	
		Totals:	287 m	9 m	0 m	

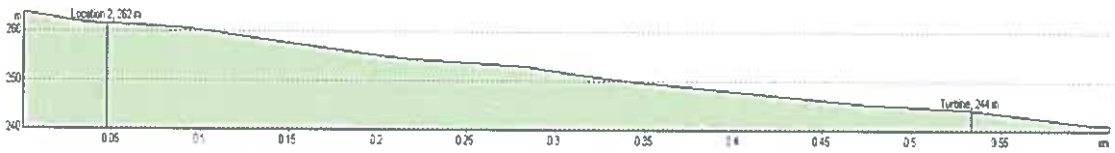
Prepared By 3DVS

Terrain Profile: Location 2 to Site

Summary

Profile Distance: 611 m
Total Ascent: 0 m Total Descent: 20 m

Elevation Profile



Waypoints

Leg	Name / Position / Elevation	Bearing	Distance	Ascent	Descent	Comments
0	WP2001 SE 22375 04172 264 m					
1	Location 2 SE 22415 04147 262 m	122°T	47.4 m	0 m	0 m	Location 2. Distance to site = 477m Cross section running southeast.
2	Turbine SE 22797 03847 244 m	128°T	486 m	0 m	17 m	Turbine
3	WP2004 SE 22855 03795 241 m	132°T	77.9 m	0 m	0 m	
		Totals:	611 m	0 m	20 m	

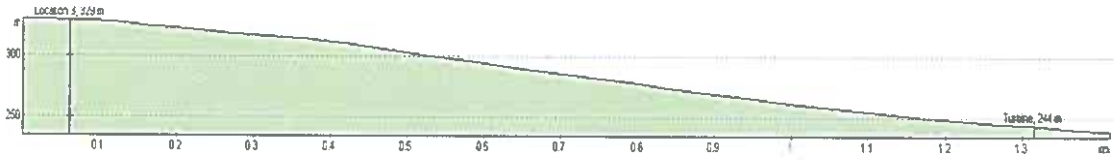
Prepared By 3DVS

Terrain Profile: Location 3 to Site

Summary

Profile Distance: 1.41 km
Total Ascent: 0 m Total Descent: 91 m

Elevation Profile



Waypoints

Leg	Name / Position / Elevation	Bearing	Distance	Ascent	Descent	Comments
0	WP2101 SE 21545 04247 330 m					
1	Location 3 SE 21603 04227 329 m	109°T	61.5 m	0 m	0 m	Location 3. Distance to site = 1254m (1.25km). Cross section running southeast.
2	Turbine SE 22797 03847 244 m	107°T	1.25 km	0 m	85 m	Turbine
3	WP2104 SE 22892 03822 239 m	104°T	98.5 m	0 m	0 m	
		Totals:	1.41 km	0 m	91 m	

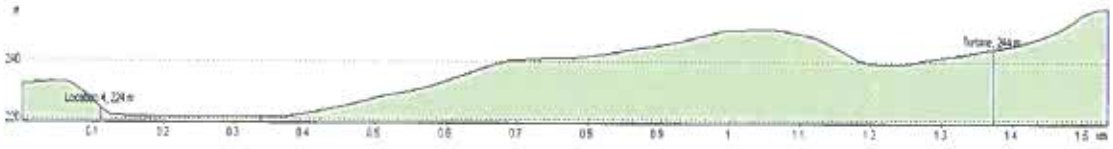
Prepared By 3DVS

Terrain Profile: Location 4 to Site

Summary

Profile Distance: 1.53 km
Total Ascent: 49 m Total Descent: 24 m

Elevation Profile



Waypoints

Leg	Name / Position / Elevation	Bearing	Distance	Ascent	Descent	Comments
0	WP2201 SE 23612 04950 232 m					
1	Location 4 SE 23548 04860 224 m	215°T	110 m	0 m	8 m	Location 4. Distance to site = 1263m (1.26km). Cross section running southwest.
2	Scout Dike Reservoir. SE 23407 04682 221 m	218°T	227 m	0 m	3 m	Scout Dike Reservoir.
3	Turbine SE 22797 03847 244 m	216°T	1.03 km	35 m	11 m	Turbine
4	WP2205 SE 22692 03722 258 m	220°T	163 m	14 m	0 m	
		Totals:	1.53 km	49 m	24 m	

