Prince Albert Road, London

Representative Views & Methodology by **Visualhorizon3D**

For **Planning Resolution Limited**

Designed by **ALISTAIR DOWNIE**

22nd November 2023

Contents

1.00 Introduction

1.1 The AVRs (accurate visual representations) shown in this document are of the proposed scheme at Prince Albert Road, London, designed by ALASTAIR DOWNIE.

1.2 This document and the images herein were created by Visualhorizon3D. Visualhorizon3D are Architectural Visualisation Specialists and were commissioned by Planning Resolution Ltd to produce the AVRs and associated methodology only. This document should be read in conjunction with all other submitted planning application documentation, including any Visual Impact Assessment reports.

1.3 The brief was to present the existing scenario, proposed AVR views and to describe the methodology used to create them.

1.4 All information regarding the development was supplied in digital format by ALASTAIR DOWNIE, including the 3D CAD model.

1.5 A general note regarding AVRs. The Landscape Institute Technical Guidance Note 06/19 (1.2.13) states, 'Two-dimensional visualisations, however detailed and sophisticated, can never fully substitute what people would see in reality. They should, therefore, be considered an approximation of the three-dimensional visual experiences that an observer might receive in the field.'

1.6 It was decided by Planning Resolution Ltd that these views should be presented as fully rendered AVRs (AVR level 3).

1.7 Various guidelines are consulted when creating AVRs. This includes the following;
London View Management Framework - Appendix C: Accurate Visual Representations.
Landscape Institute - TGN 06/19 (Technical Guidance Note 2019).
Guidelines for Landscape & Visual Impact Assessment (GLVIA) Third Edition 2013

1.8 The methodology used to create these views is described in the methodology sections of this report (sections 4 to 8).

1.9 In some sections of this report where it is marked thus #, please refer to the footnotes at the end of the relevant section for further information.

2.00 Selection of View Locations

2.1 The location of the views in this instance were instructed by Planning Resolution Ltd, presumably after consultation with the relevant local authority and professional consultants.

2.2 The adjacent image (Fig. 2.11) indicates the view location numbers and shows the relationship between the locations and the site itself (highlighted blue).

2.3 The view numbers and descriptions are described below.

View 1	Prince Albert Road.
View 2	London Zoo (outside entrance).
View 3	Prince Albert Road.
View 4	Primrose Hill.

Figure 2.11

3.00 Location Plans, View Orientation, Tripods and Existing & Proposed Views

View 1

Overall view locations & Orientation

Specific View location

Camera tripod location

Viewpoint 1 EXISTING

AVR Type:	3	Camera Make, Model & sensor format:	Nikon, D610 & Full Frame Sensor	Coordinates (Easting/Northing):	528124.479 / 183664.317 M
Date:	3-10-2023	Make & focal length of Lens:	Nikkor 24mm Tilt-shift	Height Above Ordnance Datum (AOD):	35.924 M
Time of Photograph:	10.50	Horizontal Field of View (HFoV):	73.59 °	Distance to scheme:	25.4 M
Location:	Prince Albert Road	Direction of View from North (0°):	325.6 °	Height of Camera:	1.50 M

Planning Application.
Prince Albert Road, London, NW1 7ST.
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Viewpoint 1 PROPOSED

