

## Proposed BESS, Whites Farm, Basildon

### Landscape Note on Photomontages

1. In response to a request for the Council, a number verified views were prepared to illustrate how the development proposals would appear in the landscape at year 3 and at year 10 after completion.
2. These were prepared by specialist modeller in accordance with recognised methodology.
3. The LVA had identified potential visual effects to walkers using PRoW 310\_200 located immediately north of the proposed BESS application site. The public right of way is orientated south west to north east at Whites Farm and views are represented by viewpoint photographs VP10 to VP23 (Refer to LVA Figure 2 for viewpoint locations).
4. Views from the PRoW towards the application site are also representative of potential views that would be experienced from the sport pitches identified in Figure 1 of the LVA. As such, the verified views were chosen to represent viewpoints 12 and 13 of the LVA where the application site is seen in a broader context than viewpoints 10 and 11.
5. The verified views illustrate the existing view without development proposals and views of the development at year 3 and 10 to illustrate how mitigation measures will address potential adverse visual effects.
6. The verified views illustrate how the use of a natural colour stain to the site fencing assists with mitigating impacts on views from completion and during the early years of hedge establishment. As the hedge developments then the fence becomes less visible being seen to be replaced by the native hedge which is well established by year 10.
7. The verified views illustrate that the predicted adverse visual effects assessed within the application LVA, are worst case predictions or limited to very short lengths of the PRoW where immediately adjoining the proposed development. From more open views from PRoW 310\_200, the mitigation measures are shown to be effective at assimilating the development into its immediate farm surroundings, limiting and localising effects on visual receptors within the wider landscape including sports field.
8. The verified views including methodology are attached to this note.

Paul Harris CMLI

12<sup>th</sup> May 2023

Enc.

**Verified Views and Methodology, Whites Farm, Barleylands, Basildon April 2023**

# Verified Views and Methodology

**Whites Farm, Barleylands Road, Basildon**

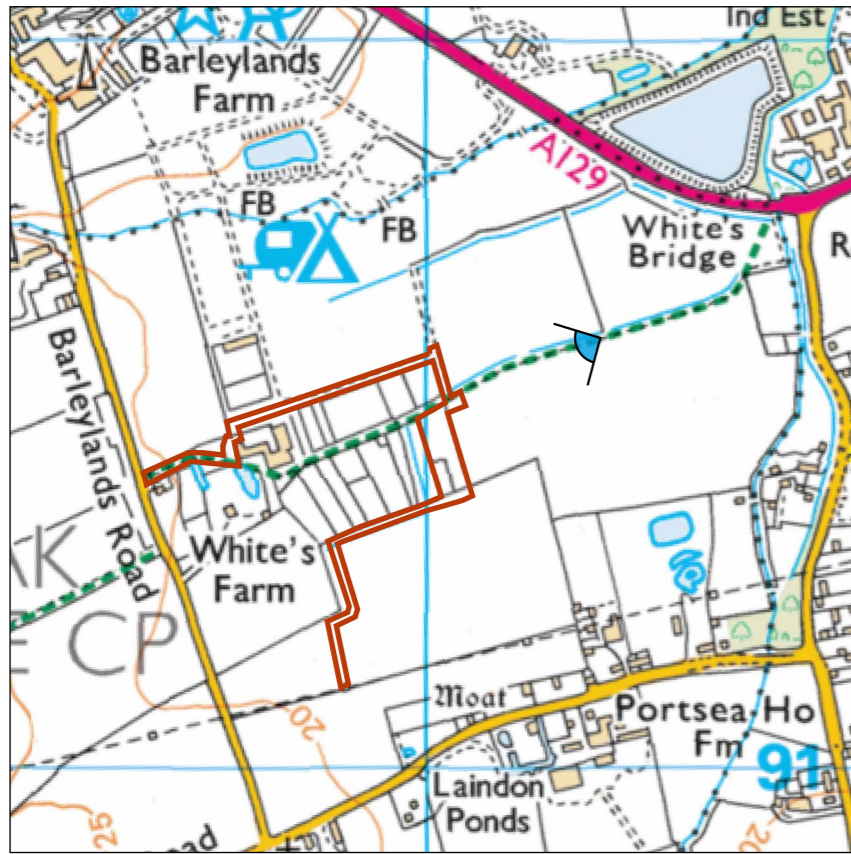
28th April 2023





Existing Contextual Photograph

Extent of 53.5° planar panorama



Viewpoint Location

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Notes:  
90° cylindrical projection in the above panorama showing the existing view. For context purposes only.