Prepared By 3DVS

Terrain Profile: Location 5 to Site

Summary

Profile Distance: 3.37 km
Total Ascent: 77 m Total Descent: 74 m

Elevation Profile



Waypoints

Leg	Name / Position / Elevation	Bearing	Distance	Ascent	Descent	Comments
0	WP2301 SE 25832 04390 262 m					
1	Location 5. SE 25703 04347 259 m	251°T	136 m	0 m	3 m	Location 5. Distance to site = 2947m (2.94km). Cross section running west/southwest.
2	Railway SE 24897 04147 209 m	256°T	831 m	0 m	50 m	Railway
3	B6462 SE 24180 04020 215 m	260°T	729 m	21 m	15 m	B6462
4	Top o' th' Town SE 23250 03890 232 m	262°T	939 m	21 m	4 m	Top o' th' Town.
5	Turbine SE 22797 03847 244 m	264°T	455 m	13 m	1 m	Turbine
6	WP2307 SE 22515 03837 265 m	268°T	282 m	21 m	0 m	
		Totals:	3.37 km	77 m	74 m	

Prepared By 3DVS



Location 1 OSGB: SE22973 - 03916 Lat/Lon: 53 31.883 - 001 39.294 Distance to site = 193m. 730' AOD (GPS). View looking southwest. Bearing 248 degs.



Location 2. OSGB: SE22973 - 03916 Lat/Lon: 53 32.010 - 001 39.798 Distance to site = 477m. 820' AOD (GPS). View looking southeast. Bearing 128 deg.


Huddersfield Rd
Location 4
Turbine
Turbine
Scout Dike Reservoir
Halifax Rd
B6462
53 32.108 - 001 36.820
Location 3
Royd Moor
Location 2
Location 1
Turbine
Barnsley Rd
Bridge St
Royd Ln
Manchester Rd
Thurlstone
Penistone
Shrewsbury Rd
B6106
Millhouse Green
High St
© 2012 Infoterra Ltd & Bluesky
© 2012 Google
Google earth
Imagery Date: 5/31/2009 2002
53° 32.066' N 1° 38.698' W elev 223 m
Eye alt 4.25 km



Location 3. OSGB: SE21603 - 04227 Lat/Lon: 53 32.055 - 001 40.532 Distance to site = 1254m (1.25km). 1062' AOD (GPS).
View looking southeast. Bearing 108 degs



Location 4. OSGB: SE23548 - 04860 Lat/Lon: 53 32.392 - 001 38.769 Distance to site = 1263m (1.26km). 728' AOD (GPS).
View looking southwest. Bearing 216 deg.

Visual Impact Assessment.

1. Introduction

3DVS have undertaken this VIA study on behalf of *Newgen*, which is intended to form part of an application for the determination of the erection of one Endurance wind turbine on land adjacent to Westfield Farm, Thurlstone. The report identifies the visual impact of this turbine through photography.

2. Site Context.

Grid Reference	
Lat/Lon:	53 31.847 – 001 39.453
OSGB:	SE22797 - 03847
Landscape Description & Use	Agricultural
Green Belt	Yes
National Park	No
A.O.N.B	No
Planning Authority	Barnsley MBC
Distance from site to nearest residential property owned by customer.	178m southeast
Distance to nearest property not owned by customer.	239m southeast on Westfield Drive
Distance from nearest commercial property.	709m northwest.
Centres of residence	Thurlstone
Public Highways	A629, B6462, Royd Moor Lane
Public Footpaths/Bridleways	Local Footpaths

3. Existing Environment.

A desktop study was undertaken to gather information on the existing baseline landscape conditions, location of visual receptors and geographical context to establish the area over which the wind turbine development may have a visual impact. In addition to the desktop study, site survey work was undertaken to verify the findings of the data collection, to identify specific landscape features and to undertake a detailed visual analysis. Photographs were taken from viewpoints from potential visual receptors.

