

Royal Heights, Reading

Accurate Visual Representations

7th September 2018
www.preconstruct.com

Document prepared by Preconstruct Ltd on behalf of Reading Heights Ltd,
in support of a planning application for the proposed development of Royal Heights, Reading

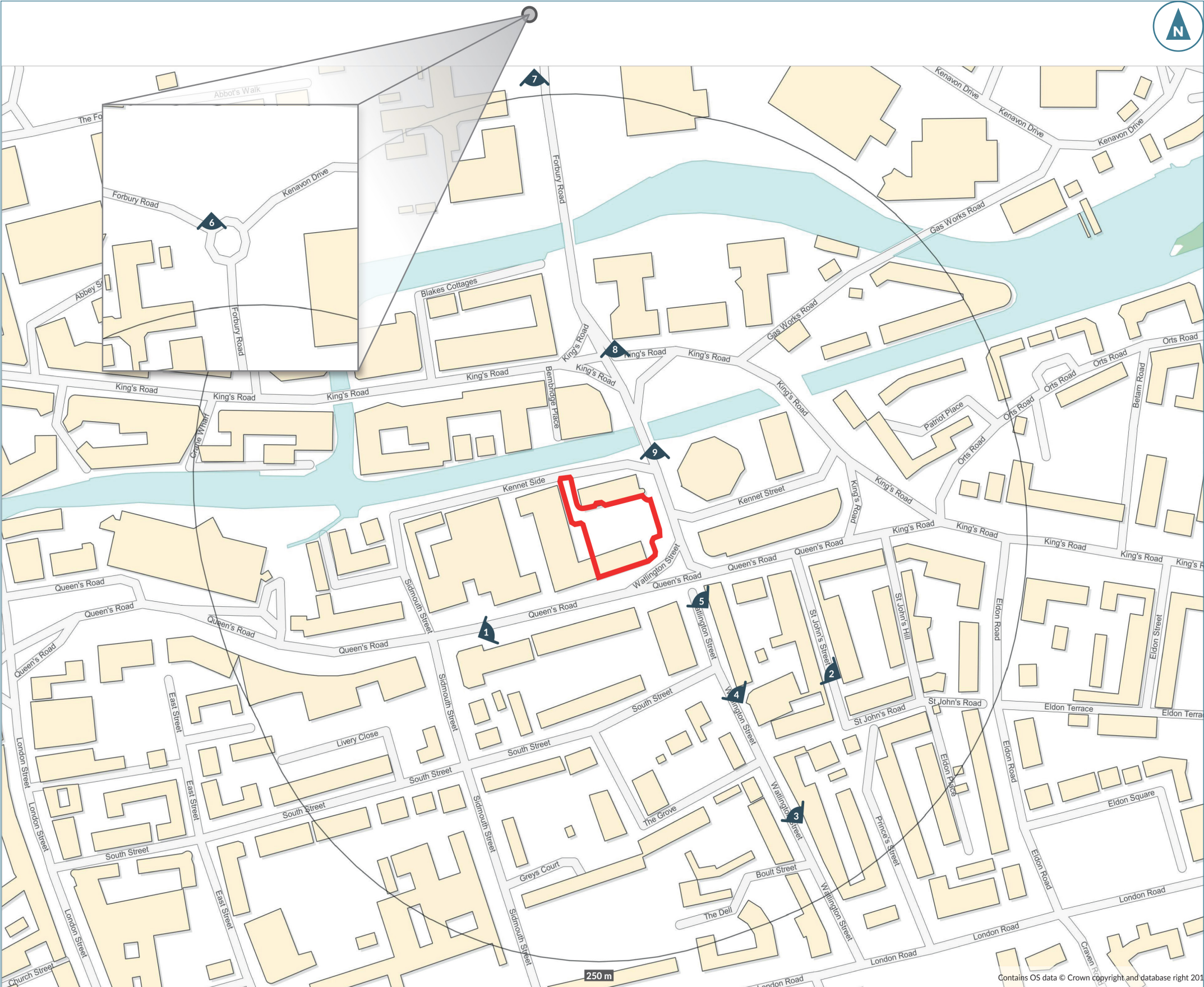


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01 Viewpoint Locations

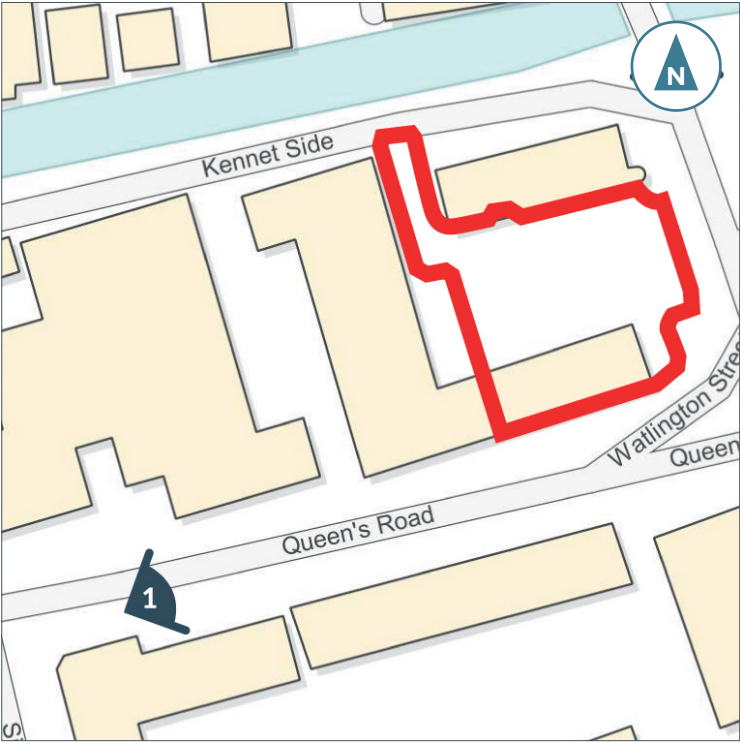


View	Description
1	Queen's Road
2	St John's Road
3	Watlington Street (1)
4	Watlington Street (2)
5	Watlington Street (3)
6	Forbury Road (2)
7	Forbury Road (1)
8	Forbury Road at King's Road
9	Watlington Street (4)

