Photoviewpoint 06 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height AOD	[illegible]	Camera / Lens	[illegible]
Viewer Height	1.65m	Date / Time	29/07/2021 10:35
Distance to Site	[illegible]	Weather Conditions	70% cloud, good visibility

Date: 09 September 2021
Drawing Number: D2545/?
Drawn by: AP
Checked by: MP

Project title: [illegible]
Client:
Drawing Title: Photomontage Viewpoint 06

Photoviewpoint 06 - Proposed View

Western Parcel Build Zone

Eastern Parcel Build Zone

Note: This is a computer generated image which was produced using photographs joined together horizontally by means of specialist programs to form an overall field of view as indicated by the red lines. For correct perspective viewing, this page should be viewed at a distance that is equal to the focal length when printed at full size (105mm x 594mm).

Date:	09 September 2022
Drawing Number:	CD 545/01b
Drawn by:	AP
Checked by:	MP

Project title:	J60 - M40
Client:	
Drawing Title:	Photomontage Viewpoint 06

Photoviewpoint 07 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height AOD	[illegible]	Camera / Lens	[illegible]
Viewpoint Height	[illegible]	Date / Time	[illegible]
Distance to Site	[illegible]	Weather Conditions	[illegible]

Date: 09 September 2021
Drawing Number: D2545/09
Drawn by: AP
Checked by: NP

Project title: [illegible]
Client:
Drawing Title: Photomontage Viewpoint 07

Photoviewpoint 07 - Proposed View

Western Parcel Build Zone

Eastern Parcel Build Zone

Date:	09 September 2021	Project title:	J80 - 8660
Drawing Number:	D2 645/01a	Client:	
Drawn by:	AP	Drawing Title:	Photomontage Viewpoint 07
Checked by:	MP		

Photoviewpoint 08 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height AOD	[illegible]	Camera / Lens	[illegible]
Viewer Height	[illegible]	Date / Time	[illegible]
Distance to Site	[illegible]	Weather Conditions	[illegible]

Note: This is a composite image [illegible]

Date: 09 September 2021
Drawing Number: [illegible]
Drawn by: AP
Checked by: MP

Project title: [illegible]
Client:
Drawing Title: Photomontage Viewpoint 08

Photoviewpoint 08 - Proposed View

Western Parcel Build Zone	Date: 09 September 2021	Project title: J60 - 5560	
Eastern Parcel Build Zone	Drawing Number: D2 545/01a	Client:	
	Drawn by: AP	Drawing Title: Photomontage Viewpoint 08	
	Checked by: MP		

Photoviewpoint 09 - Existing View

th

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height AOD	[illegible]	Camera / Lens	[illegible]
Viewer Height	1.65m	Date / Time	[illegible]
Distance to Site	32m	Weather Conditions	[illegible]

Note: This is a [illegible]

Date:	09 September 2021
Drawing Number:	[illegible]
Drawn by:	AP
Checked by:	MP

Project title:	[illegible]
Client:	
Drawing Title:	Photomontage Viewpoint 09

Photoviewpoint 09 - Proposed View

Western Parcel Build Zone	
Eastern Parcel Build Zone	

Date:	09 September 2021	Project title:	J80 - 3660
Drawing Number:	D2 845/01a	Client:	
Drawn by:	AP	Drawing Title:	Photomontage Viewpoint 09
Checked by:	MP		

Photoviewpoint 10 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height AOD	[illegible]	Camera / Lens	[illegible]
Viewer Height	[illegible]	Date / Time	[illegible]
Distance to Site	[illegible]	Weather Conditions	70% cloud, good visibility

Note: [illegible]

Date:	09 September 2021
Drawing Number:	[illegible]
Drawn by:	AP
Checked by:	MP

Project title:	[illegible]
Client:	
Drawing Title:	Photomontage Viewpoint 10

[illegible]

Photoviewpoint 10 - Proposed View

Western Parcel Build Zone	
Eastern Parcel Build Zone	

Date:	09 September 2021	Project title:	J80 - 3660
Drawing Number:	D2545/01a	Client:	
Drawn by:	AP	Drawing Title:	Photomontage Viewpoint 10
Checked by:	MP		

Photoviewpoint 11 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height (AOD)	[illegible]	Camera / Lens	[illegible]
Viewer Height	[illegible]	Date / Time	[illegible]
Distance to Site	[illegible]	Weather Conditions	[illegible]

Date: 09 September 2021
Drawing Number: D2545/09
Drawn by: AP
Checked by: MP

Project title: J10 - M40
Client:
Drawing Title: Photomontage Viewpoint 11

Photoviewpoint 11 - Proposed View

Date:	09 September 2021	Project title:	J80 - 3660
Drawing Number:	D2945/01a	Client:	
Drawn by:	AP	Drawing Title:	Photomontage Viewpoint 11
Checked by:	MP		

Photoviewpoint 12 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height AOD	[illegible]	Camera / Lens	[illegible]
Viewer Height	[illegible]	Date / Time	[illegible]
Distance to Site	[illegible]	Weather Conditions	[illegible]

Note: [illegible]

Date:	09 September 2021	Project title:	[illegible]
Drawing Number:	[illegible]	Client:	
Drawn by:	AP	Drawing Title:	Photomontage Viewpoint 12
Checked by:	MP		

Photoviewpoint 12 - Proposed View

Western Parcel Build Zone

Eastern Parcel Build Zone

Date:	09 September 2021	Project title:	J80 - 3660
Drawing Number:	D2 545/01e	Client:	
Drawn by:	AP	Drawing Title:	Photomontage Viewpoint 12
Checked by:	MP		

Photoviewpoint 13 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height (AOD)	[illegible]	Camera / Lens	[illegible]
Viewer Height	[illegible]	Date / Time	[illegible]
Distance to Site	[illegible]	Weather Conditions	[illegible]

Note: [illegible]

Date: 09 September 2021
Drawing Number: [illegible]
Drawn by: AP
Checked by: MP

Project title: [illegible]
Client:
Drawing Title: Photomontage Viewpoint 13

Photoviewpoint 13 - Proposed View

Western Parcel Build Zone	
Eastern Parcel Build Zone	

Date:	09 September 2021
Drawing Number:	D2 945/01a
Drawn by:	AP
Checked by:	MP
Project title:	
Client:	
Drawing Title:	Photomontage Viewpoint 13

Photoviewpoint 14 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height (AOD)	[illegible]	Camera / Lens	[illegible]
Viewer Height	[illegible]	Date / Time	[illegible]
Distance to Site	[illegible]	Weather Conditions	[illegible]

Date:	09 September 2021
Drawing Number:	[illegible]
Drawn by:	AP
Checked by:	MP

Project title:	[illegible]
Client:	
Drawing Title:	Photomontage Viewpoint 14

Photoviewpoint 14 - Proposed View

Western Parcel Build Zone
Eastern Parcel Build Zone

Date: 09 September 2021
Drawn by: AP
Checked by: MP
Client:
Drawing Title: Photomontage Viewpoint 14

Photoviewpoint 15 - Existing View

Viewpoint Information			
OS Grid Reference	[illegible]	Horizontal Field of View	[illegible]
Ground Height (AOD)	[illegible]	Camera/Lens	[illegible]
Viewer Height	[illegible]	Date/Time	29/07/2021, 9:20
Distance to Site	[illegible]	Weather Conditions	70% cloud, good visibility

Note: [illegible]

Date: 09 September 2021
Drawing Number: D2540/09
Drawn by: AP
Checked by: MP

Project title: J10 - M40
Client:
Drawing Title: Photomontage Viewpoint 15

Photoviewpoint 18 - Proposed View

Western Parcel Build Zone

Eastern Parcel Build Zone

Date: 09 September 2022
Drawing Number: 03 040/01m
Drawn by: AP
Checked by: MP

Project title: J60 - M40
Client:
Drawing Title: Photomontage Viewpoint 18

Appendix A:
AVR Technical Methodology

Overview
The process of generating verified views (also referred to as accurate visual representations (AVR)) for the Proposed Development at J10, M40, carried out by Troopers Hill (THL).