4. Terrain/Landscape.

The site falls in an area of Green Belt. The land is agricultural on gently sloping hillsides. There are number of reservoirs in the area. There are a number of other turbines in the area, including Royd Moor/Spicer Hill/Broadstones Edge Windfarm complex.

The proposed turbine is well positioned so as to afford little visual intrusion to the area.

5. Methodology for Assessment of Landscape Resource and Visual Impacts.

The assessment of the visual impacts were conducted in accordance with current guidance, namely The Landscape Institute and Institute of Environmental Management and Assessment *Guidelines for Landscape and Visual Impact Assessment*, (Second Edition) 2002, as described below.

In defining the landscape visual impact Tables 1, 2 & 3 below have been used as guides.

Table 1. Sensitivity Classification

Sensitivity of Landscape Resource	
Landscape of particularly distinctive, character susceptible to relatively Small changes e.g. National Park	**High**
Landscape with relatively ordinary characteristics reasonably tolerant of changes	**Medium**
Landscape with few features of value or interest, potentially tolerant of Significant change.	**Low**

Note on Table 1, specifically A.O.N.B, Green Belt, National Parks, SSSI and World Heritage sites etc.

This report addresses the visual impact of the proposed site from the viewpoint of an individual or individuals looking towards the site from various viewpoints or 'visual receptors', it does NOT assess the 'physical' impact on the Land e.g. Flora/Fauna, Geology, terrain and land use, therefore the objective terminology used in this report is of a different meaning, and RELATES to visual impact.

For example:

The proposed site may be in a National Park, by definition a high sensitivity landscape. However the site from a particular viewpoint, say a road or footpath may be masked or hidden by trees, from a 'visual' reception point of view this would be classed as 'slight' as the turbine is not in full view to the 'visual' receptor. The same criteria are applied to any properties that may have visual reception to the site.

Issues on the physical change to the landscape (as above) should be addressed by other reports.

Table 2. Magnitude Classification.

Magnitude of Change	
Substantial change in landscape characteristics over an extensive area, ranging to very intensive change over a limited area. Permanent, long term.	**High**
Moderate change in landscape component over a wide area and/or moderate change in localised area.	**Moderate**
Discernable but slight change in any landscape component. Short term, temporary	**Slight**
Virtually imperceptible change. Insignificant scale to affect the integrity of the landscape component	**Negligible**

Table 3. Impact Significance.

	Low Sensitivity	**Medium Sensitivity**	**High Sensitivity**
Substantial Magnitude	Moderate Impact	Substantial Impact	Substantial Impact
Moderate Magnitude	Slight Impact	Moderate Impact	Substantial Impact
Slight Magnitude	Slight Impact	Slight Impact	Moderate Impact
Negligible Magnitude	Negligible Impact	Slight Impact	Slight Impact

Table 4 provides a summary of predicted visual impact upon completion of installation and construction

Table 4. Predicted Visual Impact over the next 5 years.

Activity	**Effect upon landscape resource**	**Sensitivity**	**Magnitude**	**Significance of visual impact.**
Increase in traffic due to construction works and erection of plant	Loss of a small area of grassland	LOW	LOW	SLIGHT
Initial Operation Stage	Continuation of existing conditions – Loss of small area of grassland	LOW	LOW	SLIGHT
Continued full time operation	Continuation of existing conditions – Loss of small area of grassland.	LOW	LOW	SLIGHT

Table 5 Predicted Visual Impacts Upon Completion of Construction.

Activity	Effect upon Visual Impact	Sensitivity	Magnitude	Significance of visual impact.
Increased visibility of the site due to the operation of the single wind turbine	Near distance views:			
	Location 1	High	High	Significant
	Location 2	High	High	Significant
	Middle Distance Views.			
	Location 3	Low	Low	Not seen, ZERO
	Location 4	Low	Low	Slight
	Far distant views.			
	Location 5	Low	Low	Slight

6. Methodology for Assessment of Visual Impact.

Visual impact is the result of a change in view from receptors such as residential property, public rights of way, land with public access and roads. Residential properties are considered the most sensitive receptors to changes in view whereas road users are the least sensitive as their experience is transient. The magnitude of impact is assessed according to the scale of the effect, which will depend largely upon the size and type of the development and the distance of the receptor/s from the site. The significance of visual impact depends upon the sensitivity of the receptor and the magnitude and duration of the effect.

