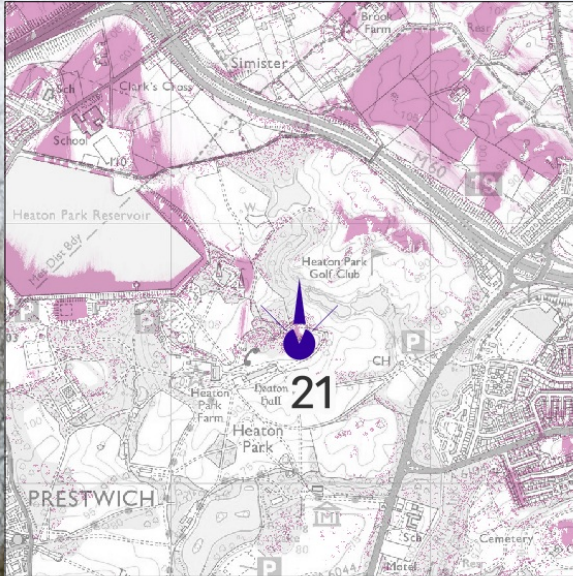


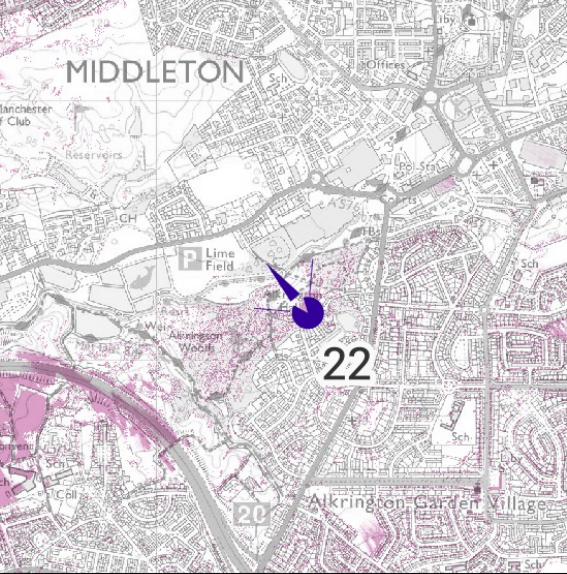
Viewpoint 21 - Existing View







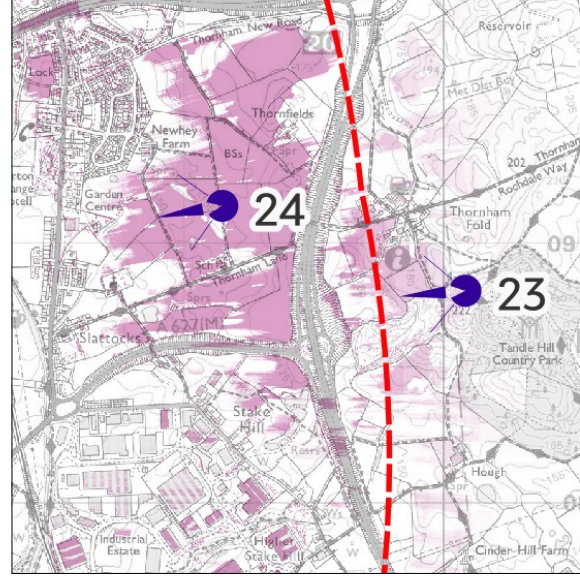
Viewpoint 22 - Existing View





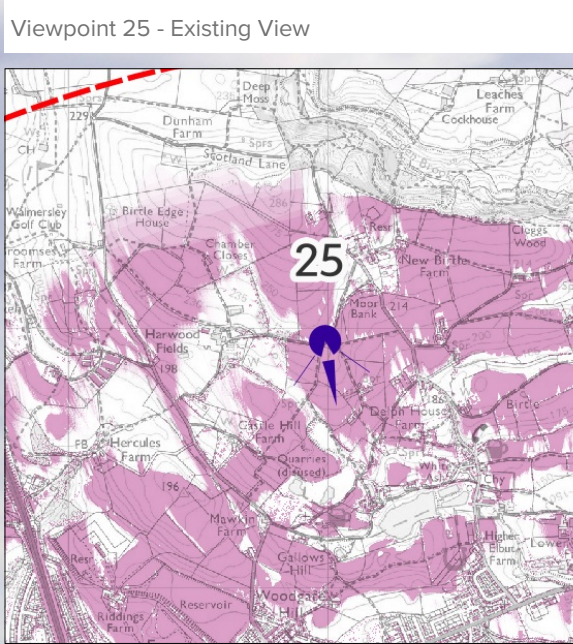


Viewpoint 23 - Existing View





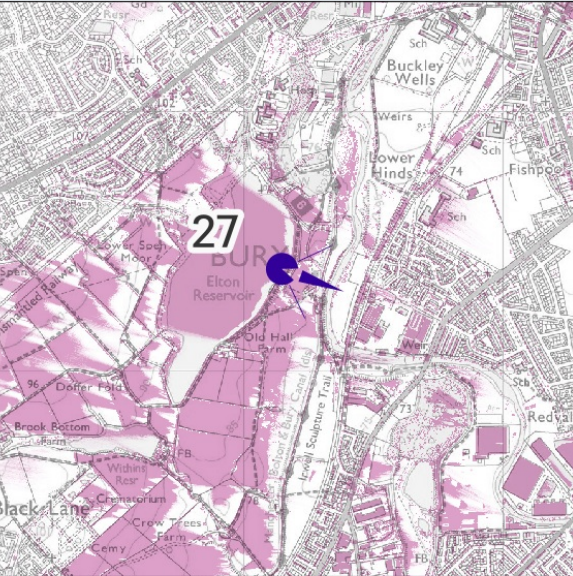








Viewpoint 27 - Existing View







Northern Gateway 1.1

Appendix: AVR Non Technical Methodology

January 2025

Overview

The process of generating verified views (also referred to as accurate visual representations (AVR)) for the Proposed Northern Gateway 1.1 Scheme was carried out in conjunction with Tyler Grange Limited and Troopers Hill Limted.

High quality/resolution photographs were taken from the agreed locations by Tyler Grange. The precise location and bearing of the camera was recorded. A contextual 3D model was generated using LiDAR DSM. A geo-referenced development model was constructed and referenced to the OSGB36 coordinate grid/datum. With a known camera position and orientation, photographic and 3D existing visible features, the development model was accurately aligned to the photograph.

The AVRs produced have an estimated accuracy tolerance of +/-1m.

The pages in this document should be printed at their intended size and not be scaled to fit smaller page sizes. Technical Methodology pages should be printed on A3 landscape paper (297mmx420mm), and the existing / proposed panoramic visualisations should be printed on 297mmx841mm paper.

The panoramic visualisations presented are cylindrically projected and for correct perspective viewing should be viewed at comfortable arm’s length.

Non Technical Methodology

This section explains the processes involved in the preparation of Accurate Visual Representations (AVR).

Standards

The work fully complies with the following guidance:

- 1. The Landscape Institute Technical Guidance Note TGN 06/19 Visual Representation of Development Proposals
- 2. The Landscape Institute/IEMA Guidelines for Landscape and Visual Impact Assessment (3rd edition 2013);
- 3. The SPG London View Management Framework (March 2012).

Preparation

Following a formal instruction from the client, the scope of the project was agreed. The client identified a number of viewpoints and supplied a map of required view locations.

Focal length, image format, required content and context and AVR was agreed prior to the site visit. The photographer was familiar with the scope of the project and read any relevant information that was made available by the client.

