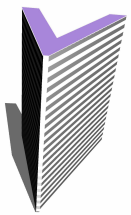
Haven Road, Exeter

Statement Appendix - 'Verified Views'



Proposed development:
Haven Road, Exeter

Accurate Visual Representation
Verifiable Photomontage Images
Methodology and Supporting Evidence

The Visualiser Ltd
February 2023

Content List

1.0 Overview

The Visualiser was commissioned to produce a series of verified dimensionally accurate photomontage to allow visual assessment of the Proposed Development known as Haven Road, Exeter.

This document has been prepared by The Visualiser Ltd to explain the methodology and practices leading to the final verified view images and provides a step-by-step description of how, based on current best practice techniques. The Visualiser Ltd produced an accurate representation of the proposed scheme in pictorial form in a transparent, structured and replicable production procedure.

The photomontaged verified images show a render, derived from a 3D computerized model of the development, superimposed on photographs and panoramic views from selected viewpoints around the site.
By accurately representing the scale, form, massing, proportion and relationship to other structures, skyline and points of interest, the visuals are a tool facilitating evaluation of the proposed development visual impact and (citation from Landscape Institute advice note Technical Guidance Note 06/19) allow competent authorities to understand the likely effects of the proposals on the character of an area and on views from specific points.

Two-dimensional photographic images and photomontage alone cannot capture or reflect the complexity underlying the visual experience, and should therefore be considered an approximation of the three - dimensional visual experiences that an observer would receive in the field.

All information regarding the Proposed Development and the selected viewpoints was supplied to The Visualiser in digital format by Piper Whitlock Architecture Architects.

Best practice standards for producing accurate visual representation were maintained. Recommendations and reference from the following documents: 'Visual Representation of Development Proposals' Technical Guidance Note 06/19 by Landscape Institute , and where relevant, London Plan 2011 Implementation Framework (March 2012), London View Management Framework Supplementary Planning Guidance: Appendix C:

"Accurate Visual Representations, were implemented to provide an impartial, objective and as realistic as possible view of the proposed development with acceptable levels of accuracy, replicability, transparency of process and openness to scrutiny."

This document also sets out additional information in relation to aspects of the production process such as: viewpoints, photography, Cad (computer aided design) 3d modelling, camera matching methodology and some of the verification that have been carried out to ensure the accuracy of Photomontage images.

The responsible parties for the preparation of the verified views set out in the following pages comprise:

Photography:
The Visualiser Ltd
6 Orsman Road
London N1 5QJ
Tel: 0207 4499 656

Haven Road, Exeter 3D Model:
Piper Whitlock Architecture Ltd,
2nd Floor, Anglo St. James House, 39a Southgate Street,
Winchester, SO23 9EH
Tel: T: 01962 843586

Survey of existing anchor points and camera locations:
Supporting Statement and evidence of the Surveyor team is included.

Land Utility Group Ltd (LUG)
Brickfield Business Centre
Brickfield House
High Road
Thornwood, Epping
Essex CM16 6TH
Phone: 01992 566698

2.0 Methodology

2.1 Photography

The photographic method used for the baseline photographs i.e, combination of lens, camera format and final presentation of image deployed were chosen to best represent the relevant landscape which includes both the site where the scheme is proposed and its context so that both the proposal's appearance and its place within its environment can be recognized and understood.

Photographic methodology is compliant with Landscape Institute Advice Note (January 2011) 'Photography and Photomontage in Landscape and Visual Impact Assessment', and where relevant, London Plan 2011 Implementation Framework (March 2012), London View Management Framework Supplementary Planning Guidance: Appendix C: Accurate Visual Representations,

Information on the camera, lens, OS grid coordinates for the viewpoint, angle and direction of view, date, time, weather and lighting conditions is included and the horizontal field of view is indicated in each case.

2.1.1 Base Photography (View Locations, Date and Time of photography)

The base photography was taken from selected viewpoints locations with public access. Base photography was taken on January 2023.

All photography was done using a Canon 5d Mark IV digital Camera.
The original time in which the baseline photographed image, camera lens information and distance from site centre are noted on each of the final photomontaged visuals.

Lenses and Photo stitching

Base photography was done using a Cannon TS 24 mm tilt and shift lens.
This lens was selected because it provides a wide field of view whilst keeping low distortion hence allowing visual consideration of the environment into which the scheme is designed to be built. The shift function of the lens allows taking additional photos which are later composed together without changing the perspective, thereby extending the visual limits without increasing the visual distortion.

