Cambridge Road Estate, Kingston

Photomontage methodology and supporting evidence

October 2020

Contents

1.0 Overview

This document has been prepared by Realm Communications to explain the methodology used to create accurate visual representations (AVRs) of the proposed development known as Cambridge Road Estate, Kingston. The visual assessment of the proposed development reflects current best practice in relation to the verification of images, a process which is constantly being refined and improved with advances in technology and industry experience.

The purpose of the photomontages is to present an accurate overview of the proposed development which enables its effect on the landscape and views to be objectively evaluated. Every image contained within this document is verified unless otherwise stated. Final images should not be used as a standalone tool to assess the suitability of a development, but should be used in conjunction with a site visit.

This audit trail demonstrates the key stages of production (that can, if required, be checked by a third party) including photography, surveying, 3D modelling and camera matching processes - all critical to ensuring the accuracy of the final photomontages. These methodologies are in accordance with current best practice and follow recommendations from The Landscape Institute's Technical Guidance Note (TGN 06/19) : Visual Representation of Development Proposals. The entities responsible for the preparation of the views set out in the following pages comprise:

Selection of Viewpoints & Commissioning Practice
Countryside Properties (UK) Ltd
Aurora House
71-75 Uxbridge
Ealing
London
W5 5SL

Barton Willmore
7 Soho Square
London
W1D 3QB
Phone: 0207 446 6888

Photography
Arcminute Ltd
25b Pall Mall Deposit
124-128 Barlby Road
Ladbroke Grove
London W10 6BL
Phone: 07774 857 627

Survey of existing views and camera locations
Datum Survey Services
Brickfield Business Centre, Brickfield House
High Road, Thornwood, Epping CM16 6TH
Phone: 07977 111 935

Production and checking of verified images
Realm Communications
The Workshop
Old Barn Cottage
Down Lane
Compton, Guildford GU3 1DQ
Phone: 01483 813 888

Supply of 3D building model, spot height and landscape information
Patel Taylor
48 Rawstorne St
London
EC1V 7ND
Phone: 0207 278 2323

2.0 Methodology

2.1 Photography

The professional architectural photographer employed on this project was briefed by Realm to work to a methodology which conforms to the principles specified in section 1.0 Overview.

The following methodology statement has been supplied by Arcminute:

Photography brief The following methodology applies to the production of photographic images originated in March 2020 which form the pictorial basis for visual impact assessment photomontages for 30 views for the site known as Cambridge Road Estate, Kingston.

Overview The Arcminute system is designed to create geometrically accurate photography and verifiable data for all its associated parameters and is fully compliant with all guidelines covering images required to be aligned with survey data for use in planning applications.

Equipment Images are captured on a 36mm x 24mm 36 megapixel digital sensor in combination with the following lenses: 17mm, 24mm, 35mm, 52mm and 80mm with shift capability (specially selected for best in class resolution and customised to conform to the high precision focal length and optical axis settings required in the process). Re camera mounts, custom made designs for both single frame and panoramic capture are used to obtain high precision camera positioning and orientation tolerances.

Choice of lens We prefer to replicate (as far as possible) what may have already been provided in terms of preliminary view studies as typically these would have been generated using pre-considered factors as to what each view would need to illustrate e.g. context, key visual receptors etc. In the absence of a definitive steer, we will generally use a 74° HFOV lens for medium to close views in an urban environment and a 40° HFOV lens for long distance views. However, the actual size and nature of a scheme (single building or large multibuilding development) and its location will also be considered before lens selection. The Landscape Institute's latest guidelines have been relaxed with regard to lens choice and they are no longer insistent that a 'standard' lens be used wherever possible.

Photography The camera is set up at eye level (1.55-1.75m) and orientated to within 0.02 deg of pitch and roll to the horizon. The point on the camera that coincides with the origin of perspective is positioned in relation to a survey marker to within 2mm in XYZ. The scene is then captured in a RAW format using standard high quality architectural photographic practice.

For panoramic images the camera is setup in portrait orientation and rotated around the camera coordinate capturing sequential frames with a 50% overlap. Each frame has the same orientation tolerance as a single frame capture.