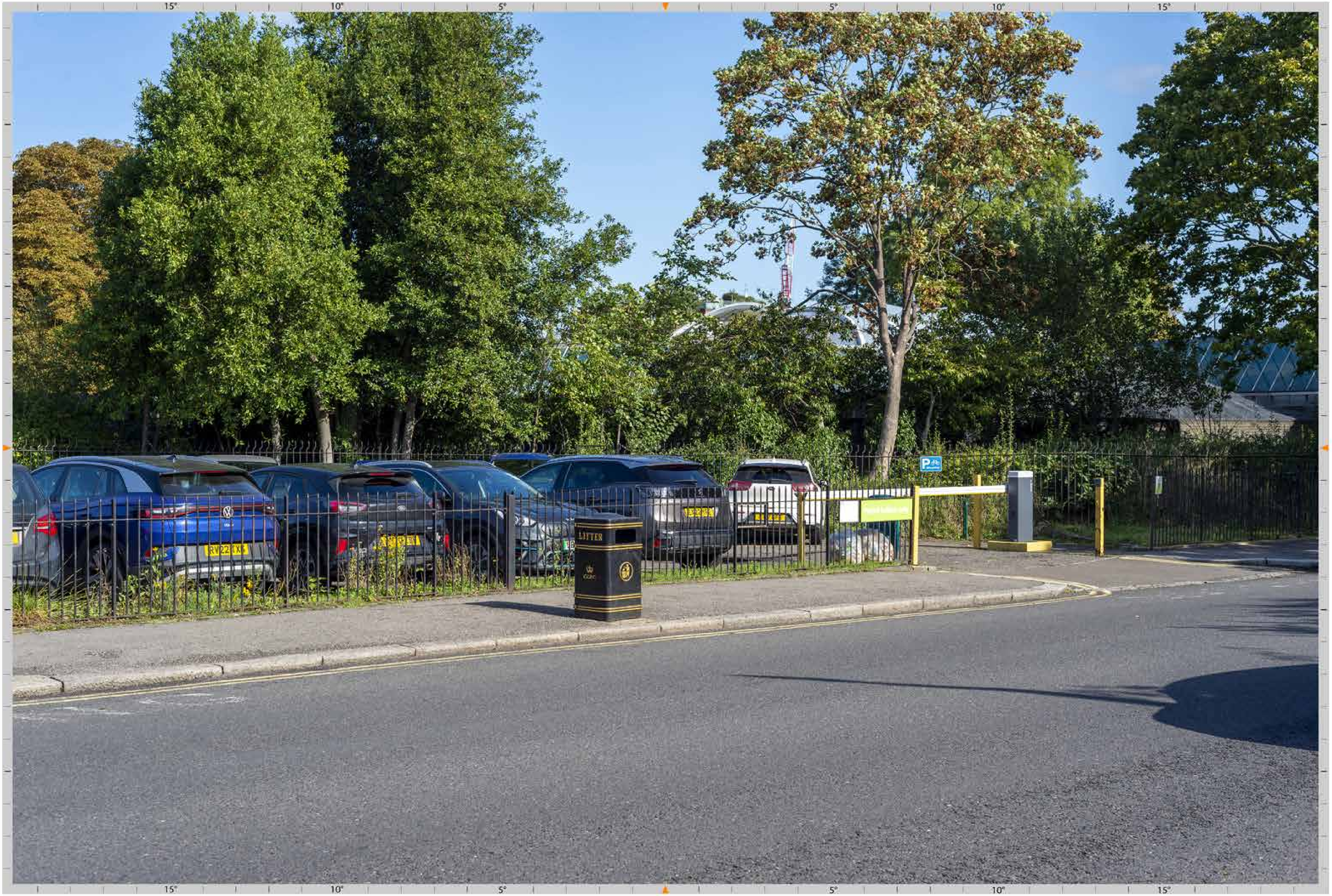
AVR Type:	3	Camera Make, Model & sensor format:	Nikon, D610 & Full Frame Sensor	Coordinates (Easting/Northing):	528124.479 / 183664.317 M	**Planning Application.**
Date:	3-10-2023	Make & focal length of Lens:	Nikkor 24mm Tilt-shift	Height Above Ordnance Datum (AOD):	35.924 M	Prince Albert Road, London, NW1 7ST.
Time of Photograph:	10.50	Horizontal Field of View (HFoV):	73.59 °	Distance to scheme:	25.4 M	Designed by ALISTAIR DOWNIE.
Location:	Prince Albert Road	Direction of View from North (0°):	325.6 °	Height of Camera:	1.50 M	Images produced by Visualhorizon3D

View 2

Overall view locations & Orientation

Specific View location


Camera tripod location



Viewpoint 2 EXISTING

AVR Type:	3
Date:	3-10-2023
Time of Photograph:	11.21
Location:	Outer Circle, London Zoo Entrance

Camera Make, Model & sensor format:	Nikon, D610 & Full Frame Sensor
Make & focal length of Lens:	Nikkor 50mm
Horizontal Field of View (HFoV):	39.5°
Direction of View from North (0°):	25.0°

Coordinates (Easting/Northing):	528002.898 / 183485.385 M
Height Above Ordnance Datum (AOD):	38.917 M
Distance to scheme:	214.3 M
Height of Camera:	1.56 M