High quality/resolution photographs were taken from the agreed locations by Troopers Hill. An adequate number of visible features were subsequently surveyed, including the precise location and bearing of the camera. A geo-referenced development model was constructed to OSGB36. With a known camera position and orientation, photographic and surveyed existing visible features, the development model was accurately aligned to the photograph.

The AVRs produced have an estimated accuracy tolerance of +/-10cm.

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 with one eye closed and curved through an arc of 90 degrees, while viewed at a constant distance of 500mm.

Site visit
Troopers Hill visited the site on the 29th July 2021 to obtain viewpoint photography. The view positions were marked with paint and documented using photography of the exact positions. A survey was also performed on the same visit to record the precise co-ordinates of camera and control points.

Technical Methodology
This section explains in detail the processes involved in the preparation of Accurate Visual Representations (AVR) The following procedures set out an efficient, consistently accurate, robust, repeatable and traceable approach to achieve a high level of accuracy.

Verified photomontages, also referred to as Accurate Visual Representations (AVR) or Visually Verified Montages (VVM), are the 'top level' in terms of accuracy and documentation. Verified imagery is relied upon at public inquiry and in support of contentious planning applications/appeals and must therefore be robust and free from erroneous/ambiguous information. From the outset, a project where verified photomontages are required MUST be approached with the intention of absolute precision and will be based upon a traceable data set.

Standards
The work fully complies with the following guidance:

1. The Landscape Institute/IEMA Guidelines for Landscape and Visual Impact Assessment (3rd edition 2013);
2. The Landscape Institute Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment.
3. The Landscape Institute TGN 2/17 Visual representation of development proposals
4. The SPG London View Management Framework (March 2012).
5. Landscape Institute TGN 06/19.

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 29th July 2021, 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)
2. Empty CF cards, at least 3x32Gb cards and 128Gb across additional cards in various capacities in case of failure
3. Battery charger
4. 50mm lens (Canon EF 50mm f/1.4 USM)
5. Lens cloth
6. Remote cabled shutter release
7. Tripod with indexed/panoramic head (Manfrotto 303)
8. Tripod head levelling base (Manfrotto 438)
9. Small magnetic spirit level
10. Plumb bob
11. Spray paint (upside down street marking paint)
12. Hilti nails / pegs and hammer
13. 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 portrait orientation) to form panoramic photographs for each view location.

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. A spray paint mark was used directly below the plumb bob to mark the location for the surveyor to measure.
4. Using a camera phone 4 shots (n,e,s,w) were taken of the assembled tripod, camera and bob in situ over the marker. A shot of the marker was also captured.
5. 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 degredation 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 verifiy 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 portrait 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 portrait 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 portrait 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 taken into Adobe Photoshop to be stitched and saved as full resolution TIF files. The process was as follows:

Downloading and Reviewing:
1. Downloaded *.CR2 RAW files from CF card using a CF card reader. The files were saved to the appropriate project folder on the network.
2. The tripod and marker shots were downloaded to the same location and depositied in a 'documentation' folder.
3. Shots were reviewed with Adobe Bridge, and selections were made based on sharpness, composition, suitability for stitching and exposure.

Processing:
4. Using Adobe Camera Raw, simple and standard digital photo processing techniques were applied ie sharpening, noise reduction and chromatic aberration correction. Settings were adjusted as necessary to achieve the best exposure, shadow detail and clarity.
5. Using Adobe Photoshop, the processed RAW files were stitched to form a panorama of cylindrical projection.
6. The completed panorama was saved as an 8bit tiff file.

AVR Control (Survey)
The AVR control survey was carried out 29th July 2021.

Survey Methodology
Survey Equipment Required (see Appendix B for specification)
- Leica 1200 series GPS Smartnet enabled dual receiver (GPS and GLONASS)
- Leica Total Station (1201 or TS16) 1' accuracy with 1000m reflectorless laser

Field Survey Methodology
- **Camera locations:** where possible, the camera position was used as a setup point for the total station, enabling the re-creation of the view as seen in the imagery and reducing the risk of incorrect interpretation of detail. Connection was via GPS Smartnet derived control points in OSGB datum and grid. 3-4 control stations were used, to ensure long distance accuracies and to identify possible outliers.
- Reference points visible in the photography were measured with reflectorless means from the total station. Where long distance views had suitable detail too far from the camera station, further setups were used closer to the detail. Common visible detail points were observed from different setup points to check and increase accuracy achieved.
- Using realtime correction (RTK) accuracies of camera positions are to the low centimetre, while accuracies of surveyed detail vary due to setup geometry and distance, but will be usually in the low centimetre range and always below 30 centimetres.

Data Processing & Delivery
Data was processed using industry standard software (Leica GeoOffice and TerraModel) to create points listings. Digital photos were taken by the survey Total Station to aid identification of points. All points are to OSGB36 grid and datum, to allow the use of common Ordnance Survey products and industry standard site surveys.

AVR Production
Modelling of the Proposals
A model of the proposed development was built by Troopers Hill using CAD (DWG) floor plans that were made available by the project architect.

Autodesk 3DS Max has poor floating point performance and requires that OSGB36 coordinate based drawings and models need to be reprojected nearer to scene origin (0,0).

A project global shift value (x and y axis) was designated when modelling was started. This value was a coordinate for the centre of the site. All drawings were corrected by the global shift value.

Importing of AVR Control Survey Data
The point data provided by the surveyor for control points and camera location was in e,n,z format and delivered as a *.csv. This data was imported in to 3DS Max using a script and was also corrected to the global shift value. When imported virtual cameras were created where specified in the data, and all control points were positioned where specified in the data.

Aligning the 3D Scene to the Baseline Photography
3DS MAX was used to generate high resolution *renders from the virtual cameras set up in the 3D environment

**Rendering is the process of generating an image from a model (or models in what collectively could be called the 3D environment), by means of computer programs - specifically, in this case Chaos Group V-Ray 3.6 for Autodesk 3Ds Max 2019.*

The virtual camera was configured to match a similar field of view to that of the panoramic baseline photograph.

The render from each camera shows each control point as a red cross. In order for the render to match the cylindrical projection of the photograph it was necessary to render the points to a cylindrical projection (using the spherical camera type in VRay 5.0 by specifying exact horizontal and vertical field of view parameters)

This render of the control points was taken into Adobe Photoshop converted to a smart object and overlayed on to the baseline photograph. The smart object was scaled (uniformly) so that the control point markers aligned to the same objects measured by the surveyor. The position of the smart object was locked so that it could not be moved accidentally.

The baseline photography was then effectively aligned to the 3D environment, and when the proposed model was rendered (in cylindrical projection) from this environment and placed in to the smart object it was therefore automatically correctly positioned in the photograph.

Output of the finished AVR
The style of AVR was discussed with the client and it was agreed that a wireline visualisations were required.

For the wireline visualisations a basic outline render was taken in to the aligned smart object. Simple lines were traced demonstrating the maximum mass extents of the proposed scheme. Masks were applied to the smart object to hide aspects of the proposed scheme that are hidden by existing features.

Using the smart object, the field of view of the baseline photography was calculated, measured and subsequently cropped (non destructively) to a fixed field of view of 90 degrees in the horizontal axis for all views.

Using Adobe InDesign, each completed AVR was presented in a document that conforms with the relevant guidance.

