

Station Road, Reading, Berkshire

Verified Views

Oct 2018 | NPA 11022 |

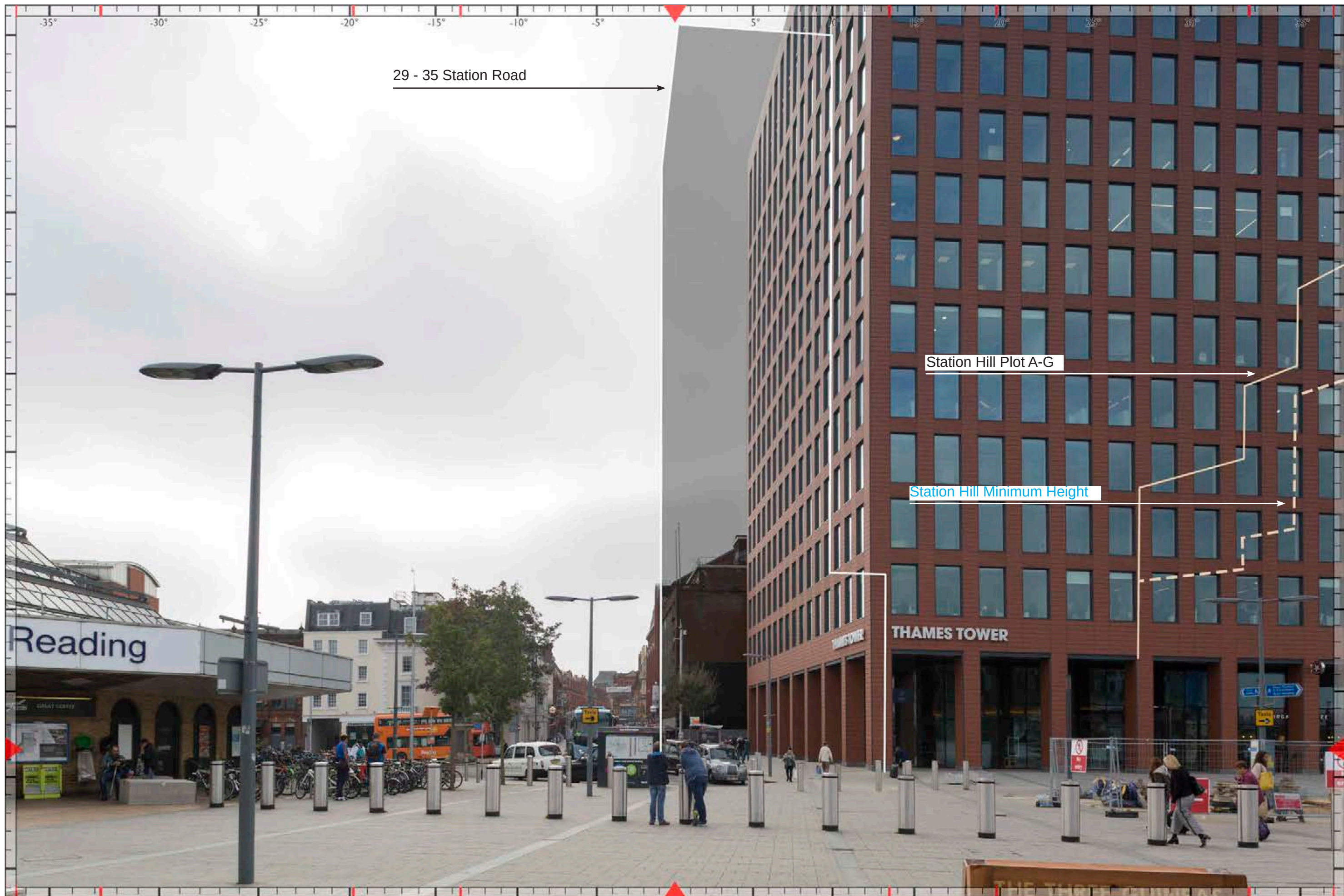
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Viewpoint Location Plan





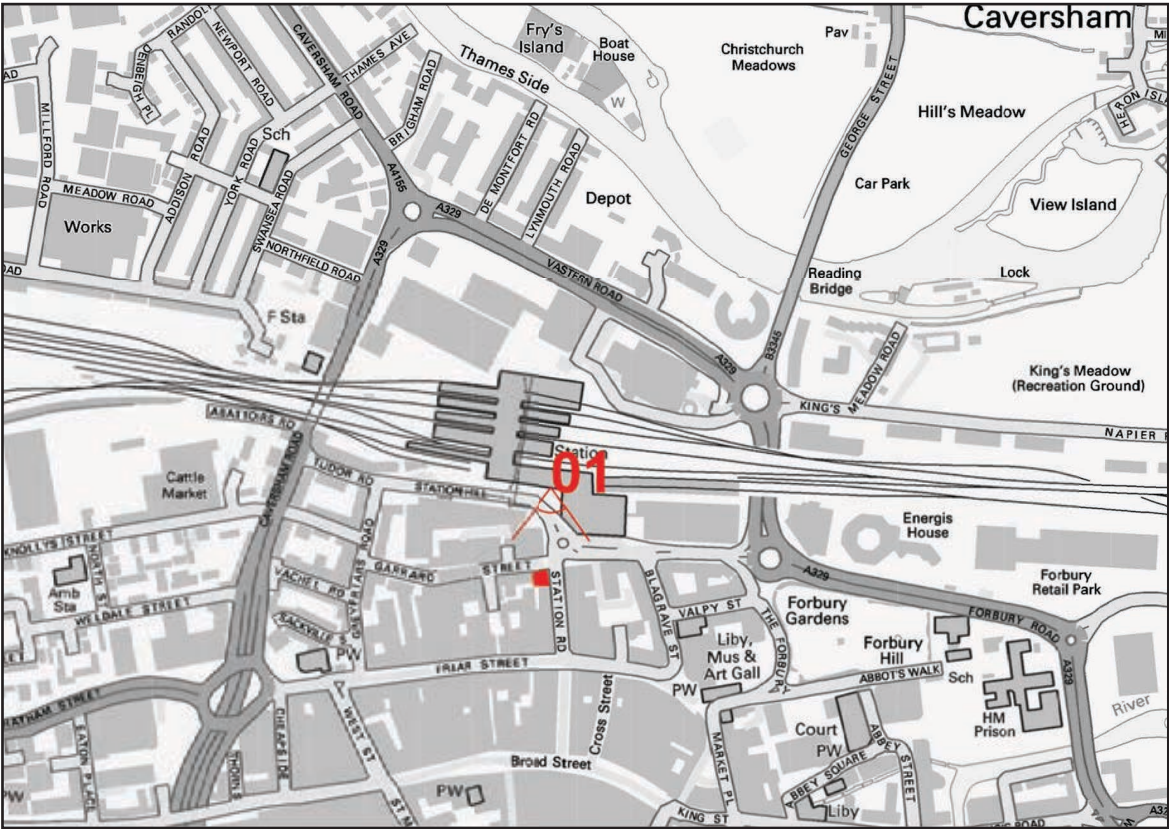
Survey reference points



View Number	I
AVR Level	I
Page Viewing Distance	260mm @ A3
Location	View from Reading Station (from outside The Three Guineas) looking S
Coordinates	471499, 173800 (to EPSG 27700)
Bearing	181°
Distance	0.09km
Eye Level	45.8 m AOD
Camera	Canon EOS 5D MK III
Frame Type	Single Frame
Focal Length	24°
Horizontal FOV	74°
Vertical FOV	53°