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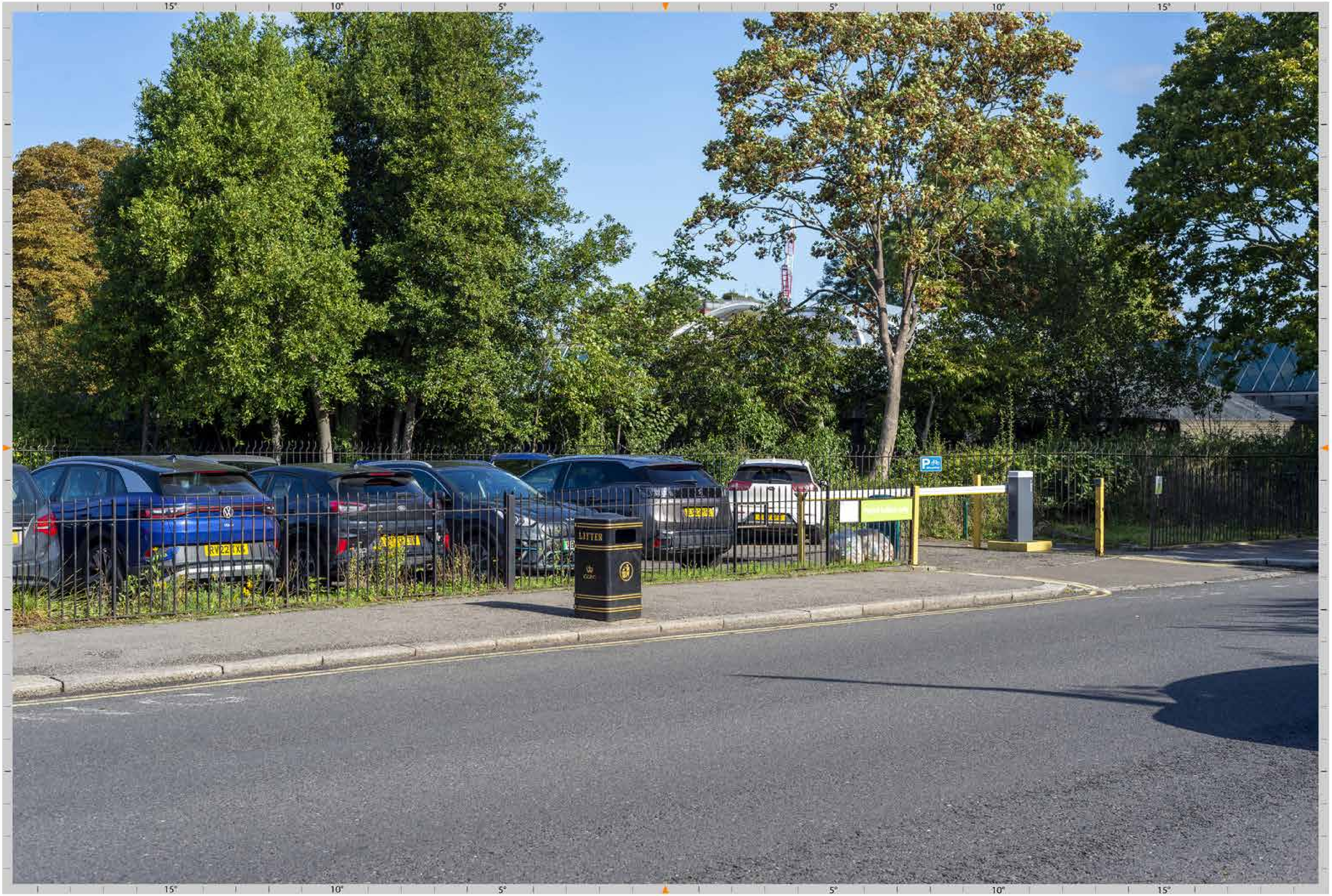


