CARLTON ALC

Locating of wind turbines within the proposed school site

Landscape and Visual Supporting Statement

Dec 2009

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1. LANDSCAPE AND VISUAL ASSESSMENT

1.1 Introduction

1.1.1 This landscape and visual statement assesses the potential landscape and visual implications of locating 2 no. 15kw, 15m high Proven wind turbines within the site of the new Carlton Community College. The landscape and visual assessment is divided into the following sections;

- Introduction and methodology
- Assessment of existing views and extent of visibility of the site
- Proposed mitigation measures
- Predicted impacts on views, landscape an amenity.
- Visual impacts and conclusions.

1.2 Assessment Methodology

1.2.1 The format of this assessment is based on the principles described in The Countryside Agency and Scottish Natural Heritage's *Landscape Character Assessment Guidance for England and Scotland*, published 2002 (ref 1-1) and The Landscape Institute and Institute of Environmental Management and Assessment *Guidelines for Landscape and Visual Impact Assessment, Second Edition*, published 2002 (ref 1-2). The assessment is also in accordance with the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 1999.

1.2.2 A desktop study was made of published information to establish the landscape context of the site and identify potential viewpoints which may be affected by the development. These viewpoints were discussed and agreed with Barnsley MBC prior to commencement of the study.

1.2.3 The application site and surrounding area was visited on 17th November 2009. The weather conditions were good and visibility was clear on the visit.

1.3 Landscape and visual assessment

1.3.1 The **landscape impact assessment** describes the likely nature and scale of changes on individual landscape elements known as 'receptors' and the resultant effect on the landscape character due to the proposed development. The extent to which a landscape can accommodate change due to development varies according to a range of factors such as land use, the scale and pattern of the landscape, visual enclosure, and quality of view and the value of the landscape. Changes to the fabric and character of a particular landscape may affect the perceived value of that landscape, giving rise to changes in its quality. The scale or magnitude of landscape effects ranges from negligible, through to minor, moderate and major. Such changes are described as either adverse or beneficial.

1.3.2 The Countryside Agency's guidelines make a clear distinction between the characterisation process (in which the attributes of the landscape are described) and the judgment making process. This section of the assessment deals with the characterisation process and later sub-sections make judgments about the potential effects of the proposed development based upon the characterisation.

1.3.3 The Countryside Agency guidelines describe how **landscape character assessment** can be applied at different scales, from the national or European level, to the parish level. Assessments are ideally prepared at different scales that should fit together as a nested series or a hierarchy of landscape character types and/or areas, such that each level of assessment adds more detail to the one above. The three main levels identified by The Countryside Agency are: national and regional scale; local authority scale; and local scale. This assessment uses and presents a summary of the relevant published assessments at national and regional scale and local authority scales. These wider character assessments are then used to provide the context for the local scale landscape assessment for the application site.

1.3.4 The Countryside Agency's guidance recommends that the characterisation process should be based on an assessment of natural factors, cultural and social factors and aesthetic and perceptual factors. These factors have been examined for the site's surroundings, the existing site as it stands today and the site, as it would be, following completion of the development.

1.3.5 The **assessment of visual effects** describes the changes in the visual character of available views and in the visual amenity of local receptors arising from the development. The sensitivity of visual receptors and views will be dependent on the context of the view, the importance of the view and the nature of the receptor. The scale or magnitude of visual change is affected by scale, the degree of contrast, the permanence of the effect, angle of view, distance and the extent of change.

1.3.6 Principal viewpoints are selected on the basis of which points provide the clearest views of the site and are also the most accessible to the public. The viewpoints selected for the production of the photomontages were identified and agreed with Barnsley MBC.

1.4 Significance Criteria

1.4.1 The potential significance of landscape and visual impact is determined by a combination of the magnitude of the potential impact and the sensitivity of the receptor to change. These two variables can be correlated as illustrated in Table 1.1, below. Thus, a landscape impact of low magnitude may nevertheless be assessed to have a moderate impact in a highly sensitive landscape such as an Area of Outstanding Natural Beauty (AONB) or a National Park. In general the following principles apply:

Table 1.1 - Principles of Assessing Significance of Landscape and Visual Impacts

Sensitivity of Receptor to change		Magnitude of Impact				Significance of Effect
		Negligible	Low	Medium	High	
	Very High	Negligible	Moderate	Moderate / Major	Major	
	High	Negligible	Minor/ Moderate	Moderate	Moderate / Major	
	Medium	Negligible	Minor	Minor / Moderate	Moderate	
	Low	Negligible	Negligible	Minor	Minor/ Moderate	

1.4.2 The above consideration of the sensitivity of the receptors with the magnitude of the potential impacts provides an overall assessment of the potential significance of impacts. However, this process is not a quantitative process; there is not an absolute scoring system. Instead, the correlation of the two factors, although reflecting recognised features and methods of working outlined in this report, is in the end a matter of professional judgment.