02 Views



View 01 - Existing

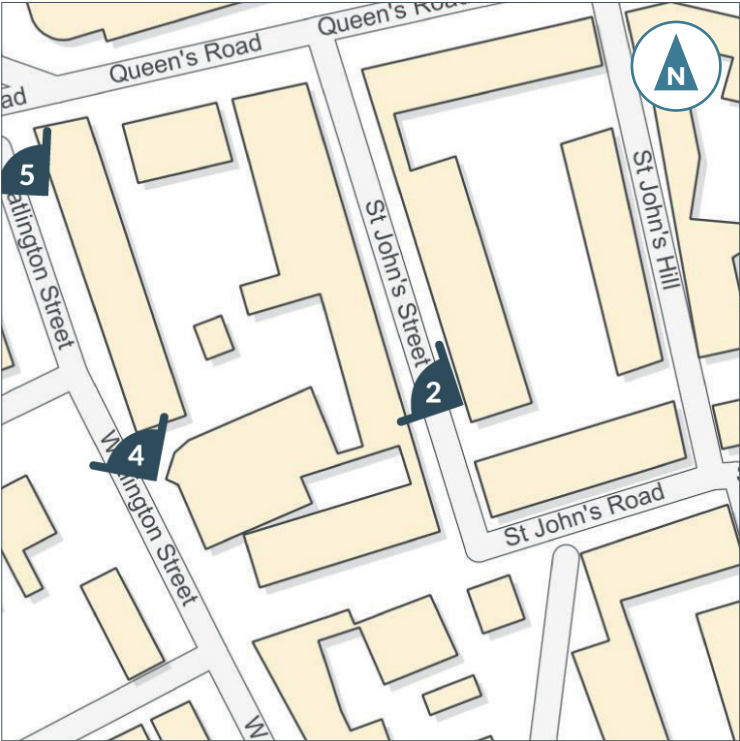


View looking east toward the application site at Queens Road

View 01 - Proposed (AVR 1)



View 02 - Existing

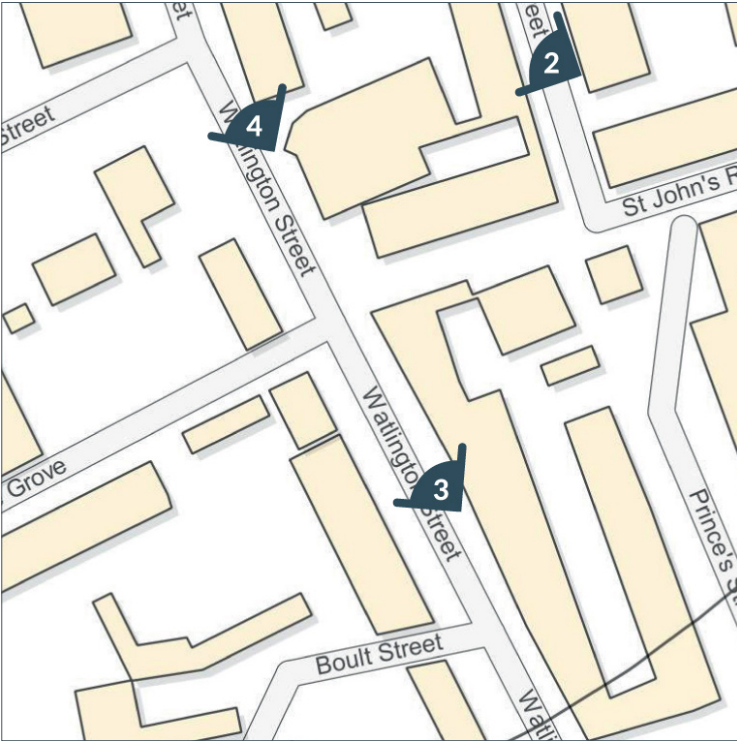


View looking north west toward the application site at St. Johns Street

View 02 - Proposed (AVR 1)



View 03 - Existing

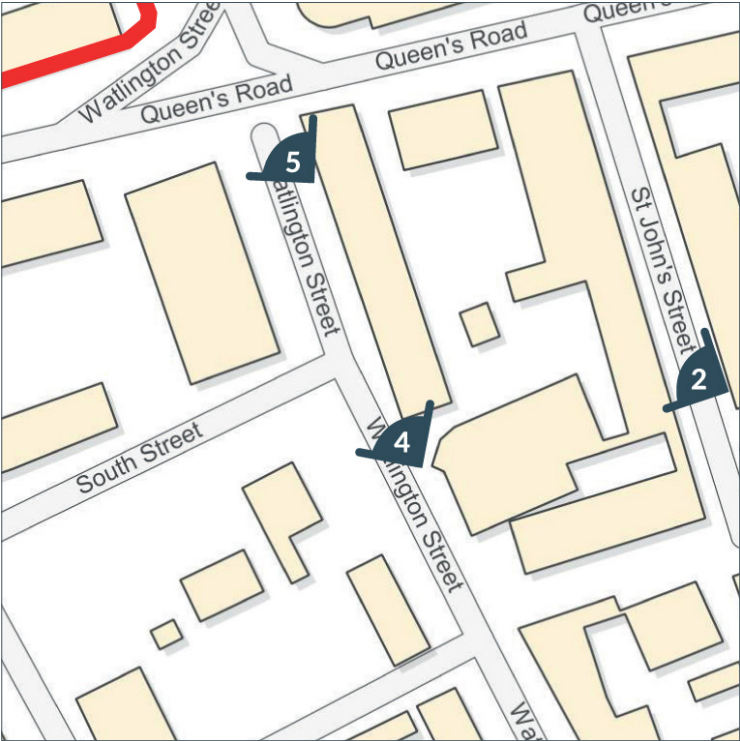


View looking north toward the application site at Watlington Street

View 03 - Proposed (AVR 1)