2.1.2 Panoramic Photography and stitching

Occasionally a single lens does not allow a wide enough filed of view hence a panoramic (stitched from several single lens photos) view is produced.
To ensure minimum distortion whilst composing panoramic images , panoramic photography was done with Canon 5d Mark II digital camera with a fixed 50 mm Lens mounted in Portrait mode on a Manfrotto MH057A5 virtual reality and panoramic head.
The Visualiser has composed the panoramic images using the original photographs.
Panoramic images have a wide field of view, hence when accurately rendering and composing the images some distortion in the form of curving lines is inevitable. Without changing the overall scale or accuracy of representation, minor straightening can be introduced for the sake of visual conformity

2.1.3 Viewpoints

All Visualisation viewpoint locations are accessible to public.

2.1.4 Perspective and Correct Viewing Distance

[Quote from LI Advice Note 6/19) Advice on photography and photomontage]

'It is generally regarded that viewing distances of between 500mm – 550mm (approximately arm's length) are the most practical and widely used. All scale representative views should, therefore, be accompanied by a note:
"To be viewed at comfortable arm's length".

The correct viewing distance, i.e. The distance at which the perspective in the image correctly reconstructs the perspective seen from the point at which the photograph was taken, thus allowing a close as possible match to the way a human eye will perceive the perspectives.

For correct viewing experience it is recommended to determine the correct viewing distance which corresponds to the printed image size. It is also recommended to mount cylindrical panoramic visuals on a curved surface (which radius is confirming to the correct viewing distance). The following trigonometric formula can be used for calculating correct viewing distance according to print size.

Viewing Distance calculation

$$d = y/2\mathrm{Tan}(\alpha/2)$$

y = height of image printed size [CM]
d= viewing distance [CM]
α = Field of View (VFOV) angle of the image in Degrees
Individual value for each visual can be found on the corresponding page

2.2 Survey Methodology Statement for: Haven Road, Exeter

2.2.1 Project Brief

We were commissioned by The Visualiser Ltd. To supply survey data for 10 verifiable views. Electronic copies of the views together with camera point locations were provided by the photographer. The survey works were undertaken in June 2021.

2.2.2 Camera Point Positioning

Network RTK solutions were established using a Leica GPS + GLONASS SmartRover receiver. The equipment was set-up over the camera position and multiple observations were recorded. A second (reference) point was taken approximately 100m away from the camera position using the same method.

2.2.3 Data Capture

Traditional survey techniques were then employed to record the points of detail within each view. A Leica TCRA TS16 Total Station with long range reflector- less distance measurement capabilities was set-up over the camera point and orientated to Ordnance Survey National Grid using the two sets of co-ordinates determined by the SmartRover receiver. An average of 15 detail points were then surveyed throughout each image

2.2.4 Deliverables

The completed survey data was issued as follows.
· Microsoft Excel Spreadsheet comprising point numbers, co-ordinate data and descriptions.
· JPG copies of each photo with point locations and view specific point numbers clearly marked.
· AutoCAD DWG file containing 3D survey points with view specific point numbers.

2.3 3d Modelling

2.3.1 Proposed Scheme 3d Model

The 3d model of the proposed scheme, which is was used for the production of the following visuals depicted superimposed on the existing baseline photographs, was constructed by Piper Whitlock Architecture Architects in Cad Software. Additional details and modifications were added by The Visualiser team. The 3d model was orientated and positioned according to ordnance survey coordinates and height, the survey points were than added and crossed checked .

2.3.2 Cumulative Schemes 3d Model

The following Cumulative schemes (**Aldgate Place Blocks A and B** and **34-40 White Church** , were modeled by The Visualiser in block level details using PDF format information previously submitted to planning portal. They are represented in the Cumulative version of the visuals.

2.4 Camera matching Photomontage and composition

Photomontage seek to imitate a photograph of the actual scene as modified by the insertion of the proposed development.
Explanatory text is provided to describe the procedure used to fit the rendered image to the underlying photographic view.

The first step includes insertion of the surveyed points into a three dimensional electronic drawing space in 3Dstudio Max (Autodesk) which contains an ordnance survey drawing of the site ,thus establishing the relation between the existing site and the surveyed points. Each of the points is checked against its existing environment description and confirmed.

The survey points are checked for abnormalities and omitted if necessary.

Camera matching is performed by accurately locating the anchor (survey) points on the backdrop of the baseline image corresponding to each view. This process is repeated for each of the selected views. This process is performed with an with close attention to detail and the highest possible accuracy.

When necessary the horizon line is calculated and marked on the Baseline photographs. Camera matching process is performed again and the horizon line is checked against the backdrop. The matched camera location, view direction and lens are checked against the real camera that was used for the photography.