1.4.3 Table 1.2, below, provides a brief definition of the full range of significance criteria. It must be emphasised that both landscape and visual impacts can be either adverse or beneficial in nature:

Table 1.2: Significance Criteria for Landscape and Visual Impacts

Significance	Definition
Negligible	The proposed scheme is appropriate in its context. It may be difficult to differentiate from its surroundings and would affect very few or no receptors.
Minor	The proposed scheme would cause a barely perceptible impact, and would affect few receptors.
Moderate	The proposed scheme would cause a noticeable difference to the landscape, and would affect several receptors.
Major	The proposed scheme would completely change the character and/or appearance of the landscape for a long period of time or permanently. It would affect many receptors.

1.4.4 These ratings reflect the existing site condition, established use and existing planning consents, but also the nature and scale of the proposed development. The visual impacts arising form visual changes in the appearance of the landscape associated with the development and perceived by the visual receptor may be beneficial or adverse and are assigned a significance rating.

1.5 Determining Landscape Capacity and Sensitivity

1.5.1 Topic paper 6 of Landscape Character Assessment guidance for England and Wales seeks to define concepts of Capacity and Sensitivity. The following definitions are suggested:

- **Overall Landscape Sensitivity** refers primarily to the inherent sensitivity of the landscape itself, irrespective of the type of change that may be under consideration.
- **Landscape sensitivity to a specific type of change** is used where it is necessary to assess the sensitivity of the landscape to a particular change or development.
- **Landscape Capacity** describes the ability of a landscape to accommodate different amounts of change or development of a specific type.

1.5.2 Sensitivity is the degree to which a particular landscape type or area can accommodate change arising from a particular development, without detrimental effects on its character and will vary with:

- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure/openness of views, and distribution of visual receptors;
- The scope for mitigation, which would be in character with the existing landscape;
- The value placed on the landscape.

1.5.3 Overall landscape sensitivity to change will be judged using a three point verbal scale of high, medium or low. Judgements are then made of each of the constituent aspects of sensitivity and these assesments are tabulated to provide a profile of a particular landscape area. An overview is than taken of the distribution of the assessments of each aspect and this is used to make an informed judgement about the sensitivity of the landscape to accommodate the specific change.

Table 1.3: Principles of Assessing Landscape Sensitivity to Change

Landscape area	Landscape character sensitivity	Sensitivity of individual elements	Sensitivity of aesthetic aspects	Visual sensitivity	Landscape sensitivity	Value of Landscape	Landscape sensitivity to change
Area A	High	Medium	Medium	High	HIGH	Low	MEDIUM
Area B	Low	Medium	Low	Low	LOW	Low	LOW
Area C	High	High	High	Medium	HIGH	High	HIGH

1.6 Determining the Sensitivity of Visual Receptors

1.6.1 Principal viewpoints are selected on the basis of which points provide the clearest views of the site and are also the most accessible to the public. Secondary viewpoints represent views from areas which are not commonly used by the public, or which would provide less clear views of the proposed development. Secondary viewpoints also represent areas which may be perceived to be sensitive to the visual impact of the proposed development due to their nature or proximity, but which in reality have restricted views of the site.

1.6.2 Sensitivity of visual receptors is typically assessed by ascribing one of the following levels: very high, high, medium or low sensitivity to change. The sensitivity of visual receptors and views will depend on the context of the view, the importance of the view and the nature of the receptor.

