Landscape and Visual Appraisal

GCB Cocoa Production Facility, Glemsford

Appendices

January 2021
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influence®

Appendices

Appendix A Methodology

A Methodology

Guidance

1.1 The Landscape and Visual Impact Assessment (LVIA) and supporting studies and surveys were conducted in accordance with the principles set out by Landscape Character Assessment Guidance for England and Scotland [1]and Guidelines for Landscape and Visual Impact Assessment 3rd Edition[2].

1.2 Other guidance with regard to developments in the landscape that has informed the LVIA include Hedgerow Regulations[3] and Lighting in the Countryside: Towards Good Practice[4].

1.3 Viewpoint photographs have been presented in accordance with the Landscape Institute's (LI) Technical Guidance Note 06/19 Visual Representation of Development Proposals[5].

Scope of the Landscape and Visual Assessment

1.4 The LVIA considers the predicted effects of development on landscape resources (both features and character) and on people's visual amenity.

1.5 Landscape and visual assessments are two separate but interlinked processes that are undertaken in parallel. The assessments are informed by a combination of desk and site based appraisal techniques and professional judgements.

1.6 The landscape assessment considers the effects of the proposed development on the physical landscape, which may give rise to changes in its character, and how this is experienced; separately considering the effects of development on:

- Landscape character areas (area with recognisable, consistent pattern of landscape elements identified at different scales by Natural England, county and local councils);
- Designated landscape resources (areas of landscape designated and protected under national and local policy);

1.7 The visual assessment considers the potential changes that would occur to available views in a landscape as a result of the development proposals, the resultant effect on visual amenity and people's responses to the changes.

1.8 The LVIA comprises, firstly the identification, understanding and description of the existing landscape and visual baseline conditions (landscape receptors and groups of views likely to be impacted by the proposed development within a defined study area) and secondly the

[1] Countryside Agency and Scottish Natural Heritage, 2002
[2] Landscape Institute and Institute of Environmental Management 3rd Edition, 2013
[3] UK Parliament, 1997
[4] Department for Communities and Local Government, 1997
[5] Landscape Institute, 2019

identification and description of the impacts arising from the development on the landscape and the visual receptors.

1.9 The assessment examines both construction phase impacts and impacts on completion of the proposed scheme, to include assessing the impacts on Day 1 of completion and 15 years into operation. The impacts are assessed based on professional judgements and an understanding of the construction phases and phasing of completion, which are summarised in the LVIA and include any proposed landscape and visual mitigation works.

Stages in Landscape and Visual Impact Assessment

1.10 The LVIA process comprises the following stages:

- Baseline assessment: record and analyse the existing nature and value of the landscape character and features, and visual amenity of the study area through desk and field based appraisal;
- Description of the nature, forms and features of the proposed development including and constraints and opportunities;
- Assessment of sensitivity of the existing landscape and identified visual receptors to change and assessment;
- Identification of potential landscape and visual impacts due to the proposed development;
- Identification of proposed mitigation measures appropriate to the development and its landscape context;
- Assessment of the magnitude of effect upon the identified receptors, likely to result from implementation of the proposed development;
- Assessment of the significance of the residual effects on landscape and visual resource, taking into account appropriate mitigation.

1.11 The assessment process is iterative; the analysis of the baseline conditions and evaluation of the potential effects resulting from a development informs the evolution of the proposed development. It is, therefore, important to take into consideration the mitigation that is inherent or proposed as part of the development in order to assess the residual effects and their significance.

1.12 The assessment process is recorded in two principal stages: a baseline study of the existing landscape and surrounding visual receptor groups, followed by the impact assessment.

Study Area

1.13 Published guidance provides recommendations on the extent of the Zone of Theoretical Visibility (ZTV) that should be produced in order to assess the area that would potentially experience significant visual effects.

1.14 The purpose of the LVIA is to identify significant landscape and visual effects. It is, therefore, reasonable to limit the study area in various respects in order to meet the requirements of the specific project in its landscape context and to reflect the likelihood of significant effects arising over very long distances. It is also important that the more significant effects occurring over shorter distances are given appropriate emphasis. The report has adopted the following approach:

Computer based Visibility Analysis – Zone of Theoretical Visibility (ZTV)

1.15 In order to identify landscape resources and visual receptors within the landscape surrounding the application site that may be affected by a development, a ZTV plan is produced to illustrate the worst case extent of the potential visibility of the proposed development. The ZTV identifies the maximum area over which it is theoretically possible to see some part of the proposed development, but does not take account of screening that may result from vegetation, localised variations in topography and built form. The ZTV is created using a terrain model, which is based on ordnance Survey (OS) data at 1:25000 scale with contours at 5m intervals.

1.16 It should be noted that ZTVs are used as a working tool to inform the assessment and do not convey the nature or magnitude of visual effects. The actual visual effects of the proposed development are assessed through a more detailed analysis of specific viewpoints, and based on field survey observations. In combination with a site visit, this information enables the identification of a provisional list of representative viewpoints, and allows the determining authority and consultees to judge how representative these are and whether they include particularly sensitive receptors and vantage points.

1.17 A bare ground ZTV, shown on figure N0746_(08)001, has been prepared around the proposed development site, for a maximum building height of 40m, to take account of the worst case scenario based on proposed building heights. This comprehensive ZTV has been examined in order to identify particularly sensitive locations that would potentially experience significant visual effects e.g. particularly important visitor destinations, or those in protected landscapes (if appropriate) or promoted viewpoints and national trails.

1.18 An appropriate study area (shown on Figure INF N0746_(08)001 has been selected for the assessment as it is considered to represent the most concentrated and significant potential impacts. This is based on professional experience of residential and mixed use development assessment, that visibility over greater distance does not have as much potential to result in significant changes to landscape and visual receptors in the landscape context.

1.19 The LVIA focusses on potentially significant landscape and visual effects likely to occur within the localised study area.

Landscape Assessment

1.20 The former Countryside Agency Landscape Character Assessment: Guidance for England and Scotland[6] makes a distinction between the characterisation process and the judgement-making process. The baseline section of the LVIA, therefore, deals predominantly with the characterisation process, in which the attributes of the landscape are described.

1.21 In order to be effective, this LVIA needs to consider the landscape resource within the study area at an appropriate level of detail. Initially, a desktop study is undertaken in order to identify any existing landscape character assessments that describe landscape designations and character areas within the LVIA study area. Following this desk based analysis, site visits

[6] Countryside Agency and Scottish Natural Heritage, 2002

are carried out to verify the existing landscape characterisation and identify and assess the physical components and structure of the landscape within the application site and its surroundings.

1.22 The baseline divides the application site and surroundings into a series of landscape character areas, which are then brought forward for the assessment if the potential for impact on the landscape resource is identified.

1.23 In addition to landscape character, the proposed development's effect on landscape elements and features is also considered. The relevant groups of landscape elements and features include:

- Landform;
- Land cover and vegetation (trees, hedgerows, grassland etc.);
- Land use (including Public Open Space);
- Watercourses;
- Accessibility (public footpaths/cycleways).