Once camera matching has been achieved and additional checks have confirmed the accuracy of the 3d electronic space coordinates, the 3d scheme model is rendered onto the back plate photograph using 3d studio max.
To increase accuracy and minimize distortions , in certain visuals, an additional Camera match was performed, as an added measure, using a cropped section of the original baseline photograph.

Lighting conditions are set so as to simulate realistically the conditions in the site when the photography was performed. Sun light position and height settings are set to correspond accurately to the existing photography in terms of time of year, time of day and site location. The scheme model is then rendered against the backdrop of the corresponding baseline photograph for each of the selected viewpoints.

2.5 Post production

Final composition and checks of the match is done in Adobe Photoshop software where the rendered image is composed on its corresponding baseline photograph.

A visual treatment process using Adobe Photoshop follows in order to make the rendered elements portray the scheme as the designer architects have envisioned it as well as creating a visually aesthetic blend with the existing photograph's elements.

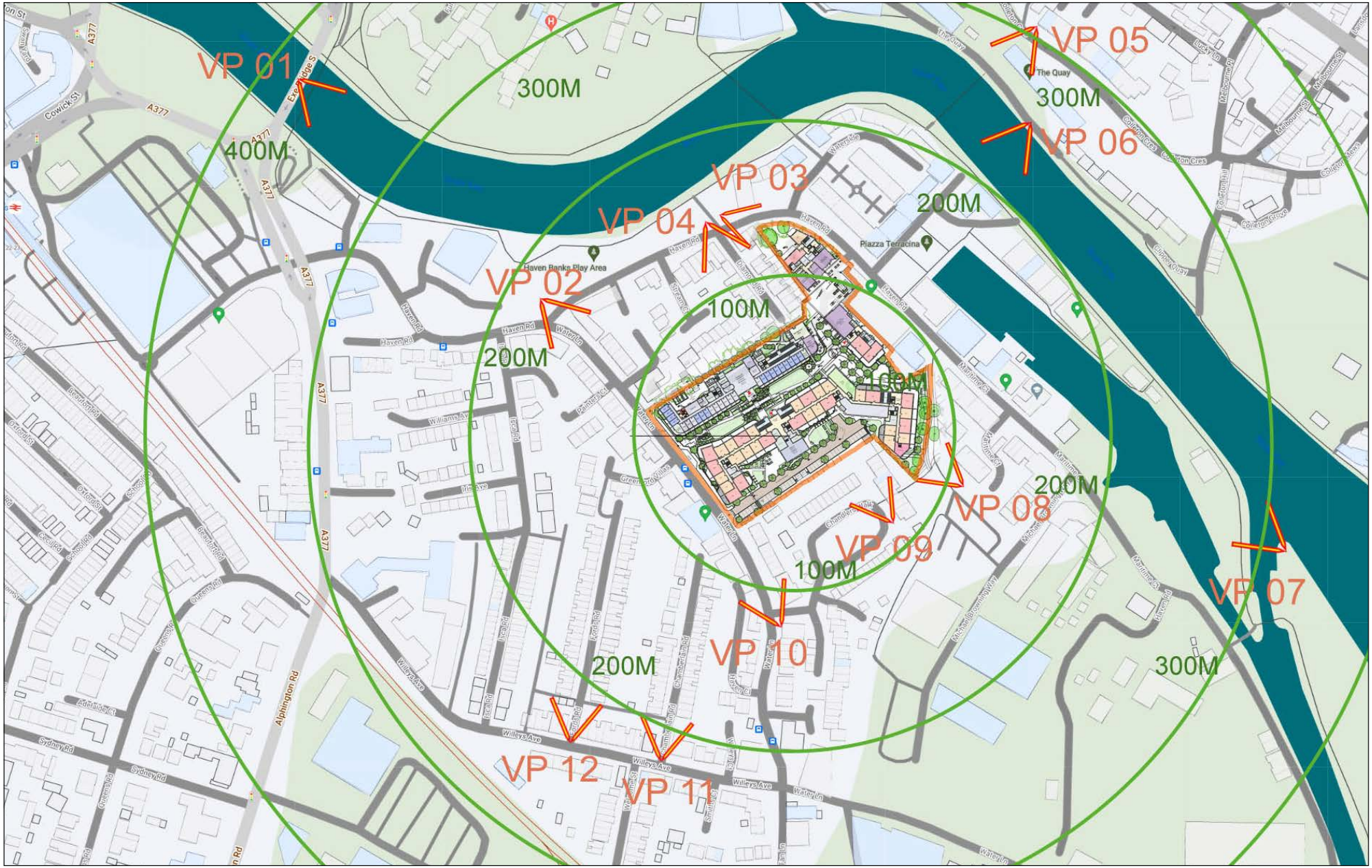
The scale and position of the featured scheme are already set and do not change at this stage which is more artistic in nature and requires interpretation from the Visualiser who consults closely with the scheme's architects regarding the pictorial interpretation of textures and materials and visual effects depicted in the rendered scheme.