Date of Photo 05th Oct 2018 11:25
Weather Overcast

View Location Plan



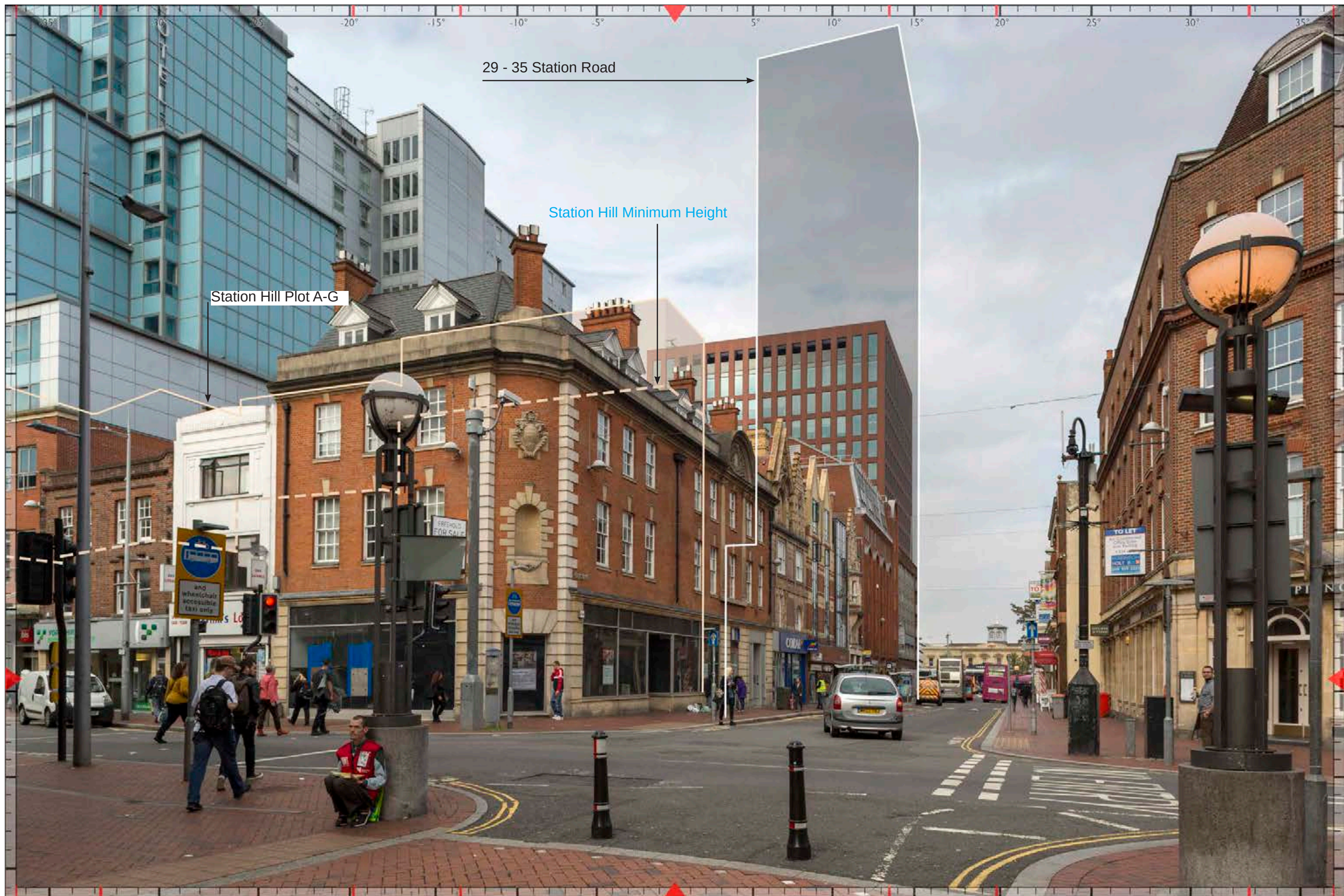
View Verification



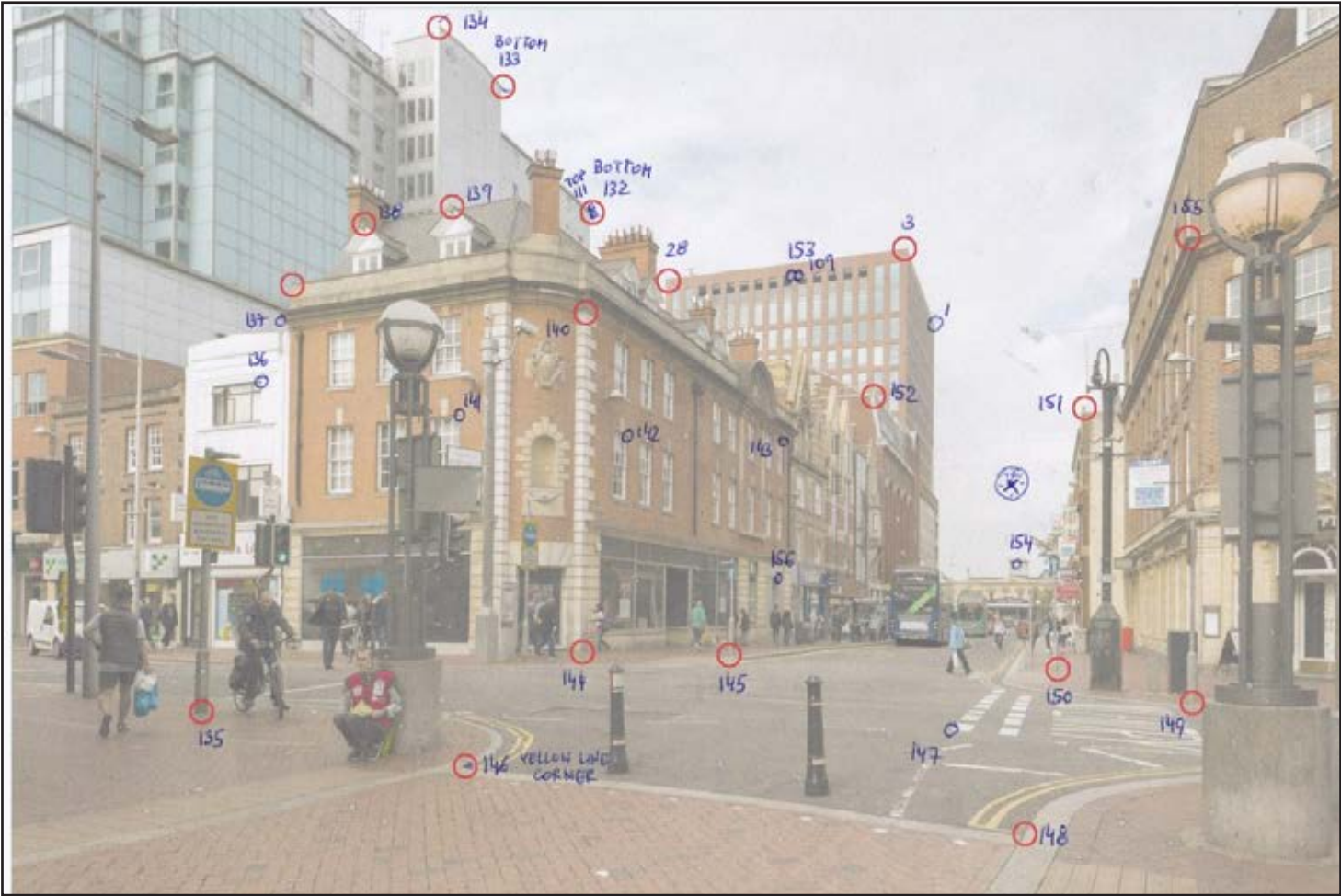
View Verification



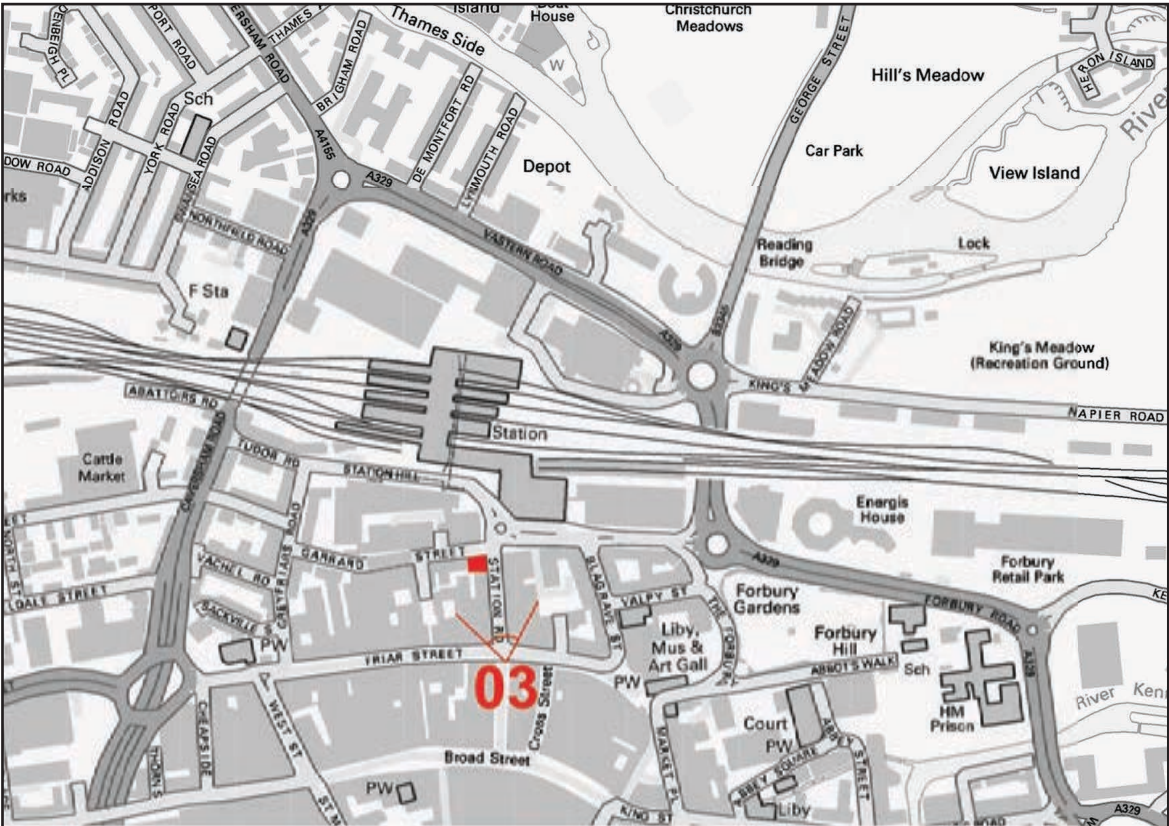




Survey reference points



View Location Plan



View Number 3

AVR Level 1

Page Viewing Distance 260mm @ A3

Location View from Friar Street / Station Road junction looking N

Coordinates 471520, 173573 (to EPSG 27700)

Bearing 335°

Distance 0.11km

Eye Level 46.8 m AOD

Camera Canon EOS 5D MK III

Frame Type Single Frame

Focal Length 24°

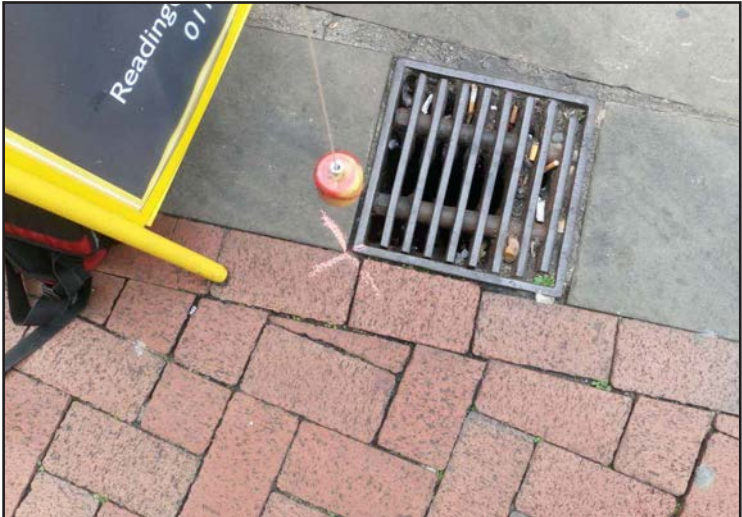
Horizontal FOV 74°

Vertical FOV 53°

Date of Photo 05th Oct 2018 14:41

Weather Overcast

View Verification

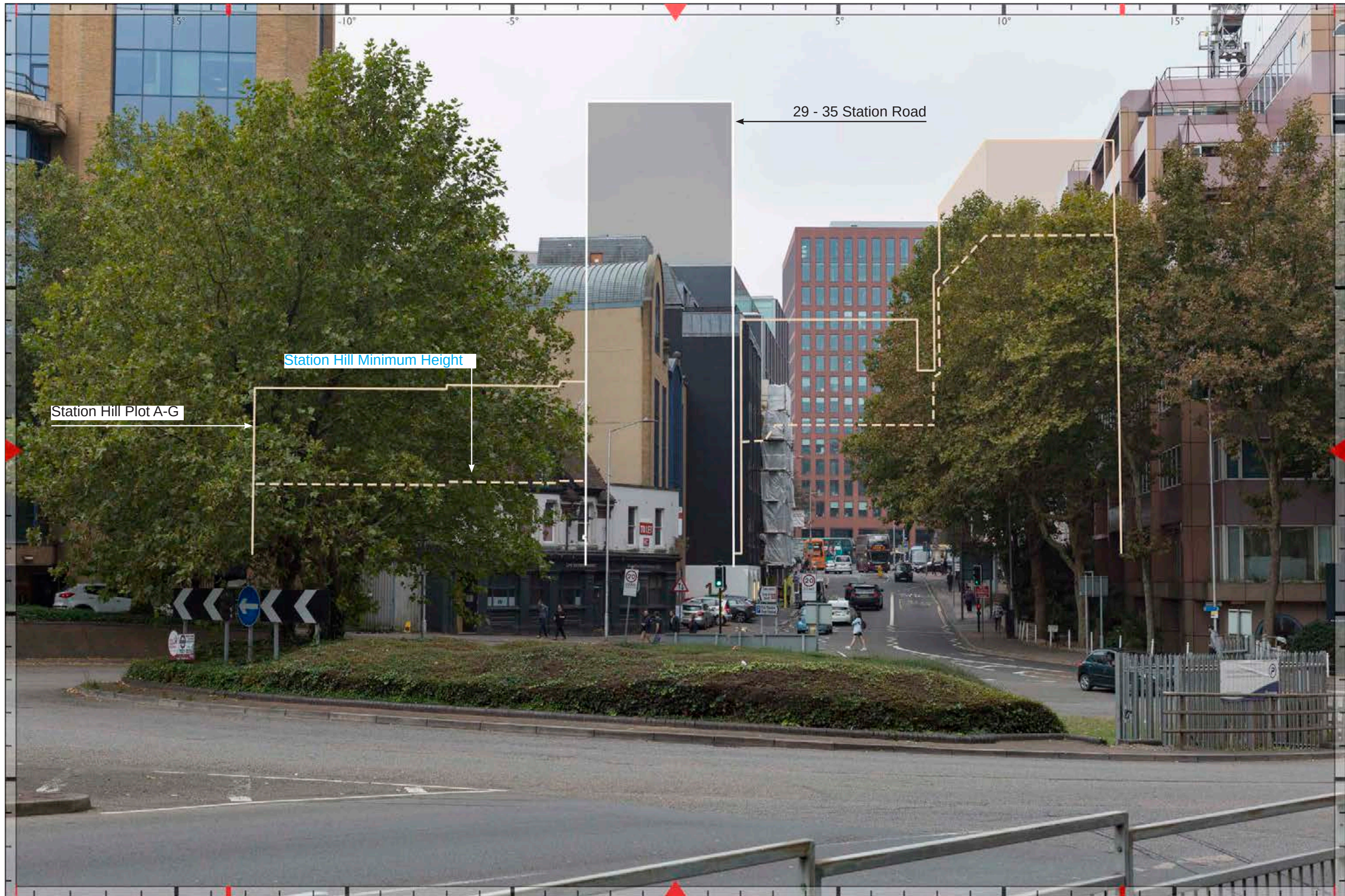


View Verification

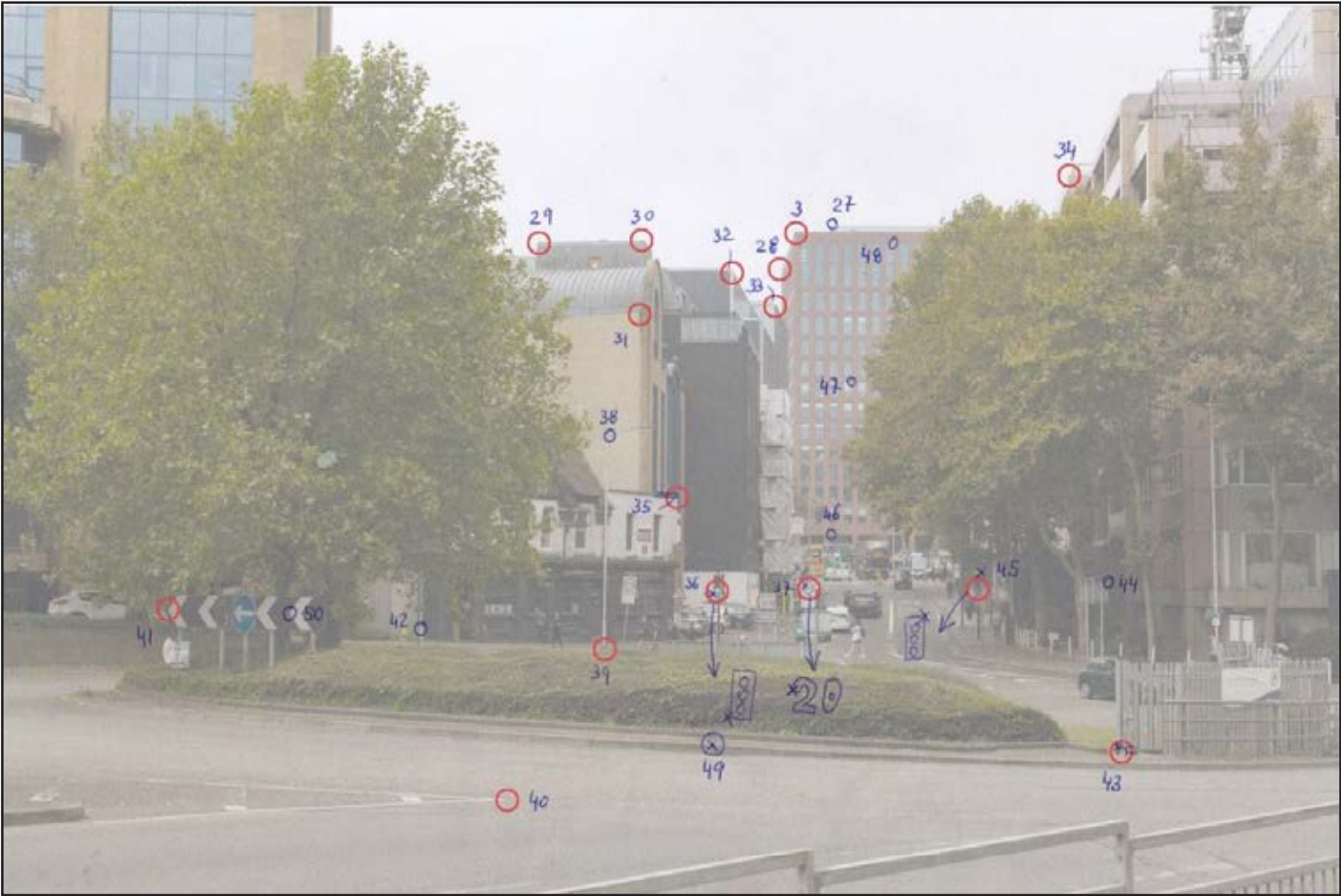




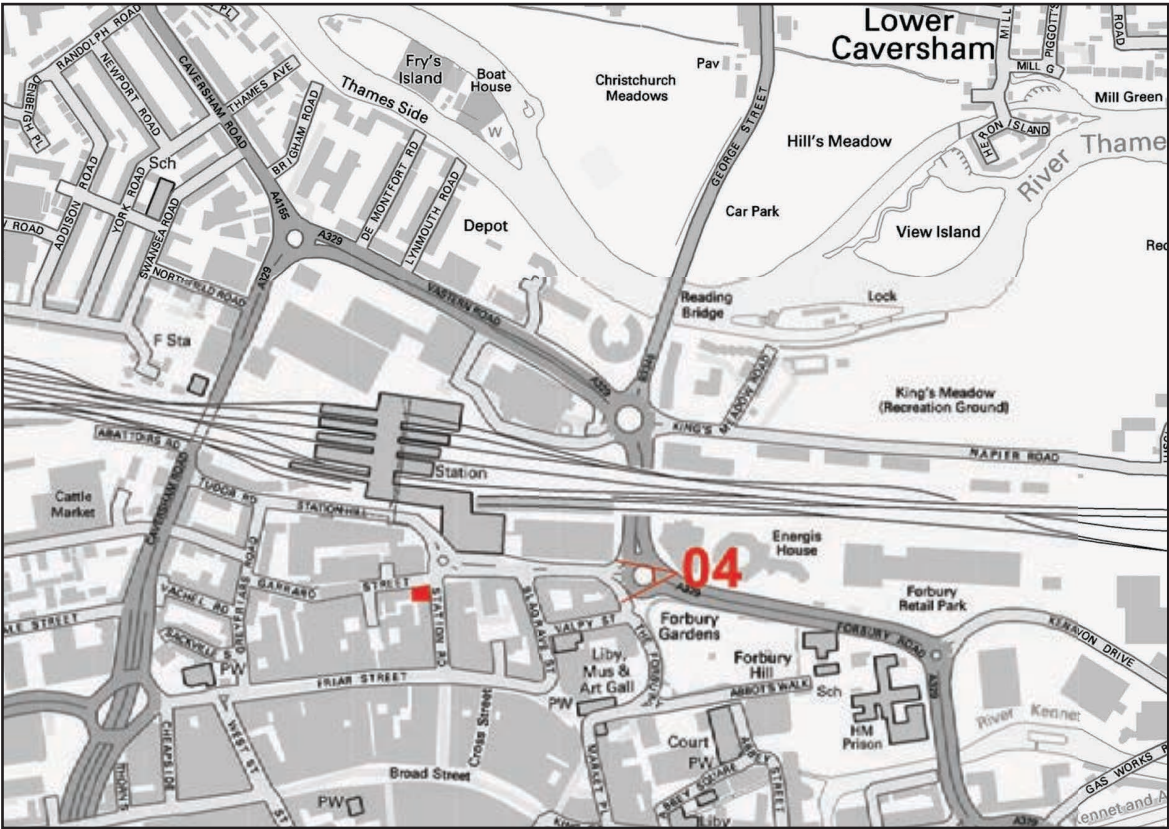




Survey reference points



View Location Plan



View Number 4

AVR Level 1

Page Viewing Distance 540mm @ A3

Location View from Forbury Rd / Vastern Rd roundabout looking SW

Coordinates 471810, 173716 (to EPSG 27700)