For every view, a photographic record is made of the tripod location, the survey mark and the height reading of the camera above it.

Post production Standard image processing for dealing with RAW files is undertaken to create a TIFF image that honestly represents the scene in terms of tonality and colour. This image is then processed to remove lens distortion and identify the XY position on the image of the optical axis. Using an image that is fully corrected for distortion enables all the survey points in the image to be used for alignment and not just those confined to the so-called central 'safe area'.

The following data is recorded on a text layer:

- Date and time
- Lens focal length (to nearest 0.005mm)
- Image size in pixels and mm
- Height above survey point (to nearest 0.001m)
- Lens shift (nominal figure to nearest mm)

The survey points are marked up on a separate layer by the survey team. This layer can be set in a blending mode so that the precise point on the image below the marked dot can be seen.

Issued files The following files were issued to Realm:

- A layered TIFF containing the image and all of the above data.
- A flattened JPEG showing the survey points for use in the alignment process
- A photo of the tripod setup
- Any other supporting evidence deemed relevant to the end user such as a KMZ file of camera locations and other supplementary photography.

2.2 Survey

All of the baseline photographs were taken by a professional architectural photographer. Each viewpoint location is surveyed and identified by Ordnance Survey co-ordinates. The heights and distances of significant points within each view that are easily distinguishable have also been recorded as Ordnance Survey grid and level datum and their accuracy has been checked

relative to the fixed camera position. The survey points for each view provide an effective check for ensuring that the 3D model and existing views are accurately merged together.

The following methodology statement has been supplied by Datum Survey Services:

Survey brief We were commissioned to survey and record co-ordinates (Eastings, Northings and AOD Height) of known points of detail located around the study site known as Cambridge Road Estate, Kingston. Digital files of the 30 views together with camera point locations were provided by the photographer.

Date of surveys March 2020.

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

Data capture Traditional survey techniques were employed to record the points of detail within each view. A Leica TCRA TS15 Total Station with long range reflector-less distance measurement capabilities was set-up directly over the camera point and orientated to Ordnance Survey National Grid using the two sets of co-ordinates determined by the SmartRover receiver.

Deliverables The completed survey data was issued as follows:

- Excel Spreadsheet comprising point numbers, coordinate data and descriptions
- PDF 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 building model

The massing and detailed 3D models were supplied by the architect. A manual crosscheck of heights was then carried out by Realm across all buildings, using AOD spot heights as supplied.

2.4 3D landscape

The landscape CAD was supplied by the architect along with the 3D models.

2.5 Camera matching

The verification process confirms the accuracy of the 3D model in relation to each view. The camera matching process involves accurately matching the position of the virtual camera with the real world camera in OS space, and the location of the 3D model of the proposed development within each (existing) view. This is achieved through aligning the imported 3D cloud of survey points within the base photo and 3D environment, creating a virtual camera that replicates the exact position and height of the real world camera to produce an image where the rendered survey points match in visual location those recorded by the survey team and photographer.

The specifications of the lens type relating to each existing view are also entered into 3DS Max to help guide with alignment. An alignment is deemed correct only when all survey points sit exactly over the pixel in the photo that corresponds with the marked-up survey photo. If all points match, the virtual camera must therefore be correctly aligned.

For each view we measure the distance from camera to target and apply respective equations to establish the potential adjustment necessary to compensate for both curvature of the earth and light refraction. Typically, when the real world camera is positioned within 1.5km from the target, the effects of curvature of the earth and light refraction are deemed to be negligible in terms of their visual impact and therefore no adjustment is made to the Z axis of the building model within the view.

2.6 Lighting and rendering

To accurately light the 3D model, 3DS Max's 'daylight system' is set to replicate the solar time, date and geographic location (longitude and latitude) as recorded in the base photograph. The settings used for each base photograph (F stop, shutter speed etc) are replicated in both this 'daylight system' and the virtual camera set-up. This process mimics the virtual sun so that the lighting falls upon the 3D model as it would in real life at the point when the photograph was captured. Fine tuning is sometimes necessary to better match the resultant lighting and shadows to the base photograph.