Technical Processes Used in Producing this Report.

1. All location photographs and the Turbine position were logged on site using a GARMIN GPS. The accuracy of positions is +/- 5m.
2. Locations were logged on site as OSGB 10 figure co-ordinates. These were then converted back to Latitude – Longitude bearings so that the positions could be accurately marked on the Google Earth Aerial view and the relevant OS Maps.
3. Original Marker Distances on the GPS were cross referenced with the distances from Google Earth and OS Maps for accuracy. Both, co-ordinate sets, elevation and distance from the Turbine position are clearly marked on the images. Terrain Cross Profiles were produced from OS digital maps 1:50.000/1:25000 vertical exaggeration is approximately x 2.
4. The visualisations were produced using 3D STUDIO MAX and Photoshop. This was done by placing the photographs into 3DS Max, placing a 'virtual camera' in the scene at the correct distance from the turbine and then superimposing the turbine into the scene. Scale height calculations were done to ensure total accuracy of turbine height against distance.
5. Final images were then rendered out, saved as .jpg files and then post processed in Photoshop, re-sizing of image for printing purposes.

Note: Consideration is given to all possible visual receptors within the range 0 to 5000m during the desktop study. However, it would be impractical to examine all visual vantage points for a project of this size and we accept that the turbine could be seen from other locations.

Table 6. Sensitivity of Visual Receptors.

Sensitivity of Visual Receptor.	
Residential properties less than 1 km from the development with direct views from ground floor and first floor windows towards the development. Public Rights of Way less than 1 km from the development with direct views.	**HIGH**
Residential properties over 1 km from the development or with more restricted views towards the development. Public Rights of Way more than 1 km from the development, or with restricted views. Local side roads and lanes. Sporting and recreational facilities, allotments.	**Medium**
Offices, commercial developments and industrial sites. Main roads and rail routes.	**Low**

Table 7. Classification of Magnitude of Visual Receptors.

Magnitude of Impact (Scale).	
The majority of viewers affected/major changes over a large proportion of the view.	**Substantial**
Many of the potential viewers affected/ major changes over a smaller proportion of the view/moderate change in view/partial view.	**Moderate**
Few viewers affected / minor change in view/glimpsed view.	**Slight**
Indiscernible change in the view.	**Negligible**

Table 8. Significance of Impact (Relationship Between Sensitivity and Magnitude).

	Low Sensitivity	Medium Sensitivity	High Sensitivity
Substantial Magnitude	Moderate	Substantial	Substantial
Moderate Magnitude	Slight	Moderate	Substantial
Slight Magnitude	Slight	Slight	Slight
Negligible Magnitude	Neutral	Neutral	Slight

The photomontage images have been produced to predict the proposed views of the site post construction. Photograph Locations 1 to 5 were taken using a Fuji SD2950 digital camera with a 50mm lens. The images are comparable to those observed by the human eye. The photomontages were produced using 3d Studio Max an industry standard visualisation package, part of the Autodesk AutoCAD group and PhotoShop. Photographs 1 to 5 were taken from publicly accessible viewpoints, to illustrate the site on completion.

7. Visual Baseline Conditions.

A visual analysis was undertaken in December when weather conditions and visibility were considered to be acceptable.

8. Visual Receptors.

A total of 5 visual receptors were chosen and photographs taken looking towards the site of the Turbine for assessment on how they might be visually affected by the erection of the proposed turbine.

The receptors are situated between 193m and 2947m away from the site. All photographs were taken from publicly accessible viewpoints.

Near Distant Views (inside 1000m)

Location 1
Location 2

Middle Distance Views (Between 1000m & 2500m).

Location 3
Location 4

Distant Views (Between 2500m & 5000m.)