Bearing 266°

Distance 0.31km

Eye Level 42.1 m AOD

Camera Canon EOS 5D MK III

Frame Type Single Frame

Focal Length 50°

Horizontal FOV 39.6°

Vertical FOV 27°

Date of Photo 05th Oct 2018 12:02

Weather Overcast

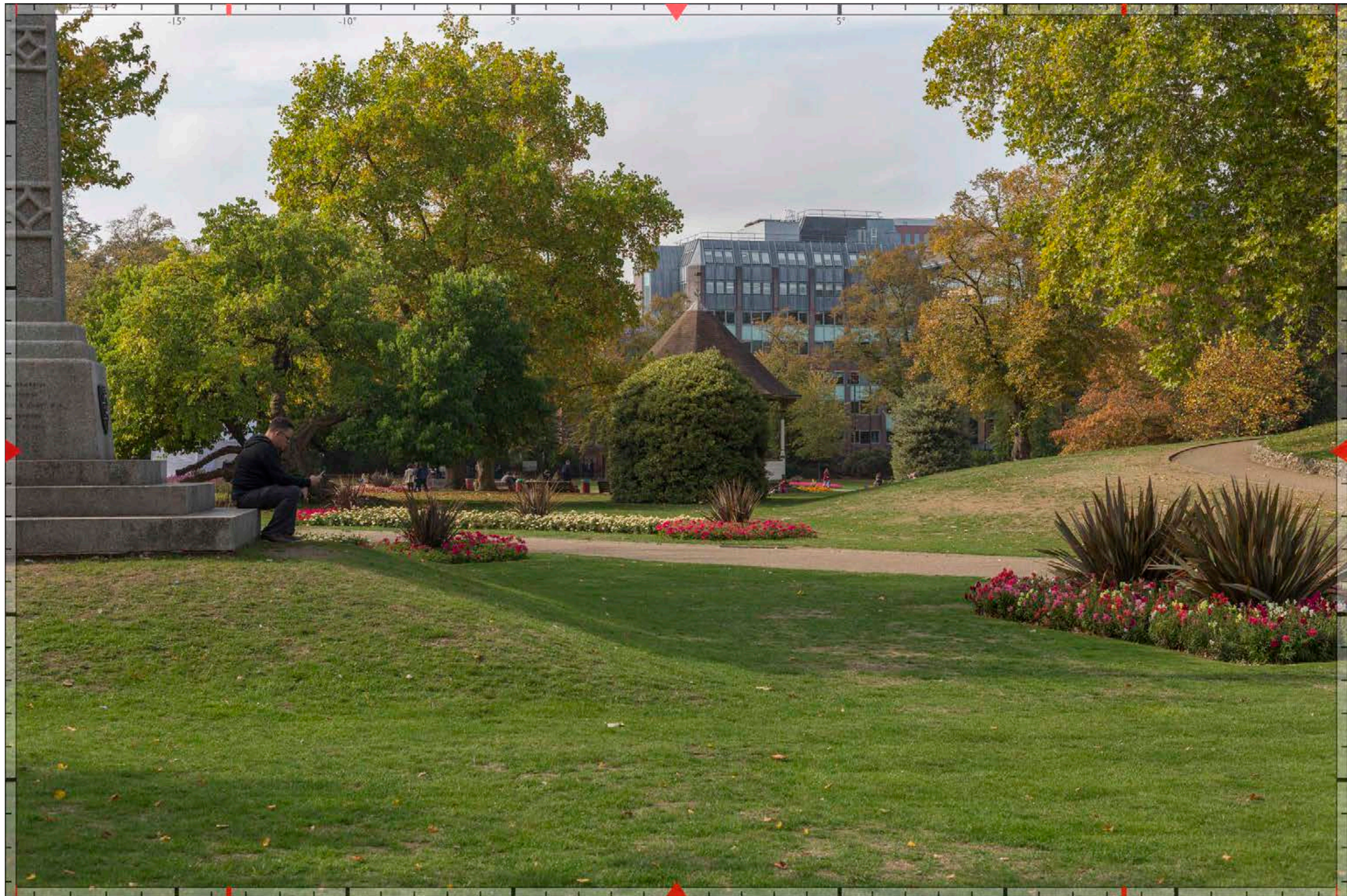
View Verification

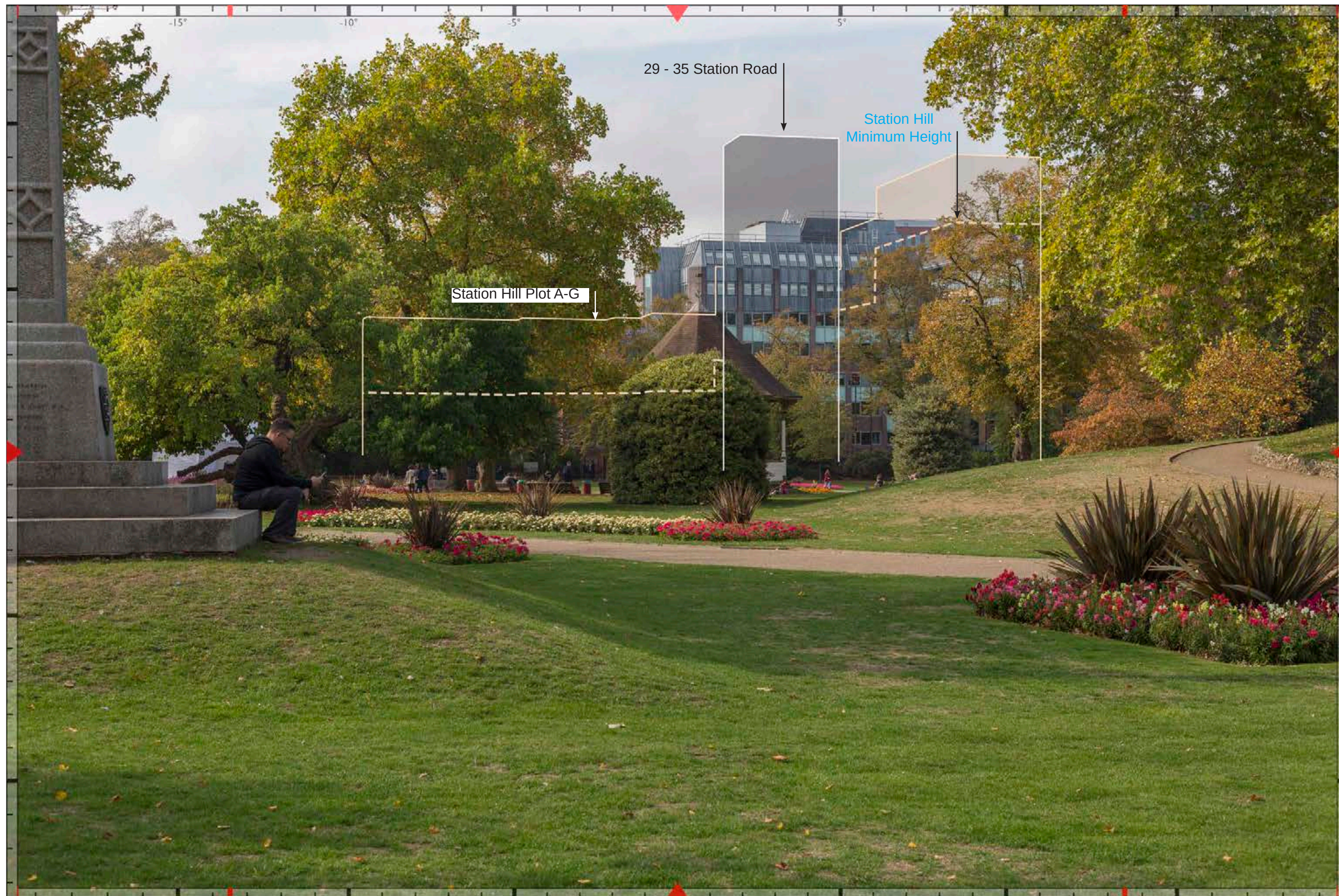


View Verification









Survey reference points



View Number 5

AVR Level 1

Page Viewing Distance 540mm @ A3

Location View from Forbury Gardens looking NW

Coordinates 471944, 173597 (to EPSG 27700)

Bearing 278°

Distance 0.45km

Eye Level 45.7 m AOD

Camera Canon EOS 5D MK III

Frame Type Single Frame

Focal Length 50°

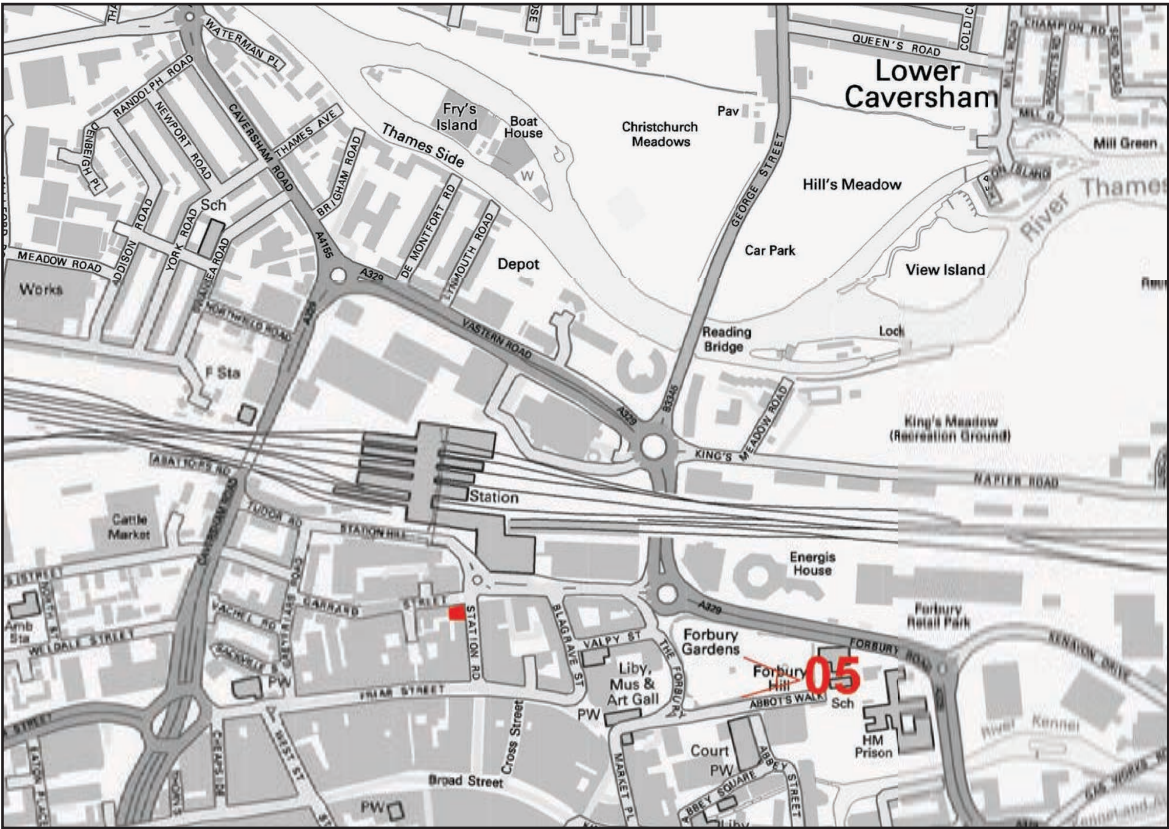
Horizontal FOV 39.6°

Vertical FOV 27°

Date of Photo 05th Oct 2018 13:51

Weather Overcast

View Location Plan



View Verification



View Verification







Survey reference points



View Number 6

AVR Level 1

Page Viewing Distance 300mm @ A3

Location View from Town Hall Square looking NW

Coordinates 471691, 173521 (to EPSG 27700)

