APPENDIX 2: VISUAL AIDS

Guidance and Standards Used

1. All Visibility Maps (ZTVs), photography and their graphical presentation has been undertaken in line with the Landscape Institute's Technical Guidance Note 06/19, Visual Representation of Development Proposals.

The Computer Model

2. To generate wireline visualisations and photomontages, computer models of the proposed site and study area are produced. Autodesk 3DS Max / LSS Software are used to create a 3D computer model of the proposed development representing the specified geometry and position of the proposed development, and the existing landform (terrain). The landform information is derived from 50m resolution terrain data incorporating 5m resolution terrain data around the site and each viewpoint and viewpoints where required (either by local guidance, or where we judge it is needed for accurate modelling).

3. The computer models include the entire study area, and all calculations take account of the effects caused by atmospheric refraction and the Earth's curvature. The computer models do not take account of the screening effects of any intervening objects such as vegetation, buildings or other non-terrain features, unless expressly stated.

4. The computer models combine the existing landform with the model of the proposed development and detailed data collected in the field to enable the output of accurate visual and graphical information and associated data for presentation as finished figures.

Visibility Maps: Zone of Theoretical Visibility

5. Zone of Theoretical Visibility (ZTV) maps have been generated using GIS to assist in in identifying areas where visibility would not occur as well as viewpoint selection, illustrate areas from where part or all of the proposed development may be visible and to indicate its potential influence in the wider landscape.

6. Unless expressly stated, the visibility maps present the extent of potential visibility on the basis of a 'bare ground' scenario: They do not account for the effects of screening and filtering of views as a result of intervening features (e.g. buildings, trees, hedgerows, etc) and so tend to over-estimate visibility, both in terms of the area from which the project can potentially be seen and potentially in terms of the extent of the development visible from a particular viewpoint.

7. ZTVs which include vegetation and buildings may use real height information derived from standard DSM products such as LiDAR – this approach is typically used for smaller study areas and urban areas. For larger study areas assumed heights are used which are stated on the ZTV figure. The location and extent of woodland and buildings is derived from OS Open data and assumed heights for these are added to the bare ground model. As a result, the ZTV study does not take account of all above ground features – only those included as woodland and buildings in the OS mapping at the time the ZTV was prepared. These ZTV studies present a more realistic visibility pattern than bare ground studies, but do not take detailed account of felling cycles, tree growth, demolition or construction.

Visualisations: Annotated Photos (Type 1)

8. Baseline photography has been undertaken at each representative viewpoint location using a high-quality digital SLR camera with full frame sensor and a 50mm fixed focal length lens – in accordance with the relevant guidance identified above. The resulting photos are either presented as single frame images or combined into panoramas using PTGui photo stitching software and saved as planar projection images. Single frame and panoramic images are presented at either A3 or on wide format sheets, in accordance with Technical Guidance Note 06/19, and are annotated to indicate the extent of the proposed development and highlight any important features within the view.

Data Accuracy

9. The Ordnance Survey (OS) provides accuracy figures for the following terrain data products expressed statistically as root-mean-square error (RMSE) in metres:

   - OS Terrain®50 (50m resolution): 4m RMSE.
   - OS Terrain®5 (5m resolution): Urban and major communication routes 1.5m RMSE; Rural 2.5m RMSE; Mountain and moorland 2.5m RMSE.
   - LiDAR data (1m resolution): 15cm RMSE.