Location 5

9. Predicted Visual Impacts.

A summary of the visual impacts from the above receptors, using the methodology described in Section 6 is summarised in Section 10. The receptor locations are shown in Part 2 of this report. (GIS Image & Shaded relief OS Map, etc). Terrain Cross Profiles with a vertical exaggeration of approx X2 are also supplied in Part 2 of this report.

The description of the views and the potential impact on individual receptors is summarised as follows below:

Location 1

From Royd Moor Lane/footpath close to the main farm complex, looking to the southwest. The site is clearly seen. To the northeast the land rises to a small residential area known as 'Top o' th' Town. Properties on the eastern edge – Windsor Ave, will have direct and significant views over the site.

Location 2

Footpath adjacent to Royd Moor Lane. The site is clearly seen to the southeast. There are a few residential properties at Royd Moor; the majority have indirect or perpendicular views.

Location 3

Spicer House Lane. The proposed site is below the line of vision. It is not seen.

Location 4.

Scout Dike Reservoir Recreation Area. NOTE: This photograph was taken at a later date from the original survey. The original 'location 4' photograph was corrupted – a black image.

Only the upper portion of the site will be seen from this popular fishing lake. Visual impact and harm to the visual amenity of this site is low.

Location 5

A629. The proposed site is partially seen in the landscape, this is due to the local topography near to the site. In this photomontage the 3 large scale commercial wind farms are clearly seen. However there is no conflict in scale.

10. Summary of Predicted Visual Impact and Cumulative Impact.

Cumulative Impact.

In respect of visual impacts, there are (at least) four types of cumulative effects in this context:

a) In combination - where two or more features are seen together at the same time from the same place, in the same (arc of) view where their visual effects are combined;

b) In succession - where two or more features are present in views from the same place (viewpoint) but cannot be seen at the same time, together because they are not in the same arc of view - the observer has to turn to see new sectors of view whereupon the other features unfold in succession;

c) In sequence - where two or more features are not present in views from the same place (viewpoint) and cannot, therefore, ever be seen at the same time, even if the observer moved round the arc of view, the observer has to move to another viewpoint to see the second or more of them, so they will then appear in sequence. The frequency of occurrence in the sequence may be highly variable, ranging from frequently sequential when the features keep appearing regularly and with short time lapses between (clearly speed of travel influences this as well as distance between the viewpoints) down to occasionally sequential where there may be long time lapses between appearances, because the observer is moving very slowly and / or the there are large distances between the viewpoints (even if not between the features);

d) Perceived - where two or more features are present but one or more is never seen by he observer, for example, because they are screened, or the observer is unable or unwilling to attend a viewpoint from where they would be seen. However, the observer is aware that others are there because, for example, they may have read or heard about them or seen signs to them; this is an apprehended or perceived effect but can be strongly felt; it could also, nevertheless, be mistaken because the observer's information or interpretation of it is wrong.

3DVS holds data on many turbines within the area that are either built or at some stage within the planning process. Because of the excellent siting of this proposed turbine, cumulative impact is not a major factor.

There is a turbine built at: 53 32.310 – 001 39.698. 840m to the northwest, and is not seen from the proposed site, but is seen in combination from Location 4 and in sequence with the large wind farm complex at Spicer Hill etc.

One in planning at: 53 32.400 – 001 38.338. 1560m to the northeast and is not seen from the proposed site.

The proposed site is seen in combination with the large wind farm complex from location 5 however the proposed site is partially hidden and therefore does not increase visual harm.

All other turbines are discounted due to distance and changes in topography.

Fundamental change at the site will result from the erection of the turbine as a new vertical structure in the landscape. There are a number of other wind turbines in the area including the commercial wind farm at Royd Moor/Spicer Hill which is to the north west of the proposed site.

There will be significant visual impact from the proposed site to residential properties on the western side of Windsor Ave; there will be indirect views from properties on Westfield Ave.

No views could be established from Thurlstone or surrounding residential areas – other than those mentioned due to topography and woodland.

Adverse Visual impact is limited to a small area.