Landscape Sensitivity

1.24 Landscape is a combination of both cultural and physical components that give rise to patterns that are distinctive to particular localities and help to define a 'sense of place'. Landscape character is defined by the interaction of influences and components such as landform, hydrology, vegetation, landcover, land use pattern and cultural features and associations, and their relationship with the surroundings.

1.25 Although landscape has some intrinsic sensitivity, different landscape receptors have different elements and features that can accommodate a variety of development types. To reliably inform detailed assessment of impacts, landscape sensitivity needs to be determined with reference to the changes arising from a specific type of development. Therefore landscape sensitivity is assessed combining judgments on the value attached to a landscape and the susceptibility to the type of change or development proposed.

1.26 Landscape value is the relative value attached to a potentially affected landscape. Landscape value is relative in relation to the different stakeholders and different parts of society that use or experience a landscape. Factors that have been considered in making judgments on landscape value include designations (both national and local), local planning documents, status of features (eg. TPO's or Conservation Areas) and local community and interests (for example local green spaces, village greens or allotments). Landscape value will vary in response to the specific landscape that is being considered.

1.27 The value is assessed as high, medium or low and the assessment is made based on the following factors:

- The quality placed on the landscape, including the scenic quality;
- The presence of rare elements or features, or rare landscape character types;
- Whether the landscape contains a particular character and/or features or elements considered to be particularly important examples;
- The presence of nature, historical or cultural features of interest;

- Evidence that the landscape is important for recreational users;
- Perceptual aspects, such as tranquillity or wildness;
- Associations of the landscape with particular people in history (such as artists or writers), or historical events, that contribute to the perception of natural beauty.

1.28 The second component of landscape sensitivity relates to susceptibility. Landscape susceptibility to change is the ability to accommodate change without undue consequences for the maintenance of the baseline situation. In this context, the term landscape receptors can be expanded to cover overall character areas, condition or a particular landscape character type or an individual landscape element or feature. Landscape susceptibility will vary in response to the specific landscape that is being considered and to the nature of the type of change that may occur.

1.29 To assess landscape susceptibility it is important to appreciate the key characteristics and attributes of the landscape of the application site and surrounding study area, in order to understand local landscape variations and if the landscape of the application site fits with the description of the LCT/LCA that it is within.

1.30 The characteristics of the landscape that should be considered with regard to their susceptibility to change include a variety of attributes, such as scale and enclosure, landform, nature of land use, nature of existing elements or nature of existing features. Landscape susceptibility is described on the verbal scale as high, medium or low.

1.31 Sensitivity is a term applied to specific receptors, combining judgments of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor. Receptors can include specific elements of features or may be judged at a wider scale and include landscape character parcels, types or areas.

1.32 The consideration of value of the landscape receptor combined with susceptibility to the type of change arising from the proposal, allows for assessment of sensitivity of the landscape receptor. The sensitivity of landscape receptors is categorised as high, medium or low; the criteria for each category is outlined in Table A-1.

Table A-1 Sensitivity of Landscape Receptors

Receptor Sensitivity	**Typical Criteria**
High	A landscape of particularly distinctive character and high or exceptional scenic quality. Strong representation of the typical landscape character type. Intact landscape with excellent condition of elements and features. Presence of rare features in the landscape. May be nationally and/or regionally designated landscape for its scenic quality and character, such as an Area of Outstanding Natural Beauty (AONB) or National Park. High recreational value with strong cultural and historical associations. High susceptibility to changes arising from the proposal.

Receptor Sensitivity	Typical Criteria
Medium	A landscape of moderately distinctive character and scenic quality. Typical landscape character type is apparent. Relatively intact landscape with occasional features of interest. May be locally designated for its quality and character. Receptor of higher value but lower susceptibility to the type of change or development, or vice versa.
Low	A landscape of little distinctive character or scenic quality or is damaged, neglected or poor character and lacking scenic quality. Landscape has become eroded with no more than occasional elements and features of interest. Not subject to any form of landscape designation. Receptor of low value and low susceptibility to the type of change arising from the proposal.

Magnitude of Landscape Effect

1.33 Once the sensitivity of the landscape receptors has been determined, the effect that the proposed development would have on the landscape resource can be assessed.

1.34 The magnitude of effect from the proposed development on landscape character, designations or features is appraised, taking into account each phase (construction and completion) of the proposed development and any inherent / proposed mitigation. The assessment of the magnitude of effect takes into account the following factors:

- The distance of the landscape receptor from the proposed development;
- The degree to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones, for example removal of hedges may change the small-scale, intimate landscape into a large-scale, open one, of the introduction of new buildings or tall structures may alter open skylines;
- The extent of existing landscape elements that would be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;
- The scale of the overall predicted change to character;
- The timescale or phasing of the construction stages;
- Whether the landscape change would be reversible or not.

1.35 The magnitude of effect is categorised as high, medium, low or negligible. This is a professional judgement based on the criteria for each magnitude as outlined in Table A-2 below. Different combinations of the below variables can apply in reaching an overall judgement on magnitude.

Table A-2 Magnitude of Landscape Effects

Magnitude of Effect	Typical Factors
High	The proposed development would cause a large, irreversible change to the existing landscape for a long period of time or permanently. Impact upon landscape features of international and national importance or on fundamental landscape elements such that this would change the key characteristics of that landscape. Long-term or permanent change to the existing landscape conditions.
Medium	The proposed development would cause a noticeable change to the existing landscape; however, few elements and features that contribute to the overall character would be affected. Medium or short-term change to landscape conditions. Moderate alteration to the individual components of the landscape, leading to small change in aesthetic and perceptual aspects of the landscape.
Low	The proposed development would cause a small impact / change and would affect relatively few receptors. Temporary or reversible change in landscape conditions. The key characteristics of the landscape contributing to its character would not be significantly affected.
Negligible	The proposed development is appropriate in its context or barely perceptible. It may be difficult to differentiate from its surroundings and has very little or no impact on receptors compared to the baseline situation. No key characteristics of the landscape, contributing to its character would be affected.

Visual Assessment

1.36 Following desk studies and site visits a range of visual receptors (people) that have a potential to be affected by the proposed development are identified. They would include local residents, users of footpaths and other routes, road users, users of recreational facilities, visitors to popular tourist attractions and noted viewpoints, or people at their place of work.

1.37 Potential viewpoints and areas for investigation are then identified following an initial study of Ordnance Survey (OS) maps, analysis of Zone of Theoretical Visibility and, most importantly, site visits; based on the following criteria:

- Distance from the application site to the receptor;
- The proportion of the application site / proposed development visible, as well as the absolute visibility of the proposed development;
- The height of the proposed development relative to the receptor with reference also to the scale of other features in the view;
- The number and character of elements that would be lost from or added to the view;

- High concentrations of viewers, such as settlements, local recreational facilities, public footpaths and attractions etc;
- Views illustrating the visual character of the surrounding area; and
- Areas identified as having a high potential for visual impact.