View 04 - Existing

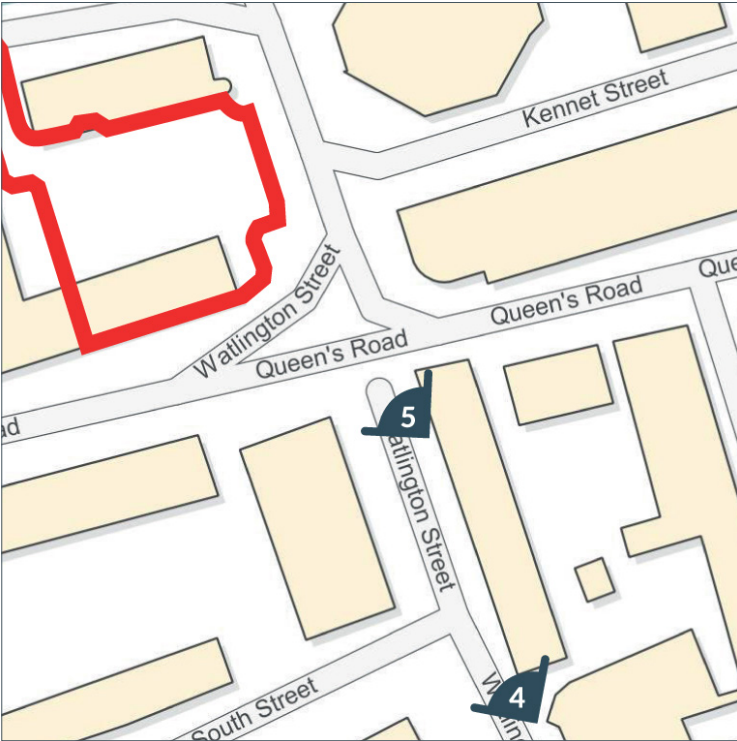


View looking north toward the application site at Watlington Street

View 04 - Proposed (AVR 3)



View 05 - Existing

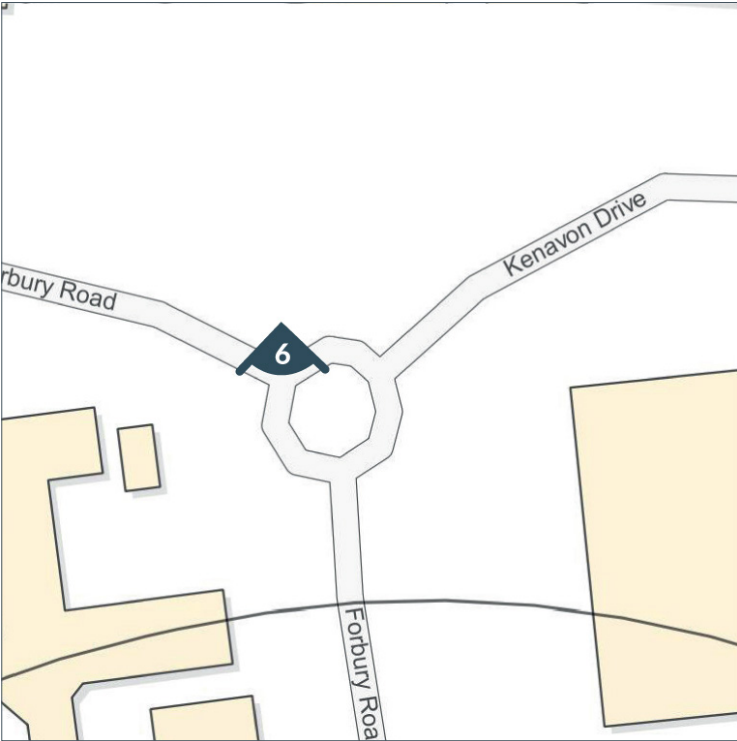


View looking north toward the application site at Watlington Street

View 05 - Proposed (AVR 1)



View 06 - Existing

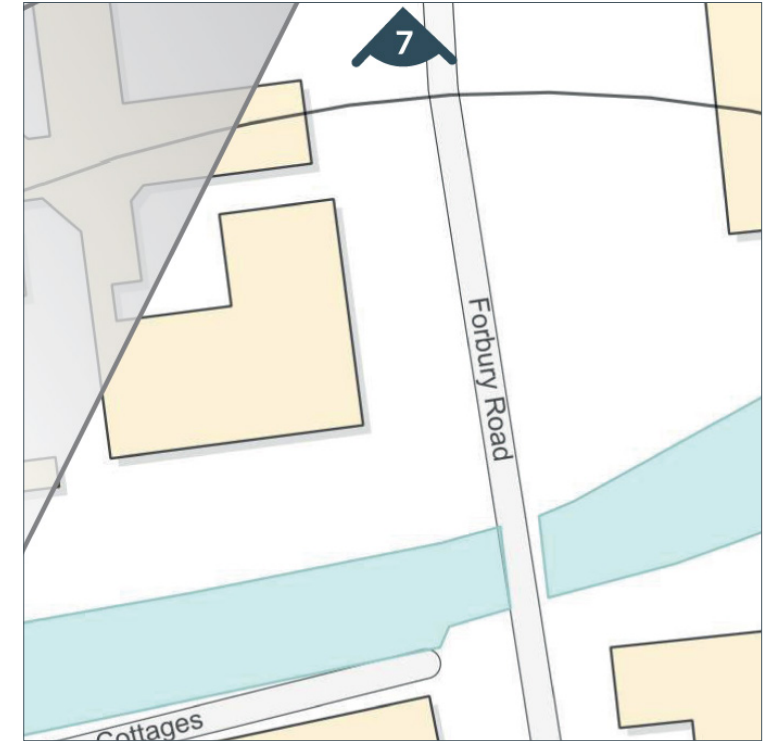


View looking south toward the application site at Fortbury Road

View 06 - Proposed (AVR 1)