Bearing 313°

Distance 0.25km

Eye Level 46.6 m AOD

Camera Canon EOS 5D MK III

Frame Type Single Frame

Focal Length 28°

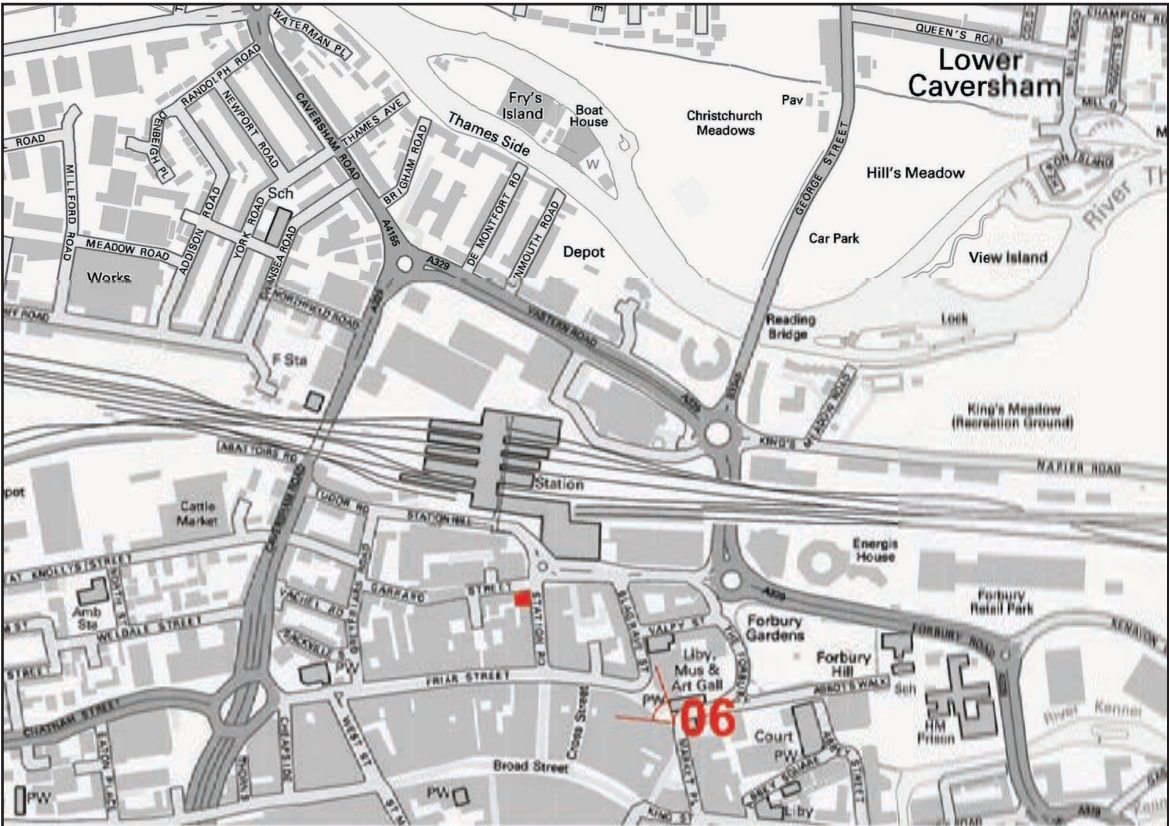
Horizontal FOV 65°

Vertical FOV 46°

Date of Photo 05th Oct 2018 14:10

Weather Sunny Intervals

View Location Plan

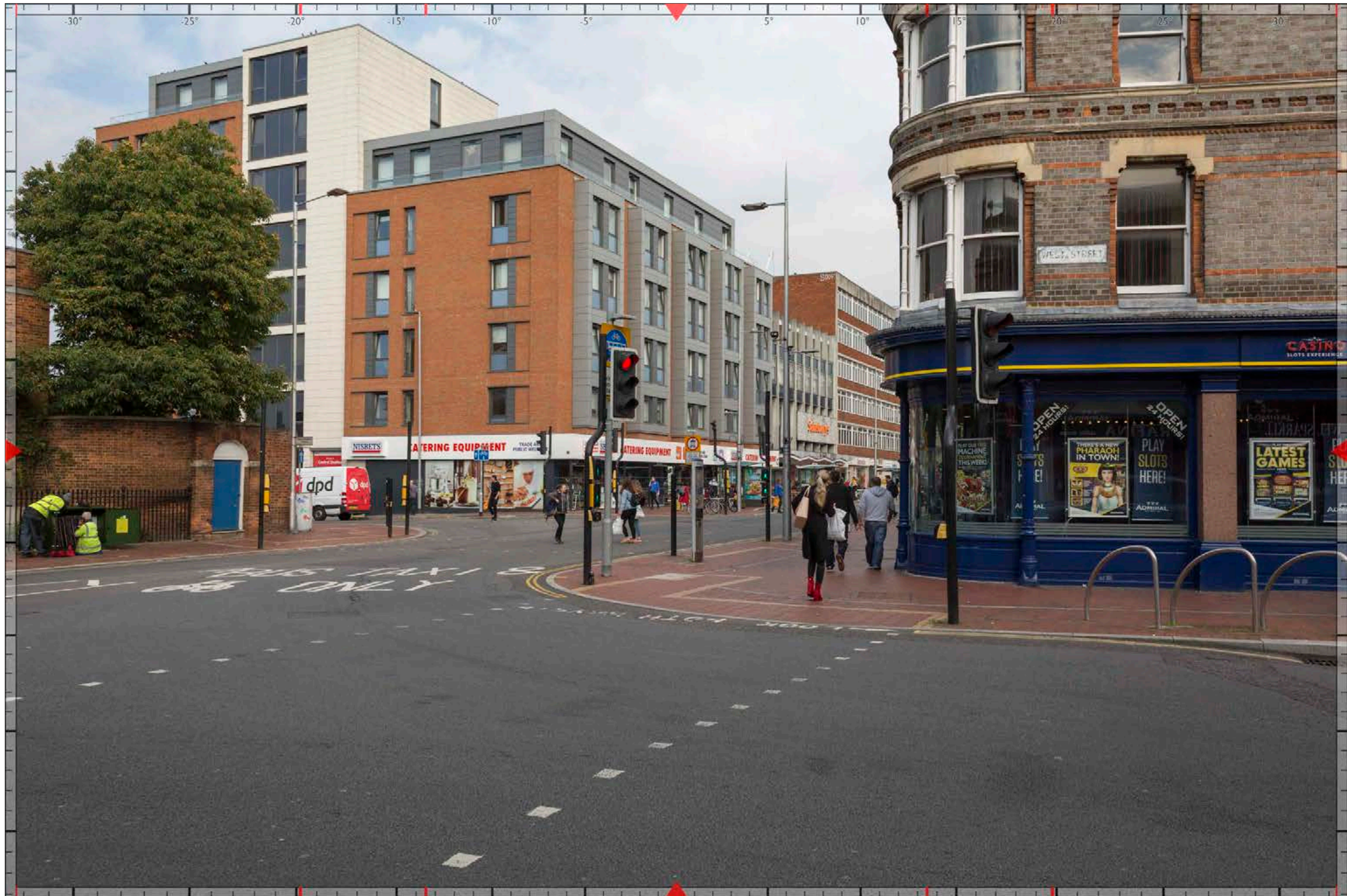


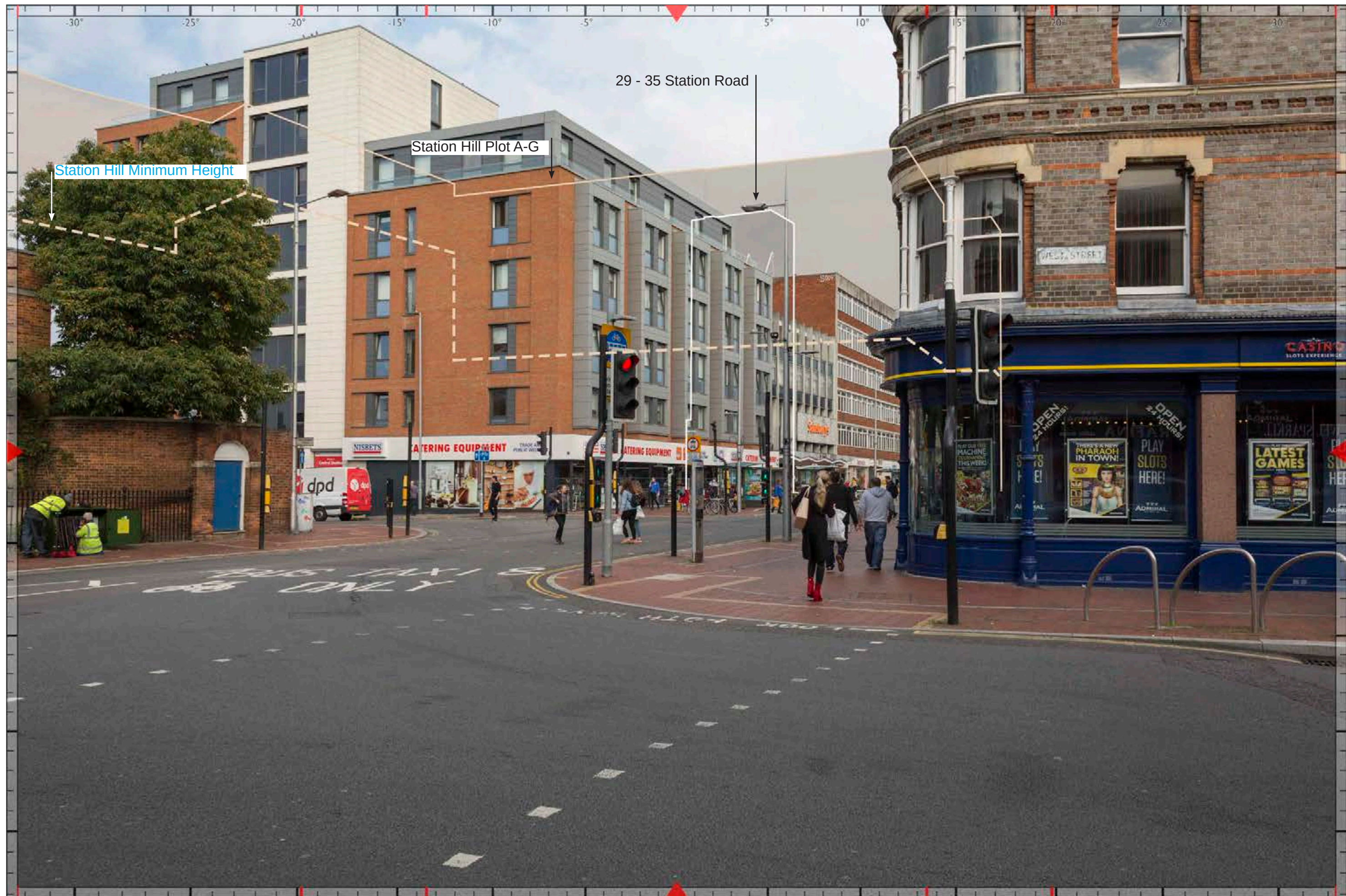
View Verification



View Verification



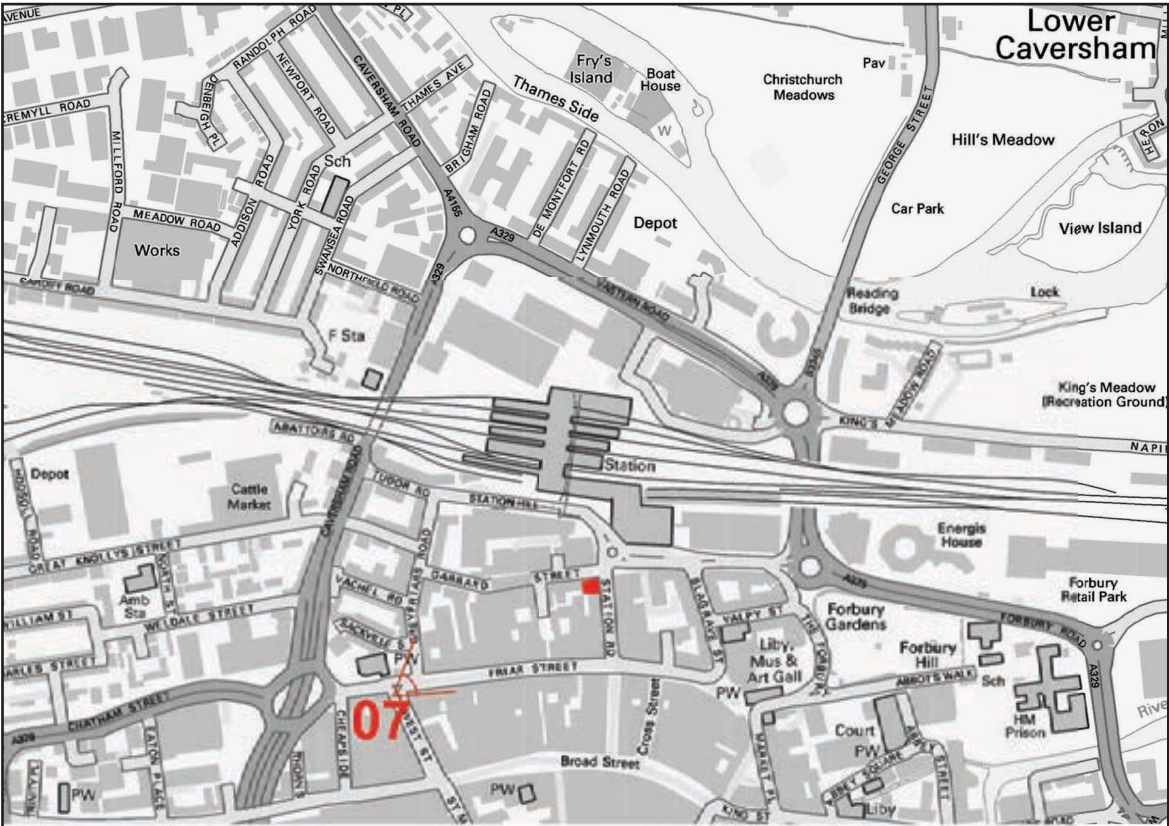




Survey reference points



View Location Plan



View Number 7

AVR Level I

Page Viewing Distance 300mm @ A3

Location View from Friar Street / West Street junction looking NE

Coordinates 471230, 173546 (to EPSG 27700)