Distance to proposal: 226m  
 Bearing to site centre: 233°  
 Viewpoint grid reference: 570235.567 E 191590.296 N  
 Viewpoint ground height: 17.89m  
 Camera Height (AGL): 1.6m  
 Horizontal Field of View: 90° (Cylindrical Projection)

Date & time of photo(s): 13/04/2023 09:42  
 Camera: Canon 5D MkIV  
 Lens, FL, max aperture: Canon, 50mm, f/1.2L  
 LI Image Type: Type 1

Rev: -  
 Scale: -  
 Drawn: AM  
 Checked: PH  
 Sheet Size: A3 Landscape

Client: Anglo Renewables Limited  
 Project: Whites Farm, Barleylands Road, Basildon  
 Drawing Title: Viewpoint 12 - Existing

Fig  
1



Rose Cottage,  
 Mill Lane, Wolverley,  
 DY11 5TR

M: 07747 816055



Existing Baseline Photograph



Photomontage - Proposed Development at Year 3

Distance to proposal: 226m  
 Bearing to site centre: 233°  
 Viewpoint grid reference: 570235.567 E 191590.296 N  
 Viewpoint ground height: 17.89m  
 Camera Height (AGL): 1.6m  
 Horizontal Field of View: 90° (Cylindrical Projection)

Date & time of photo(s): 13/04/2023 09:42  
 Camera: Canon 5D MkIV  
 Lens, FL, max aperture: Canon, 50mm, f/1.2L  
 LI Image Type: Type 4

Rev: -  
 Scale: -  
 Drawn: AM  
 Checked: PH  
 Sheet Size: A3 Landscape

Client: Anglo Renewables Limited  
 Project: **Whites Farm, Barleylands Road, Basildon**  
 Drawing Title: Viewpoint 12 - Existing baseline photograph - Proposed development at Year 3

Fig 2



Rose Cottage,  
 Mill Lane, Wolverley,  
 DY11 5TR

M: 07747 816055



Photomontage - Proposed Development at Year 3

View flat at a comfortable arms-length

Rev:	-	Fig	Distance to nearest building:	226m	Camera Height (AGL):	1.6m	Date & time of photo(s):	13/04/2023 09:42
Scale:	-	<b>3</b>	Bearing to site centre:	233°	Horizontal Field of View:	53.5° (Planar Projection)	Camera:	Canon 5D MkIV
Drawn:	AM		Viewpoint grid reference:	570235.567 E 191590.296 N			Lens, FL, max aperture:	Canon, 50mm, f/1.2L
Checked:	PH		Viewpoint ground height:	17.89m				
Sheet Size:	841 x 297mm							



Existing Baseline Photograph



Photomontage - Proposed Development at Year 10

Distance to proposal: 226m  
 Bearing to site centre: 233°  
 Viewpoint grid reference: 570235.567 E 191590.296 N  
 Viewpoint ground height: 17.89m  
 Camera Height (AGL): 1.6m  
 Horizontal Field of View: 90° (Cylindrical Projection)

Date & time of photo(s): 13/04/2023 09:42  
 Camera: Canon 5D MkIV  
 Lens, FL, max aperture: Canon, 50mm, f/1.2L  
 LI Image Type: Type 4

Rev: -  
 Scale: -  
 Drawn: AM  
 Checked: PH  
 Sheet Size: A3 Landscape

Client: Anglo Renewables Limited  
 Project: **Whites Farm, Barleylands Road, Basildon**  
 Drawing Title: Viewpoint 12 - Existing baseline photograph - Proposed development at Year 10