1.38 A Site visit was carried out on 08-09.12.21 to assess both general landscape character and views experienced by different types of visual receptors during the day.

1.39 Following desktop research to understand the surrounding potentially sensitive receptors, a selection of viewpoints was made to represent key relevant visual receptor types likely to be affected by the proposed development, such as residents of nearby properties, users of Public Rights of Way (PRoW), pedestrians, cyclists or road users; to enable the assessment of the proposed change in views and the significance of effect on these receptors.

1.40 Photographs illustrating views from this series of representative viewpoints were taken either using a Canon EOS 500D Digital SLR with lens set to a 35mm focal length to provide the closest possible approximation of a 50mm lens focal length ('true eye' vision) on a traditional 35mm film SLR camera, or a fixed 50mm FL Lens. The photographs have been reproduced in a series of viewpoint sheets with annotation and details of the image recorded. Where contextual views consist of more than one frame, the relevant frames are merged together using Photoshop Creative Cloud (CC) software. This is consistent with Visualisation Type 1: annotated viewpoint photographs and Visualisation type 3: Photomontage / Photowire.

Visual Receptors

1.41 Visual receptors are groups of people, which include the public or community at large, residents, visitors and other groups of viewers. Study of OS data, production of a ZTV and consultation with the Local Planning Authority (LPA) assist with identifying viewpoints for assessment that best represent the visual receptors likely to be affected by the proposed development.

1.42 Representative viewpoints are validated through site visits; resulting in the repositioning or exclusion of some of the preliminary viewpoints, due to lack of visibility towards the application site.

Visual Sensitivity

1.43 Sensitivity of visual receptors, whose groups are represented by a selection of viewpoints, depends on their susceptibility to change in views and the value attached to the views that they experience.

1.44 The susceptibility of different visual receptors to changes in views and visual amenity is judged, based on:

- The occupation or activity of people experiencing the view at particular locations; and
- The extent to which their attention or interest may, therefore, be focussed on the views and the visual amenity they experience at particular locations.

1.45 Judgements about the value of views take account of:

- Recognition of the value attached to particular views, for example in relation to heritage / cultural assets, or through planning designations;
- Indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment and references to them in literature and art (Landscape Institute and Institute for Environmental Management and Assessment, 2013).

1.46 The sensitivity of the visual receptors is categorised as **high**, **medium** or **low**, as defined in Table A-3 below.

Table A-3 Sensitivity of Visual Receptors

Receptor Sensitivity	Typical Criteria
High	People with a particular interest in their surroundings or with prolonged viewing opportunities, examples include: • Users of promoted viewpoints (often with interpretation boards); • Users of tourist and visitor destinations including recreational or heritage sites (such as ornamental parks and open spaces); • Visitors to recreational hilltops and peaks; • Residential locations and occupiers of residential properties; • People using important recreational routes, such as National Trails / long distance promoted routes, National Cycle Routes; • Users of paths and Public Rights of Way (PRoW) in nationally or locally designated landscapes.
Medium	People with a general interest in their surroundings or with some viewing opportunities, examples include: • Users of public open spaces and outdoor recreational spaces; • Users of other public routes and PRoW; • Visitors to local viewpoints and resting places.
Low	People with a more limited or passing interest in their surroundings, examples include: • Users of more transitory routes such as other public routes; • Users of the local road network and major highways; • People at their place of work; • Users of indoor or sporting recreational facilities.

Magnitude of Visual Effect

1.47 For each of the identified groups of receptors, the potential magnitude of visual effect (in comparison to the existing 'baseline' situation) was assessed, taking into account each phase of the proposed development and any inherent / proposed mitigation. The magnitude of visual effect takes into consideration the following factors:

- The scale of change to the view with respect to loss or addition of features within the view and changes in its composition, including the proportion of the view occupied by the proposed development;
- The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics;

- The nature of the view of the proposed development, considering the relative amount of time over which it will be experienced and whether views would be full, partial or glimpsed;
- The degree of visual intrusion or obstruction that would occur from the proposed development;
- The angle of the view in relation to the main activity of the receptor;
- The duration and reversibility of the assessed effect.

1.48 The magnitude of effect is categorised as **high**, **medium**, **low** or **negligible**. As with landscape, different combinations of the variables in the below table may apply.

Table A-4 Magnitude of Visual Effects

Magnitude of Effect	Typical Factors
High	Severe change to views; Removal of valuable landscape features / elements that highly contribute to the overall quality and nature of the view; Total change to the visual character of the surrounding landscape; Large number of viewers affected over a prolonged period of time; Development is highly prominent in the view.
Medium	Moderate alteration to views; Development affects few visual features / elements on or adjacent to the application site. Reversible effect, affecting only a part of the wider view. Development 'stands out' in the view.
Low	The proposed development would cause a small impact / change and would affect relatively few receptors. Change to views on transitory routes such as infrequently used paths and roads. Small change to more complex views for a small number of viewers with no particular focus on the proposed development.
Negligible	The proposed development is appropriate in its context or barely perceptible. It may be difficult to differentiate from its surroundings and has very little or no impact on receptors compared to the baseline situation. It would have no or minimal effect on visual features / elements on or adjacent to the Application Site.

Nature of Effects

1.49 The nature of effects contributes to the assessment of magnitude of landscape and visual effects.

1.50 The LVIA considers whether the landscape and visual changes that would arise as a result of the proposed development would be beneficial or adverse. An adverse effect is one that introduces a new, discordant or intrusive element to the landscape or a view. A beneficial effect would be from an overall improvement to the landscape or a view, through the removal of existing discordant features and / or introduction of features of similar scale to those in the surrounding landscape or view that would contribute to its overall character.

1.51 With regard to the duration of landscape and visual effects, short to medium term effects are normally considered to be temporary and associated with the construction of the proposed development, and long-term effects are normally associated with a fully completed and operational scheme. Permanent effects are those which result in an irreversible change to the baseline conditions or will last for the foreseeable future.

1.52 The duration of landscape and visual effects is typically categorised as follows:

- Long-term – 15 years and beyond;
- Medium-term – 5 to 15 years;
- Short-term – 0 to 5 years.

1.53 Landscape and visual effects can be direct (effects that are caused by activities which are an integral part of the scheme) or indirect (effects that are due to activities that are not part of the scheme, e.g. regeneration benefits attributable to the scheme).

Appendix B Wireframe Montages

Glemsford

AVR Verified Views

8th January 2021

Note
These visualisations have been prepared by rbmp using current best practice techniques in both photography and the construction of 3D models and photomontages specified by the Landscape Institute: 3rd edition (April 2013); Landscape Institute Technical Guidance Note 06/19 (September 2019) Visual Representation of Development Proposals; The Revised SPG London View Management Framework (March 2012.)