1.6.3 Table 1.4 below provides a description of the criteria used to define the sensitivity of the visual receptors:

Table 1.4: Criteria for Assessing Sensitivity of Visual Receptors

Sensitivity	Definition of Visual Receptor
Very High	The principal views from residential buildings; beauty spots and picnic areas. Users of outdoor recreational facilities including strategic recreational footpaths, cycle routes or right of ways, whose attention may be focused on the landscape; important landscape features with physical. Cultural or historic attributes.
High	Other footpaths; secondary views from residential buildings' people travelling through or past the landscape roads, train lines or other transport routes.
Medium	People engaged in outdoor sports or recreation (other than appreciation of the landscape), commercial buildings or commercially engaged pedestrians, whose attention may be focused on their work or activity rather than the wider landscape
Low	Views from heavily industrialised areas

1.7 Determining Magnitude of Impacts on Landscape Character and Visual Receptors

1.7.1 Magnitude is determined by the distance from the viewer, the extent of change in the field of vision, the proportion or number of views affected and the duration of each from each viewpoint, or a sequence of viewpoints that may have transient views (e.g. along a road).

1.7.2 Generally, greater weight is given to visual impacts on public viewpoints than on private properties. Table 1.5 provides a description of the criteria used to assess the magnitude of impacts on landscape and visual receptors:

Table 1.5: Assessing Magnitude of Impacts on Landscape and Visual Receptors

Magnitude	Typical Criteria
High	Total loss of or major alteration to key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements considered to be totally uncharacteristic when set within the attributes of the receiving landscape.
Medium	Partial loss or alteration to one or more key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements that may be predominant but may not necessarily be considered to be substantially uncharacteristic when set within the attributes of the receiving landscape.
Low	Minor loss of or alteration to one or more key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements that may not be uncharacteristic when set within the attributes of the receiving landscape.
Negligible	Very minor loss or alteration to one or more key elements/ features/ characteristics of the baseline i.e. pre-development landscape or view and/or introduction of elements that are not uncharacteristic within the surrounding landscape – approximating the 'no change' situation.

1.8 Nature of the Development

1.8.1 The proposal is for the installation of 2 no. 15kw, 15m wind turbines to the north east of the site - to the south of Cronkhill Lane and to the north of the playing field area of the new school. Information on the location of the wind turbines and further detail on their structure is shown on drawing BP4L_CAR_AWP_DR_94_BW_12 which is included within the application.

1.9 Baseline Conditions

1.9.1 The site is located to the east of the village of Carlton. The entire site area comprises of approximately 14.5ha which is currently being developed to form the new site for both Royston and Edward Sheerien schools – Carlton Community College. The construction of the wind turbines is proposed to be located in a 0.1km area within the site. A canal and disused railway form the boundary of the site to the east, a leisure centre with associated grounds, residential properties along Cronkhill Lane and Royston Lane form the boundary to the west, arable fields to the north and amenity land to the south. The site topography generally falls from west to east, towards the canal. The area where the wind turbines are to be located is adjacent to the proposed playing fields for the school site which are currently being formed and graded. Due to this the turbines will sit in an area lower than the existing levels along Cronkhill Lane which are being retained. Tree cover is evident along the canal and boundaries of the leisure centre and there are a number of mature trees around the perimeter of the latter.

1.10 Landscape Character Designations

Broad Landscape Character

1.10.1 The study area lies within Character area 38 'Nottinghamshire, Derbyshire and Yorkshire Coalfield' as defined in The Countryside Commission's Countryside Character, 'The character of England's natural and man-made landscape', Volume 3: Yorkshire and The Humber (Ref. 1.3). The key characteristics of area 38 'Nottinghamshire, Derbyshire and Yorkshire Coalfield' are as follows:

- Widespread evidence of industrial activity including mine buildings, former spoil tips and iron and steel plants;
- Complex mix of built up areas, industrial land, dereliction and farmed open country;
- Many areas affected by urban fringe pressures creating fragmented and downgraded landscapes;
- Substantial areas of intact agricultural land in both arable and pastoral use;
- Small, fragmented remnants of pre-industrial landscape and semi-natural vegetation, including many areas of woodland, river valley habitats, subsidence flashes and other relict habitats;
- Ever-present urban influences from major cities, smaller industrial towns and mining villages;

- Widespread influence of transport routes, including canal, road (M1, M62) and rail, with ribbon developments emphasising the urban influence in the landscape;
- Rolling landforms with hills, escarpments and broad valleys;
- Local variation in landscape character reflecting variations in underlying geology;
- Strong cultural identity arising from history of coal mining and other heavy industry.