View 07 - Existing

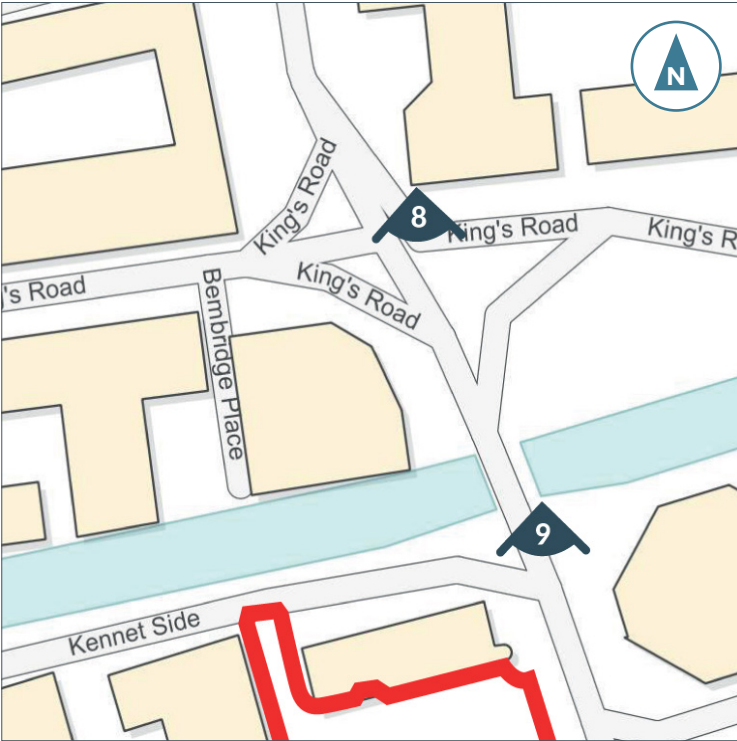


View looking south toward the application site at Fortbury Road

View 07 - Proposed (AVR 1)



View 08 - Existing

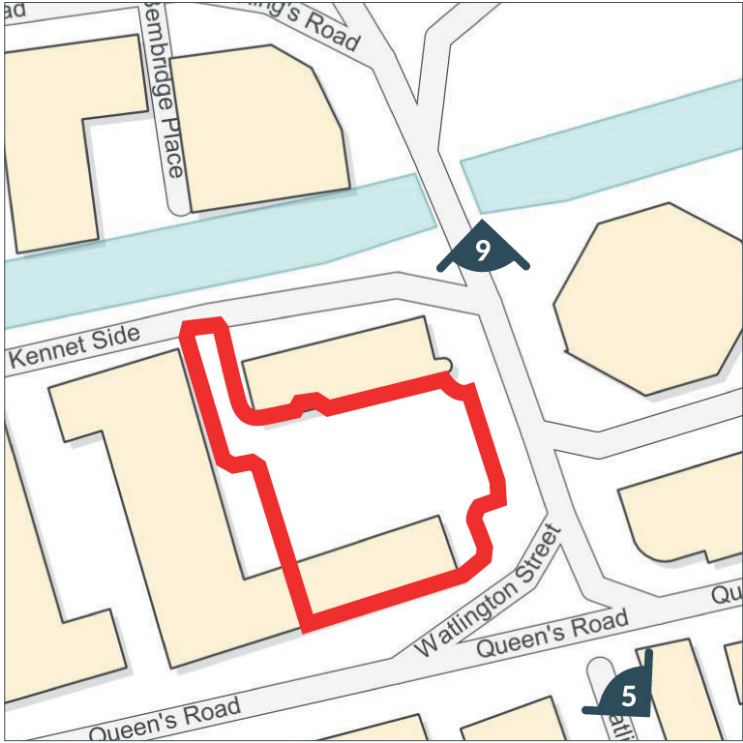


View looking south toward the application site at the junction of King’s Road, Forbury Road and Watlington Street

View 08 - Proposed (AVR 1)



View 09 - Existing



View looking west toward the application site at Kennet Street

View 09 - Proposed (AVR 3)



Appendix 01 - Methodology

Overview

The process of generating verified views (also referred to as accurate visual representations (AVR)) for the Proposed Development at Royal Heights, Reading was carried out by Preconstruct.

Preconstruct use a methodology that is compliant with relevant sections of: The Landscape Institute/IEMA Guidelines for Landscape and Visual Impact Assessment (3rd edition 2013); The Landscape Institute Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment and The Revised SPG London View Management Framework (March 2012).

High quality/resolution photographs were taken from the agreed locations by Preconstruct. An adequate number of visible features were subsequently surveyed, including the precise location and bearing 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

Preconstruct visited the site on the 5th April 2018, to obtain viewpoint photography. The view positions were documented using photography of the exact positions (marked with paint) which was passed on to the surveyor who later visited the site to record the precise co-ordinates.

Photography

For each agreed photoviewpoint location, a high resolution photograph was taken with a 35mm (full frame) digital SLR camera. The location at which the photograph was taken was marked (where possible) with a nail and / or spray paint to allow the surveyor to record the precise location on a subsequent visit. The camera was levelled horizontally and laterally by means of a tripod mounted levelling base and two camera mounted spirit levels. A tilt/shift or perspective control lens was used to allow vertical rise while avoiding convergence of vertical elements.

Lens Selection Criteria

In order to capture the full extent of the proposed development and an appropriate amount of contextual built form 24mm (73° horizontal field of view), and 17mm (93° horizontal field of view) lenses were used.