Please see supporting methodology documentation for this project.
[End of this document.]

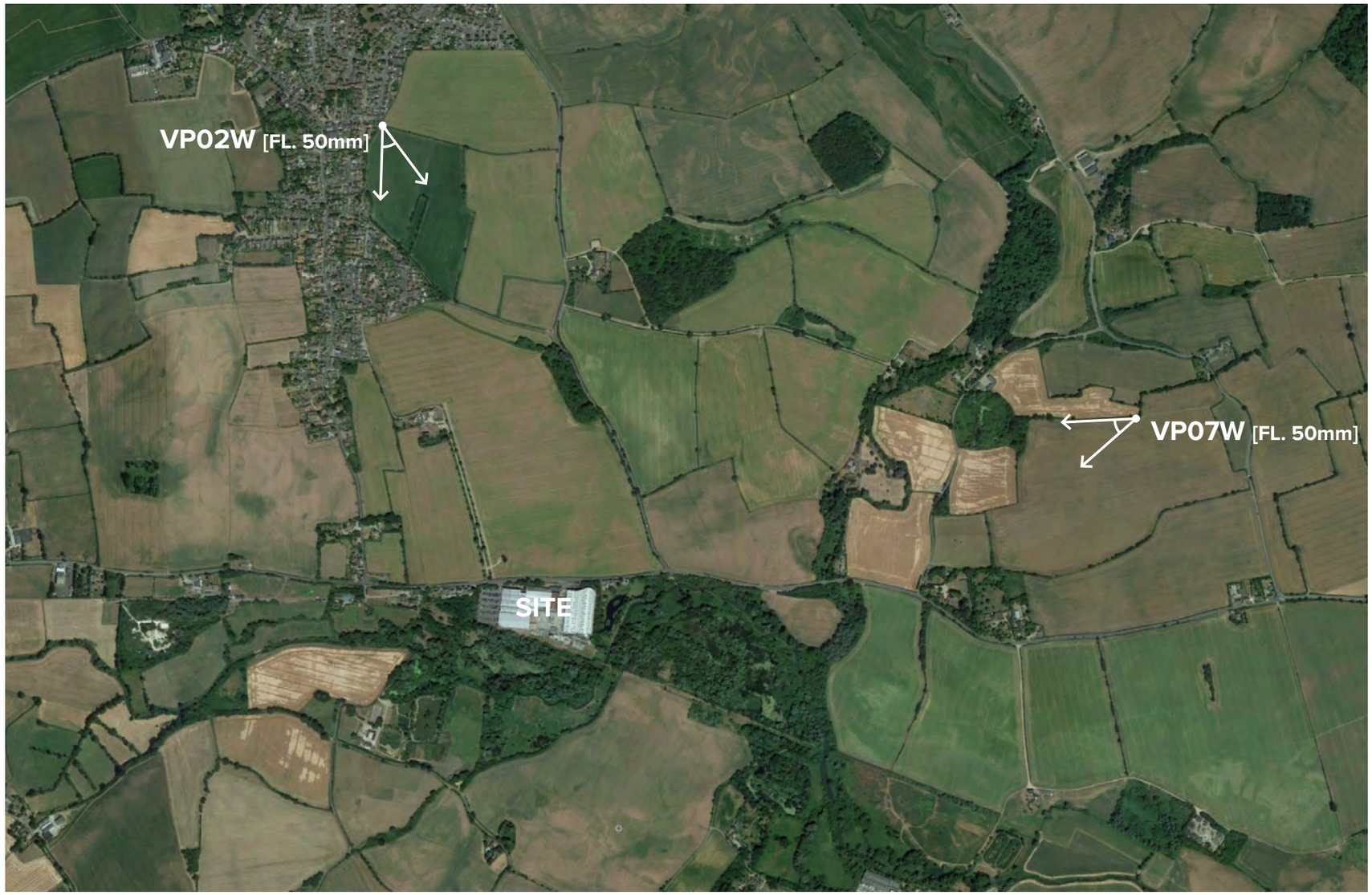
Viewing Instructions
The visualisations gives an impression of the predicted scale and mass of the proposed development as it would be seen from the viewpoint locations. For correct viewing, the images should be viewed at the distance shown on the corresponding page when printed at A3. This images should only be assessed in the field from the same viewpoint location.

Camera Location Information

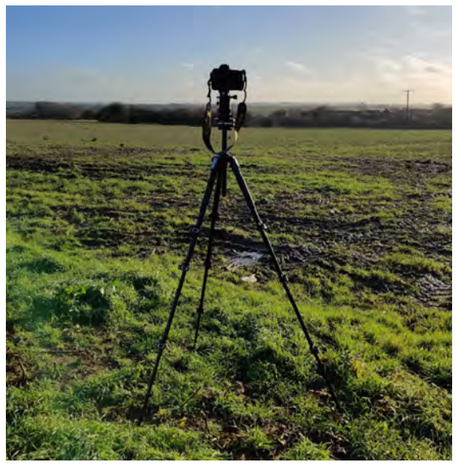
Viewpoint Number	Easting	Northing	Ground Height	Camera Height
Viewpoint 02W	583039.47E	247842.98N	+75.56 AOD	+77.16 AOD
Viewpoint 07W	585198.67E	247103.06N	+59.54 AOD	+61.14 AOD

rbmp

Manchester 0161 706 0158
London 020 3488 0657
studio@rbmp.co.uk
www.rbmp.co.uk / www.verifiedviews.co.uk



[Map data ©2021 Google]



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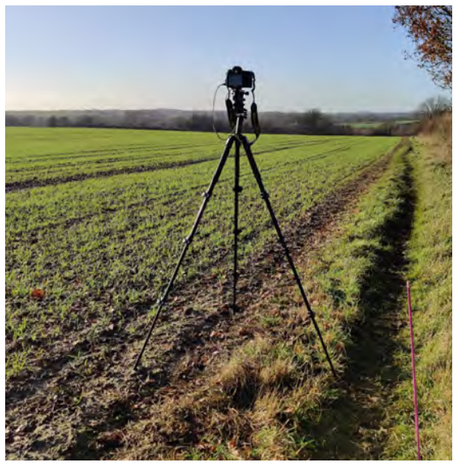