Local Landscape Character

1.10.2 In terms of local character the site sits within Character Area D1: 'North East Barnsley Settled Arable Slopes' as defined in ECUS and Land Use Consultants 'Barnsley Borough Landscape Assessment' (Ref 1.4). The key characteristics of this area are:-

- Sloping/undulating landform with small valleys and ridges providing localised variation in terms of views and sense of enclosure;
- Arable farmland comprising medium to large field units with no obvious pattern;
- Large areas of residential and industrial development creating a strong urban influence;
- Distant views to Barnsley
- Irregular, degraded and declining field boundaries of varied materials;
- Lack of tree cover providing little in terms of enclosure or interest in the vertical plane;
- Pylons and power lines are visually striking elements across open farmland;
- Disused industrial quarries, tips and spoil heaps;
- Significant number of primary and secondary vehicular routes;
- Disused railway lines are strong linear features of ecological significance;
- Scrubby margins, unmanaged field boundaries and compartmentalised field units;
- Abrupt transitions between urban and rural land.

1.11 Landscape Designations

1.11.1 Having viewed the Magic website (Ref 1-5) it was found that, other than the site being located within greenbelt, there are no other national or local designations within 1.5km of the site.

1.12 Visual assessment ZVI

1.12.1 A visual assessment has been made of the two principle views in and out of the site, as agreed with Barnsley MBC, to identify the extent of visual impact arising from the proposed siting of the wind turbines. In the following section there is a brief description of the existing visibility of the site in the context of the surrounding landscape and receptors.

ZVI TO THE WEST OF THE SITE

1.12.2 The extent of the ZVI from the settlement is largely defined by the vegetation surrounding the existing leisure centre and the residential properties along Cronkhill and Royston Lane. Further views are allowed where there are open spaces adjacent to these roads, such as the Cemetery.

ZVI TO THE NORTH

1.12.3 Elevated views from some properties within Royston are available towards the site although these are partially obscured by the existing trees along the old railway path. Filtered views can also be achieved from recreational users of the old railway path though these are screened in part by the existing vegetation along the route and that along Cronkhill Lane.

ZVI TO THE EAST

1.12.4 Views of the site are available from the path running alongside the canal although occasionally filtered by landform and existing vegetation. Pylons and residential properties within Carlton are also available within the view.

ZVI TO THE SOUTH

1.12.5 Views along the length of the site are available from the plots of land to the south of the site. Existing vegetation to the south of these small plots interrupts views from further south.

RECEPTORS

1.11.6 The principle receptors, from where photomontages have been developed, were agreed with Barnsley MBC and are indicated in the table below.

Table 1.6: Significant Visual Receptors

Visual Receptor		Approx. Distance from site	Grid ref
Key Potential Visual Receptors			
1	Footpath along canal to east	0km	N 10463 E 36997
2	Leisure centre grounds	0km	N 10269 E 36882

1.12 Assessment of Impacts

IMPACTS ON LANDSCAPE CHARACTER

1.12.1 The introduction of the two windturbines at the Carlton site will have a **negligible impact** on both the broad and local landscape character of the area due to the relatively small scale of them and the frequency of other vertical elements such as pylons and mature tree planting in the surrounding environment.

IMPACTS ON VISUAL RECEPTORS

1.12.2 The assessment of impacts of the locating of the wind turbines on visual receptors is summarised below and the significance of these impacts is detailed in Table 1.8. The impacts have been assessed taking into consideration the parallel construction operation of building the new school and associated grounds.

Footpath along canal to east

1.12.3 The construction of the wind turbines will be seen in conjunction with the development of the new school building and associated grounds for which construction traffic and use of more prominent structures, such as tower cranes, is a regular occurrence. At completion the wind turbines will be stood at a height of 15m to hub off the re-graded land. The photomontage from this viewpoint, drawing no. Carlton CC 1 (Appendix 1), reflects this. The photomontage indicates that the masts for the turbines are hard to distinguish through the existing vegetation but both the hubs can be seen above the vegetation, although these will be seen obliquely. The turbines are also seen in the context of the proposed building and other high structures, such as pylons, in the distance resulting in an **adverse impact of minor/moderate significance.** After a period of 15 years the woodland planting proposed to the east boundary of the site will obscure all views of the wind turbines from this location resulting in an **impact of negligible significance.**

Leisure grounds to south

1.12.4 During the construction of the wind turbines vehicles will be seen trafficking the area to the south of Cronkhill Lane but these will be no more evident than those vehicles used to re-grade the playing fields adjacent to where the wind turbines are to be located. The photomontages from the two viewpoints taken from this receptor, drawing no. Carlton CC 1 and Carlton CC3 (Appendix 1) show that the wind turbines will be hard to distinguish through the existing vegetation and weld mesh fence resulting in an **adverse impact of minor significance**. It is also worth noting that the photographs were taken in winter when most trees had lost their leaves. In summer when trees are in full leaf it is likely that views of the wind turbines will be almost totally obscured. 15 years after the construction of the wind turbines it is anticipated that views of the wind turbines will be totally obscured, even in winter, as the proposed woodland planting to supplement the existing on this boundary will be established resulting in an **impact of negligible significance.**