This stage can include:

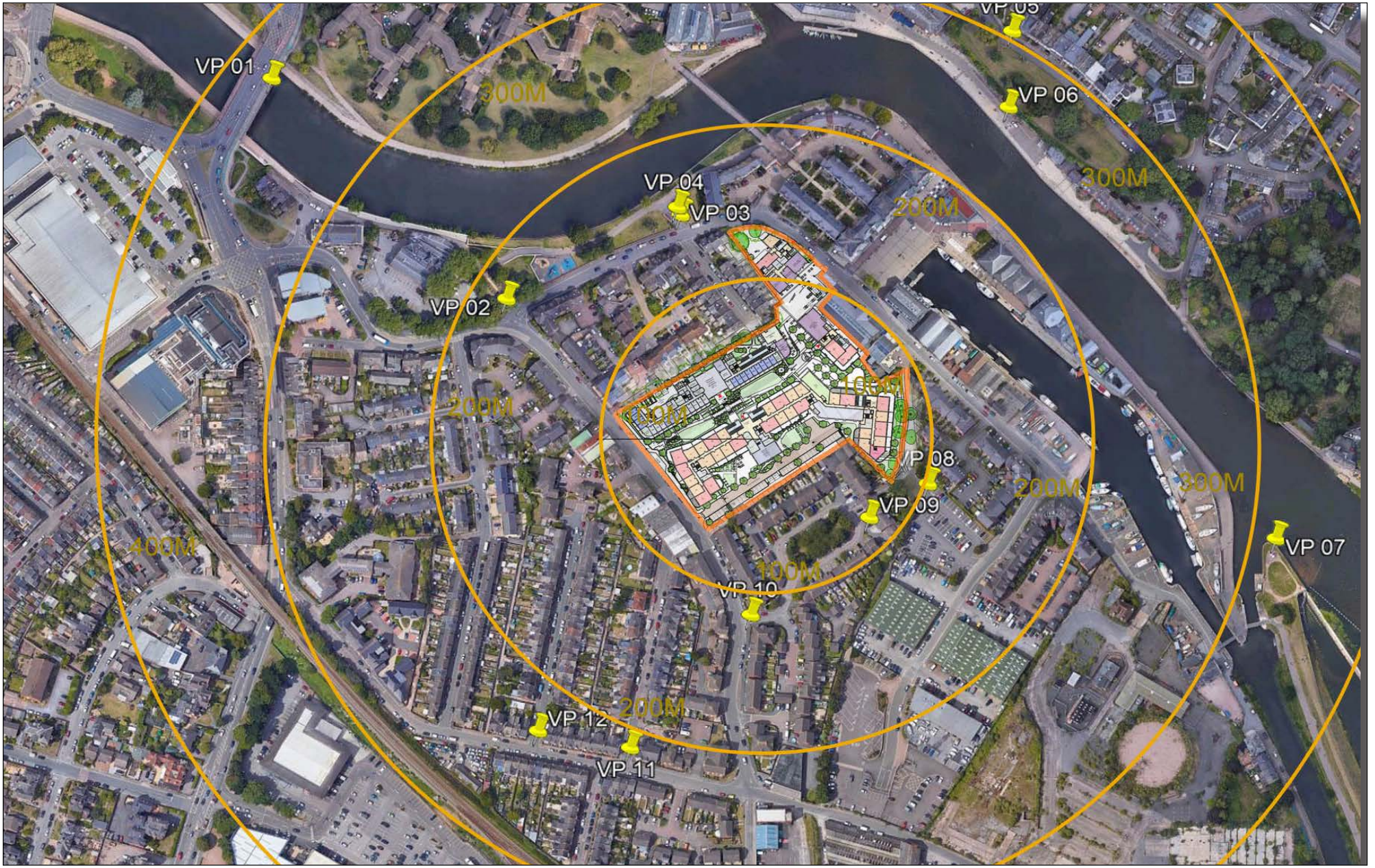
1. Bringing forward foreground elements (obscuring the proposed scheme) such as lamp posts, trees, buildings.
2. Colour balancing (contrast, saturation etc') according to lighting and general image conditions.
3. Applying depth of field effects more accurately to simulate physical distance to the rendered elements
4. Correcting of panoramic curvature lines (original image included)