Bearing 63°

Distance 0.28km

Eye Level 46.5 m AOD

Camera Canon EOS 5D MK III

Frame Type Single Frame

Focal Length 28°

Horizontal FOV 65°

Vertical FOV 46°

Date of Photo 05th Oct 2018 15:02

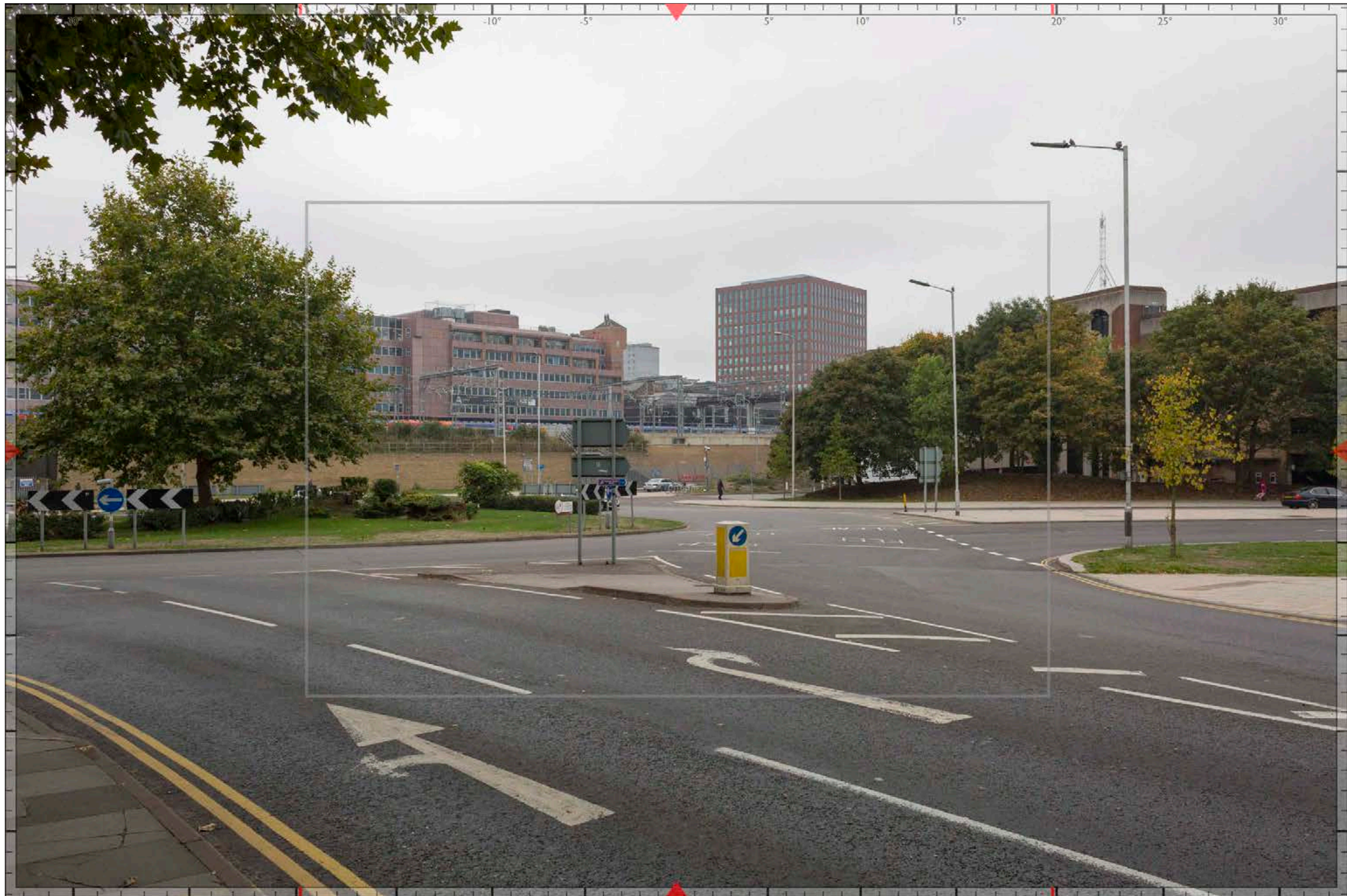
Weather Overcast

View Verification



View Verification







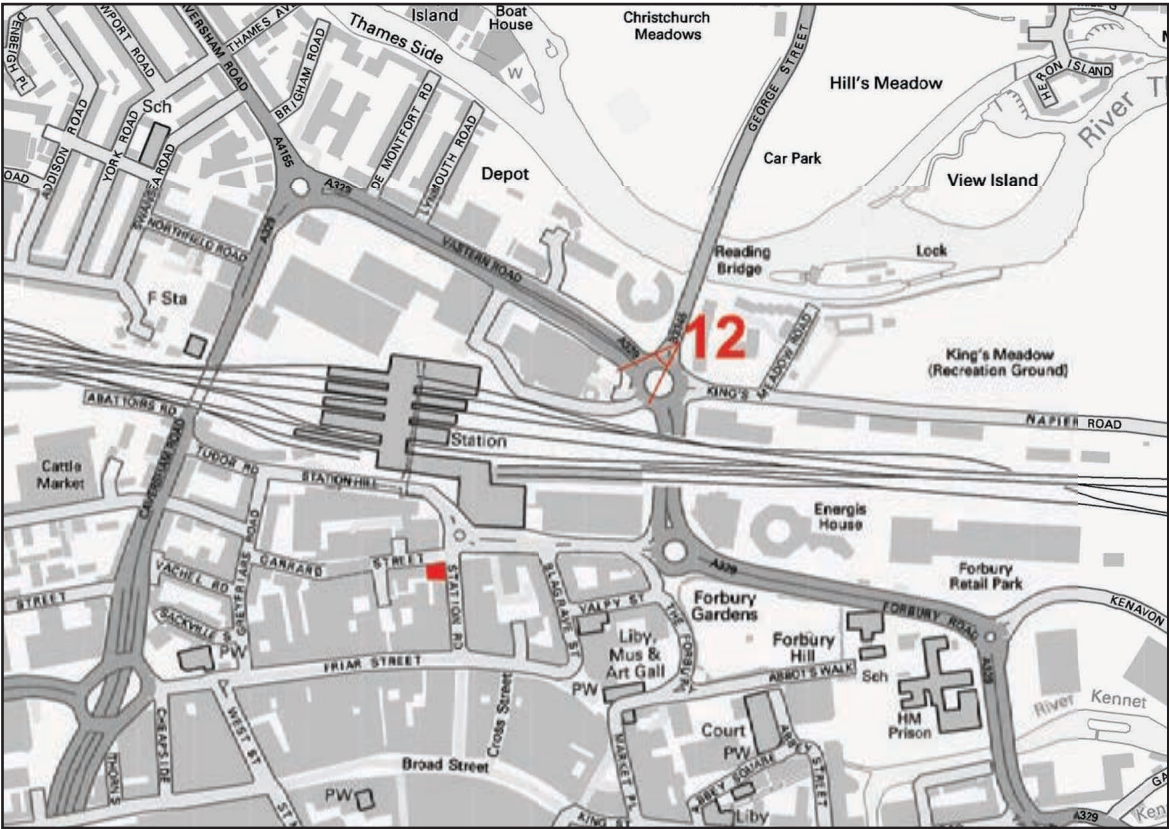


Survey reference points



View Number	12
AVR Level	1
Page Viewing Distance	540mm @ A3
Location	View from Vastern Road / Napier Road roundabout looking SW
Coordinates	471773, 173957 (to EPSG 27700)
Bearing	227°
Distance	0.37km
Eye Level	41.4 m AOD
Camera	Canon EOS 5D MK III
Frame Type	Single Frame
Focal Length	50°
Horizontal FOV	39.6°
Vertical FOV	27°

View Location Plan



Date of Photo	05th Oct 2018 10:27
Weather	Overcast

View Verification



View Verification









Survey reference points

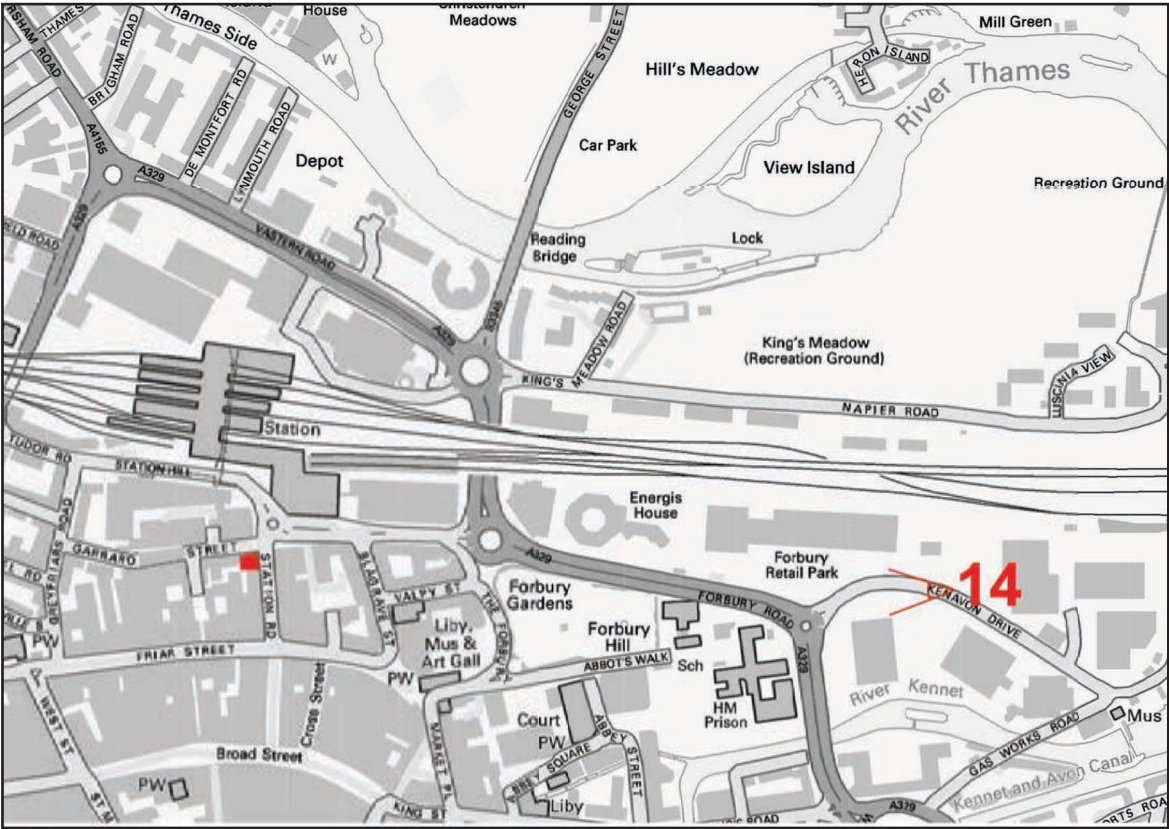


View Number 14
AVR Level 1
Page Viewing Distance 540mm @ A3
Location View from Kenavon Drive looking W
Coordinates 472311, 173654 (to EPSG 27700)
Bearing 263°
Distance 0.81km
Eye Level 40.8 m AOD

Camera Canon EOS 5D MK III
Frame Type Single Frame
Focal Length 50°
Horizontal FOV 39.6°
Vertical FOV 27°

Date of Photo 05th Oct 2018 13:28
Weather Sunny Intervals

View Location Plan



View Verification



View Verification









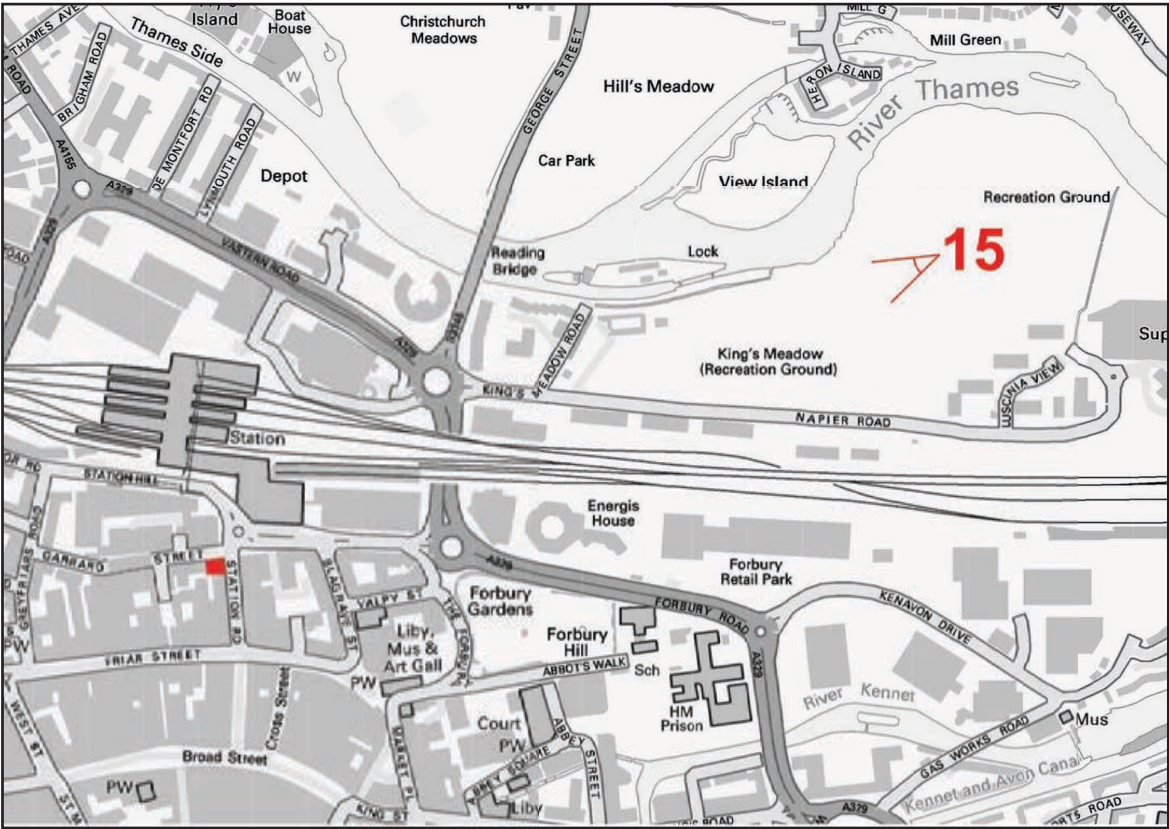
Survey reference points



View Number	15
AVR Level	I
Page Viewing Distance	540mm @ A3
Location	View from Kings Meadow looking SW
Coordinates	472350, 174061 (to EPSG 27700)
Bearing	246°
Distance	0.93km
Eye Level	37.7 m AOD
Camera	Canon EOS 5D MK III
Frame Type	Single Frame
Focal Length	50°
Horizontal FOV	39.6°
Vertical FOV	27°