Table 1.8 Significance of Impact on Receptors

	Visual Receptor	Sensitivity of viewpoint	Magnitude of the impact during construction	Significance	Magnitude of the impact on completion	Significance	Magnitude of the impact after 15 years	Significance
Key Visual Receptors								
1	Footpath along canal to east	High	Low	Minor/Moderate Adverse	Low	Minor/Moderate Adverse	Negligible	Negligible
2	Leisure centre grounds	Medium	Low	Minor Adverse	Low	Minor Adverse	Negligible	Negligible

1.13 Conclusion

1.13.1 From both receptors it is evident that the existing vegetation effectively filters complete views of the wind turbines during construction and completion phases resulting in impacts which, although adverse, are for the most part of only minor significance. It is important to note that the wind turbines will not be seen in isolation but in the same context as the proposed school building and associated infrastructure, massing and scale. In both cases these impacts will reduce to negligible when the proposed woodland planting around the perimeter of the site becomes established and fully screens any views of the turbines.

1.15 References

1-1 Countryside Agency and Scottish National Heritage (2002); Landscape Character Assessment Guidance for England and Scotland.

1-2 The Landscape Institute and Institute of Environmental Management and Assessment, Second Edition (2002); Guidelines for Landscape and Visual Impact Assessment.

1-3 Countryside Commission (1998); Countryside Character. The Character of England's natural and man-made landscape, Volume 3: Yorkshire and the Humber.

1-4 ECUS and Land Use Consultants (2001); Barnsley Borough Landscape Character Assessment

1-5 www.magic.gov.uk – Multi Agency Graphic Information for the Countryside

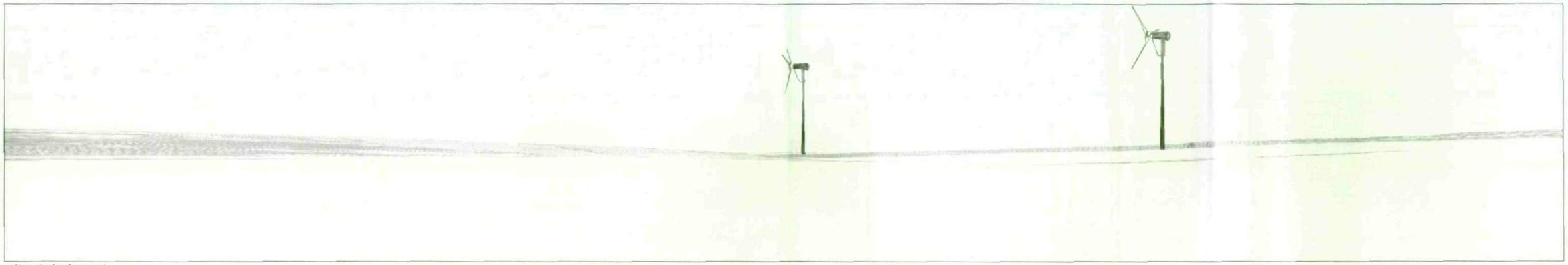
APPENDICES

APPENDIX 1

Photomontages



Before (90 degree view)



After (wireframe)



After (solid render)



Viewpoint Location

Viewpoint Parameters:

Grid reference: **N10463, E36997**

Elevation: **56m**

EPS (Estimated Position Error): **3m**

Tripod height: **1.75m**

Date and time of photography: **12.01PM Tuesday 7/11/2009**

Turbine: **2 no. wind turbines 15m high to hub**

Note: Photographs were taken using a 35mm Digital SLR, which is equivalent to 50mm SLR.