Mitchell Peacock
[redacted]
On behalf of Troopers Hill Limited
Braeside, Cotswold Close
Bourne
Brimscombe
Stroud
Gloucestershire
GL5 2UA

Appendix B:
Equipment Specification

Camera: Canon 5DSR

Image sensor type	CMOS sensor
Image sensor size	Approx. 36.0 x 24.0 mm
Processor	Dual DIGIC 6
Effective pixels	Approx. 50.6 megapixels
Max resolution	8688 x 5792 pixels
Lens mount	Canon EF mount
Image type	JPEG, RAW (14-bit Canon original), RAW+JPEG simultaneous recording possible
Crop/aspect ratio	Full-frame/ Approx. 1.3x (crop)/ Approx. 1.6x (crop)/ 1:1 (aspect ratio)/ 4:3 (aspect ratio)/ 16:9 (aspect ratio)
LCD Monitor type	TFT color, liquid-crystal monitor
Monitor size and dots	3.2-in. (3:2) with approx. 1.04 million dots
AF points	61 (up to 41 cross-type points)
Focus operation	One-Shot AF, AI Servo AF, AI Focus AF, Manual Focusing (MF)
AF fine adjustment	AF Micro adjustment (All lenses by the same amount, Adjust by lens)
Exposure Metering mode	Approx. 150,000-pixel RGB+IR metering sensor and 252-zone TTL metering at max. aperture EOS iSA (Intelligent Subject Analysis) system
ISO speed	100 - 6400 (expandable to 50 and 12800)
Exposure compensation	±5 (at 1/3 EV, 1/2 EV is typ.)
AE Bracketing	±3 stops in 1/3- or 1/2-stop increments (can be combined with manual exposure compensation)
Anti-flicker	Possible
Interval timer	Shooting interval and shot count settable
Bulb timer	Bulb exposure time settable
HDR Shooting - Dynamic range adjustment	Auto, ±1, ±2, ±3
Multiple exposure - Shooting method	Function/control priority, Continuous shooting priority
Number of multiple exposures	2 to 9 exposures
Multiple-exposures control	Additive, Average, Bright, Dark
Shutter speed	1/8000 sec. to 30 sec. Bulb, X-sync at 1/200 sec.
Continuous shooting speed	Approx. 5 frames-per-second
Max. burst (With full-frame)*	JPEG Large/Fine : Approx. 31 shots (approx. 51 shots) RAW : Approx. 12 shots (approx. 14 shots) RAW+JPEG Large/Fine : Approx. 12 shots (approx., 12 shots)
Compatible Speedlites	EX-series Speedlites
Flash metering	E-TTL II autoflash
Flash exposure compensation	±3 stops in 1/3- or 1/2-stop increments
PC terminal	Provided
Live view shooting - focus method	Contrast-detection AF system (Face+Tracking, FlexiZone-Single) Manual focus (approx. 5x and 10x magnified view possible for focus check)
Continuous AF	Provided
Recording format	MOV
Movie	MPEG-4 AVC/H.264 Variable (average) bit rate
Audio	Linear PCM
Recording size and frame rate	Full HD (1920x1080) : 29.97p/25.00p/23.98p HD (1280x720) : 59.94p/50.00p VGA (640x480) : 29.97p/25.00p
Dimensions (W x H x D)	Approx. 152.0 x 116.4 x 76.4 mm / 5.98 x 4.58 x 3.01 in.
Weight:	Approx. 930 g / 32.80 oz. (Based on CIPA Guidelines) Approx. 845 g / 29.80 oz. (Body only)

Lens: Canon 50mm f/1.4 USM

Angle of view (horzntl, vertl, diagnl)	40°, 27°, 46°
Lens construction (elements/groups)	7/6
No. of diaphragm blades	8
Minimum aperture	22
Closest focusing distance (m)	0.45
Maximum magnification (x)	0.15
AF actuator	Micro USM¹
Filter diameter (mm)	58
Max. diameter x length (mm)	73.8 x 50.5
Weight (g)	290

Tripod Head: Manfrotto 303PIUS Panoramic Head + 300N Rotation Unit

- sliding plates for nodal point positioning
- Elbow bracket to allow camera to be mounted in either portrait or landscape orientation

Survey GPS: Leica 1200

Receiver	**GX1230**
Type	Dual frequency
Channels	12 L1 + 12 L2 / WAAS / EGNOS
RTK	Yes
Power consumption	5.2W (receiver + controller + antenna)
Batteries	Two Li-Ion 3.6Ah/7.2V mini batteries
	Power receiver + controller + antenna for about 15 hours (static mode)
	Power receiver + controller + antenna + radio for about 10 hours (RTK mode)
External supply	Nominal 12V DC (10.5 to 28V allowed)
Weight	1.20kg
Temperature	Operation: -40 to +65 C. Storage: -40 to 80 C
RTK Accuracy	Horizontal: 10mm + 1ppm. Vertical: 20mm + 1ppm (kinematic)
Post-Processed	Horizontal: 5mm + 0.5ppm. Vertical: 10mm + 0.5ppm (static)
Data logging	Compact Flash cards: 256Mb, typical spec:-
	About 4,400 hours L1+L2 logging at 15 sec rate About 17,600 hours L1+L2 logging at 60 sec rate About 360,000 RTK points with codes
Controller	**RX1210T**
Display	High contrast 1/4 VGA touch screen, 11 lines x 32 characters
Keypad	Full illuminated QWERTY keypad with user definable keys
Weight	0.48kg
Temperature	Operation: -30 to +65 C. Storage: -40 to 80 C
Antenna	**SmartTrack AX1202**
Weight	0.44kg
Temperature	Operation: -40 to +70 C. Storage: -55 to 85 C

Survey Total Station: Leica TPS 1201+

Angle measurement

		Type 1201+	Type 1202+	Type 1203+	Type 1205+
Accuracy (std.dev., ISO 17123-3)	Hz, V:	1" (0.3 mgon)	2" (0.6 mgon)	3" (1 mgon)	5" (1.5 mgon)
	Display resolution:	0.1" (0.1 mgon)	0.1" (0.1 mgon)	0.1" (0.1 mgon)	0.1" (0.1 mgon)
Method	absolute, continuous, diametrical				
Compensator	Working range:	4' (0.07 gon)	4' (0.07 gon)	4' (0.07 gon)	4' (0.07 gon)
	Setting accuracy:	0.5" (0.2 mgon)	0.5" (0.2 mgon)	1.0" (0.3 mgon)	1.5" (0.5 mgon)
	Method:	centralized dual axis compensator			

Distance measurement (IR-Mode)

Range (average atmospheric conditions)	Round prism (GPR1):	3000 m
	360° reflector (GRZ4):	1500 m
	Mini prism (GMP101):	1200 m
	Reflective tape (60 mm x 60mm)	250 m
	Shortest measurable distance:	1.5 m
Accuracy / Measurement time (standard deviation, ISO 17123-4)	Standard mode:	1 mm + 1.5 ppm / typ. 2.4 s
	Fast mode:	3 mm + 1.5 ppm / typ. 0.8 s
	Tracking mode:	3 mm + 1.5 ppm / typ. <0.15 s
	Display resolution:	0.1 mm
Method	Special phase shift analyzer (coaxial, visible red laser)	

FinPoint R400/R1000 reflectorless distance measurement (RL-Mode)

Range (average atmospheric conditions)	FinPoint R400:	400 m / 200 m (Kodak Gray Card: 90 % reflective / 18 % reflective)
	FinPoint R1000:	1000 m / 500 m (Kodak Gray Card: 90 % reflective / 18 % reflective)
	Shortest measurable distance:	1.5 m
	Long Range to round prism (GPR1):	1000 m - 7500 m
Accuracy / Measurement time (standard deviation, ISO 17123-4) (object in shade, sky overcast)	Reflectorless ≤ 500 m:	2 mm + 2 ppm / typ. 3 - 6 s, max. 12 s
	Reflectorless > 500 m:	4 mm + 2 ppm / typ. 3 - 6 s, max. 12 s
	Long Range:	5 mm + 2 ppm / typ. 2.5 s, max. 12 s
Laser dot size	At 30 m:	approx. 7 mm x 10 mm
	At 50 m:	approx. 8 mm x 20 mm
Method	FinPoint R400 / R1000:	System analyzer (coaxial, visible red laser)