Viewpoint 2 PROPOSED

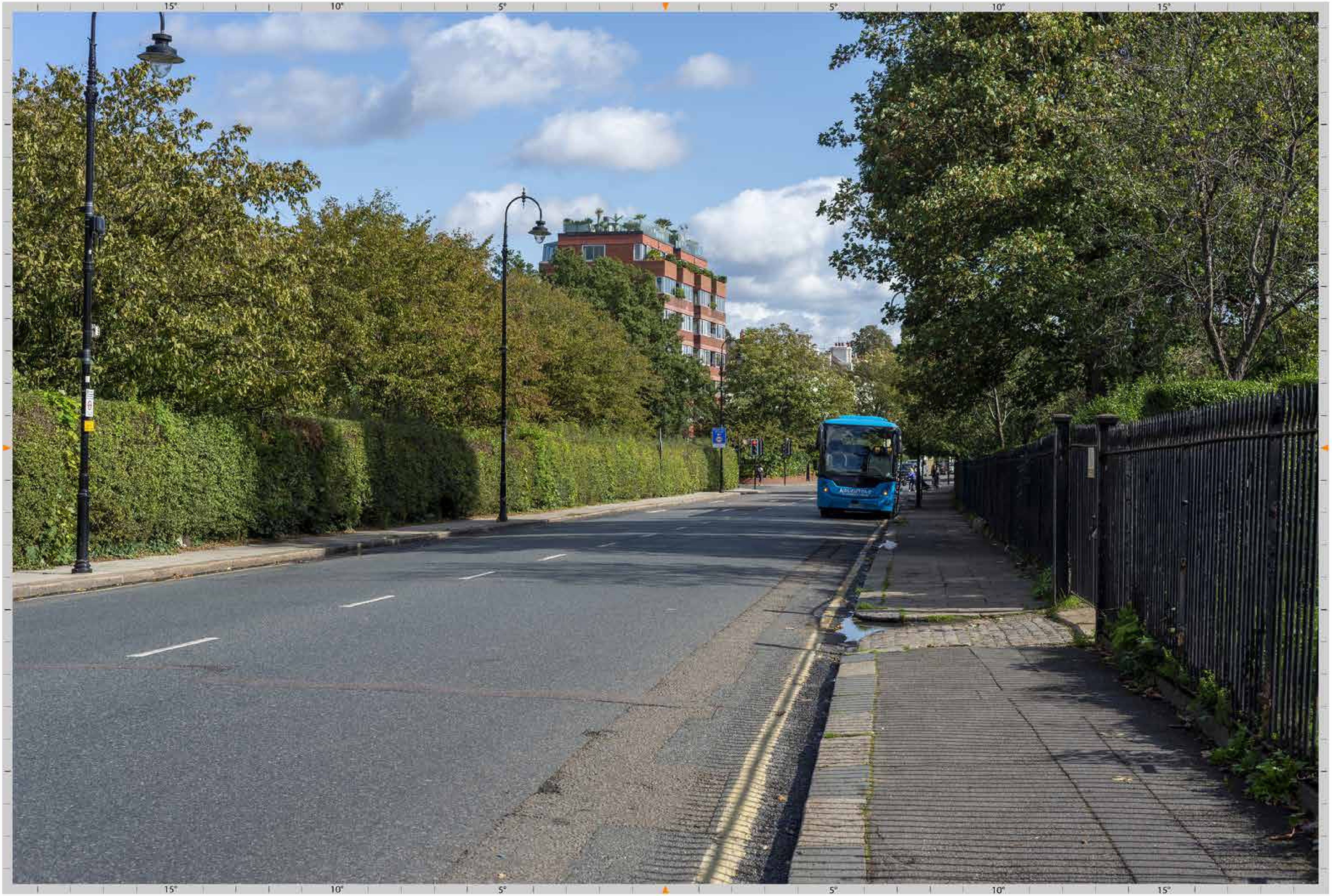
AVR Type:	3	Camera Make, Model & sensor format:	Nikon, D610 & Full Frame Sensor	Coordinates (Easting/Northing):	528002.898 / 183485.385 M	**Planning Application.**
Date:	3-10-2023	Make & focal length of Lens:	Nikkor 50mm	Height Above Ordnance Datum (AOD):	38.917 M	Prince Albert Road, London, NW1 7ST.
Time of Photograph:	11.21	Horizontal Field of View (HFoV):	39.5°	Distance to scheme:	214.3 M	Designed by ALISTAIR DOWNIE.
Location:	Outer Circle, London Zoo Entrance	Direction of View from North (0°):	25.0°	Height of Camera:	1.56 M	Images produced by Visualhorizon3D

View 3

Overall view locations & Orientation

Specific View location

Camera tripod location



Viewpoint 3 EXISTING

AVR Type: 3
Date: 3-10-2023
Time of Photograph: 12.25
Location: Prince Albert Road

Camera Make, Model & sensor format: Nikon, D610 & Full Frame Sensor
Make & focal length of Lens: Nikkor 50mm
Horizontal Field of View (HFoV): 39.5
Direction of View from North (0º): 63.7 º

Coordinates (Easting/Northing): 527951.321 / 183613.715 M
Height Above Ordnance Datum (AOD): 37.509 M
Distance to scheme: 153.6 M
Height of Camera: 1.52 M