3.0 Supporting Evidence

3.1 viewpoints map



3.2 Aerial viewpoints map



3.2 Views Table

Viewpoint	Grid Reference		Focal Length of Lens (Horizontal)	Photo/series ref	Distance from Site center [m]	Date / Time	Viewpoint Height (AOD)	Horizontal Field of View	Render type
	E	N							
VP 01	291660.737	92045.793	24mm	6285	380	19/01/2023, 12:37:35	12.473	74º	AVR 3
VP 02	291807.178	91896.772	24mm	6310	179	19/01/2023, 12:44:09	9.019	74º	AVR 3
VP 03	291918.818	91951.276	24mm	6155	133	19/01/2023, 11:44:24	9.547	74º	AVR 3
VP 04	291917.04	91956.438	24mm	6145	139	19/01/2023, 11:43:09	9.996	74º	AVR 3
VP 05	292135.904	92064.853	24mm	6076	286	19/01/2023, 11:17:28	23.98	74º	AVR 3
VP 06	292128.537	92020.766	24mm	6061	246	19/01/2023, 11:08:31	8.748	74º	AVR 3
VP 07	292291.117	91726.586	24mm	6269	334	19/01/2023, 12:24:03	9.198	74º	AVR 3
VP 08	292071.355	91769.116	24mm	6186	115	19/01/2023, 11:55:12	9.351	74º	AVR 3
VP 09	292034.139	91747.691	24mm	6191	101	19/01/2023, 11:58:31	9.837	74º	AVR 3
VP 10	291957.423	91683.839	24mm	6208	145	19/01/2023, 12:03:30	8.377	74º	AVR 3
VP 11	291879.827	91597.182	24mm	6229	249	19/01/2023, 12:08:32	8.83	74º	AVR 3
VP 12	291820.415	91609.968	24mm	6250	266	19/01/2023, 12:10:56	9.015	74º	AVR 3

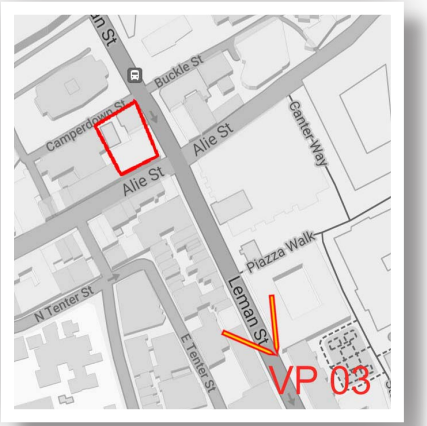
3.3 Recommended Print Dimensions and Viewing distances.

Viewpoint	Vertical FOV [Degrees]	Print 1 (400mm viewing distance)		Print 2 (300 mm Height)	
		Viewing dist	Print height Height	Viewing dist	Print /size
All Viewpoints	53.3º	400mm	400mm	300mm	300mm

VP 01

Surveyed points ordnance survey coordinates
for baseline photograph number 6285, Distance from site 380m
19/01/2023, 12:37:35

Point ID	Easting	Northing	Ortho Height
C1	291660.737	92045.793	10.717
101	291702.228	92045.288	9.209
102	291723.733	92045.848	10.794
103	291719.718	92025.402	6.479
104	291786.353	92008.687	10.601
105	291917.946	91937.899	15.126
106	291876.702	91913.563	18.158
107	291853.100	91910.606	15.271
108	291750.730	91950.876	13.385
109	291715.765	91955.888	16.371
110	291698.129	91956.737	16.639
111	291696.115	91956.634	9.694
112	291712.130	91955.824	10.734
113	292010.298	91903.603	22.560
114	291832.613	91941.089	8.340



VP 01 matching methodology Screenshots

Model and camera location - 3D Studio Max screen capture

Original photograph

Original photograph with survey points

Camera match to survey points - 3D Studio Max screen capture

Camera match with shaded model (2021 design)- 3D Studio Max screen

Final camera match with rendered model (2021 design)

Accurate visual representation Images
Haven Road, Exeter
Proposed Scheme

VP 01 - Existing

219/01/2023, 12:37:35 Distance from site center 380 m

VP 01 - Proposed

VP 02 - Existing

19/01/2023, 12:44:09 Distance from site center 179m

VP 02 - Proposed

VP 03 - Existing

19/01/2023, 11:44:24, Distance from site center 133 m

VP 03 - Proposed

VP 04 - Existing

19/01/2023, 11:43:09 Distance from site center 139 m

VP 04 - Proposed

VP 05 - Existing

19/01/2023, 11:17:28, Distance from site center 286 m

VP 05 - Proposed

VP 06 - Existing

19/01/2023, 11:08:31, Distance from site center 246 m

VP 06 - Proposed