Appendix 13.3

LVIA METHODOLOGY

Appendix 1: EIA Landscape and Visual Impact Assessment Methodology summary of Approach and Criteria Tables

The key terms used within assessments are:

- Susceptibility and Value – Which contribute to Sensitivity.
- Scale, Geographical Extent, Duration and Reversibility – which contribute to the Magnitude of change.
- Level of Effect - the level or degree of effect on the landscape as a resource and/or the effect on views and visual amenity as experienced by people and is judged by determining magnitude (or the nature of the effects) and registering it against sensitivity
- Level of Effect – a judgment of the level of effect when Sensitivity and Magnitude are combined.
- Significance - A measure of the importance or gravity of the environmental effect defined by level of effect criteria. A final additional judgment is made about whether an effect is likely to be significant or not, for developments subject to EIA.

Sensitivity

Overall sensitivity lies along a continuum of low to high. The *Value and Susceptibility* of a receptor are both considered in forming a judgment of overall sensitivity.

Susceptibility is defined as the ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences. It is assessed for both landscape receptors including, landscape character areas, and for visual receptors (people). It indicates the ability of a defined landscape receptor to accommodate the proposed development "without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies." (GLVIA, 3rd edition, para 5.40) and identifies "the occupation or activity of people experiencing views at particular locations and the extent to which their attention may be focused on the views and the visual amenity they experience at a particular locations." (GLVIA, 3rd edition, para 6.32). An example of how Susceptibility can be described at each end of the continuum of low to high is provided in the following Tables below A and B for both landscape and visual receptors.

Landscape **Value** is "the relative value that is attached to different landscapes by society" (GLVIA, 3rd edition, page 157). Box 5.1 (GLVIA 3rd version, page 84) sets out some factors to be considered in the identification of valued landscapes. These can be broadly described as: Landscapes recognised and valued for their quality (condition) and/or cultural associations; key characteristics and features as recognised in published landscape character assessments; scenic quality; rarity; representativeness; recreational value and for perceptual qualities, notably wildness and /or tranquillity. An example of how Value can be described at each end of the continuum of low to high is provided in the following Table 1 for landscape receptors. In visual terms, **Value** relates to that attached to views experienced by receptors (people). An example of how Value can be described at each end of the continuum of low to high is provided below for visual receptors in the following Table 2.

Magnitude of Change

Overall magnitude of change lies along a continuum of low to high. Together the *Scale, Geographical Extent, and Duration and Reversibility of effect* are all considered in understanding the overall Magnitude of change.

Scale of effect is assessed for both landscape and visual receptors and identifies the degree of change which would arise from the development. An example of how Scale of effect can be described at each end of the continuum of low to high is provided in the following Tables 3 and 4 for both landscape and visual receptors.

Geographical Extent of effect of is assessed for both landscape and visual receptors and indicates the geographic area over which the effects will be felt. An example of how Geographical Extent can be described at each end of the continuum of low to high is provided in the following Tables 3 and 4 for both landscape and visual receptors.

Duration and Reversibility of effect is assessed for all landscape and visual receptors and identifies the time period over which the change to the receptor would arise as a result of the development. An example of how Duration and Reversibility can be described at each end of the continuum of low to high is provided in the following Tables 3 and 4 for both landscape and visual receptors.

Level of Effect

Best practice guidelines stipulate that the significance of any landscape related impact should be evaluated, both during the construction works and following completion of the development. The significance of any landscape and visual effect is a function of the sensitivity of the affected landscape resources and visual receptors against the magnitude of change that they would experience. As such, the assessment of potential and residual effects can be described as: negligible, minor, moderate, and major. A description is set out in TTable.5

The following terms will be used to define residual landscape/townscape direct and indirect effects:

Adverse: the proposed development may result in direct loss of physical landscape/townscape resources, weaken key characteristics or negatively affect the integrity of a landscape/townscape designation; and
Beneficial: the proposed development may replace poor quality elements of the existing landscape/townscape or strengthen existing landscape/townscape characteristics.
Neutral: the proposed development would result in neither appreciable adverse nor beneficial landscape effects.

The following terms have been used to define residual visual effects:
Adverse: the proposed development reduces visual amenity; and
Beneficial: the visual amenity is improved by the proposed development.
Neutral: the proposed development would result in neither appreciable adverse nor beneficial visual effects.

Significance

Landscape/Townscape or visual effects above moderate adverse (i.e. Major) are considered to be significant; all other effects are considered not significant.

Table.1 Sensitivity of Receptors Criteria: Landscape Receptors

As set out below, the Sensitivity lies along a continuum of low to high. The Value and Susceptibility of a landscape/townscape/seascape receptor are both considered in understanding and forming a judgment regarding its overall Sensitivity.

		Landscape Value		*Landscape Susceptibility*
	Designations and Conservation Interests/Associations *Landscapes recognised and valued for their quality and / or cultural associations / recreational value*	***Key Characteristics and Features*** *As recognised in published Landscape Character Assessments or policy*	***Landscape Condition*** *Degree to which the landscape is intact and legible & its scenic quality*	*The ability of a defined landscape to accommodate the specific proposed development without undue negative consequences*
High	National / Regional Importance (e.g. AONB, National Park, Registered Parks and Gardens)	Features which are dominant within the landscape and are fundamental to defining the distinct landscape character of an area. Important characteristics and features recognised as forming intrinsic part of nationally and regionally designated landscapes. Distinctive individual or rare features.	Distinct landscape structure with strong pattern and intact features. Few detractors or uncharacteristic features or elements present.	The landscape is such that changes in terms of the proposed development would be entirely at odds with the character of the local area, relatec to matters including pattern, grain, use, scale and mass.
	Local importance (e.g. Conservation Areas, Special Landscape Areas / Features)	Locally important and notable features that contribute to the overall character of an area. Features and elements protected by local policy.	Landscape exhibits recognisable structure and characteristic patterns. Some detracting features present.	The proposed development has a degree of consistency with the existing scale, pattern, grain, land use of the prevailing character, although mitigation may be appropriate to enhance assimilation.
Low	No Designation and no or very few attributes that demonstrably lift the landscape resource, above ordinary, at a local level	Features or elements that are uncharacteristic and detract from the landscape character of an area.	Degraded landscape structure with fragmented pattern and poor legibility of character. Detracting features notable within the landscape.	The proposed development is entirely consistent with the character of the local area, related to matters including pattern, grain, use, scale and mass.

e.g. Medium – Landscape Character Area does not include a designation but includes important characteristics and features that create a distinct landscape structure with strong pattern and intact features. The proposed development has a degree of consistency with the existing scale, pattern, grain, land use of the prevailing character, although mitigation may be appropriate to enhance assimilation.

Table.2 Sensitivity of Receptors Criteria: Visual Receptors

As set out below, the Sensitivity lies along a continuum of low to high. The Value and Susceptibility of a receptor are both considered in understanding and forming a judgment regarding its overall Sensitivity.