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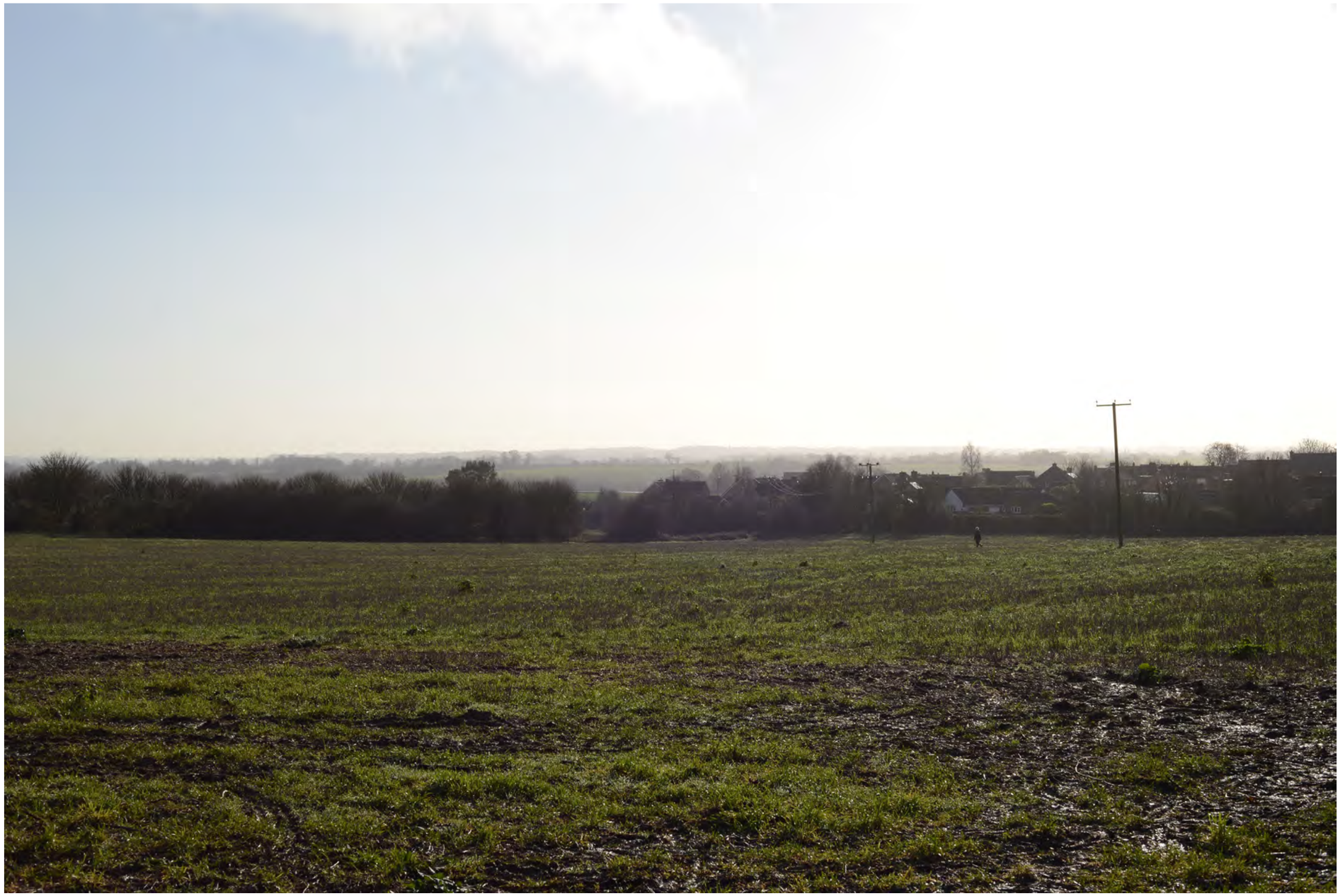

Viewpoint Information

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Camera Height:	+77.16 AOD
Viewing Distance:	Approx 50cm at A3

Camera / Photograph Information

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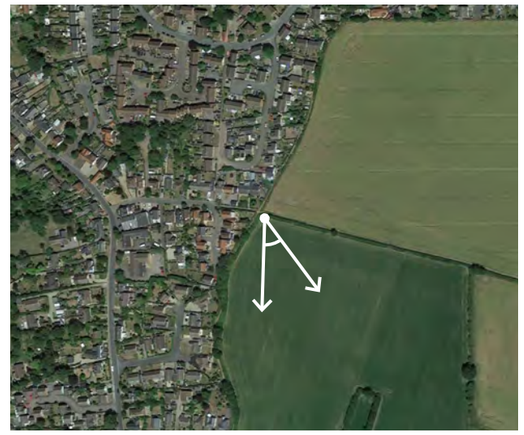
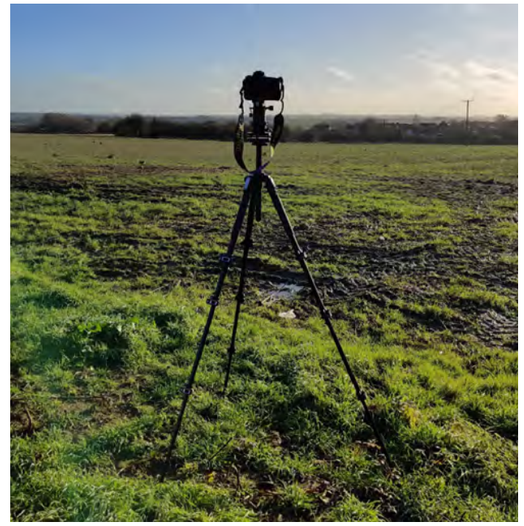
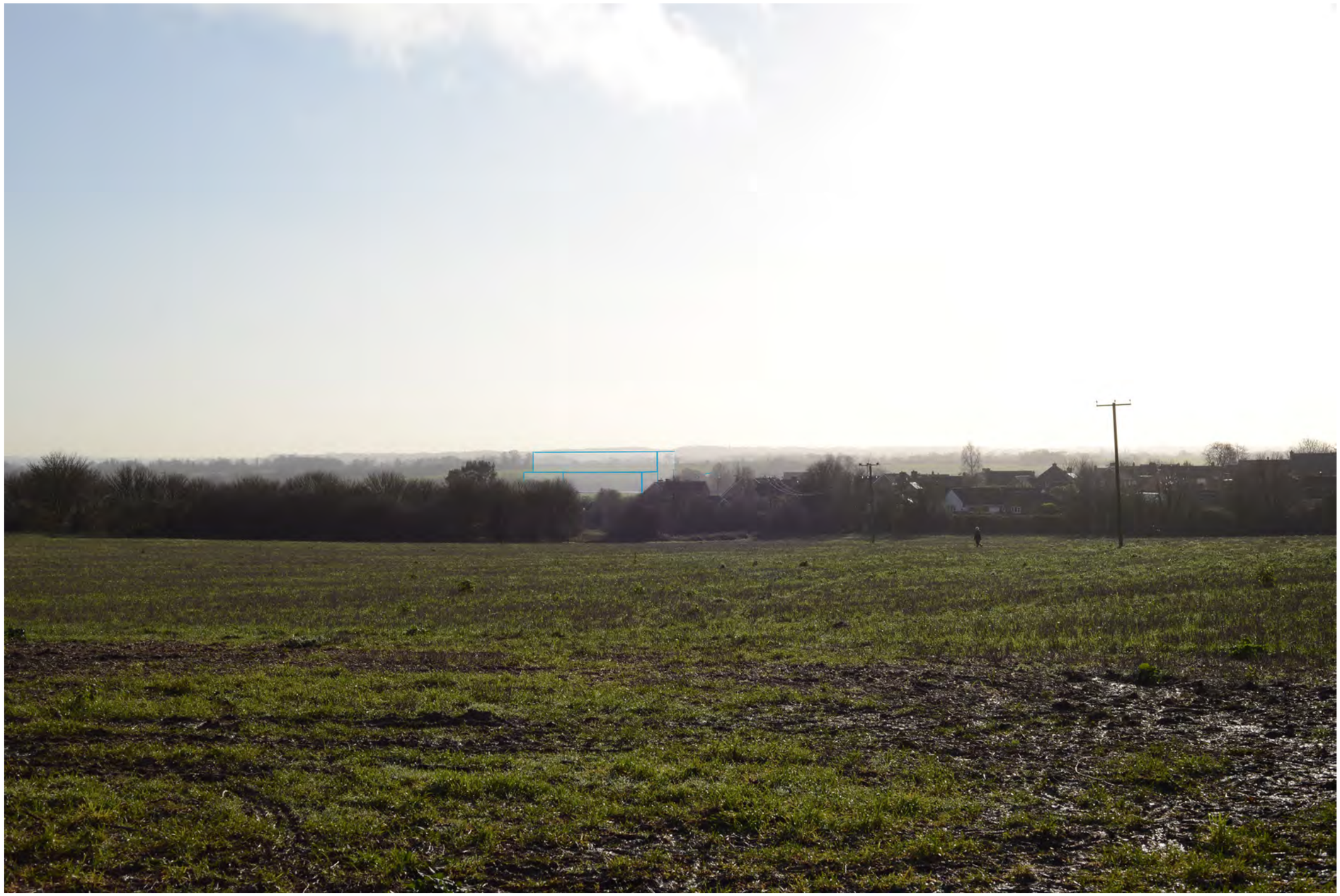
Focal length:	50mm