Equipment Used for Photography

- Canon EOS 5D Mk 1V digital SLR camera (35mm)
- Canon TSe 24mm f/3.5L
- Remote (cabled) shutter release
- Tripod indexed pan head
- Levelling base with bubble level
- Camera (hot shoe) mounted two axis spirit level
- Plumb bob
- Street marking paint

Post Production

Each base photograph has had a level of basic colour correction applied to it so that it best represents the impression of the scene as the photographer experienced it in person.

This processing is predominately done to the 16bit RAW file using Adobe Camera Raw and Photoshop. It includes, but is not limited to, adjustments in; colour temperature and tint; levels such as exposure and contrast; shadow and highlight recovery; sky recovery through the use of gradient corrections; and other post processing effects such as sharpening and noise reduction.

Survey

For each agreed photoviewpoint location an instructional document was released to the survey subcontractor. The surveyor was instructed (by means of a marked up photograph, map and tripod (in situ) photograph) to record a range of contextual reference points.

Survey Equipment Required

- Leica GPS (either 1200 series or 500 series) with smartnet capability.
- Leica Total station (usually TCRP1201)

Field Survey Methodology

- Camera Locations - Where possible the camera position and another survey station (to use as an RO) are fixed using the GPS. If local conditions don't allow this other survey stations are fixed and the control traversed to where required and the Camera position fixed by the total station. Multiple fixes are taken with the GPS to ensure accuracy.
- Reference points - From either the camera position, or somewhere more suitable, points on the photograph are co-ordinated using the reflectorless capability of the total station. Repeat measurements are taken on the long range shots to ensure accuracy and avoid interference from intermediate targets.

Data Processing & Delivery

GPS data was 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 in the form of a delimited text file.

The Proposed Development

Preconstruct imported a 3D model of the proposed development supplied by the project architect.

The model was checked for accuracy against plans and elevations and subsequently aligned to the OSGB36 co-ordinate system.

Cumulative Effect Developments

Design information in relation to consented schemes for cumulative assessment has been collected via the local planning portal. In cases where information was not immediately available, further enquiry to source information has been made through the local authority and relevant architects. The consented schemes visualised represent those where sufficient information has been available. Schemes where insufficient information is available could not be included in the visualisations.

The 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] 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 features of the proposed development that would be occluded by existing features.. This process was performed on all views.

** Rendering is the process of generating an image from a model (or models in what collectively could be called the 3D environment), by means of computer programs - specifically, in this case Chaos Group V-Ray 3.4 for Autodesk 3Ds Max 2017.*

Appendix 02 - Sources of Data

Photography and Viewpoint Data

VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
1	View looking east toward the application site at Queens Road	AVR 1	Verified	472102.49	173217.21	38.87m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	14:16	Basic Colour Correction
2	View looking north west toward the application site at St. Johns Street	AVR 1	Verified	472343.15	173182.55	43.22m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:43	Basic Colour Correction
3	View looking north toward the application site at Watlington Street	AVR 1	Verified	472315.73	173093.78	41.35m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:32	Basic Colour Correction
4	View looking north toward the application site at Watlington Street	AVR3	Verfied	472288.8	173146.63	40.83m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:21	Basic Colour Correction
5	View looking north toward the application site at Watlington Street	AVR 1	Verified	472247.64	173250.36	39.16m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:04	Basic Colour Correction
6	View looking south toward the application site at Fortbury Road	AVR 1	Verified	472122.74	173639.01	41.60m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	10:51	Basic Colour Correction
7	View looking south toward the application site at Fortbury Road	AVR 1	Verified	472122.25	173595.56	41.57m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	11:11	Basic Colour Correction
8	View looking south toward the application site at the junction of King's Road, Forbury Road and Watlington Street	AVR 1	Verified	472190.12	173408.29	37.75m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	11:43	Basic Colour Correction
9	View looking west toward the application site at Kennet Street	AVR 3	Verified	472216.92	173342.82	40.54m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	12:12	Basic Colour Correction

Generated Data (by Preconstruct)

Asset	Description	Reference	Date	Comment
3D Model / Scene	Scene files generated in 3DS Max Design 2017 to create and render model data	Xref BUILD.max	06/09/2018	

Survey Data

Asset	Description	Supplier	Reference	Date	Comment
Survey Data	Table of Points (XLSX file) Surveyors notes/mark-up (PDF)	AG Surveys	2963	13/04/18	Imported using proprietary script. Origin Shift -472213E --173279 N

