

M1 Junction 19

Environmental Impact Assessment: Photomontages

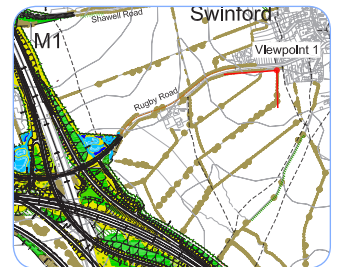


Client: Highways Agency

As part of the Environmental Impact Assessment of the proposed M1 Junction 19 improvements, photomontages were required to illustrate the mitigation measures designed to offset or reduce the impact of the scheme upon the landscape.

The methodology for the photomontage production was based on Landscape Institute Advice Note 01/09: Use of photography and photomontage in landscape and visual assessment. The work included:-

- liaison with the design team, including the Client, site visits, desktop studies and discussions to aid identification of the most appropriate photomontage locations. The locations selected were visual receptors such as dwellings and public rights of way which would potentially be impacted upon by the scheme
- high quality panoramic photography and use of GPS technology to accurately record photo locations
- input into production of a digital model, produced in 3D Studio Max, used as a base for the preparation of photomontages accurately simulating how the proposed ground contours and structural elements would appear from each location
- accurate alignment of the panoramic photographs, to the data extracted from the 3D model, using Adobe Photoshop
- careful rendering of the photomontages in Adobe Photoshop to illustrate the As Built view of the proposed scheme
- liaison with the design team to ensure all elements of the design, including engineered features such as bridges and gantries, were accurately represented.



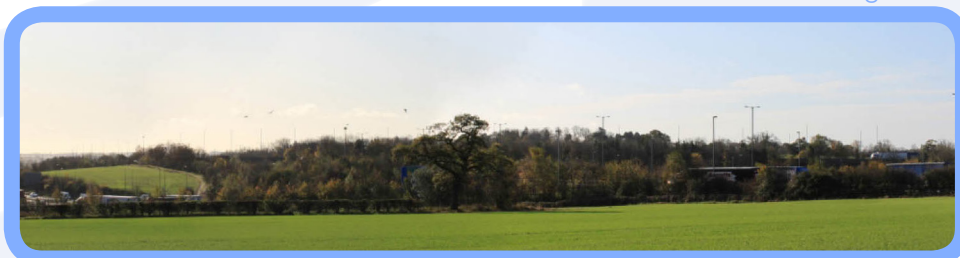
Photomontage Vignette



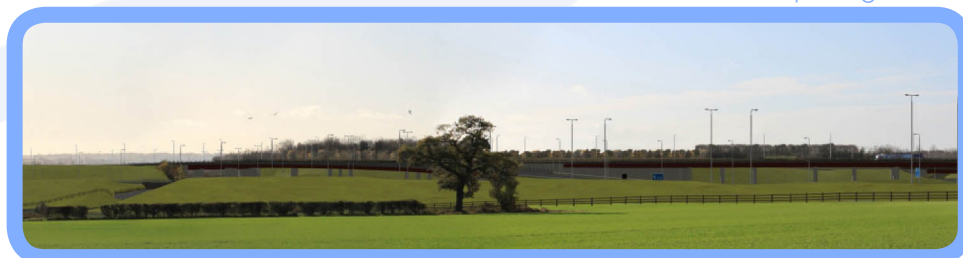
3D Model

The photomontage images show the existing view, the opening view and the view when planting would be well established (15th year). Planting shown in the 15th year reflects a conservative estimated growth height averaging approximately 4.5m.

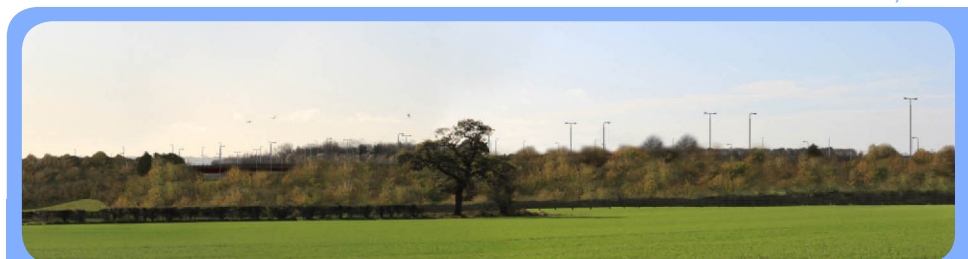
Existing view



Opening view



15th year



Technical Summary



Location:	Junction 19 of the M1 adjacent to the M6 near Rugby
Type of scheme/site and size:	Major highway improvement, total site area 38 hectares
Outline brief:	Complete a series of photomontages, accurately illustrating the design proposals in the opening year and after 15 years. Provide advice and input into the 3D model of the proposed scheme.
Completion date:	Photomontages completed December 2009
Project team:	Client: Highways Agency (HA). Main Contractor: Skanska. Env. Coordinator & L-scape Architect: Moore Environment Lead Designer: Jacobs.

PHOTOMONTAGE METHODOLOGY

Photomontage location criteria:

- Illustrate views from villages surrounding the scheme & from areas accessible to the general public.
- Represent views from all sides of the junction & include features such as false cuttings & gantries.
- Represent the range of potential effects from the distance & in close proximity to the scheme.

Photographs

- Locations established using GPS, recording easting & northing co-ordinates & AOD height of camera.
- Taken using Canon Eos Digital 'single lens reflex' (SLR) camera with 'standard' 50mm focal length. Camera tripod mounted at 1.5m AOD & levelled in horizontal & vertical axis.
- Photographs stitched in Adobe Photoshop using 50% overlap to ensure minimal optical distortion, creating a seamless panoramic photograph.

Preparation of 3D model

- Produced by Jacobs Engineering in 3D Studio Max4.
- Photograph locations & key landscape elements surveyed in GPS & inserted into model. Key landscape elements used as 'virtual points' to later align 3D model with panoramic photographs.
- At photograph location in 3D digital model, 'virtual camera' set at 1.5m AOD & set to equivalent Digital SLR focal length. Images of model extracted from these locations in Jpeg format.
- 3D model extracts stitched in Adobe Photoshop using a 50% overlap.
- Stitched 3D model extract incorporated into corresponding panoramic photograph, scaled horizontally & vertically until 'virtual points' align with existing elements such as structures & lighting columns. Cross-referenced with OS mapping to ensure accuracy.

Rendering

- Panoramic photograph & 3D model extract imported into Photoshop as a series of layers.
- Panoramic photograph & 3D model extract edited to create accurate impression of proposals.
- Reconstruction vegetation informed using oblique aerial photographs of existing landscape & additional photographs taken in surrounding area. Photographs of planting selected to match time of year relevant to the original photograph & proposed species mixes.
- Images of existing landscape or highway related elements including gantries, signage, lighting & vehicles inserted as appropriate to reflect the proposals.

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