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Camera / Photograph Information

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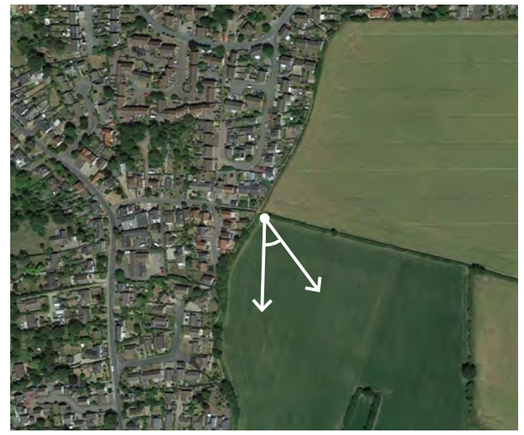
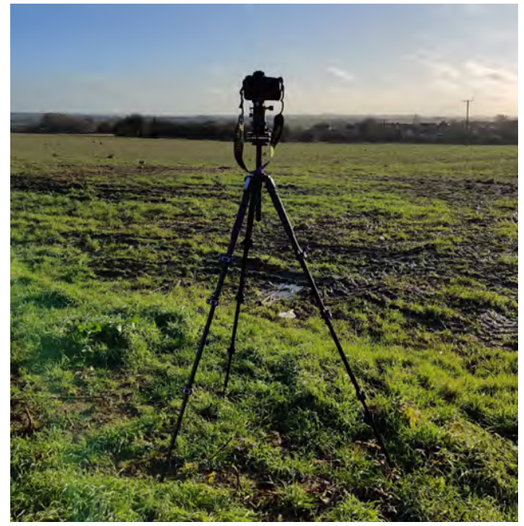
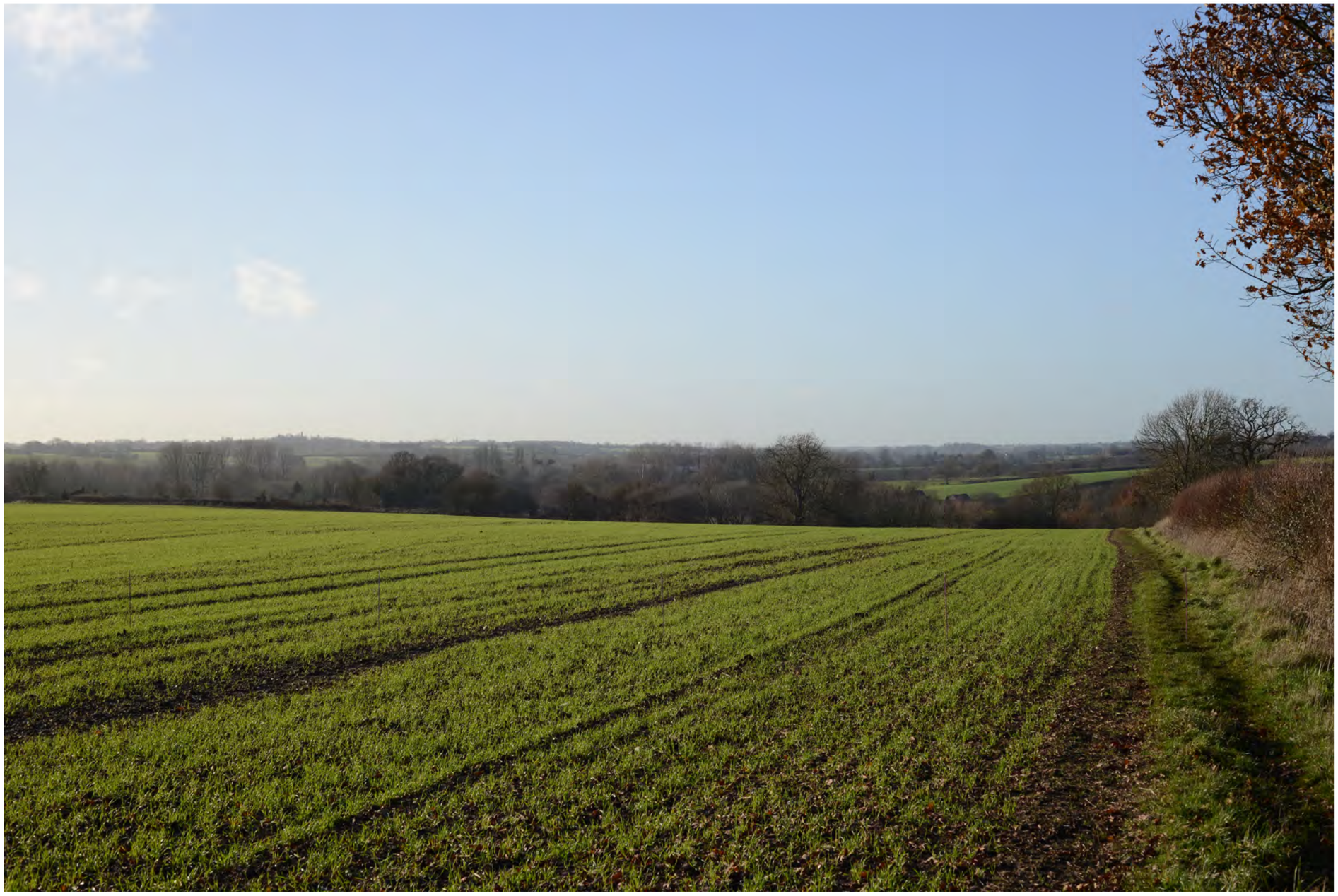
Focal length:	50mm