	Value (attached to views)	*Visual Susceptibility* *The occupation or activity of people experiencing the view and the extent to which their attention or interest may be focused on the views and their visual amenity at particular locations*
High	Recognised national / Important Viewpoints, including those identified within and protected by policy. These viewpoints may be tourist destinations and marked on maps. Designed views, including from within historic landscapes. Users of nationally recognized routes e.g. National Cycle Network, National Trails. Land with public access (i.e. Open Access Land and National Trust Land).	People visiting recognised viewpoints with views towards the development. People using Public Rights of Way and Access Land as part of recreational routes with extensive views towards the development.
	Locally important views/ views. Views from within locally designated landscapes e.g. Conservation Areas and local planning policy. Views from local routes identified on maps Permissive routes, not recognised by policy or identified on maps.	People using recreational facilities or playing outdoor sports with views of the development but for whom views are not the main focus. Users of Public Rights of Way and Access Land with intermittent views towards the development.
Low	No designations present	People travelling along roads or using transport routes where the focus is not on the views and views of the development are fleeting. People at places of work where attention is not on the views. Users of Public Rights of Way and Access Land where views towards the development are limited to glimpses and are not the main focus of attention.

e.g. Medium - views of the landscape are part of, but not the sole purpose of the receptors activities along local routes.

Table.3 Magnitude of Change Criteria: Landscape Receptors

As set out below, magnitude of change lies along a continuum of low to high. Together the Scale, Geographical extent, and Duration and Reversibility of effect are all considered in understanding and forming a judgment regarding the overall magnitude of change.

	Scale	*Geographical Extent*	*Duration and Reversibility*
	identifies the degree of change which would arise from the development	*of effect indicates the geographic area over which the effects will be felt*	*of effect identifies the time period over which the change to the receptor would arise as a result of the development.*
High	Highly noticeable change, affecting most key characteristics and dominating the experience of the Landscape/Townscape; introduction of highly conspicuous new development; and the baseline situation will be fundamentally changed.	Extensive affecting the majority or all the Landscape/Townscape Character Area.	Long-term or permanent, the change is expected to be in place for 10+ years and there may be no intention for it to be reversed or only partially reversed.
	Partial alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be largely unchanged but noticeable despite discernible differences.	Localised, affecting the site and a proportion of the wider Landscape/Townscape Character Area.	Medium-term, the change is expected to be in place for 5-10 years and the effects may be reversed or partially reversed.
Low	Minor alteration to few elements, features qualities or characteristics resulting in a barely perceptible change.	Affecting the site and immediate setting only.	Short-term, the change is expected to be in place for 0-5 years and the effects are likely to be reversed.

e.g. Medium – Highly noticeable change with introduction of highly conspicuous development which will affect the site and a proportion of the character area for a short-term, during construction. The effects are likely to be reversed.

Table.4 Magnitude of Change Criteria: Visual Receptors

As set out below, magnitude of change lies along a continuum of low to high. Together the Scale, Geographical extent, and Duration and Reversibility of effect are all considered in understanding and forming a judgment regarding the overall magnitude of change.

	Scale	*Geographical Extent*	*Duration and Reversibility*
	identifies the degree of change which would arise from the development	*Wide, and/or within close proximity, and/or open views.*	*identifies the time period over which the change to the receptor would arise as a result of the development.*
High			
	Intensive/dominant or major alteration to key elements of the baseline view.	Extensive, open and/or close proximity, and/or direct and/or affecting unscreened views.	Long-term or permanent, the change is expected to be in place for 10+ years and there may be no intention for it to be reversed or only partially reversed.
	Partial/noticeable or minor alteration to key elements of the baseline view.	Framed, and/or contained, and/or medium distance, and/or partially screened views.	Medium-term, the change is expected to be in place for 5-10 years and the effects may be reversed or partially reversed.
Low	Minor alteration to few elements of the baseline view.	Narrow, and/or fragmented, and/or long distance, and/or heavily screened views.	Short-term, the change is expected to be in place for 0-5 years and the effects are likely to be reversed.

e.g. Medium – Intensive and major alteration to key elements of the framed baseline view over a medium distance for a short period of time during construction. The effects are likely to be reversible.

Table.5 Level of Effect Criteria

Major beneficial:	The development would fit well with the scale, landform and pattern of the landscape and bring substantial enhancements. The development would create a major improvement in views.
Moderate beneficial:	The development would fit well with the scale, landform and pattern of the landscape, maintain and/or enhance the existing landscape character. The development would create a noticeable but improved change in the view.
Minor beneficial:	The development would complement the scale, landform and pattern of the landscape, whilst maintaining the existing character. The development would result in minor improvements to the existing views.
Negligible:	The development would cause very limited changes to the landscape and/or views but creates no significant effects; the development would create neither an adverse or beneficial change to the landscape or visual receptor.
Minor adverse:	The development would cause minor permanent and/or temporary loss or alteration to one or more key elements or features of the landscape, to include the introduction of elements that may not be uncharacteristic of the surrounding landscape. The development would cause limited visual intrusion.
Moderate adverse:	The development would cause substantial permanent loss or alteration to one or more key elements of the landscape, to include the introduction of elements that are prominent but may not be substantially uncharacteristic with the surrounding landscape. The development would be clearly visible and would result in adverse effects upon the landscape.
Major adverse:	The development would irrevocably damage, degrade or badly diminish landscape character features, elements and their setting. The development would be irrevocably visually intrusive and would disrupt fine and valued views both into and across the area.

Appendix 13.4

EXTRACTS FROM LANDSCAPE CHARACTER ASSESSMENT

Oxfordshire Wildlife & Landscape Study

13.1.1 Published by Oxfordshire County Council, the Oxfordshire Wildlife & Landscape Study (2004) describes the character and qualities of landscape character types (LCTs) and local character areas (LCAs) across the county. The study also identifies regional character areas within the county however notes that these are the parts of the National Character Areas which fall within Oxfordshire, no description is provided of these areas in the assessment.

13.1.2 The report identifies the Development Site as being located in the Cotswolds Regional Character Area. This character area however is not assessed in detail in this LVIA, as the report notes the RCA is the area of the Cotswolds NCA present within Oxfordshire, no further assessment of the character of this area is provided and as set out above, character studies at the national or regional level are best used to 'set the scene' rather than used to assess the effects on landscape character.

6. Farmland Plateau LCT

13.1.3 This landscape type covers the plateau across the elevated northern part of the county. It extends across the areas between Chipping Norton and Banbury and is dissected by the rivers Evenlode, Glyme and Dorn. To the east of the Cherwell Valley the plateau continues northeast of Upper Heyford and Fritwell. The most southern part lies to the northwest of the River Windrush.

13.1.4 This landscape type is characterised by a high limestone plateau with a distinctive elevated and exposed character, broad skies and long-distance views. Large scale arable fields dominate the landscape, with some medium-sized plantations partially obscuring the otherwise open views.

13.1.5 Its key characteristics are:

- Level or gently rolling open ridges dissected by narrow valleys and broader vales.
- Large, regular arable fields enclosed by low thorn hedges and limestone walls.
- Rectilinear plantations and shelterbelts.
- Sparsely settled landscape with a few nucleated settlements.
- Long, straight roads running along the ridge summits.

13.1.6 The landform of the LCT is a distinctive smoothly rolling plateaux, in places, it reaches heights of around 200 metres.

Land use and vegetation

13.1.7 The light and easily cultivated soils have favoured the intensive arable farming that largely dominates the landscape. There are some smaller, semi-improved grass fields used for pony and sheep-grazing. Characteristic features dominating the skyline include the small to medium-sized regular plantations and long, wide shelterbelts bordering roads and field boundaries. They are particularly prominent when associated with large estates, and are mostly mixed and deciduous plantations

with ash, field maple, beech and occasionally oak. Beech plantations are also typical of this landscape type. Small patches of secondary woodland with similar tree and shrub species can also be found.

13.1.8 Otherwise, there is very little semi-natural vegetation. There are pockets of calcareous grassland confined to steep railways embankments, disused quarries, airfields, and road verges. Bracken and patches of gorse are also found along road verges and on disused quarries and golf courses.