Planning Application.
Prince Albert Road, London, NW1 7ST.
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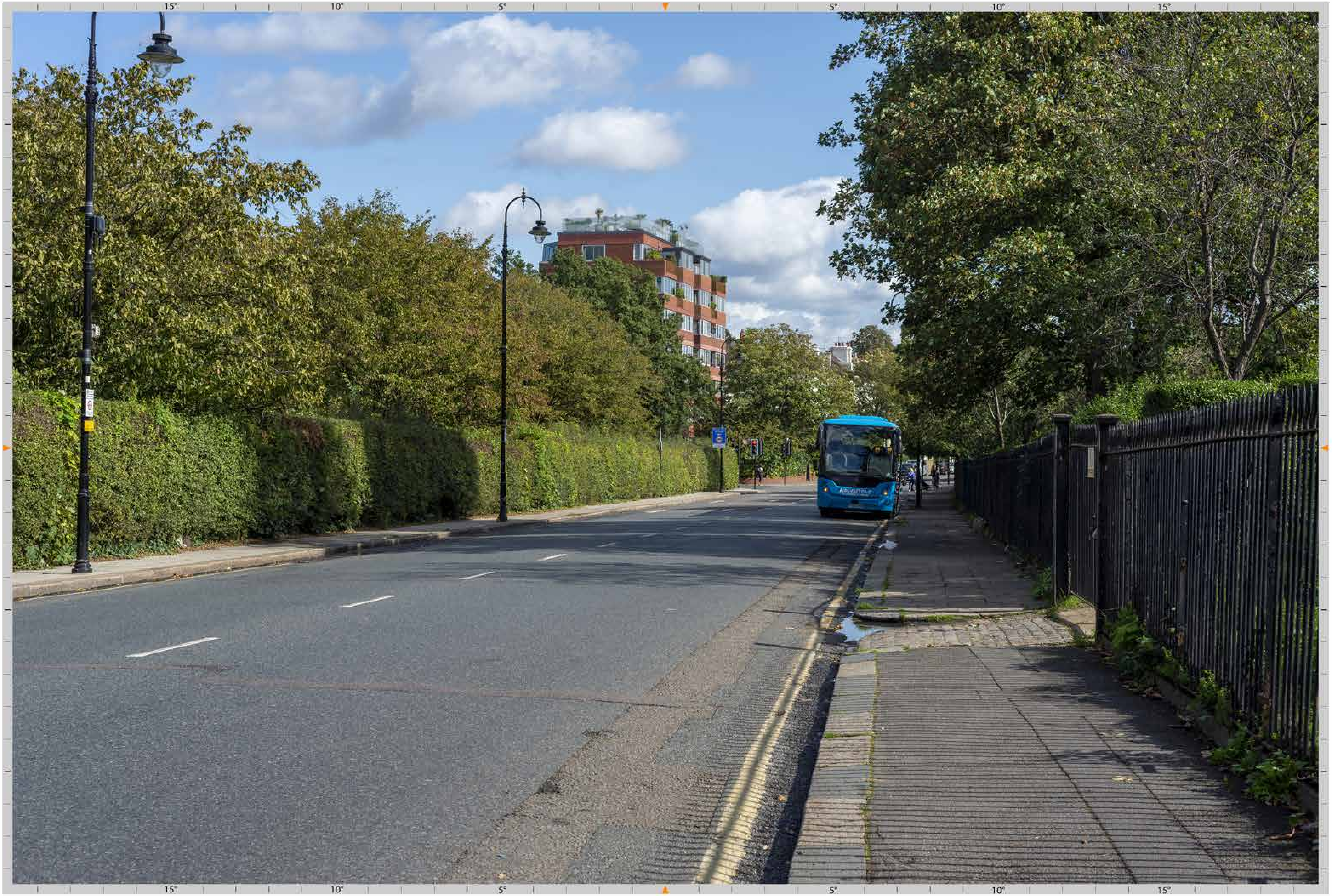

Viewpoint 3 PROPOSED

AVR Type:	3	Camera Make, Model & sensor format:	Nikon, D610 & Full Frame Sensor	Coordinates (Easting/Northing):	527951.321 / 183613.715 M	**Planning Application.**	
Date:	3-10-2023	Make & focal length of Lens:	Nikkor 50mm	Height Above Ordnance Datum (AOD):	37.509 M	Prince Albert Road, London, NW1 7ST.	
Time of Photograph:	12.25	Horizontal Field of View (HFoV):	39.5	Distance to scheme:	153.6 M	Designed by ALISTAIR DOWNIE.	
Location:	Prince Albert Road	Direction of View from North (0º):	63.7 º	Height of Camera:	1.52 M	Images produced by Visualhorizon3D	

View 4

Overall view locations & Orientation

Specific View location

Camera tripod location

Viewpoint 4 EXISTING

AVR Type:	3	Camera Make, Model & sensor format:	Nikon, D610 & Full Frame Sensor	Coordinates (Easting/Northing):	527655.100 / 183893.326 M
Date:	3-10-2023	Make & focal length of Lens:	Nikkor 50mm	Height Above Ordnance Datum (AOD):	68.322 M
Time of Photograph:	15.21	Horizontal Field of View (HFoV):	39.5	Distance to scheme:	153.6 M
Location:	Primrose Hill	Direction of View from North (0⁰):	115.5 °	Height of Camera:	1.59 M

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Prince Albert Road, London, NW1 7ST.
Designed by ALISTAIR DOWNIE.
Images produced by Visualhorizon3D

Viewpoint 4 PROPOSED

AVR Type:	3	Camera Make, Model & sensor format:	Nikon, D610 & Full Frame Sensor
Date:	3-10-2023	Make & focal length of Lens:	Nikkor 50mm
Time of Photograph:	15.21	Horizontal Field of View (HFoV):	39.5
Location:	Primrose Hill	Direction of View from North (0°):	115.5 °

Coordinates (Easting/Northing):	527655.100 / 183893.326 M
Height Above Ordnance Datum (AOD):	68.322 M
Distance to scheme:	153.6 M
Height of Camera:	1.59 M

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4.00 Methodology: Overview

4.1 The Accurate Visual Representations (AVRs), created in this document are 2D images that show the proposed development in location, in relation to its contextual surroundings and the degree to which it is (or is not) visible. AVR levels range from wirelines, level 0 up to fully rendered views, level 3. Examples of AVRs can be seen adjacent (Fig. 4.11 and Fig. 4.12). The images shown in this document were instructed to be fully rendered by Planning Resolution Limited.

4.2 A three dimensional computer model was accurately projected onto the base photographs to create the AVRs and the views are presented as existing and proposed for comparison.