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Barnsley Schools BSF

DRAWING TITLE
Photomontage Location - Carlton CC 1

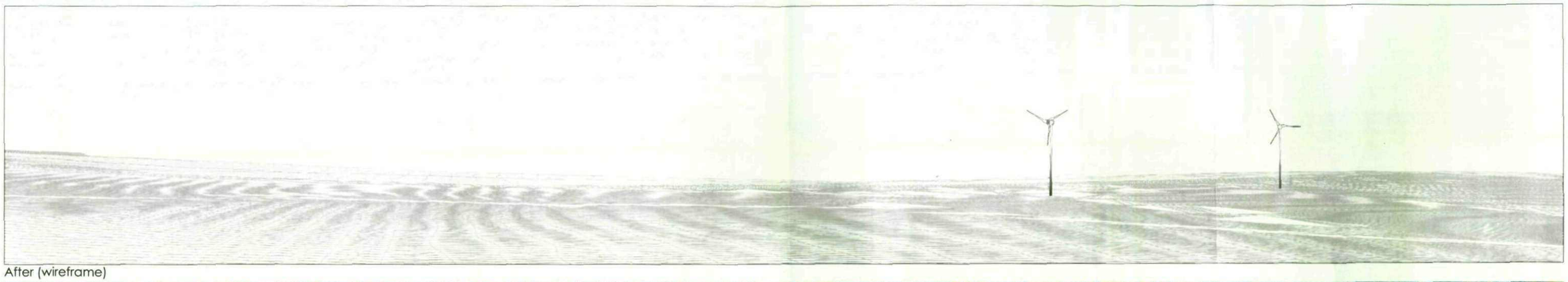
DRAWING No.	SCALE (A3)	DATE	DRAWN	CHKD
Carlton CC 1	NTS	20/11/09	KA	JM

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Before (90 degree view)



After (wireframe)



After (solid render)



Viewpoint Location

Viewpoint Parameters:

Grid reference: **N10269, E36882**

Elevation: **62m**

EPS (Estimated Position Error): **4m**

Tripod height: **1.75m**

Date and time of photography: **11.40AM Tuesday 7/11/2009**

Turbine: **2 no. wind turbines 15m high to hub**

Note: Photographs were taken using a 35mm Digital SLR, which is equivalent to 50mm SLR.

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PROJECT
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DRAWING TITLE
Photomontage Location - Carlton CC 2

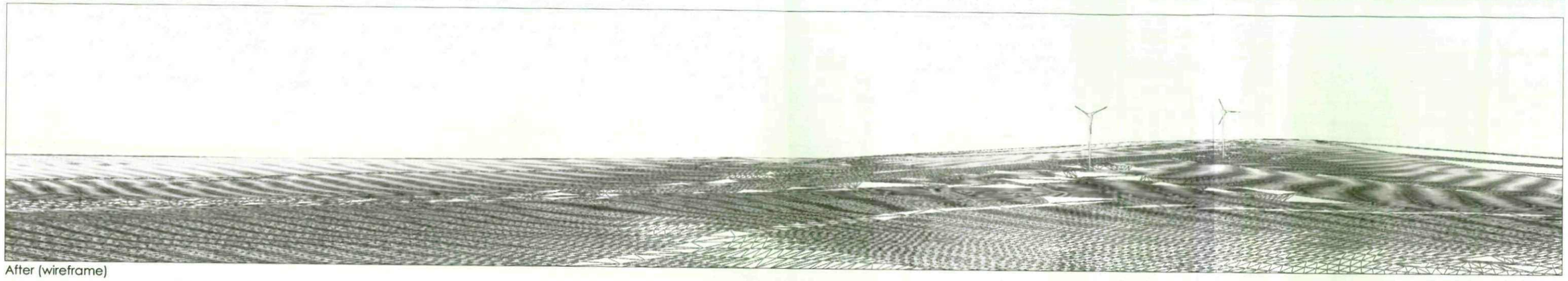
DRAWING No.	SCALE (A3)	DATE	DRAWN	CHKD
Carlton CC 2	NTS	20/11/09	KA	JM

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Before (90 degree view)



After (wireframe)



After (solid render)



Viewpoint Location

Viewpoint Parameters:

Grid reference: **N10223, E36816**

Elevation: **62m**

EPS (Estimated Position Error): **3m**

Tripod height: **1.75m**

Date and time of photography: **11.35AM Tuesday 7/11/2009**

Turbine: **2 no. wind turbines 15m high to hub**

Note: Photographs were taken using a 35mm Digital SLR, which is equivalent to 50mm SLR.

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PROJECT
Barnsley Schools BSF

DRAWING TITLE
Photomontage Location - Carlton CC 3

DRAWING No.	SCALE (A3)	DATE	DRAWN	CHKD
Carlton CC 3	NTS	20/11/09	KA	JM

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