Cultural pattern

13.1.9 This is a characteristic, planned, late Parliamentary enclosure landscape. There is a large-scale geometric field pattern surrounded by low hawthorn hedges and stone walls. Hedgerow trees, which are mainly ash, sycamore, field maple and sometimes oak, are sparsely scattered throughout and do not detract from the openness of the landscape. Another characteristic feature is the straight roads which reinforce the geometric pattern of this planned landscape.

13.1.10 The exposed high plateau has not favoured settlement, and it is characterised by sparsely scattered farmsteads and a few nucleated villages. Farmhouses are generally located in the open countryside as a result of parliamentary enclosure.

13.1.11 The use of local limestone for building materials gives a very distinctive character to the village settlements. The vernacular character is particularly prominent in villages such as Fritwell and Souldern, and in small hamlets such as Ledwell.

19. Wooded Estatelands LCT

13.1.12 The landscape type includes parklands at the eastern end of the Cotswolds, ranging from the area around Blenheim Park, Steeple Barton, Middleton Park and as far as Shelswell Park to the north of Bicester. Further south it includes Eynsham Hall Park and Bladon Heath Wood and it also covers the majority of the wooded and parkland areas in the undulating landscape of the Corallian Ridge.

13.1.13 Its key characteristics are:

- Rolling topography with localised steep slopes.
- Large blocks of ancient woodland and mixed plantations of variable sizes.
- Large parklands and mansion houses.
- A regularly-shaped field pattern dominated by arable fields.
- Small villages with strong vernacular character.

13.1.14 The landform is generally rolling, ranging from gently rolling to undulating. Across the Corallian Ridge the landform is strongly undulating and is steeply sloping in places resulting in small valleys.

Land use and vegetation

13.1.15 The landscape has a mix of land uses but is largely dominated by arable farming. On the steeper slopes there is some semi-improved grassland, as well as pockets of calcareous grassland, acid grassland and gorse. This is a well-wooded landscape with large, prominent blocks of ancient semi-natural woodland often located on the steeper slopes. In addition, there is a significant number of smaller, mainly mixed plantations that are scattered throughout much of the area and this adds to the overall sense of enclosure. Dense corridors of willows and poplars, and belts of semi-natural woodland bordering the valley streams are other locally prominent features.

Cultural pattern

13.1.16 The field pattern is generally characterised by a geometric pattern of medium to large-sized fields, with arable cropping in the larger fields. There are a number of species-rich hedges bordering roads and close to woods. Although there are only a few mature oak and ash hedgerow trees, they still contribute to the wooded character of the landscape. They are more obvious in the vicinity of ancient woodland and quite sparse where arable cropping is dominant. Views are generally filtered through trees and framed by woodland blocks. Large parklands with their distinctive country houses, extensive woodland and ornamental lakes at Blenheim, Middleton, Eynsham Hall and Buscot are also very typical of this landscape type and underline its estate character.

13.1.17 The settlement pattern is characterised by small settlements as well as scattered farmhouses in the wider countryside. The vernacular character is strong in most of the villages and this is reinforced by features such as stone walls.

H. Fritwell (CW/57) LCA

13.1.18 This area is characterised by large, regularly-shaped arable fields and medium-sized mixed plantations. There are small fields of semi-improved grassland surrounding villages. There are also a few large blocks of ancient semi-natural woodland, including Stoke Wood and Stoke Little Wood, which add to the wooded character of the area. The field boundaries are dominated by hawthorn and blackthorn hedges with scattered hedgerow trees, although the latter are almost totally absent to the south of Upper Heyford airfield. Hedges are generally low in height, except around Fritwell and Ardley where they are taller and more species-rich.

Forces for change

- Agricultural intensification, particularly the conversion of grassland to arable has resulted in the loss of semi-natural vegetation and fragmentation of the hedgerow network. Hedges along roadsides are generally in a better condition, but many internal hedges bordering arable fields have been removed.
- The open plateau landscapes are very exposed and agricultural buildings and other large structures, such as the industrial units at Enstone Airfield, are particularly prominent. Similarly, the structures associated with Upper Heyford airfield are very visible across the Cherwell valley.

Landscape Strategy

13.1.19 The overarching strategy for this LCA is to conserve the open and remote character of the landscape and maintain the large-scale field pattern.

Guidelines

- Conserve the open, spacious character of the landscape by limiting woodland planting on the more exposed ridge tops. Locate new planting in the dips and folds of the landscape and establish tree belts around airfields, quarries and other large structures to reduce their visual impact using locally characteristic native tree and shrub species such as ash, oak and beech.
- Strengthen the field pattern by planting up gappy hedges using locally characteristic species such as hawthorn and blackthorn.
- Promote environmentally sensitive maintenance of hedgerows, including coppicing and layering when necessary, to maintain a height and width appropriate to the landscape type.
- Maintain the sparsely settled rural character of the landscape by concentrating new development in and around existing settlements. The exposed character of the plateau is particularly sensitive to visually intrusive development, large buildings and communication masts.
- Promote the use of local building materials, such as limestone and ironstone, and a scale of development appropriate to landscape type.

C. Middleton Stoney (CW/59) LCA

13.1.20 The area is dominated by large arable fields and localised improved grassland. Woodland is a strong landscape element, and large woodland blocks are associated with the parklands and estates. It is mainly ancient semi-natural woodland, with species such as ash, oak, hazel, and field maple, as well as mixed plantations. Throughout the landscape, there are belts of young mixed and coniferous plantations next to roadside hedges and they often function as field boundaries. Hedgerow trees such as ash, sycamore and occasionally oak are found in some roadside hedges, but they are sparser to the north where there is more intensive arable cropping. In parts there are dense corridors of willow and ash, belts of semi-natural woodland and poplar plantations bordering watercourses. Hedgerows vary from tall, thick species-rich hedges with shrubs such as wayfaring tree, dogwood, hazel, field maple, spindle and wild privet through to low, gappy internal field hedges. Parklands are a prominent feature throughout and they include Middleton, Bignell and Tusmore Parks in the north and Kirtlington and Bletchington Parks in the south.

Forces for change

- Overall, the hedges are in good condition but intensive agriculture has led to the fragmentation of field boundaries, particularly in areas dominated by arable farming. In such areas the hedges are very intensively maintained, fragmented, and in places removed altogether and replaced by fences.
- The vernacular character is strong in most of the villages and there is generally a low impact from residential development, especially within the wider countryside. However, in some villages new residential development is out of character, even though it is contained within the village envelope. There is also

sprawling development along some of the main roads, particularly the A420 and A338, although this is mitigated to some extent by woodland and mature garden trees.

- In very intensive areas of arable farming some of the new, large-scale barn complexes are visually intrusive.
- Some large-scale business parks using inappropriate building materials are also visually intrusive.

Landscape Strategy

13.1.21 Safeguard and enhance the characteristic landscape of parklands, estates, woodlands, hedgerows and unspoilt villages.

Guidelines

- Conserve and maintain semi-natural and ancient semi-natural woodland. Where appropriate, replace non-native conifer species with native species such as oak and ash. Promote the establishment and management of medium to large-scale deciduous and mixed plantations in areas where the landscape structure is particularly weak.
- Strengthen the field pattern by planting up gappy hedges using locally characteristic species such as hawthorn and hedgerow trees such as oak and ash.
- Promote environmentally sensitive maintenance of hedgerows, including coppicing and layering when necessary, to maintain a height and width appropriate to the landscape type.
- Conserve and sympathetically maintain species-rich hedgerows and, where appropriate, replant gappy hedges using species such as hawthorn, blackthorn, wayfaring tree, dogwood and spindle.
- Minimise the visual impact of intrusive land uses such as quarries, landfill sites, airfields and large-scale development, such as new barns and industrial units, with the judicious planting of tree and shrub species characteristic of the area. This will help to screen the development and integrate it more successfully with its surrounding countryside.
- Maintain the nucleated pattern of settlements and promote the use of building materials and a scale of development and that is appropriate to this landscape type.