Date of Photo 05th Oct 2018 12:37
Weather Overcast

View Location Plan

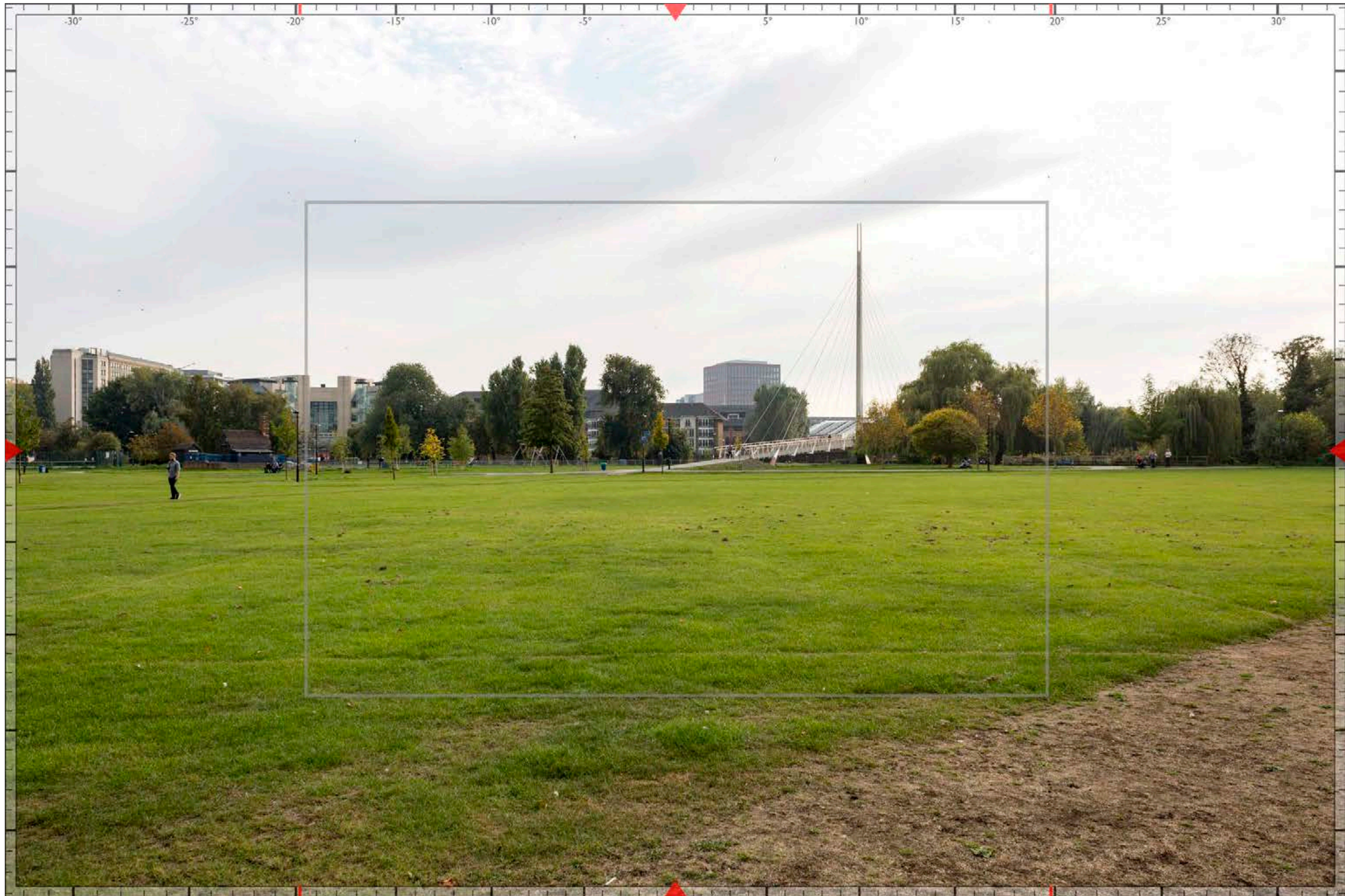


View Verification

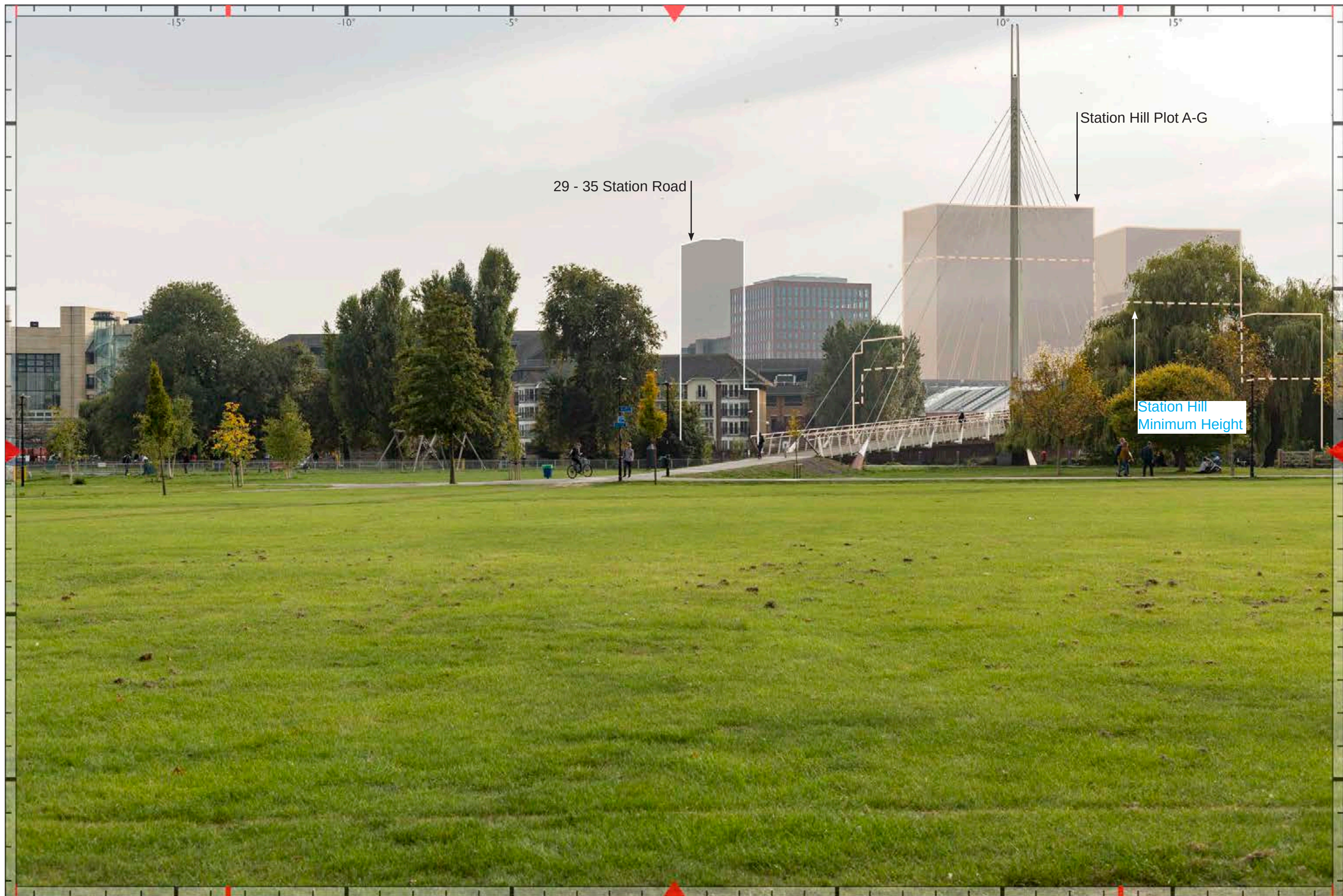


View Verification



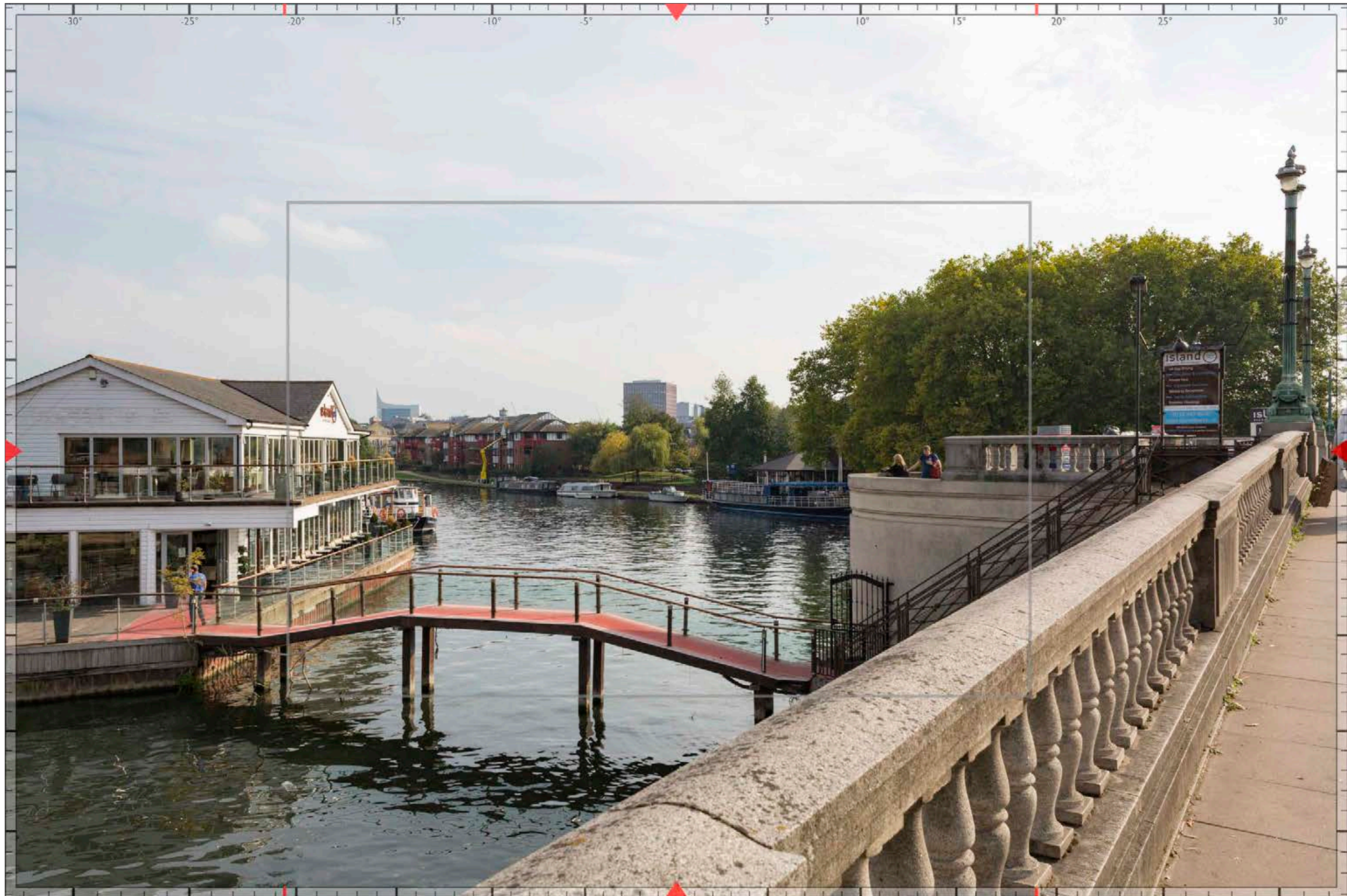


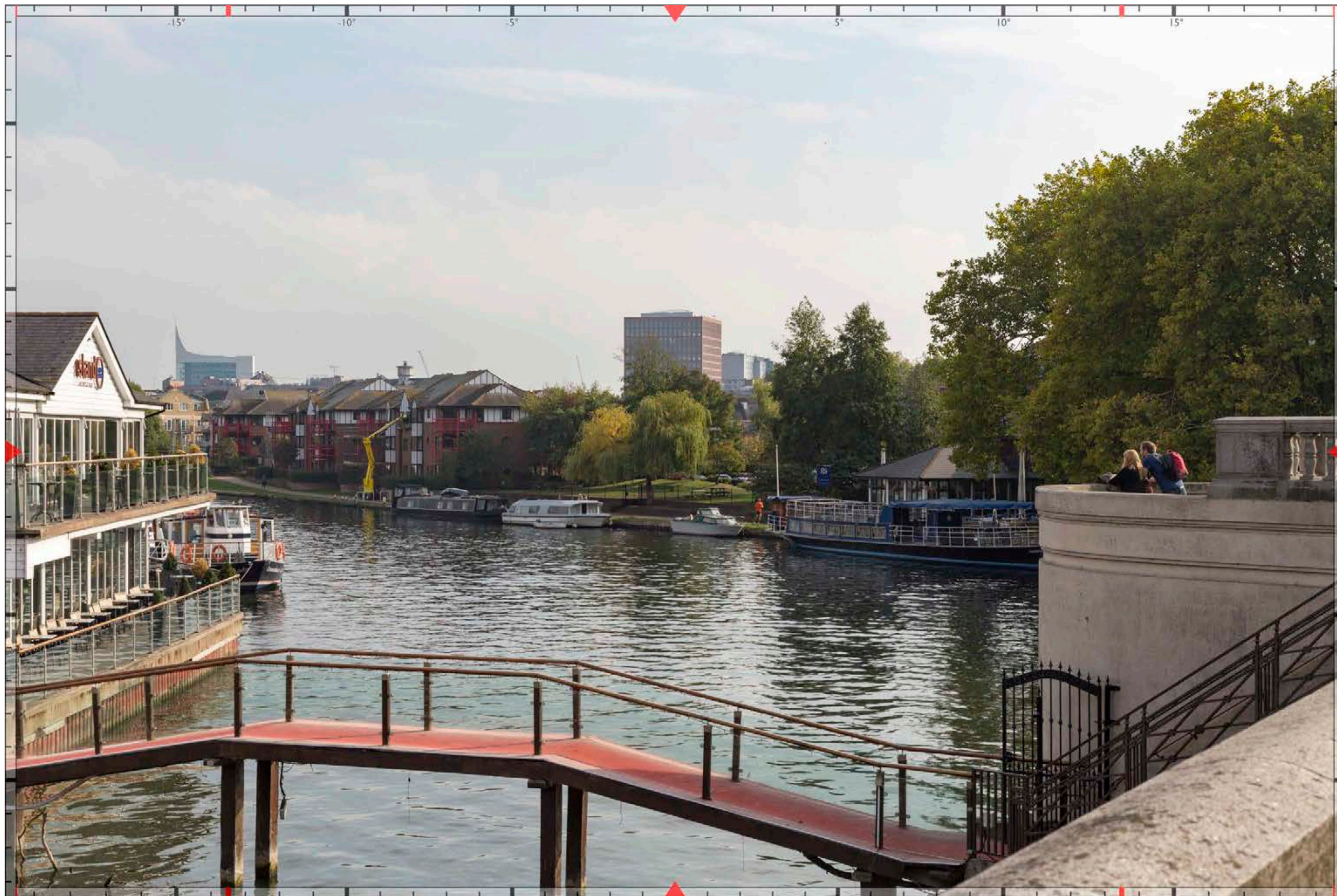


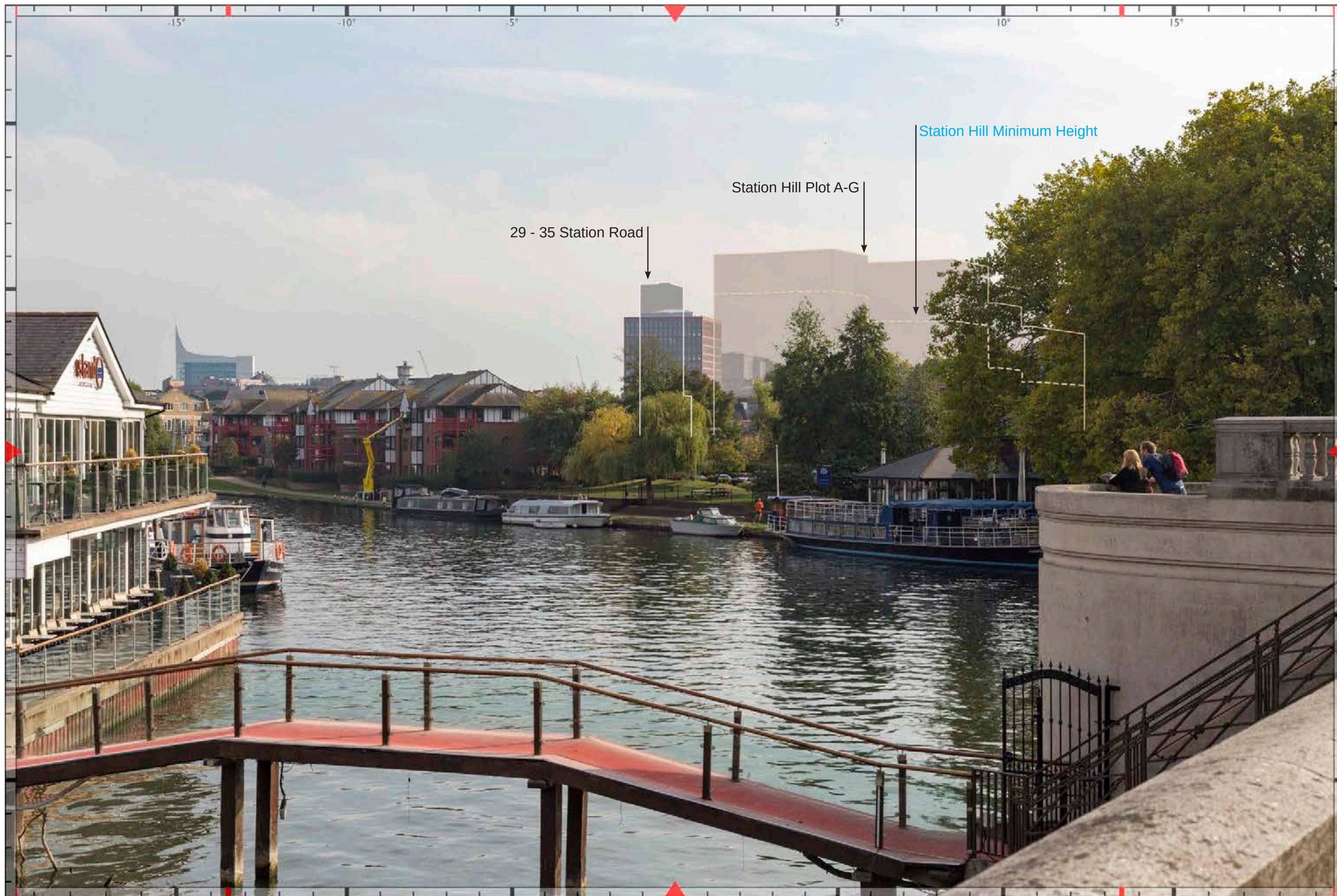


[illegible]

A photograph of a golf course. In the foreground, a camera is mounted on a silver tripod on a grassy area. To the left of the tripod, a black and red golf bag lies on the grass. A white line, possibly a measuring tape or a string, extends from the tripod towards the right. In the background, a dirt path leads into the distance, flanked by large, leafy trees. Several people are visible in the distance, some walking and others standing. The sky is blue with some clouds.