Viewpoint Information

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Camera Height:	+61.14 AOD
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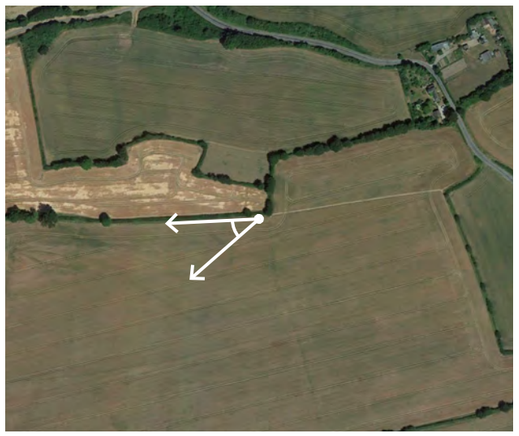
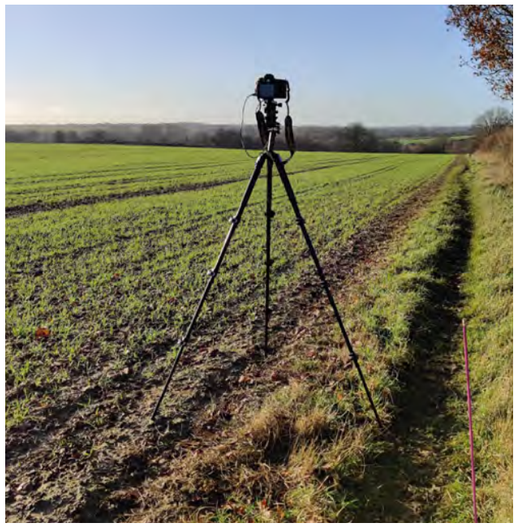
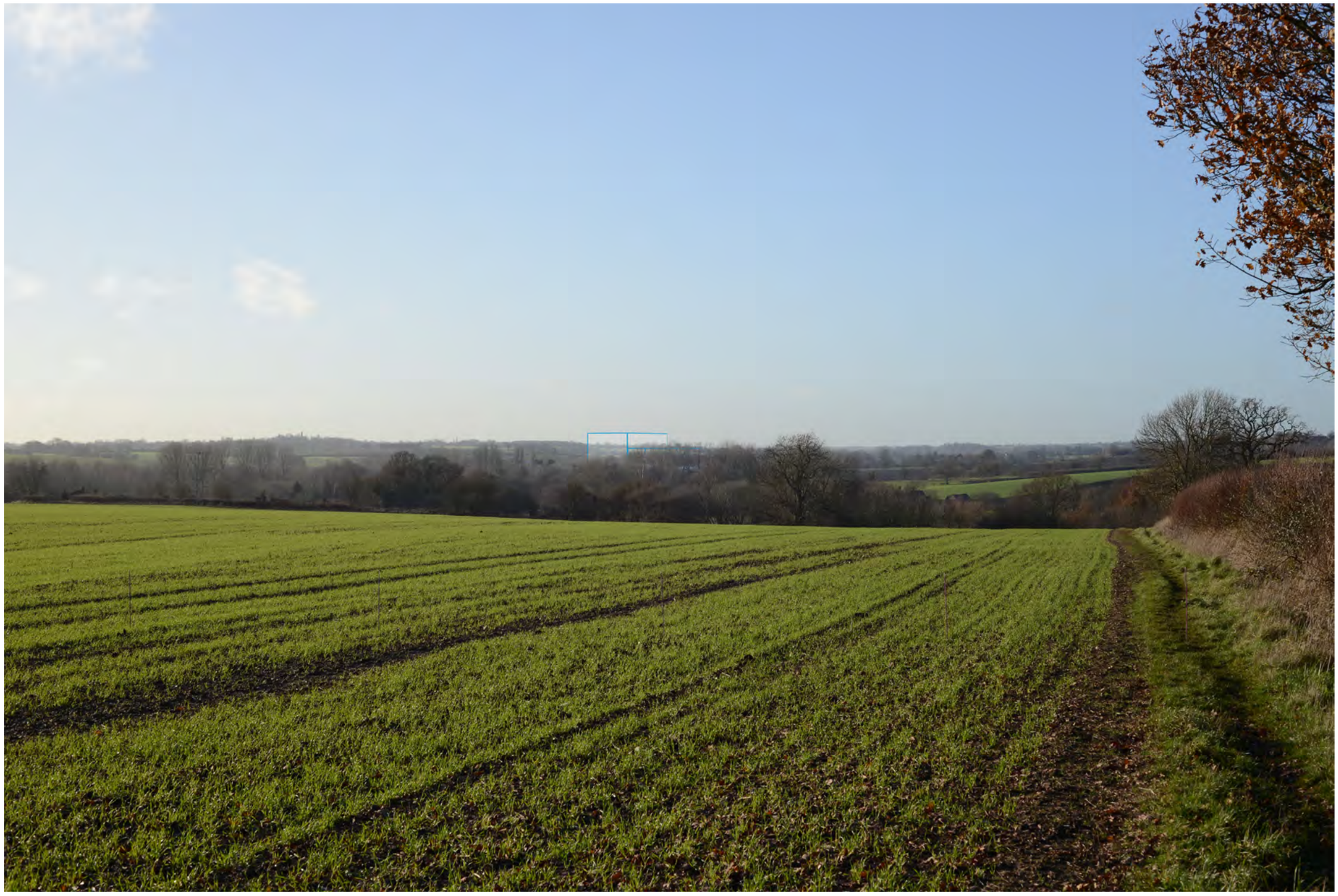




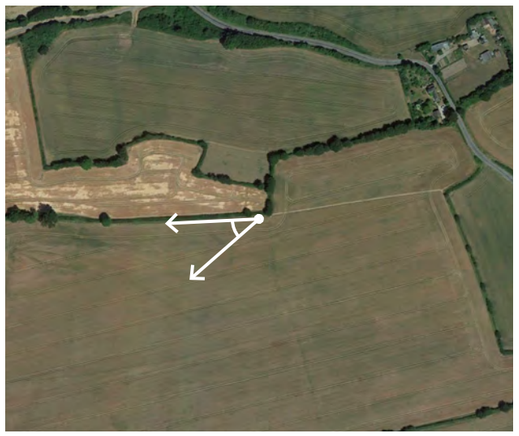


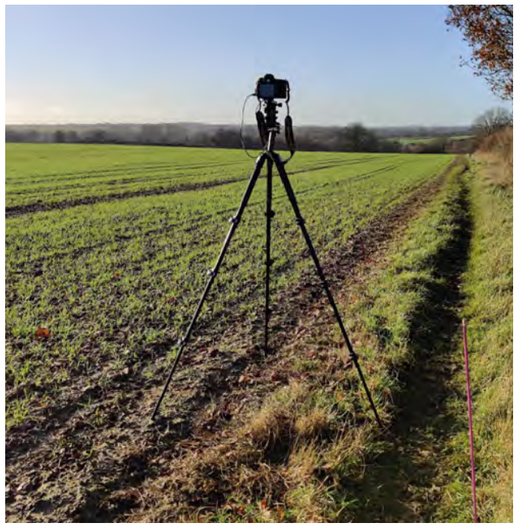
Viewpoint Information

Grid reference:	585198.67E,247103.06N
Ground Height:	+59.54 AOD
Camera Height:	+61.14 AOD
Viewing Distance:	Approx 50cm at A3

Camera / Photograph Information

Date & Time:	15/12/2020 13.04pm
Camera:	Nikon D600 (full frame sensor)
Focal length:	50mm





Glemsford

Verified Views Methodology Statement

January 2021

OVERVIEW

The process of generating verified views (also referred to as Accurate Visual Representations (AVR) & Visually Verified Montages (VVM)) for the proposed new development was carried out by RBMP Ltd.

These visualisations have been prepared by RBMP Ltd. using current best practice techniques in both photography and the construction of 3D models and photomontages specified by the Landscape Institute: Guidelines for Landscape and Visual Impact Assessment 3rd edition (April 2013); Landscape Institute Technical Guidance Note 06/19 (September 2019) Visual Representation of Development Proposals; The Revised SPG London View Management Framework (March 2012.) All views have been prepared to Type 4 visualisations as set out within table 2, page 11 of TGN06/19.

High quality/resolution photographs were taken from the agreed locations with an adequate number of visible features subsequently surveyed, including the precise location of the camera.

A development model was generated to correct geographical co-ordinates. With a known camera position and orientation, photographic and surveyed existing visible features, the development model was accurately aligned to the photograph.

SITE VISIT

RBMP Ltd. visited the site on the 15th December 2020, to obtain viewpoint photography. The view positions were documented using photography of the exact positions (marked with a survey pin) with a surveyor present to record the precise co-ordinates.

PHOTOGRAPHY

For the agreed viewpoint location, high resolution RAW photographs were taken with a Digital SLR camera with a 35mm (full frame) sensor. The camera was levelled horizontally and laterally by means of a tripod mounted levelling base and two camera mounted spirit levels.

CAMERA & EQUIPMENT

- Nikon D600 digital SLR camera (35mm)
- Nikon 50mm f/1.8
- Manfrotto 190 tripod
- Tripod indexed pan head
- Levelling base with bubble level
- Digital Level
- Laser plumb bob

LENS SELECTION

In order to capture the full extent of the proposed development and an appropriate amount of context, a 50mm lens in landscape orientation (effective 39.6° horizontal field of view) was used. For internal use/reference a 180° panoramic for each viewpoint location was also captured using a 15° rotational index allowing a series of individual frames to be stitched together into a single image.

POST PRODUCTION

Each photoviewpoint photograph was processed using Adobe Photoshop® CC 2021 Camera RAW. Standard (digital) photographic post production techniques (profiles, curves and sharpening) were used to create a corrected final .psd file to be used as the basis for the photomontage.

SURVEY

For the agreed photoviewpoint location an instructional document was released to the survey subcontractor. The surveyor was instructed on site to record a range of contextual reference points.

SURVEY EQUIPMENT

- Leica GPS
- Leica Total station
- Precise level

FIELD SURVEY METHODOLOGY

Camera Locations - To establish the position of a viewpoint, the surveyor must set up a GPS on it and record enough points to ensure a high level of accuracy.

Reference points - To survey the various reference points, the surveyor should set up three temporary stations (TBMs) within view of each reference point and establish their location using the GPS. Once these co-ordinates have been established, the surveyor will set up a Total Station on the TBMs and take 3 reflectorless survey shots to the reference point in view.

Where GPS positioning was not possible near to the required survey point – due to poor signal, for instance – the surveyor will set up his TBMs at the nearest position possible and traverse traditionally to a position where he can survey the point.

DATA PROCESSING & DELIVERY

GPS data is processed through Leica Geo-Office to acquire the OSGB36 co-ordinate system information and then processed to produce co-ordinate information for the surveyed points.

PROPOSED DEVELOPMENT

rbmp created a 3D model of the proposed development working from supplied model and plans. The model was checked for accuracy and subsequently aligned to the OSGB36 coordinate system.

VERIFICATION PROCESS

The collected survey reference point data and camera location data was imported into the 3D model environment from the delimited text file (relative to the OSGB36 co-ordinate system) by means of a proprietary script.

At each photoviewpoint location a virtual camera was set up in the 3D software using the coordinates provided by the surveyor. The 3D coordinates of the survey reference points were used to create an accurate ‘point cloud’ model of the contextual surveyed parts of the scene. The scene was verified by matching the contextual surveyed points to the photograph.

To do this, for each photoviewpoint, two renders* were made from the 3D model from the same virtual camera: one render showed only the development (in the chosen method of presentation); the other showed only the survey reference point data.

Using a photo editing package [Adobe Photoshop® CC 2021.] the photography, survey reference point render and proposed development render were aligned.

With the rendered* proposals aligned to the photography, masks were applied to the image to hide extents of the proposals occluded by intervening vegetation and built form.

USE OF PHOTOMONTAGES

For correct perspective viewing, the photomontage pages should be printed unscaled at A3 and must be viewed at an approximate viewing distance of 50cm. The photomontages should only be assessed in the field from the same viewpoint.

*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 for Autodesk 3Ds Max 2020.

NOTES

- The model (Buildings/Wirelines) is based on the supplied Built Environment Design Partnership .DWG files:
  - GCB-BED-ST-SE-DR-A-1004 - Proposed Site Sections.dwg
  - GCB-BED-ST-ZZ-DR-A-1002 - Proposed Site Plan.dwg
  - GCB-BED-Z1-RF-DR-A-1109 - Proposed Cocoa Building Roof Plan.dwg
  - GCB-BED-Z2-EL-DR-A-1210 - Proposed Chocolate Building Elevations.dwg
  - GCB-BED-Z2-RF-DR-A-1208 - Proposed Chocolate Building Roof.dwg
  - GCB-BED-Z3-EL-DR-A-1304 - Proposed Biomass Building Elevations.dwg
- The model has been positioned and referenced to the OS Grid using the supplied topographic data contained within the above drawings and RBMP’s collected survey data for the building.

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