Fig 4



Rose Cottage,  
 Mill Lane, Wolverley,  
 DY11 5TR

M: 07747 816055



Photomontage - Proposed Development at Year 10

View flat at a comfortable arms-length

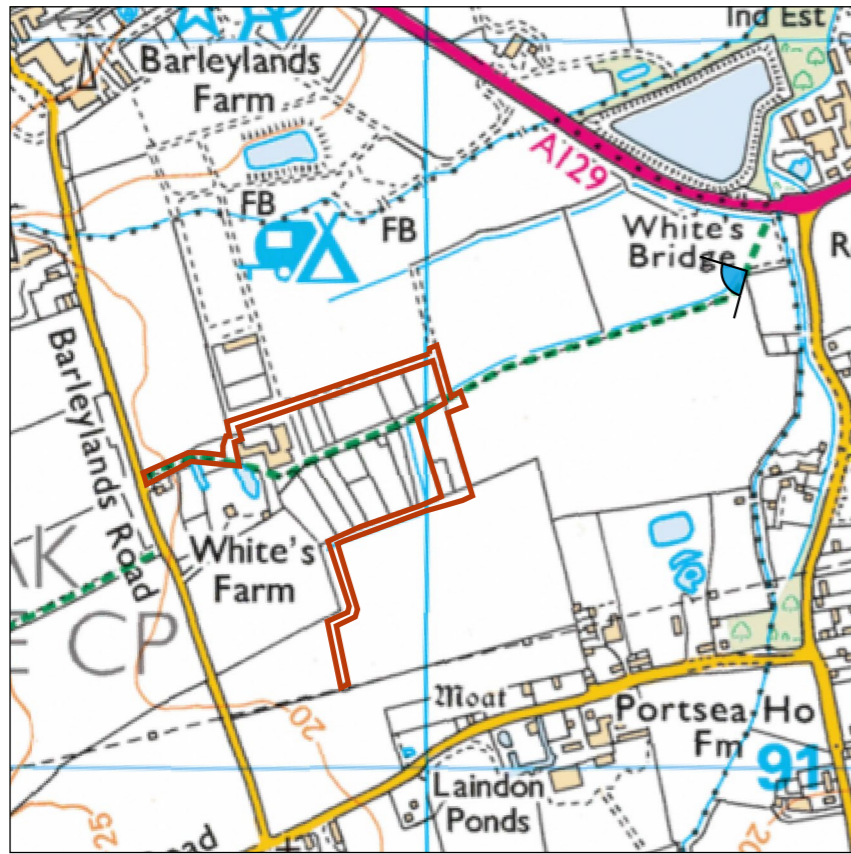
Rev:	-	Fig	Distance to nearest building:	226m	Camera Height (AGL):	1.6m	Date & time of photo(s):	13/04/2023 09:42
Scale:	-	<b>5</b>	Bearing to site centre:	233°	Horizontal Field of View:	53.5° (Planar Projection)	Camera:	Canon 5D MkIV
Drawn:	AM		Viewpoint grid reference:	570235.567 E 191590.296 N			Lens, FL, max aperture:	Canon, 50mm, f/1.2L
Checked:	PH		Viewpoint ground height:	17.89m				
Sheet Size:	841 x 297mm							





Existing Contextual Photograph

Extent of 53.5° planar panorama



Viewpoint Location

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Notes:  
90° cylindrical projection in the above panorama showing the existing view. For context purposes only.

Distance to proposal: 450m  
 Bearing to site centre: 239°  
 Viewpoint grid reference: 570436.37 E 191681.073 N  
 Viewpoint ground height: 17.45m  
 Camera Height (AGL): 1.6m  
 Horizontal Field of View: 90° (Cylindrical Projection)

Date & time of photo(s): 13/04/2023 09:22  
 Camera: Canon 5D MkIV  
 Lens, FL, max aperture: Canon, 50mm, f/1.2L  
 Image Type: Type 1

Rev: -  
 Scale: -  
 Drawn: AM  
 Checked: PH  
 Sheet Size: A3 Landscape

Client: Anglo Renewables Limited  
 Project: Whites Farm, Barleylands Road, Basildon  
 Drawing Title: Viewpoint 13 - Existing

Fig 6



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Existing Baseline Photograph



Photomontage - Proposed Development at Year 3

Distance to proposal: 450m  
 Bearing to site centre: 239°  
 Viewpoint grid reference: 570436.37 E 191681.073 N  
 Viewpoint ground height: 17.45m  
 Camera Height (AGL): 1.6m  
 Horizontal Field of View: 90° (Cylindrical Projection)

Date & time of photo(s): 13/04/2023 09:22  
 Camera: Canon 5D MkIV  
 Lens, FL, max aperture: Canon, 50mm, f/1.2L  
 LI Image Type: Type 4

Rev: -  
 Scale: -  
 Drawn: AM  
 Checked: PH  
 Sheet Size: A3 Landscape

Client: Anglo Renewables Limited  
 Project: **Whites Farm, Barleylands Road, Basildon**  
 Drawing Title: Viewpoint 13 - Existing baseline photograph - Proposed development at Year 3

Fig 7



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Photomontage - Proposed Development at Year 3