4.4 A note on camera lens choice. It is often suggested that a 50mm lens on a traditional 35mm camera setup is the ideal for AVRs when showing an area of interest. While this may be the case in many situations, for some AVRs in urban scenarios this setup will clearly be inadequate for assessment purposes. Current recommendations allow for other lens' to be used with clear reasons given for this choice.

4.5 Therefore, having sought the recommendations from Planning Resolution Ltd the lens' instructed to show the scheme, for better townscape assessment, were as follows;
Views 2, 3 and 4. Nikon D610 camera FFS (full frame sensor) with 50mm 1:1.8D AF Nikkor lens.
View 1. Nikon D610 camera FFS with 24mm PC-E 1:3.5D Nikkor tilt-shift lens[1] (8mm shift up).

4.6 The original centre of view (or optical axis) is indicated using orange arrows on the outer edges off all existing and proposed views. For most fixed lenses this will be the centre of the image but where a shift lens has been used the vertical centre will move. The orange arrows shown on each view therefore directs the viewer to the original centre of view when assessing said view. Graticules around the image also indicate the field of view in degrees.

Figure 4.11

Figure 4.12

5.00 Methodology: Photography

5.1 High resolution digital photography has been used (Fig. 5.11 example). Digital photography is now very advanced, is fast, and holds all relevant data within the file needed to create the final view and output data for any possible future verification including camera type, lens used, time and date etc.

5.2 All efforts are made to take the photographs in good, clear weather.

5.3 A location map (usually Ordnance Survey map or similar), descriptions and any available photographs are supplied to the photographer to easily find the view locations once on site.

5.4 Each camera is set up level and directly over a surveyor pin (or fixed marker) that can be accurately surveyed in the surveying process (described in the next section). A tribrach leveller[2] is used to accomplish this. This means there will be no converging vertical lines in the final photograph.

5.5 In some situations a wider lens and/or a shift lens[1] will be required to capture adequate context for assessment purposes. Rather than having to tilt a camera up capture a scheme, which would introduce converging vertical lines (something the human eye compensates for in the real world), Shift lens' are used. This allows the camera to capture more of the top of an image, bringing the subject matter into frame while removing converging lines.

5.6 The height of the lens is recorded by the photographer and RAW[3] format files are captured thus ensuring full resolution, tonal range and colours are recorded for latter use.

5.7 The date and time is also recorded and should correspond to the date imbedded in the digital photograph so that lighting conditions can be recreated in the corresponding 3D computer model. A photograph is taken of the marked location and tripod for future reference.

5.8 Optical distortion is removed from the digital images to assist the camera matching process.

5.8 The lens used is shown on the technical data sheet for each view.

Figure 5.11

1 A tilt shift lens can be used to better compose views. It can be used to show less foreground, more sky and has the ability to remove converging vertical lines, All common practice in architectural photography.

2 A tribrach leveller allows accurate placement over the location as well as allowing levelling ability in the horizontal or vertical planes.

3 RAW format files contain the raw information captured by the camera sensor. The data captured is not yet processed so these files are the digital equivalent of a negative. Where the processing of on old style negative was done in a dark room, todays RAW image processing is done by computer software.

6.00 Methodology: Surveying

6.1 A professional measured building and land surveyor carries out the surveying work for each view. The surveyor is supplied with a location map (usually Ordnance Survey map or similar), together with any other relevant location photos, to easily find the view locations once on site. Either the actual photograph to be used or an approved reconnaissance photograph is supplied for the surveyor to refer to.

6.2 The surveyor is supplied with an existing site survey. The surveyed points will be coordinated onto the existing site survey using traditional and accepted surveying methods. This is used later in the camera matching process (section 7.00). In some instances where the original site survey is on a local grid, Eastings and Northings may relate back to this.

6.3 For each view the camera location marker is surveyed and static points are recorded by the surveyor. The static points surveyed should be within the cameras field of view for each location. The points must be fixed, for example corners of buildings, fixed street furniture, corners of windows and edges of roads[4] and these points are used to check horizontal and vertical alignment

6.4 Electronic theodolite (Fig. 6.41) and reflectorless laser technology is used to locate each static point and is to a tolerance of +/-5mm.

6.5 The static points are numbered and all Eastings, Northings and levels Above Ordnance Survey Datum (AOSD)[5] information is recorded for each point. The points are marked and numbered on the approved photograph for each view (Fig. 6.51 example image). This image will then form the background plate in the 3D model file (see section 7.00). The surveyed information is supplied digitally to Visualhorizon3D in a combination of dwg[6] and jpg[7] formats as well as a text document with written descriptions for each point.