Photography

The site visit was done on 6th March, 22nd March 7th November, and 11th November 2024 and consideration was made to:

- 1. Forecast weather conditions
- 2. Shot itinerary based on sun position/time of day
- 3. Access / distance to site / duration of journey to site and required time on site
- 4. Suitable parking

Equipment used (see Appendix B for specification):

- 1. Camera, in working order with charged batteries (Canon EOS 5DS R + 110D)
- 2. Empty SD cards, at least 3x32Gb cards and 128Gb across additional cards in various capacities in case of failure
- 3. Battery charger
- 4. 50mm lens (Canon EFs 50mm f/1.8)
- 5. Lens cloth
- 6. Remote cabled shutter release
- 7. 3 Legged Thing Punks Travis General Use Tripod
- 8. Nodal Ninja EZ Leveller MKII together with a Nodal Ninja Advanced Rotator RD16-II
- 9. Tape measure

Lens Selection Criteria

In order to capture appropriate and relevant context, it was agreed that a 50mm lens should be used in combination with a panoramic tripod head. A series of shots were taken (with the camera in landscape orientation) to form panoramic photographs for each view location.

Site visit

Tyler Grange visited the site on the 6th March, 22nd March 7th November, and 11th November 2024 to obtain viewpoint photography. The view positions were recorded on a hand held GPS device.

On site procedure

- 1. Based on the order of viewpoints on the itinerary, each view location was visited. The tripod was erected and camera attached, along with the 50mm lens, shutter release, spirit level and plumb bob. The bob was hung from the bottom of central tripod assembly after a nodal point adjustment had been made.
- 2. The height of the lens’ central axis above ground level was measured and set to 1.60m using the tape measure.
- 3. The following camera settings were used:
 - Manual ‘M’ mode
 - Bracket set to +/- 0.75 stops
 - Aperture at f8 to ensure wide depth of field and minimal diffraction.
 - ISO <100
 - Auto White Balance (AWB)
 - Evaluative metering
 - RAW capture only to avoid loss of dynamic range and image quality degradation associated with 8bit jpeg format
 - Enabled highlight warning
 - Check that TS-E lens is not ‘tilted’ or shifted if in use
 - Used ‘Live View’ and zoom function to fix and verify focus on the site, This also enables ‘mirror lockup’ and therefore less camera shake.
 - Evaluative metering.

Panoramic Shots:

- 1. A sufficient horizontal field of view was determined to include the site and sufficient relevant context, vertical field of view was also considered based on height of the proposals and proximity to the site - the views were very close to the site, so the camera was set in landscape orientation.
- 2. The tripod was levelled using the tripod mounted level. Following this the panoramic tripod head was levelled using the levelling base. The levelling base was microadjusted by partially engaging the clamp. Using the digital level built in to the camera, pitch and yaw angles were adjusted to achieve level. Levels were checked at the mid point and each end of the panorama. A trial sweep of the panorama was performed while checking the digital level to ensure a perfectly level set of shots.
- 3. A minimum of 50% shot overlap must was achieved with the camera in landscape orientation. The panoramic tripod head assembly was adjusted to rotate incrementally at approximately 50% of the total horizontal field of view of the selected lens with the camera is in landscape orientation.
- 4. The panoramic tripod head was adjusted to centre the lens nodal point to the rotational axis of the tripod. It was important to ensure this is set to the correct measurement in order to avoid parallax.
- 5. With the camera centred on the site, ‘live view’ and x10 magnification was enabled and an appropriate point was identified to focus on.
- 6. Once focused, and accounting for conditions, the correct exposure was achieved by adjusting the shutter speed.
- 7. The panorama was shot from left to right, taking three bracketed shots per rotational increment, through the panorama attempting where possible to avoid cars and any other moving objects.
- 8. Shots were previewed to check the quality, focus, highlight warning and histogram for the shots to ensure that a well exposed usable set of photographs had been captured.
- 9. ETR (expose to the right) method was used to achieve noise free shots - using the histogram and bracketing the shutter speed was adjusted to achieve an over exposed (but not clipped) +0.75 bracket shot.

Photography Post Processing

RAW files were processed in Adobe Camera Raw after shot approval in Adobe Bridge. The processed RAW files were then stitched using Camera RAW and saved as full resolution DNG files. The process was as follows: