LVIA Appendix 11.3 – Methodology Statement for Viewpoint Graphic Production

Methodology for producing baseline photography with matching wirelines, photomontages and photowires

Compliancy with Current Guidelines

The methodology for producing baseline photographs with matching wirelines, photomontages and photowires is compliant with *The Landscape Institute Technical Guidance Note 06/19 (September 2019): Visual Representation of Development Proposals.* These visualisations conform to Type 3 visualisations outlined in these guidelines.

Methodology

Below is an overview of the workflow used for production of these visualisations:

Viewpoint Photography

A high resolution digital SLR camera with a 50mm fixed lens and full frame sensor (Canon 5D Mk IV and Canon 50mm fixed lens) was used for viewpoint photography. The camera was mounted on a leveled Manfrotto tripod with a Manfrotto 300N graduated panoramic head to give level and stable photography. Geographic location, elevation, camera height and date and time of photography was recorded. To gain 360° photography 18No single frames were captured for each viewpoint using RAW format. The viewpoint photography was stitched together using Adobe Lightroom software. Viewpoint positions were recorded using a hand-held Garmin GPS, and adjusted with reference to Google Earth and import to British Grid using Global Mapper software. This gives a level of accuracy of better than 2m.

Reference Point Survey

Features within the viewpoint photograph were identified as markers with which to position the computer-generated image of the proposed solar farm within the viewpoint photographic panoramas at the correct scale and in the correct position. Marker objects were recorded on-site and other objects identified later when studying the stitched panoramic images. The position of these markers was surveyed on site if accessible or taken from ortho-rectified aerial imagery.

3D Modelling of Proposed Scheme and Wireline Generation

All elements of the proposed scheme were modelled from project digital design data using industry standard Autodesk 3D Studio Max software and geo-referenced to aid accurate positioning at real-world coordinates. For each viewpoint, a wireline visualisation was produced using a computer-generated cylindrical camera and suitable rendering software. The ground model was created using Ordnance Survey Terrain 5 digital terrain data (DTM) giving a height survey resolution of 5 metres.

Camera Matching and Rendering

Virtual cylindrical cameras were created in 3D Studio Max software to simulate each viewpoint photograph position and reference markers created in the 3D modelling software

at the surveyed reference point for each of the markers. The viewpoint baseline 360° panoramic image was then matched to the wireline using the reference markers, aligning these to elements in the panorama. In this way, the proposed solar farm was positioned at the correct scale and in the correct position.

High quality renderings of the development were then produced showing the correct colours and materials of all elements of the solar farm. Shadow direction and intensity were generated using a computer-generated sunlight system and with reference to the date and time of day the viewpoint photographs were taken. Reflectivity of the solar panels were also represented in the images.

Photomontaging

Using industry standard image editing software, Adobe Photoshop, the rendered image was overlayed and matched to the previously matched wire line. Any elements of the proposed scheme that would be occluded by the intervening existing features were then digitally masked, displaying only those elements of the development that would be seen.

Photowire Production

Where the development would be less apparent from a viewpoint, but it was important to show the extent and scale of the development a photowire was produced. The wireline was displayed as an overlay over the baseline viewpoint panorama, showing the terrain silhouette in white and showing the development in blue with transparency. The transparency shows what elements hide elements of the developments and where potential elements may be seen.

Presentation

Adobe InDesign software was used to publish the visualisations. Baseline photography and matching wirelines are presented in panoramic format at 90° horizontal field of view and 14.2° vertical field of view. Photomontages and photowires are presented at 90° horizontal field of view and 25° vertical field of view. All visualisations are in cylindrical projection at an enlargement factor of 96% relative to the full frame sensor of the camera used. They are configured to be displayed on an A1 size sheet in order to give a realistic impression of scale and form of the proposed solar farm within the local and wider landscape when viewed at a comfortable arm's length. This configuration was chosen due to the very wide linear nature of the development.

Viewpoint information, camera and photographic information and presentation factors are recorded on each sheet. A location map for each viewpoint is also included.