Figure 6.41

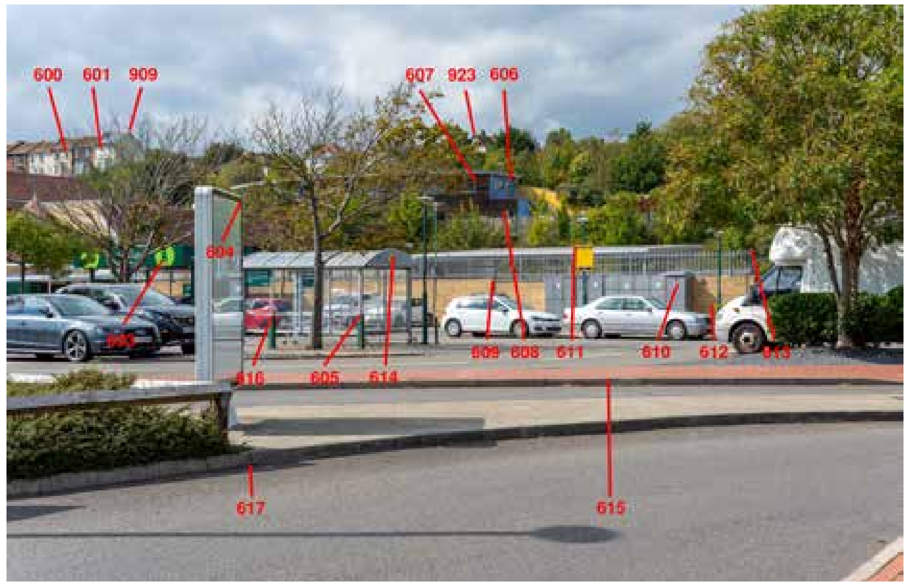

Figure 6.51

4 *There are occasions where a view will be in a field or in a location where no such fixed points are visible. In this instance, small markers are placed or laid down, the photograph is taken, and the marker locations surveyed and later digitally removed form the photograph.*

5 *Eastings and Northings are geographic coordinates for a point from a datum. Above Ordnance Survey Datum refers to levels above a vertical datum. The origins for these datums are used by Ordnance Survey, the national mapping agency of Great Britain and measurements refer back to them. Where the original site survey is on a local grid, Eastings and Northing will relate back to this.*

6 *Dwg is a file format used by many computer aided design packages to store 2D and 3D data.*

7 *Jpg is a digital image file format that can store and transmit photographic images.*

7.00 Methodology: 3D Model & Camera matching

7.1 Unless an accurate 3D computer generated model [9] is supplied (see example in Fig. 7.11 adjacent), computer aided design (CAD) drawings are supplied (usually by the design architect) often in dwg[6] format. These would typically include a site survey, plans, elevations and sections explaining the construction and layout of the proposed development. In this instance the architect supplied a 3D model.

7.2 The 3D model is imported into 3D computer graphics software (3D software)[8]. In this instance, Autodesk 3ds Max. Heights and positioning are cross-checked against the supplied information. The 3D model supplied is accurately positioned over the supplied location/topographical plans and placed at the correct height location, as specified by the architect.

7.3 The surveyors information (see section 6.00) is then imported into the 3D software file and correctly overlaid on the location/topographical plans, ensuring all data is in the correct relationship.

7.4 Refer to example Fig. 7.41 adjacent for the following description. The background plate is shown on screen in the 3D software and the virtual camera is located in the correct location (as surveyed by the surveyor). The camera is adjusted to the correct height over the surveyed point (as recorded by the photographer). The real world camera lens information is input to the corresponding virtual camera. The output image size is set to be identical to that of the background plate and, by adjusting the virtual camera target point, the surveyed points and corresponding background plate are accurately lined up. The process is double checked, and the same steps are followed for each virtual camera and background plate.

7.5 In the case of shifted lens photographs, the background plate and output image size are increased in height until the survey points and background plate align.

7.6 The 3D scene is now ready to be worked up to create two dimensional images for each camera location the same size as the corresponding background plate (see section 8.00 for a description of this process).