Appendix 13.5

SCOPED OUT PHOTOVIEWPOINTS

For Context Only

Baseline Image A: View from junction of PRoW within Tusmore Park

Baseline Image B: View north from PRoW 109/5/10 traversing Western Site

Tyler Grange
Morsclen Estate, Rendcomb, Cirencester, GL7 7EX
T: 01285 883804 E: TGlandscape@tylergrange.co.uk W: www.tylergrange.co.uk

Project No:	14047	**Date:**	August 2021
Client:	Albion Land	**Project:**	Land at J10, M40
Status:	Planning	**Figure:**	Scoped out Photoviewpoints

For Context Only

Baseline Image B: View south from PRoW 109/5/10 traversing Western Site

Baseline Image C: View from B4100 northwest of Application Site

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Project No:	14047	**Date:**	August 2021
Client:	Albion Land	**Project:**	Land at J10, M40
Status:	Planning	**Figure:**	Scoped out Photoviewpoints

For Context Only

Baseline Image D: View from B4100 at Ploughley Hill

Baseline Image E: View from east of St Olave Church, Fritwell

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Project No:	14047	**Date:**	August 2021
Client:	Albion Land	**Project:**	Land at J10, M40
Status:	Planning	**Figure:**	Scoped out Photoviewpoints

For Context Only

Baseline Image F: View from PRoW 109/7/10, east of Ardley

Baseline Image G: View from B4100 south of Swifts House Farm

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Project No:	14047	**Date:**	August 2021
Client:	Albion Land	**Project:**	Land at J10, M40
Status:	Planning	**Figure:**	Scoped out Photoviewpoints

For Context Only

Baseline Image H: View from bridleway 367/5/20, north of Stoke Little Wood

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Project No:	14047	**Date:**	August 2021
Client:	Albion Land	**Project:**	Land at J10, M40
Status:	Planning	**Figure:**	Scoped out Photoviewpoints

Appendix 13.6

Consultation with LPA

Rob Mayers

From: Tim Screen <Tim.Screen@Cherwell-DC.gov.uk>
Sent: 16 August 2021 08:51
To: Rob Mayers
Cc: Wendy Lancaster; Aaron Grainger; Alistair Walker; Elin Fradgley; Emma Lancaster; Wellstead, Jonathan - Communities
Subject: RE: Jct10 M40 Landscape and Visual matters [21/0708/PREAPP]

Thank you Rob for the clarifications.

We look forward to your LVIA .

Best regards.

Tim

Tim Screen CMLI
Landscape Architect
Environmental Services
Environment & Place
Cherwell District Council

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Cherwell DISTRICT COUNCIL NORTH OXFORDSHIRE

From: Rob Mayers <rob.mayers@tylergrange.co.uk>
Sent: 13 August 2021 17:32
To: Tim Screen <Tim.Screen@Cherwell-DC.gov.uk>
Cc: Wendy Lancaster <wendy.lancaster@tylergrange.co.uk>; Aaron Grainger <aaron.grainger@tylergrange.co.uk>; Alistair Walker <alistair.walker@quod.com>; Elin Fradgley <elin.fradgley@quod.com>; Emma Lancaster <emma.lancaster@quod.com>; Wellstead, Jonathan - Communities <Jonathan.Wellstead@Oxfordshire.gov.uk>
Subject: RE: Jct10 M40 Landscape and Visual matters [21/0708/PREAPP]

Afternoon Tim,

Many thanks for getting back to me and providing your feedback, its greatly appreciated given the current constraints.

The inclusion of a brief narrative describing the rationale for scoping out Photoviewpoints A – E will form part of the LVIA chapter.

A Photoviewpoint was initially considered from location A but was discounted during the site work phase of the LVIA. However, Photoviewpoints 2 & 3 are adjacent to the parkland and have views over the wider landscape whereas those from A do not, being enclosed by successive hedgerows and areas of woodland. An assessment from

Photoviewpoints 2 & 3 are illustrative of views encountered from the southern edge of the parkland and, it is felt, represent a 'worse case' scenario for receptors.

With respect to residential receptors, aside from its location on a PRoW part of the reasoning for the selection of Viewpoint 8 was to capture, from a publicly accessible location, potential views from the residential properties situated adjacent to the Western Site. I trust this selection is satisfactory.

Many thanks,

Rob

Rob Mayers
Senior Landscape Consultant

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Arboriculture · Ecology · Landscape Planning + Design

Our team work flexibly, so please do not rush to respond to this email if it's not convenient.

From: Tim Screen <Tim.Screen@Cherwell-DC.gov.uk>
Sent: 12 August 2021 16:06
To: Rob Mayers <rob.mayers@tylergrange.co.uk>
Cc: Wendy Lancaster <wendy.lancaster@tylergrange.co.uk>; Aaron Grainger <aaron.grainger@tylergrange.co.uk>; Alistair Walker <alistair.walker@quod.com>; Elin Fradgley <elin.fradgley@quod.com>; Emma Lancaster <emma.lancaster@quod.com>; Wellstead, Jonathan - Communities <Jonathan.Wellstead@Oxfordshire.gov.uk>
Subject: RE: Jct10 M40 Landscape and Visual matters [21/0708/PREAPP]

Hi Rob

Sorry I forgot to mention:

are you able to include residential receptors?

Many thanks

Best regards

Tim

Tim Screen CMLI
Landscape Architect
Environmental Services
Environment & Place
Cherwell District Council

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From: Tim Screen
Sent: 12 August 2021 15:58
To: 'Rob Mayers' <rob.mayers@tylergrange.co.uk>
Cc: 'Wendy Lancaster' <wendy.lancaster@tylergrange.co.uk>; 'Aaron Grainger' <aaron.grainger@tylergrange.co.uk>; 'Alistair Walker' <alistair.walker@quod.com>; 'Elin Fradgley' <elin.fradgley@quod.com>; 'Emma Lancaster' <emma.lancaster@quod.com>; 'Wellstead, Jonathan - Communities' <Jonathan.Wellstead@Oxfordshire.gov.uk>
Subject: RE: Jct10 M40 Landscape and Visual matters [21/0708/PREAPP]

Afternoon Rob

We are still looking at our resourcing/capacity issues. In the meantime here is my brief response.

The 'scoped out' viewpoints do not have to be photographically recorded, however I would prefer to see a narrative for each as they are in 'logical' locations on the plan (if intervening topography obscures the site/scale/massing then this should be mentioned). I would like to see a photo-record for A because this is a visual receptor on/near an important heritage receptor.

The rest of the viewpoints are a good representation of the visual experience. I personally would include a two view (or more) sequence of the PRoW approach to the site, where the receptor may have an enhanced experience of the site's scale/massing, which would directly influence weighting and subsequently the design of the landscape masterplan.

Hope this is acceptable under the constraints we are all currently experiencing.

Best regards

Tim

Tim Screen CMLI
Landscape Architect
Environmental Services
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Cherwell District Council

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From: Tim Screen
Sent: 10 August 2021 16:36
To: Rob Mayers <rob.mayers@tylergrange.co.uk>
Cc: Wendy Lancaster <wendy.lancaster@tylergrange.co.uk>; Aaron Grainger <aaron.grainger@tylergrange.co.uk>; Alistair Walker <alistair.walker@quod.com>; Elin Fradgley <elin.fradgley@quod.com>; Emma Lancaster <emma.lancaster@quod.com>; Wellstead, Jonathan - Communities <Jonathan.Wellstead@Oxfordshire.gov.uk>
Subject: RE: Jct10 M40 Landscape and Visual matters [21/0708/PREAPP]

Afternoon Rob

It is unfortunate that I have been unable to consider these viewpoints. This is due to staff resourcing issues and a high work load. I have asked whether there is capacity within another team.