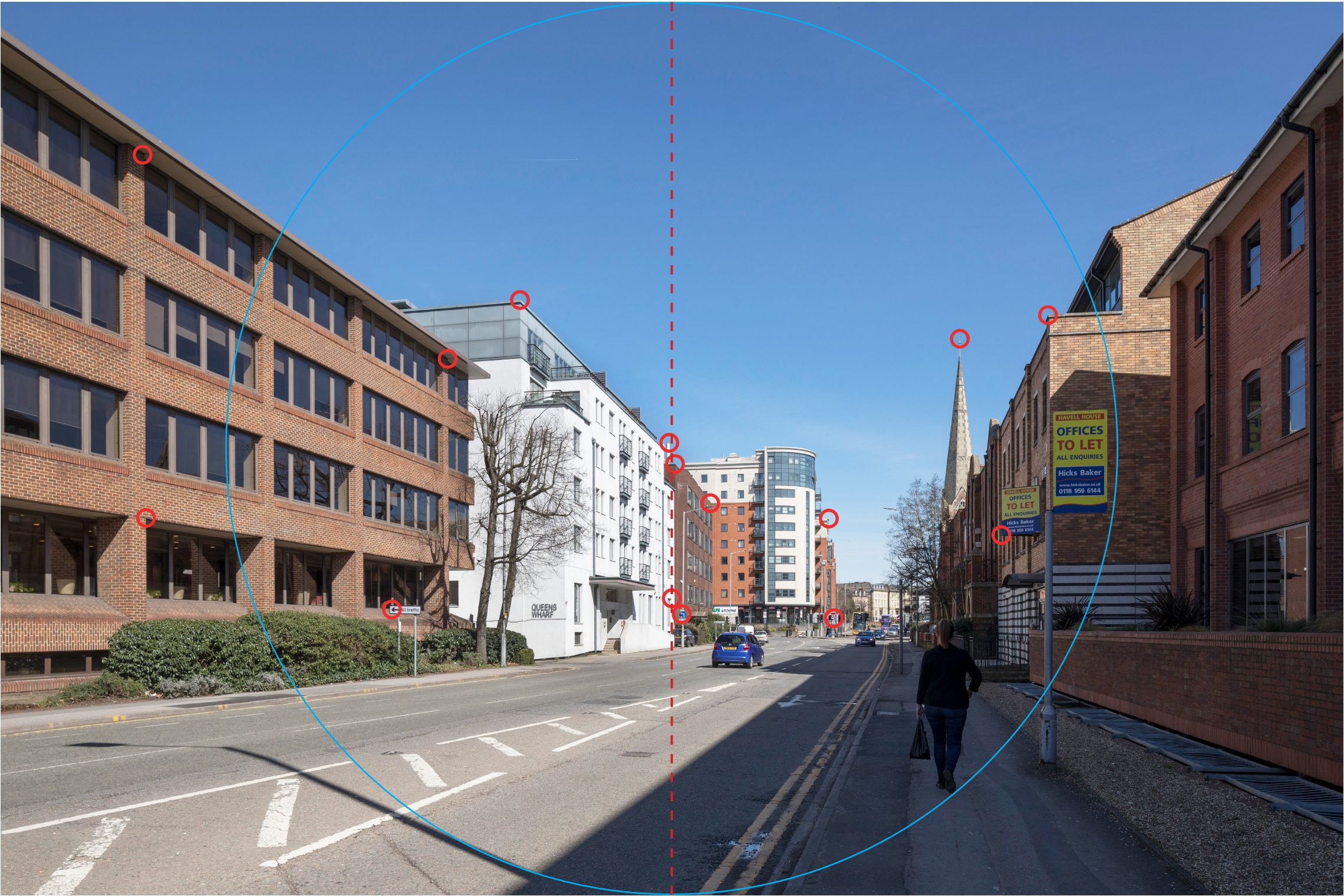
Supplied Data

Asset	Description	Supplier	Reference	Date	Comment
Proposed Scheme Design	Sketch-up Model	EAA	Massing model_52.skp	03/09/2018	Not in OS coordinate system. Data from model used to assist in alignment to OS coords.
Site Plan	DWG	EAA	220-2-22-01_Proposed Ground Floor Plan.dwg	08/05/2018	Not in OS coordinate system. Used to assist in alignment of Proposed Model to OS coords.
Elevation	DWG	EAA	220-2-23-02_Proposed Section BB.dwg	08/05/2018	Used to set the model to max AOD
OS MasterMap	DWG		OS_MasterMap_476102_630453_OS_Mastermap.dwg	08/05/2018	Used to assist in alignment of Proposed Model to OS coords.
Landscape Information	PDF;email	Wilder Associates	Planting and Tree Plan.pdf	06/09/2018	Information on placement, species and size of tree types within site boundary

Appendix 03: AVR Verification Data

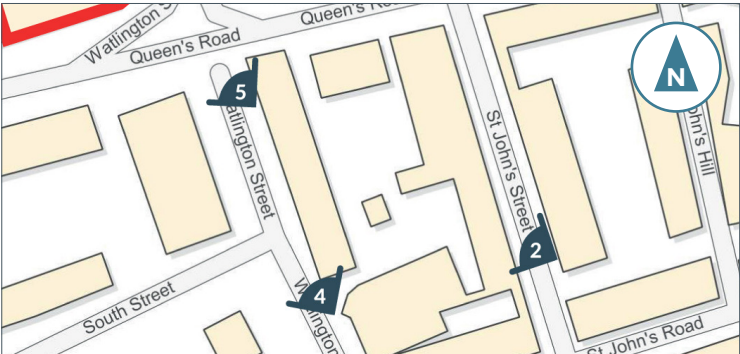


View 01 - Survey Points



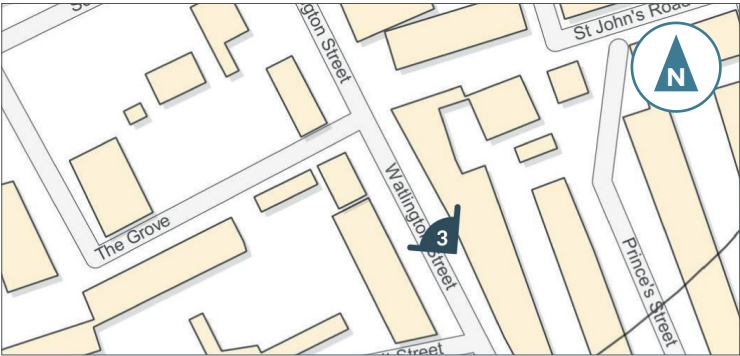
VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
1	View looking east toward the application site at Queens Road	AVR 1	Verified	472102.49	173217.21	38.87m	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	14:16	Basic Colour Correction

View 02 - Survey Points



VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
2	View looking north west toward the application site at St. Johns Street	AVR 1	Verified	472343.15	173182.55	43.22	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:43	Basic Colour Correction

View 03 - Survey Points



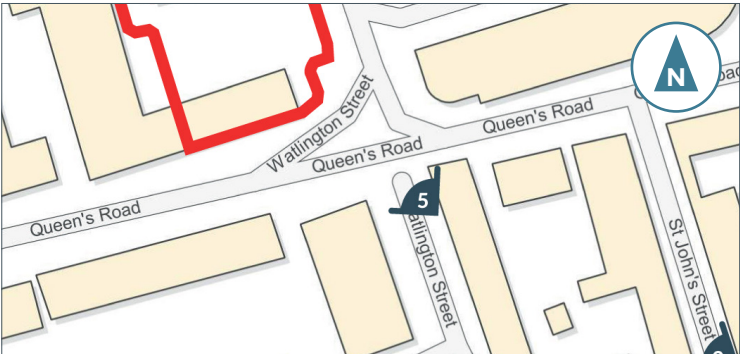
VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
3	View looking north toward the application site at Watlington Street	AVR 1	Verified	472315.73	173093.78	41.35	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:32	Basic Colour Correction

View 04 - Survey Points



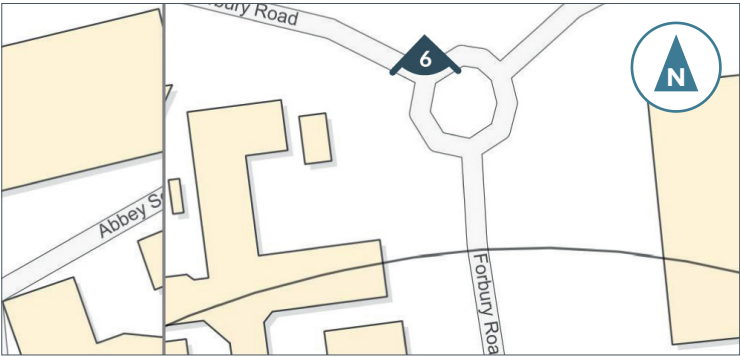
VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
4	View looking north toward the application site at Watlington Street	AVR3	Verified	472288.8	173146.63	40.83	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:21	Basic Colour Correction

View 05 - Survey Points



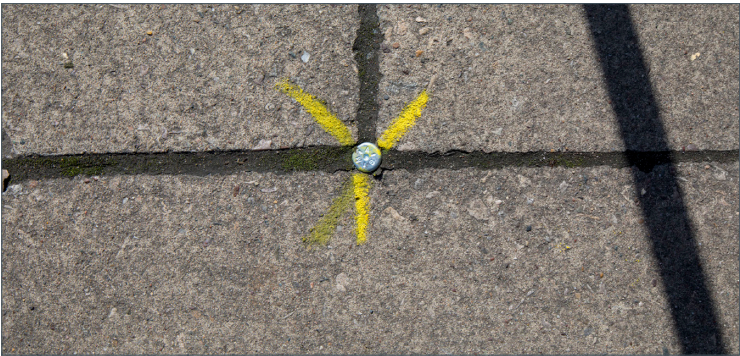
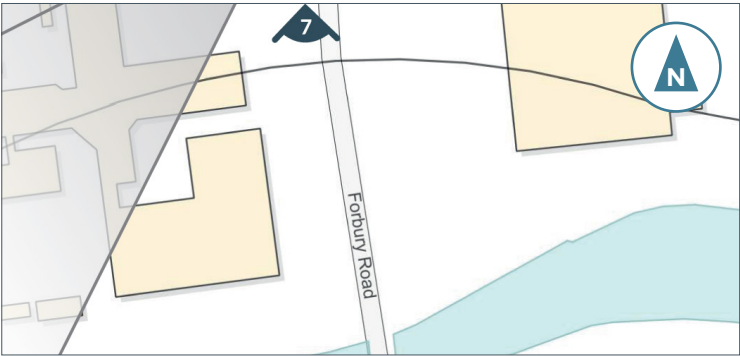
VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
5	View looking north toward the application site at Watlington Street	AVR 1	Verified	472247.64	173250.36	39.16	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	13:04	Basic Colour Correction

View 06 - Survey Points



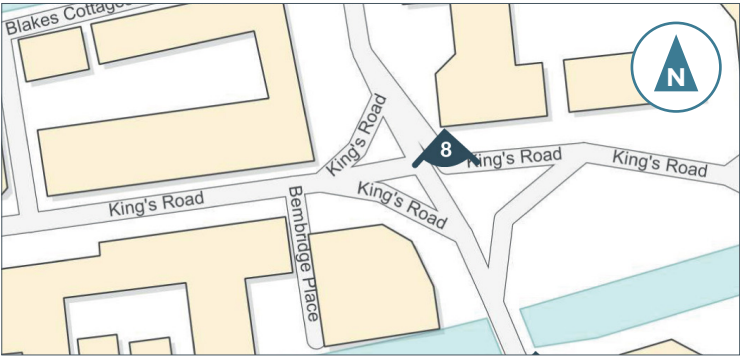
VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
6	View looking south toward the application site at Fortbury Road	AVR 1	Verified	472122.74	173639.01	41.60	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	10:51	Basic Colour Correction

View 07 - Survey Points



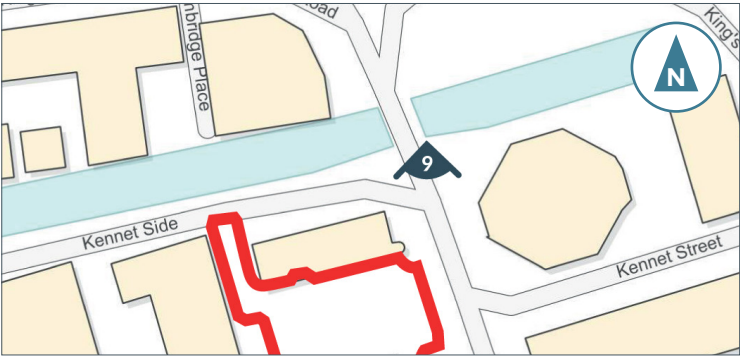
VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
7	View looking south toward the application site at Fortbury Road	AVR 1	Verified	472122.25	173595.56	41.57	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	11:11	Basic Colour Correction