Figure 7.11

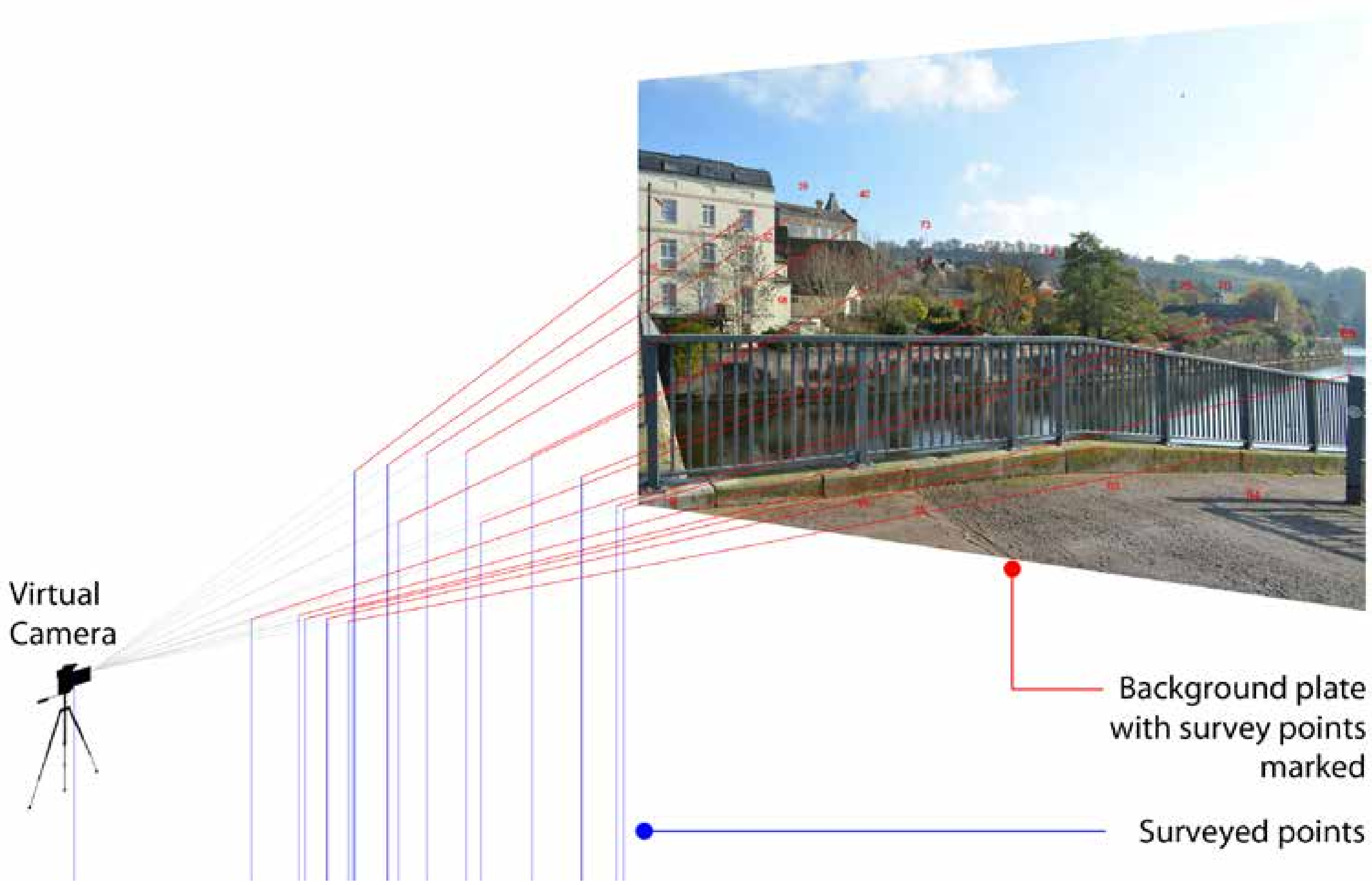

Figure 7.41

8 3D computer graphics software is a computer programme that creates 3D computer generated imagery.

9 A 3D model is a mathematical representation of a three-dimensional object created using 3D software.

8.00 Methodology: Image creation and post production

8.1 The camera matching and verification of size and location is an accurate procedure and can be audited. Lighting and texturing are created using both the expertise of the 3D artist and the input of the architect/designer. The existing photographs are examined to determine tonal and light behaviour at the time the photograph was taken. This assists in understanding how the scheme should appear within the final composition. The architect/designer should supply details of materials that will be used for the project and samples where possible.

8.2 The 3D software has the ability to place a light representing the sun at the correct orientation and time (as recorded in the digital photograph) to the accurately placed model. Any other real world lighting sources are recreated in the 3D scene using virtual lights. This is done for each camera location.

8.3 When the lighting and texturing[10] are complete a 2D rendering[11] of each image is generated by the 3D software ready to superimpose on the photograph.

8.4 The rendered image and photograph of the existing view are both imported into image editing software. Post-production[12] work is carefully and expertlycarried out to edit, adjust and blend the two images together.

8.5 Due to the work carried out in the 3D model & Camera matching stage, the rendered image will accurately overlay on the existing photograph (Fig. 8.51 adjacent example).

8.6 Any objects or parts of the photograph that will be in front/behind the proposed development (Fig. 8.61 adjacent example) must be edited to show this scenario. There are different ways to achieve this but, suffice to say, the same end result is an image that shows the proposal correctly in place (Fig. 8.62 adjacent example).

8.7 The architect/designer is again consulted with regards material finishes. Any subtle amendments such as hue, saturation etc are made to give the end result.

8.8 This process is carried out for each view location required and the images are saved and output in a format relevant to the media they will be viewed in.

Figure 8.51

Figure 8.61

Figure 8.62

10 *Texturing is the application of a surface to the 3D model. This can be done by wrapping 2D images or photographs on surfaces or by using software procedures and formulas to create the desired texture.*

11 *The process of creating a two dimensional image from a 3D model.*

12 *The final stage in production of a view.*