View flat at a comfortable arms length

Rev:	-	Fig	Distance to nearest building:	450m	Camera Height (AGL):	1.6m	Date & time of photo(s):	13/04/2023 09:22
Scale:	-	<b>8</b>	Bearing to site centre:	239°	Horizontal Field of View:	53.5° (Planar Projection)	Camera:	Canon 5D MkIV
Drawn:	AM		Viewpoint grid reference:	570436.37 E 191681.073 N			Lens, FL, max aperture:	Canon, 50mm, f/1.2L
Checked:	PH		Viewpoint ground height:	17.45m				
Sheet Size:	841 x 297mm							



Existing Baseline Photograph



Photomontage - Proposed Development at Year 10

Distance to proposal: 450m  
 Bearing to site centre: 239°  
 Viewpoint grid reference: 570436.37 E 191681.073 N  
 Viewpoint ground height: 17.45m  
 Camera Height (AGL): 1.6m  
 Horizontal Field of View: 90° (Cylindrical Projection)

Date & time of photo(s): 13/04/2023 09:22  
 Camera: Canon 5D MkIV  
 Lens, FL, max aperture: Canon, 50mm, f/1.2L  
 LI Image Type: Type 4

Rev: -  
 Scale: -  
 Drawn: AM  
 Checked: PH  
 Sheet Size: A3 Landscape

Client: Anglo Renewables Limited  
 Project: **Whites Farm, Barleylands Road, Basildon**  
 Drawing Title: Viewpoint 13 - Existing baseline photograph - Proposed development at Year 10

Fig 9



Rose Cottage,  
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 DY11 5TR

M: 07747 816055



Photomontage - Proposed Development at Year 10

View flat at a comfortable arms length

Rev:	-	Fig	Distance to nearest building:	450m	Camera Height (AGL):	1.6m	Date & time of photo(s):	13/04/2023 09:22
Scale:	-	<b>10</b>	Bearing to site centre:	239°	Horizontal Field of View:	53.5° (Planar Projection)	Camera:	Canon 5D MkIV
Drawn:	AM		Viewpoint grid reference:	570436.37 E 191681.073 N			Lens, FL, max aperture:	Canon, 50mm, f/1.2L
Checked:	PH		Viewpoint ground height:	17.45m				
Sheet Size:	841 x 297mm							

## Overview

A verified photomontage is a visual representation of a proposed development that is as accurate as it is possible to be within the limits of the technology used and the available data. Although it is not possible to achieve 100% perfect accuracy due to minor errors in survey work, environmental variables and photographic distortion, the careful implementation of a best practise method will result in only a negligible error.

The photomontage images represent how the proposed development would be perceived from a number of locations surrounding the site. These locations were chosen as the result of a detailed consideration of sensitive viewpoints.

The methods described in this document are based on current best practise and follow recommendations from 'Guidelines for Landscape and Visual Impact Assessment 3rd edition' (GLVIA3), Landscape Institute and IEMA (2013), alongside the Landscape Institute technical guidance note, 'Visual Representation of Development Proposals, (LI 06/19)

## Methodology

### Photography

The photograph has been taken from a publicly accessible location; no private access was needed. The methodology ensures that the combination of camera and lens recreates as close as possible what can be seen by the human eye.

### Equipment:

The aim of a verified photomontage is to illustrate what a proposed development may look like to a person standing at a specified photographic viewpoint. In order to create this effect, all photographs are taken with a camera and lens combination, resulting in a 'standard' focal length (equivalent to the cone of human vision). A standard focal length is usually considered to be in the range 45mm to 55mm on a traditional 35mm film camera. On digital cameras, where the image sensor is often smaller than the recorded image on traditional film cameras, the focal length of the lens used must compensate for the effective magnification resulting from the smaller sensor.

A Canon 5D Mark IV full frame sensor camera was used for the viewpoint in conjunction with a 50mm prime lens (35mm format equivalent), which is within the 'standard' focal length range. The full frame sensor in the camera therefore, results in no magnification. To eliminate the parallax error that occurs when taking panoramic images, a sliding plate on the tripod head was employed allowing the camera to be moved back along the line of sight so that the nodal point of the lens was positioned directly over the axis of rotation.

Image capture: The camera was mounted on a tripod using a panoramic tripod head at 1.6m above ground level to simulate the view at eye level.

The orientation of the camera was adjusted so that the optical axis and the horizontal axis were aligned with the horizon. This is the 'astronomical' horizon as set by a gravity governed bubble

level.

The image was captured in the camera's RAW image mode to ensure maximum quality. Camera settings were chosen carefully for each viewpoint; the camera was set to aperture priority mode, a small aperture of f/11 was used and the focus distance selected specifically to render all parts of the scene in focus whilst retaining image quality.

A panorama was deemed essential due to the proximity and the need to show the context of the proposed development and so frames were taken at 15-degree intervals to allow for overlap (discussed below).

Post Production: The panorama was stitched together using PT Gui Pro specialist panorama creation software, with each photograph being cropped to take only the central portion of each image. These precautions minimise the small amount of optical distortion effect caused by the camera lens. Images were imported as jpeg files and minor tonal and colour adjustments were made which aim to replicate the scene as honestly as possible as it was perceived by the photographer at the time of capture. The stitched cylindrical panorama was then cropped to 90° for use as a baseline 'existing' view.

### Survey

Precise surveying was essential to gain accurate information of the camera and control point positions. GPS readings were taken from the central tripod position that the camera was placed using an Emlid Reach RS2 GNSS Receiver, which achieved a 25mm degree of tolerance.

### Control Points:

Control points are surveyed points/objects that can clearly be identified on the photograph. Since they are included in the 3D model, they can be visually matched with the corresponding points on the photograph.

All survey measurements were supplied in CAD format for use in the 3D model.

## 3D Model

3D models were created and supplied which were then aligned within 3DS Max using the site masterplan to determine the X and Y position. Finished floor levels were then used to accurately position the 3D model vertically AOD (above ordnance datum).

## Camera Matching and Rendering

The process of camera matching (i.e. correctly assembling the perspective view within the 3D program to match the photograph taken on site) needs meticulous attention to detail. The details of the Ordnance Survey co-ordinates for the viewpoint, and the angle of the view were also checked as part of the verification process.

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Drawing Title Methodology



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The survey information was added into the 3D model and aligned precisely with the OSGB36 coordinate system. A 'Virtual' Camera (or perspective view) was then created within 3DS Max at the viewpoint location and raised by 1.6m to match the position at eye-level that was achieved during photography.

Any atmospheric conditions experienced at the time of taking the photograph were added to the model. For example, haze or reflected sunlight.

Using the 'Virtual' camera each cylindrical panorama was used as a backdrop and rendered using a V-Ray camera option that mirrors the distortion exhibited in a cylindrical panorama. Adjustments were then made to the 'virtual' camera and the position of the photograph to align the 3D control points with the real-life equivalents shown in the panorama, thus creating a 'photo-matched' viewpoint with the model aligned at the correct scale and angle.

A daylight system was then created within 3DS Max using the geographic location and time zone, then setting the correct time that the viewpoint was captured. This allows for the accurate creation of shadows as at the time of taking the photograph. For viewpoints taken in full cloud, a High Dynamic Range Image (HDRI) was mapped as a 'dome light' within 3DS Max and used as the main light source. An HDRI is an image format that contains a large amount of shadow and highlight information and can be used to illuminate a 3D scene, providing a good representation of conditions on a cloudy day.

### Post production

Care was taken in Adobe Photoshop to mask out elements of the 3D model that may be obscured by foreground objects to produce the final visualisation.

The final visualisations were then taken back into PT Gui Pro and converted to 53.5° rectilinear (or planar) panoramas. These panoramas were aligned according to the latest LI and SNH guidance and presented at A3 and A1 page width, which allows for a comfortable arm's length viewing distance.

### Caveats

- i. A photomontage can never be considered as a 100% accurate representation of what would be seen due to the large number of variables affecting the images from the photography to the limitations of the 3D programs. They should be used as an aid to the decision making process.
- ii. Due to the width of the site and the need to show the context within each viewpoint it was decided to present all views at 90° at A3 as well as the magnified planar viewpoints at A1 width.

### References

All photomontages were created in accordance with recommendations given in the following publications:

Landscape Institute and IEMA (2013) Guidelines for Landscape and Visual Impact Assessment 3rd edition (GLVIA3).

Landscape Institute:

Note 06/19 - Visual Representation of Development Proposals

Note 07/19 - Visual Representation of Development Proposals: Glossary and Abbreviations

Note 08/19 - Visual Representation of Development Proposals: Camera Auto Settings

Scottish Natural Heritage (2017) Visual representation of windfarms: good practice guidance. ('SNH 2017')

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