Survey reference points



View Number 17

AVR Level 1

Page Viewing Distance 540mm @ A3

Location View from Caversham Bridge looking SE

Coordinates 471163, 174619 (to EPSG 27700)

Bearing 161°

Distance 0.97km

Eye Level 43.1 m AOD

Camera Canon EOS 5D MK III

Frame Type Single Frame

Focal Length 50°

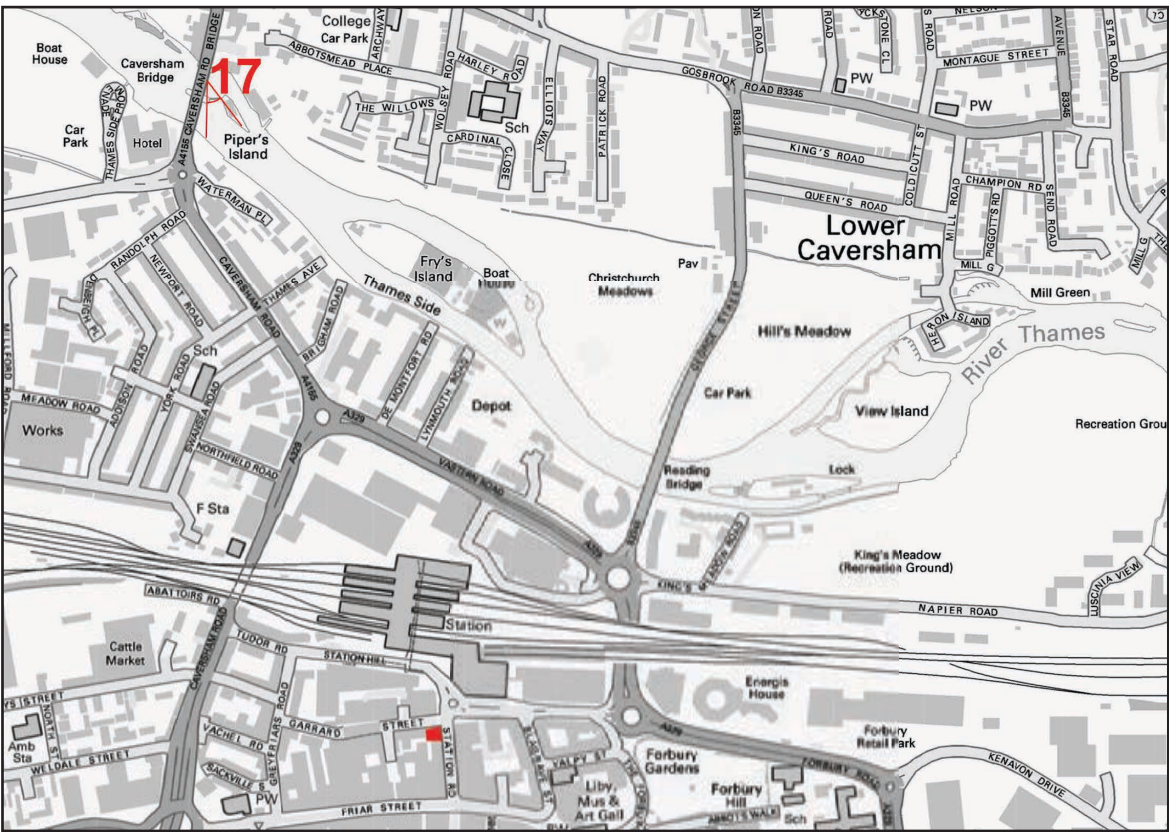
Horizontal FOV 39.6°

Vertical FOV 27°

Date of Photo 05th Oct 2018 15:29

Weather Sunny Intervals

View Location Plan

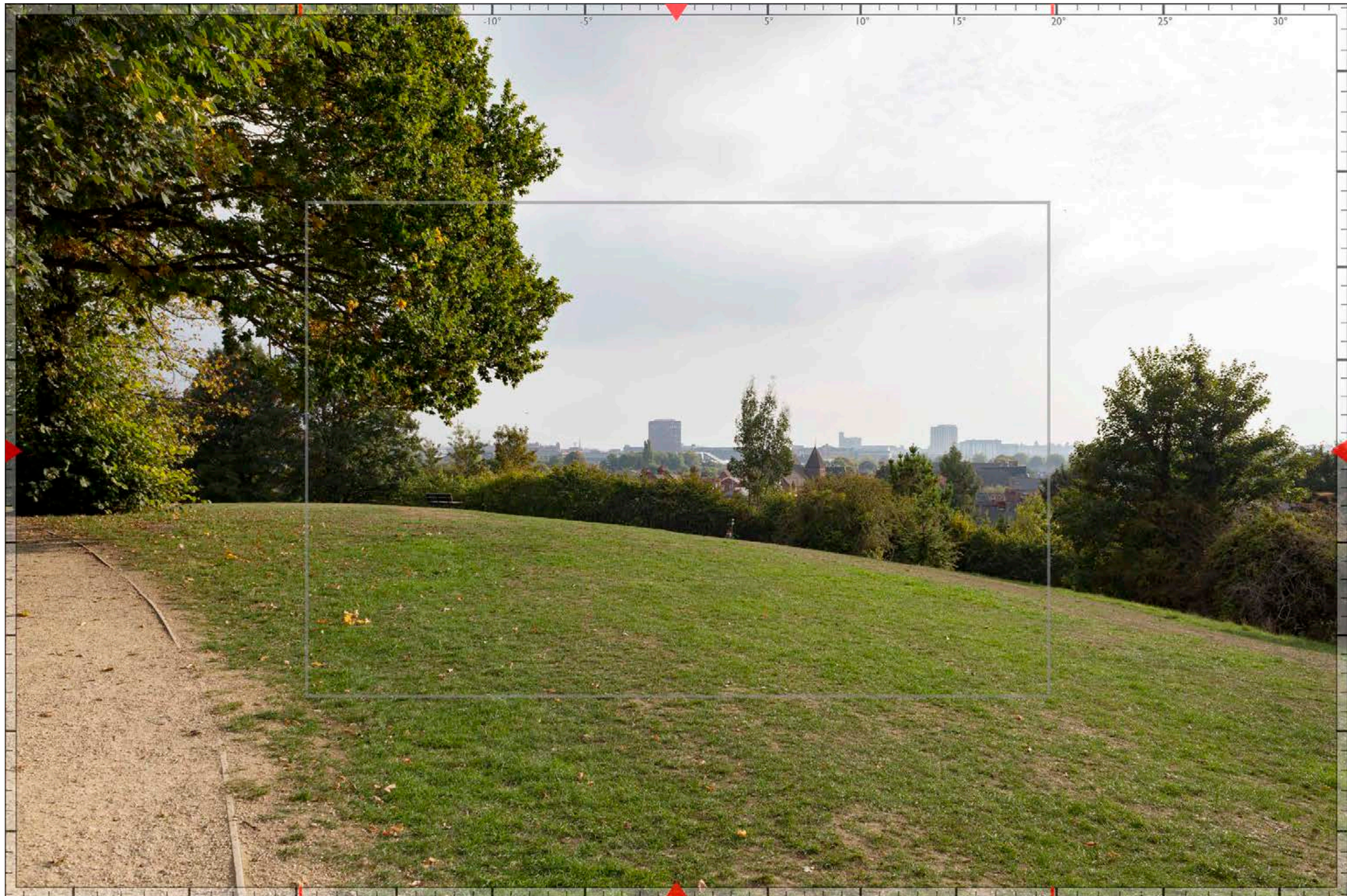


View Verification



View Verification





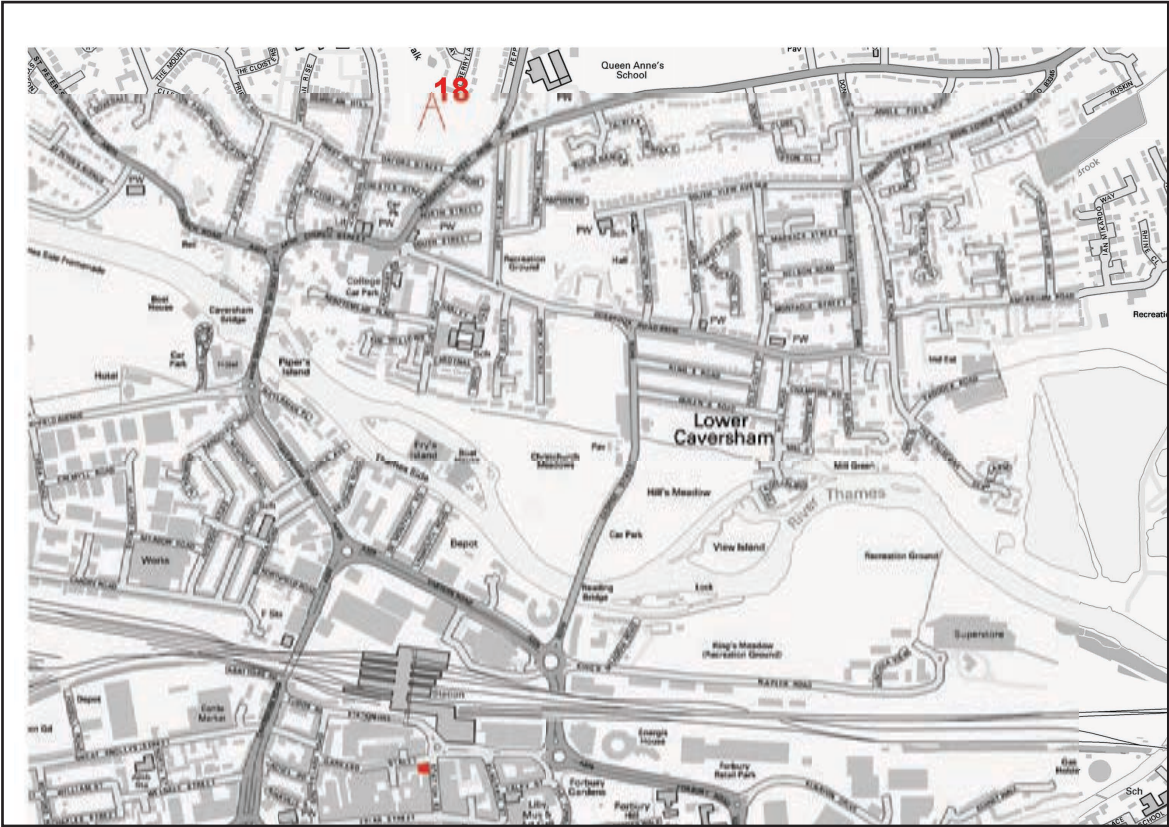




Survey reference points



View Location Plan



View Number 18

AVR Level 1

Page Viewing Distance 540mm @ A3

Location View from Balmore Walk looking S

Coordinates 471502, 175095 (to EPSG 27700)

Bearing 182°

Distance 1.39km

Eye Level 56.2 m AOD

Camera Canon EOS 5D MK III

Frame Type Single Frame

Focal Length 50°

Horizontal FOV 39.6°

Vertical FOV 27°

Date of Photo 05th Oct 2018 16:06

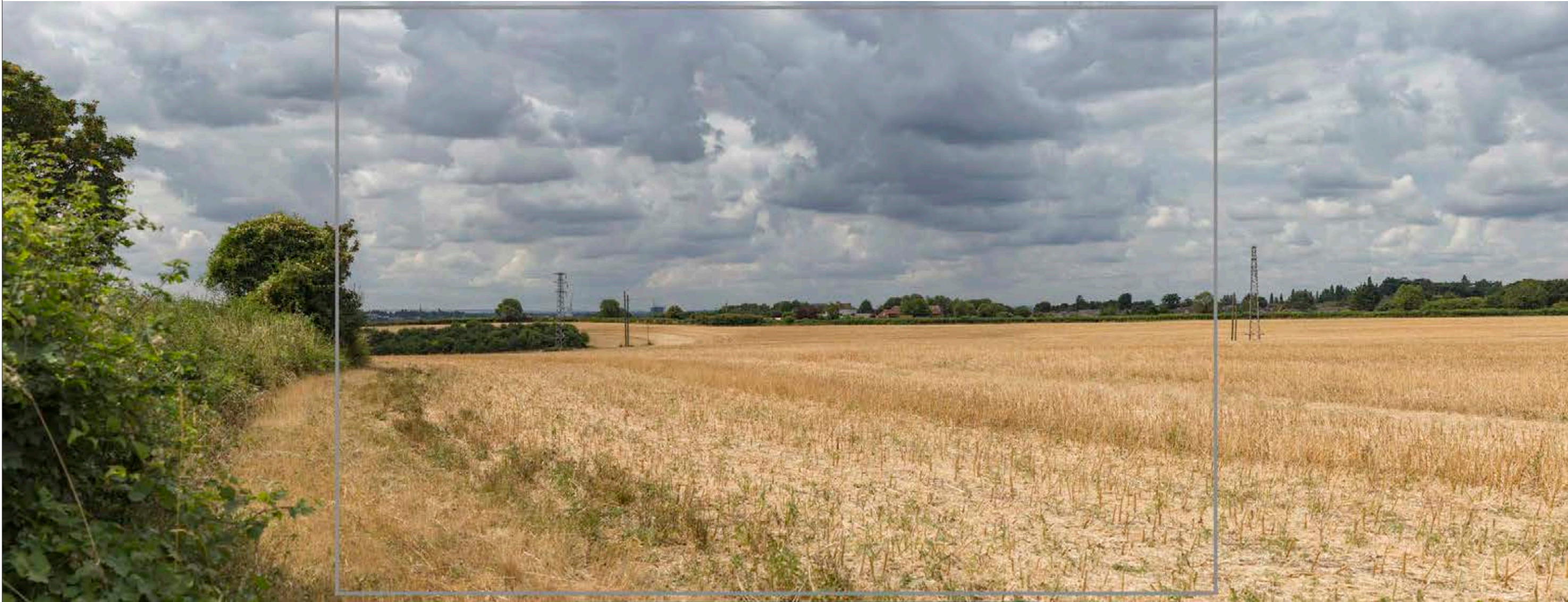
Weather Sunny Intervals

View Verification



View Verification









View Number

26

AVR Level

I

Page Viewing Distance

540mm @ A3

Location

View from Playhatch, Dunsden Green SW

Coordinates

473900, 176922 (to EPSG 27700)

Bearing

216°

Distance

4.02km

Eye Level

76.6 m AOD

Camera

Canon EOS 5D MK III

Frame Type

Single Frame

Focal Length

50°

Horizontal FOV

39.6°

Vertical FOV

27°

Date of Photo

18th Jul 2018 11:14

Weather

Overcast

View Location Plan



View Verification



View Verification



Visually Verifiable Montage Methodology

Introduction

A Verified View is an image that combines a photographic view with an accurate CAD 3-D representation of a proposed development, displayed to an agreed level of detail. Its purpose is to impartially and realistically represent the proposal, using a baseline of verifiable visual data and information. By using verifiable visual data this image can then be used by others (if required) to scrutinise the work, without its accuracy being questioned.