View 08 - Survey Points



VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
8	View looking south toward the application site at the junction of King's Road, Forbury Road and Watlington Street	AVR 1	Verified	472190.12	173408.29	37.75	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	11:43	Basic Colour Correction

View 09 - Survey Points



VP	Description	Type	Method	Easting	Northing	Height AOD	Tripod Height	Camera	Lens	Focal Length	Orientation	HFOV	Date	Time	Post Processing
9	View looking west toward the application site at Kennet Street	AVR 3	Verified	472216.92	173342.82	40.54	1.65m	Canon 5D Mk IV	TS-E24mm f/3.5L	24mm	Landscape	73°	05/04/2018	12:12	Basic Colour Correction

Survey Points Table

Point #	Eastings	Northings	Height (AOD)
100	472194.09	173265.19	61.71
101	472176.06	173255.59	43.31
102	472117.28	173240.65	53.18
103	472135.09	173245.92	53.16
104	472145.09	173249.24	59.67
105	472243.30	173288.41	69.51
106	472325.88	173288.60	68.72
107	472220.74	173254.30	41.90
108	472131.34	173219.78	49.70
109	472133.82	173221.41	43.57
110	472125.24	173215.14	49.11
111	472169.29	173251.28	41.85
112	472125.91	173240.44	41.24
113	472117.28	173240.69	43.51
200	472221.45	173287.67	49.23
201	472255.60	173345.05	61.43
202	472240.65	173329.26	62.72
203	472252.38	173287.23	71.66
204	472247.06	173274.64	71.65
205	472202.85	173393.05	40.54
206	472197.13	173393.78	40.42
207	472196.85	173380.79	39.92
208	472189.83	173397.10	40.04
209	472188.17	173398.36	40.17
210	472186.15	173395.49	37.76
211	472191.96	173389.27	49.32
212	472198.93	173389.45	49.56
213	472201.73	173315.02	56.93
300	472324.86	173196.15	51.76
301	472327.25	173194.36	45.41
302	472330.16	173184.90	48.50

Point #	Eastings	Northings	Height (AOD)
303	472330.52	173183.89	44.31
304	472332.73	173187.10	44.17
305	472325.15	173192.59	50.65
306	472323.80	173205.95	47.02
307	472260.97	173272.37	71.64
308	472285.53	173278.00	60.99
309	472298.13	173290.37	60.72
310	472306.49	173283.08	44.67
311	472312.02	173239.59	49.10
312	472328.43	173185.54	52.45
400	472175.36	173362.70	92.95
401	472200.88	173306.45	56.86
402	472291.98	173107.63	44.00
403	472290.22	173108.01	52.16
404	472283.33	173121.68	51.41
405	472291.58	173119.00	44.11
406	472272.91	173158.39	43.88
407	472207.80	173312.45	56.43
408	472281.31	173169.18	59.47
409	472290.29	173161.99	86.58
410	472314.49	173106.42	50.56
411	472316.37	173100.42	42.87
412	472292.15	173143.87	41.79
413	472314.35	173100.07	42.50
500	472198.92	173306.08	52.47
501	472271.83	173157.15	46.72
502	472249.19	173199.63	42.29
503	472251.90	173202.66	42.41
504	472285.24	173155.78	44.01
505	472283.67	173164.18	51.49
506	472284.78	173163.38	47.23

Point #	Eastings	Northings	Height (AOD)
507	472285.85	173163.06	52.99
508	472236.05	173197.06	45.06
600	472177.43	173302.89	51.46
601	472177.45	173302.84	44.67
602	472176.06	173255.59	43.31
603	472176.85	173258.53	59.64
604	472191.92	173264.08	59.35
605	472210.05	173267.82	56.43
606	472205.79	173279.84	56.45
607	472182.47	173309.99	56.87
608	472205.67	173334.29	43.09
609	472184.94	173416.78	61.17
610	472221.37	173287.88	42.27
611	472241.69	173255.52	40.18
700	472209.25	173270.00	54.87
701	472210.80	173264.97	50.42
702	472217.29	173242.60	50.36
703	472221.43	173287.60	49.20
704	472212.22	173309.52	41.35
705	472236.48	173223.01	51.07
706	472244.19	173205.78	52.05
707	472223.45	173329.72	42.92
708	472281.23	173169.25	59.45
709	472205.35	173317.13	51.46
710	472207.58	173314.31	45.85
711	472198.05	173319.52	45.89
800	472173.09	173457.89	56.59
801	472172.98	173458.63	61.19
802	472199.19	173320.02	52.54
803	472133.30	173547.41	43.15
804	472123.44	173569.21	43.06

Point #	Eastings	Northings	Height (AOD)
805	472120.22	173582.68	45.61
806	472128.60	173583.57	41.36
900	472142.95	173557.14	52.71
901	472302.82	173477.85	60.44
902	472264.94	173435.06	60.44
903	472209.82	173463.79	63.77
904	472178.19	173464.47	58.19
905	472228.69	173239.30	79.30
906	472195.40	173319.07	52.54
907	472135.35	173423.07	56.79
908	472115.19	173565.09	58.63
909	472107.90	173594.90	55.45
910	472118.55	173623.42	42.74
911	472139.31	173592.44	43.77
912	472140.12	173617.49	42.89

Appendix 04: AVR Type Description

Text extracted from The London View Management Framework (SPG March 2012 - Part 3, page 248) Appendix C: Accurate Visual Representations.

“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	Location, size and degree of visibility of proposal
AVR (Level) 2	As level 1 + description of architectural form
AVR (Level) 3	As level 2 + use of materials



AVR0
Showing location and size
(in this case as a toned area
superimposed on photograph)



AVR1
Confirming degree of visibility (in
this case as an occluded ‘wireline’
image)



AVR2
Explaining architectural form (in
this case as a simply shaded
render in a uniform opaque
material)



AVR3
Confirming the use of materials (in
this case using a ‘photorealistic’
rendering technique)



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