Best regards

Tim

Tim Screen CMLI
Landscape Architect
Environmental Services
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Cherwell District Council

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From: Rob Mayers <rob.mayers@tylergrange.co.uk>
Sent: 10 August 2021 15:53
To: Tim Screen <Tim.Screen@Cherwell-DC.gov.uk>; Tim Screen <Tim.Screen@Cherwell-DC.gov.uk>
Cc: Wendy Lancaster <wendy.lancaster@tylergrange.co.uk>; Aaron Grainger <aaron.grainger@tylergrange.co.uk>; Alistair Walker <alistair.walker@quod.com>; Elin Fradgley <elin.fradgley@quod.com>; Emma Lancaster <emma.lancaster@quod.com>
Subject: RE: Jct10 M40 Landscape and Visual matters [21/0708/PREAPP]

Afternoon Tim,

Is there an update available on the selection of viewpoints for Jct10, M40 or do require any more information from me? I look forward to receiving your feedback.

Kind regards,

Rob

Rob Mayers
Senior Landscape Consultant

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From: Rob Mayers <rob.mayers@tylergrange.co.uk>
Sent: 02 August 2021 15:21
To: Tim.screen@cherwell-dc.gov.uk; tim.screen@cherwellandsouthnorthants.gov.uk
Cc: Wendy Lancaster <wendy.lancaster@tylergrange.co.uk>; Aaron Grainger <aaron.grainger@tylergrange.co.uk>; Alistair Walker <alistair.walker@quod.com>; Elin Fradgley <elin.fradgley@quod.com>; Emma Lancaster <emma.lancaster@quod.com>
Subject: Jct10 M40 Landscape and Visual matters [21/0708/PREAPP]

Afternoon Tim,

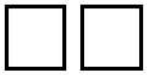
I am contacting you in respect of landscape and visual matters relating to the proposed development at Jct10, M40. I would like to discuss the selection of viewpoints assessed in the LVIA and a number of locations that have been investigated but wish to scope out. The drawings also illustrate a proposed Study Area (2km) that would be used for landscape and visual receptors.

The link below contains documents that illustrate the location of proposed viewpoints and baseline photography taken from them. I look forward to receiving any comments you may have.

210802 Viewpoints

Kind regards,

Rob



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Appendix 15.1

Flood Risk Assessment (FRA)

LAND AT JUNCTION 10, M40

BAYNARDS GREEN, BICESTER

Site Specific Flood Risk Assessment & Drainage Strategy

Issue 2

August 2021

BAILEY

JOHNSON

HAYES

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Client – Albion Land Limited
Project Ref – S1299

DOCUMENT ISSUE RECORD

Document Number	BJH-JUNCTION10-FRA-V2
BJH Reference	S1299-FRA-V2

Revision	Date of Issue	Author	Checked	Approved
Issue 1	18.08.21	James Griffiths BEng, MSc, GMICE	William Bailey CEng MICE IStructE	William Bailey CEng MICE IStructE
Issue 2	25.08.21	James Griffiths BEng, MSc, GMICE	William Bailey CEng MICE IStructE	William Bailey CEng MICE IStructE

Limitations

All comments and proposals contained in this report, including any conclusions, are based on information available to Bailey Johnson Hayes Limited during investigations. The conclusions drawn by BJH Limited could therefore differ if the information is found to be inaccurate or misleading. BJH Limited accepts no liability should this be the case, nor if additional information exists or becomes available with respect to this scheme.

Except as otherwise requested by the Client, "Albion Land Ltd", then Bailey Johnson Hayes Limited is not obliged to and disclaims any obligation to update the report for events taking place after: -

(i) The date on which this assessment was undertaken, and
(ii) The date on which the final report is delivered

EXECUTIVE SUMMARY

Background

Bailey Johnson Hayes Ltd. was commissioned by Albion Land Ltd in July 2021 to prepare a Flood Risk Assessment (FRA) and Drainage Assessment to support an Outline Planning Application for the proposed development at Junction 10 of the M40, Baynard's Green, Bicester. The Development has 2 parcels of land and there will be 2 Planning Applications for the Eastern and Western sides of the A43. The Flood Risk Assessment has been prepared in accordance with the guidelines set out in the National Planning Policy Framework and regional/ local policy and guidance.

Site Location and Description

The site is located adjacent to the north of Junction 10 of the M40, approximately 1km north of the centre of Ardley in Oxfordshire. The Ordnance Survey grid reference for the centre of site is 454583 229025. The site refers to two parcels of agricultural arable land on the east and west sides of the A43. The larger western parcel extends to 43.45ha and the smaller eastern parcel extends to 23.18ha.

Flood Zone

The Environment Agency mapping shows that the whole site is within Flood Zone 1 which is shown to be at less than 0.1% chance of flooding in any year, otherwise known as having a 1:1000-year chance. There are no recorded instances of the flooding from nearby rivers or watercourses.

Fluvial Flooding

The risk from Fluvial flooding is Very Low to Negligible as described in Section 3.2.

Groundwater Flooding

The risk from Groundwater flooding is Low as described in Section 3.3.

Canal Flooding

The risk from Canal flooding is Very Low to Negligible as described in Section 3.4.

Reservoir & Waterbody Flooding

The risk from Reservoir and Waterbody flooding is Very Low to Negligible as described in Section 3.5.

Sewer Flooding

The risk from Sewer flooding is Very Low to Negligible as described in Section 3.6.

Surface Water Flooding

The risk from Surface Water flooding is Low as described in Section 3.7.

Flood Risk to the Wider Catchment

The flood risk to the wider catchment flooding is Low as described in Section 3.8.

Proposed Development

The erection of Storage and Distribution (Use Class B8) buildings and associated infrastructure including parking, electricity substation(s), new site accesses from the B4100; creation of internal roads and access routes; hard and soft landscaping; and the diversion of an existing public right of way.Phasing is planned, with Enabling Works on Western Site first, following commencement of Western Development and then Eastern Development.

Proposed Flood Mitigation

An overview of the potential mitigation measures available to address flood risk issues at the development site is provided in Section 4. Some of the proposals included are; Raising thresholds and building levels outside of design flood levels, providing safe access and egress around the development, directing overland flows towards areas of low risk, implementation of SuDS to manage runoff at sources thus reducing flood volume, installation of pollution prevention features to prevent contamination at discharge locations, tree planting to increase biodiversity and absorption of water, management and maintenance to ensure correct operation of all drainage systems and managing residual risks post development.

Discharge Hierarchy

The drainage discharge hierarchy has been followed where a hybrid scheme of discharge is proposed to firstly, into the ground via infiltration basins, swales, and pervious pavements. In addition, flows will be limited to greenfield rates discharging into local ditches at no greater than QBAR. There are no sewers available on site so discharge to sewers was not considered. Pumping of storm water is not necessary on this site.

Proposed SuDS Features

The following SuDS features are recommended from the SuDS and Water Quality Assessment:

- Swales
- Infiltration Basins
- Permeable Paving
- Petrol Interceptors, Catchpits, Gullies and Line Drains
- Flows control devices

Proposed Foul Drainage

There remains a number of viable options which will need detailed and extensive discussions and assessments to find the final solution, outside the scope of this assessment. The most suitable option(s) will be defined during the detailed design stage. Three viable options for discharge have been described such as; pumping to a local treatment works, on-site treatment, and discharge to new or upgraded foul wastewater infrastructure.

Recommendations

It is recommended during detailed design that flood mitigation measures are implemented, and drainage design is carried out using the philosophy established in this report. Further design will be required to establish the entire drainage network and to ensure no flooding is created on the site during the 30-year event and flooding is contained on site safely during the 100-year + 40% event.

CONTENTS

TABLES

FIGURES

APPENDICES