“Neither photographs nor visualisations can replicate a view as seen in reality and they should only be considered a tool for assessment” find where this is

Verified Views are also referred to as:

- Visually Verifiable Montages (VVMs)
- Verified Visual Image (VVI)
- Accurate Visual Representation (AVR)

When producing verified views, a series of options are available to aid design and planning decisions according to the level of detail required. To assist agreement between all parties prior to AVR preparation, the following classification types are presented to broadly define the purpose of an AVR in terms of the visual properties it represents.

This classification is a cumulative scale in which each level incorporates all the properties of the previous level.

- AVR Level 0 Location and size of proposal
- AVR Level 1 As level 0 + degree of visibility of proposal
- AVR Level 2 As level 1 + visual architectural form and details
- AVR Level 3 As level 2 + use of realistic materials

Nicholas Pearson Associates has an established reputation within the environmental and landscape consultancy field for the production of Verified Views for urban and rural developments and has successfully presented these for planning applications and as expert witnesses at public inquiry.

The methodology used by Nicholas Pearson Associates accords with the following guidance documents where appropriate:

- The Third Edition of the good practice ‘Guidelines for Landscape and Visual Impact Assessment’ 2013; produced by the Landscape Institute and Institute of Environmental Management & Assessment.
- Photography and photomontage in landscape and visual impact assessment, March 2011. Landscape Institute Advice Note 01/11.
- Visual representation of development proposals (31 March 2017) Landscape Institute Technical Guidance Note 02/17
- London View Management Framework Supplementary Planning Guidance: Appendix C: Accurate Visual Representations. March 2012.
- Visual Representation of Wind Farms Version 2.2, February 2017, Scottish Natural Heritage
- Assessing the impact of small-scale wind energy proposals on the natural heritage, March 2016 Version

3, Scottish Natural Heritage Guidance

- ‘Visualisation Standards for Wind Energy Developments’ (July 2016) Highland Council

Appendix A includes a project specific methodology pro-forma detailing which principles from this methodology have been applied.

Photography

Suitable weather conditions are sought so that the proposals may be clearly visible in the context of the view. It should be noted that taking photographs looking south during the winter due to the low angle of the sun can be problematic. We therefore endeavor to take the photographs at an appropriate time of day to reduce the chance of the site being in shadow or backlit. The photograph(s) correctly portray the view which is obtained at each representative viewpoint whilst avoiding obvious obstructions.

Using detailed topographic survey and Ordnance Survey mapping, the camera is mounted on tripod at a height of 1.6m above existing ground level, which best represents the average human eye level. Where possible the tripod is positioned over a pre-surveyed feature which can be identified on the 3D model. A built-in spirit level is used to ensure that the camera is horizontal.

Photographs are taken in a RAW format using manual settings to enable the best quality results. The photographer takes note of the weather conditions and direction of view. All other details relating to the photograph are stored in the image EXIF data. If necessary, the original RAW file can be submitted as part of the verification process.

Baseline Photograph

A common-sense approach is applied to our photography and image composition with no one format or lens being suitable for all situations. As a rule, rural and coastal sites may generally require a “panoramic” format, whilst urban sites may require a more considered approach using alternative formats where appropriate.

Invariably the photographic format can often be dictated by the reproduction size. Most imagery is viewed electronically on screen or printed at A3 with the occasional use of A1 wide by A4 high (840 x 297mm) for panoramic views. Therefore, a sensible balance must be struck to place the proposal within meaningful context whilst providing clarity for the viewer.

Each view of the proposal is represented so that an informed decision can be made by balancing the needs of the assessor or viewer on site. Wherever possible, consultation with the relevant planning professional takes place on the matter and our final methodology is based on the most appropriate agreed set of professional guidelines.

Lenses

No ‘one size fits all’, and we will use the most appropriate set of lenses / formats to convey the view. Only prime lenses are used; in the following order of preference: 50mm, 28mm, 24mm, 24mm/Shift. Both landscape and portrait orientations are considered when planning the photography. The 50mm lens has always been regarded as the “standard” lens on a full frame 35mm camera and closest to the human eye when image printed at A3 and viewed at arm’s length. 50mm lenses are not always appropriate for all situations and so when viewing Verified Views based on other lenses, the observer must be aware of the limitations of the printed format. Alternative lenses are only selected when the viewpoint is close to the site. This means that even at a reduced printed scale, the observer is still able to identify all the features visible by the naked eye.

Full Frame Sensor lenses are quoted as having the following Horizontal Fields of View. Canon EF 50mm: 39.6 Degrees / Canon EF 28mm: 65.5 Degrees / Canon TS-E 24mm: 74 Degrees. However, the exact field

Visually Verifiable Montage Methodology

of view cannot be assumed, and the actual field of view may vary +/- 2 or 3 degrees depending on the lens. When matching these lenses in our 3D software we have calculated the exact field of view of our own lenses.

Photography Equipment Used

- Canon 5D Mk3 full frame digital SLR camera (Full frame sensor)
- Canon EF 50mm f/1.4 STM lens
- Canon EF 28mm f/1.8 USM Lens
- Canon TS-E 24mm f/3.5 L II
- Manfrotto Tripod
- NN4-D16-Nodal Ninja NN4 Panorama head with RD-16 rotator base
- NN-EZ-Nodal Ninja EZ Leveler MKII
- Plumb bob
- Compass

Image Composition

A practical aesthetic approach is applied to our viewpoint photography, where good composition is important. We approach each viewpoint with the intention of capturing the view as perceived and experienced by the observer.

When the proposed development is at a distance, whilst the observer is aware of the wider area within their peripheral vision they tend to focus on the area in question. In these circumstances it is important to consider the limitations of printed technology. When representing proposals at a distance, the verified view is presented on a baseline photograph with a smaller field of view so that it can be reproduced at a scale suitable for viewing at a reasonable distance. To ensure that the viewer is provided with a representation of the wider context, a “representative” view with a larger field of view is presented alongside to demonstrate this. This may be a single frame photograph or panorama and “provides landscape and visual context only”

In most cases viewpoint photographs are taken so that the camera is level to the horizon, the verticals are not then distorted, and the proposals are in the center of the view. However, there are exceptions to this rule, such as:

- 1) Viewpoints from the top or bottom of a hill where the viewer naturally directs their line of site towards the focal point/s of the view. We may adjust the angle to ensure that we create a natural looking composition.
- 2) Slight rises vertically may also be necessary to pick up vital “tops” of features.
- 3) To allow the proposal to be assessed in context, a view may be adjusted to incorporate important features on the left or right-hand side meaning that the proposal may not always be in the center of the view.
- 4) The view is restricted (through an archway or along an avenue for example) where looking directly at the proposal is unnatural.
- 5) A famous view where composition is key (i.e.: a famous painting or photograph).
- 6) Shift/tilt lenses. Although the camera remains level the lens is “shifted” just enough to include the proposed development, or other features required, without including excessive sky. Due to the lens type the vertical elements of the photograph remain straight.

The original Canon RAW files are processed in Adobe Photoshop to adjust white balance, colour accuracy and sharpness. The images undergo further correction procedures to ensure the horizon is precisely horizontal and any barrel distortion is compensated for.

Camera Matching & Verification:

Irrespective of whether the final VVM is output as a single or composite panoramic image, each Verified View is based upon a single rendered frame.

Viewpoint markers are used to tie the photograph to the CAD Camera view. These are surveyed features and points such as lamp posts, walls, boundaries and buildings; anything that has a known location. These markers are required to be as accurate as possible and should ideally be positioned within the central portion of the image. They should be at both varying heights, distances and breadth within the view. The background plate photograph is imported into 3D Studio Max to verify the accuracy of the match.

The location accuracy and angle of view can also be checked by triangulating the position and preparing view line sections. This is a reliable method successfully used for location finding in the field.

Texturing, Rendering & Post Production

3D Studio Max was used for applying the photorealistic surfaces and materials to the 3D model. Material references and planting sizes are based upon information provided by the Architects / Landscape Architect

The exact resolution of the photograph is noted and used as the size for the final rendered output of the 3D Model view so that the two overlay each other precisely. Adobe Photoshop CC is used to blend the modelled information with the existing base line / base plate photograph.

Reproduction

To assist the viewer in understanding the characteristics of the lenses used baseline photographs and verified views can be annotated around the border, to indicate the field of view and optical axis of the lens used. This border is divided up into degree increments indicating the field of view. The position of the optical axis indicates whether the photograph was taken with horizontal shift or vertical rise. The above added graphic is simply an alternative way of quickly knowing the lens used. This is particularly useful when a number of viewpoints of a proposal are taken with varying lens types.

It is important to reproduce each document and view at the correct size for both practicality and to ensure view accuracy when combined with the listed recommended viewing distance (as detailed on each view)

Each viewpoint within the document is supplied with all or some of the following information:

- Figure Number
- Viewpoint Number
- Viewpoint Details
- OS Coordinates (12 digit)
- Eye level (A.O.D)
- Direction of View (Bearing)
- Camera Height (AGL)
- Date & Time

Visually Verifiable Montage Methodology

- Viewing distance (Advisory)
- Single Frame or Composite
- Horizontal Field of View
- Vertical Field of View
- Weather / Lighting Conditions
- Camera Type
- Lens / Focal Length
- Model and camera location accuracy

The Verified views in this document may also contain other information such as:

- Illustrative bar indicating compass bearing
- Extent of central 50mm frame used to construct panorama
- Extent of which Proposed development occupy – (Degrees noted)
- Number of buildings visible
- Distance to site
- Note on A3 versions: “This image provides landscape and visual context only.”
- Annotation of key features
- Note: “View flat at a comfortable arm’s length”
- Building ID numbers

Viewpoint Pack

- Note: This image is intended only for use at the viewpoint.

Wirelines views are colour coded as follows:

- DTM – Grey/Black
- Waterbodies – Light Blue
- Proposed structures – Brown
- Existing structures - Blue

Each verified view is accompanied by a viewpoint location plan and photographs of camera locations together with a version of this methodology.

Viewing Procedures

The purpose is to reproduce the Verified View so that it correctly reconstructs the perspective seen from the location from which the photograph was taken.

We aim to reproduce all wireframes and photomontages so that they can be viewed at a comfortable arm’s length. When comparing the view in the field, the viewer must also keep their head motionless. This ensures

that the represented view falls within the human field of view. The viewer must keep their head motionless and fix their eyes on the centre of the view. If requested an acetate print can be provided for viewing on site. This can help the viewer align the key features on the image with those in real life.

Cylindrical views are only intended for viewing as a printed image. The printed image should be viewed on an arc that matches the images field of view, at a comfortable arms-length.

Where it is not possible to represent the proposed site with suitable context in the standard document frame, a larger field of view is necessary. Irrespective of reproduction size all verified views are accurate representation, and the advisory viewing distance (also referred to as Principle Distance by the SNH guidance) is included on all images to allow technical comparison if required.

Further Reading

Further summaries of our approach, verified view methods plus examples of our work can be found on our website:

<http://npavisuals.co.uk/approach/>

<http://npavisuals.co.uk/verified-view>

Visually Verifiable Montage Methodology

Appendix A: Project Specific Information

Project: Station Road

Site Location: Reading

Status: Planning

Photography Equipment Used

- Canon 5D full frame digital SLR camera (Full frame sensor)
- Canon EF 50mm f/1.4 STM lens
- Canon EF 28mm f/1.8 USM Lens
- Canon TS-E 24mm f/3.5 L II
- Manfrotto Tripod
- NN4-D16-Nodal Ninja NN4 Panorama head with RD-16 rotator base
- NN-EZ-Nodal Ninja EZ Leveler MKII
- Plumb bob
- Compass

The Following format/s were deemed appropriate for this project

- The baseline photograph(s) for Viewpoint(s) 4, 5, 12, 14, 15, 16, 17, 18 and 26 were single photographs taken using the Canon 50mm f/1.8 lens with a 39.6-degree field of view, reproduced suitable to be viewed at arm's length (540mm @ A3). This format is selected as suitable to assess architecture and site layout which occupies a key portion of the viewpoint requiring a greater level detail to represent in print what may be visible with the naked eye. The verified view can often be presented with a panoramic view which represents the wider context.
- The baseline photograph(s) for Viewpoint(s) 6 and 7 were single photographs taken using the Canon 28mm f/1.8 lens with a 65-degree angle of view, reproduced suitable to be viewed at 300mm @ A3. This format is selected as suitable to assess architecture and site layout within its local setting. The use of this lens is supported by the Landscape Institute in situations where the whole development cannot be contained within the Field of View of a 50mm standard lens.
- The baseline photograph(s) for Viewpoint(s) 1 and 3 were single photographs taken using the Canon TS-E 24mm f/3.5 L II with a 74-degree field of view, reproduced suitable to be viewed at 260mm @ A3. This format is selected as suitable to assess larger architectural form and site layout within a restricted local setting. This lens removes parallax distortion and converging verticals, particularly on high buildings and more closely matches what the brain interprets. It The use of this lens derives from the London View Management Framework Supplementary Planning Guidance: Appendix C: Accurate Visual Representations. March 2012.

Mapping & Survey Data

- Z Map / City Model
- Digital Terrain Mapping (Commercial 3D height data)

To assist in the verification process an Ordnance Survey / Z Model was used to identify 3D point locations. In many cases these may include existing building ridgelines & Parapets, Street furniture, kerbs or similar such details. Data includes Camera locations and specific 3D points to assist in the camera matching process.

Viewpoint Surveying

For each agreed photo viewpoint, a location plan is provided to the surveyor along with marked up a referenced photograph showing the camera in situ. The surveyor then establishes the location of each viewpoint using a Leica Global Positioning System (GPS). Where GPS positioning was not possible near to the required survey point, the surveyor works back from an established GPS location.

The surveyor records a range of reference points, using a reflectorless Total Station. These viewpoint marker points were in the foreground and background, high level and low level. These can include existing building ridges, lighting columns, bollards or similar such details

Data processing is conducted and referenced back to Ordnance Survey.

Data is presented in an Excel Spreadsheet, 3D DWG plus a photograph marked with the reference points.

Applications Used

- Autodesk Civil 3D
- 3D Studio MAX
- Adobe Photoshop
- Adobe InDesign

Proposals Supplied

- AutoCAD 3D Model
- Revit Model

The proposals supplied by the architects (Broadway Malyan) were all combined with the site survey and mapping data so that they correspond with each other. A geo-referencing system is used when doing this so that information regarding viewpoints can be accurately located. The model(s) supplied were cross-checked with the site plan and elevations to ensure they accurately match the design drawings, including FFLs, ridge heights and footprint.

AVR Level:

AVR Level 1

Additional Comments

Models for cumulative assessment were provided by Broadway Malyan and rendered in a different colour to differentiate the schemes that have planning consent. These verified views are presented as AVR Level 1 to show height, scale and mass.