Once the camera matching and lighting processes are complete, the render of the 3D model is output to the same pixel resolution as per each respective base photograph.

2.7 Post production

Fully rendered views The render of the three-dimensional model was superimposed on the existing still views in Adobe Photoshop. The foreground of the existing views was then copied and placed over the rendered model in order to ensure that the depth is accurate within the photomontage view between the foreground, background and the rendered model. At this stage, for the fully rendered photomontages, the textured model can be further adjusted to match the resolution, colouring and saturation of the photograph taken to create a close impression of what the textures of the buildings and structures would look like. This is a qualitative exercise and requires interpretation by the designer on how the structure will look. A final qualitative check of all of the photomontage images has been carried out to ensure that they provide objectively accurate views of the proposed development.

Wireline views These photomontages show the outline of the maximum envelope of built form in accordance with development parameters as a red line for the building (a solid line where visible, a dotted line when obscured by foreground objects).

2.8 Recommended viewing distances

It is recommended that final images are viewed at an optimum viewing distance (in relation to the size of printed photomontage) to give a correct sense of scale. We recommend that images are printed to a size that creates a comfortable viewing distance of up to 525mm. The recommended viewing distance for each image is specified within Section 4.0 of this document.

2.9 Caveats

Please note that the Phase 1 landscape was modelled on a view-specific basis in accordance with the mark-ups supplied by the architect. Tree planting is based on heights of between four and five metres.

Key to cumulative schemes (phases):

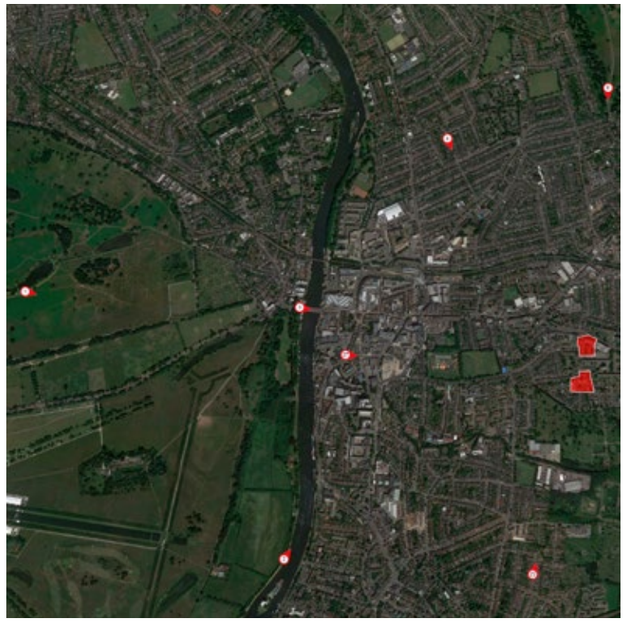
3.0 Supporting evidence

Ordance survey co-ordinates			
View Ref	Eastings	Northings	AOD Height
1	516257.097	169463.454	10.390
2a	517648.977	168151.721	6.032
3	517653.535	169389.784	11.600
4	518384.424	170299.516	8.534
5	519242.225	170591.629	23.498
6	519618.511	170943.160	53.247
7	519403.424	169532.300	15.668
8	519633.223	169351.157	21.035
9	520302.722	169176.050	14.140
10	519636.486	169022.594	13.734
11	518890.377	169307.289	9.592
12	518477.948	169017.096	9.328
13	518706.162	169035.138	9.953
14b	518881.459	169031.075	10.110
15	518931.359	168968.197	10.831
16a	519056.045	168851.710	13.797
17	519348.150	168875.003	17.580
18	519415.322	168951.025	16.905
19	519187.791	168680.242	15.284
20a	518858.259	168820.144	10.246
21	518590.931	168771.256	9.126
22	518827.162	168078.252	27.642
23a	520301.483	168481.914	16.622
24	520215.464	167922.779	15.727
25	518254.255	169170.471	9.298
26a	518205.054	169020.581	8.974
27	517890.114	169135.313	7.433
28	518485.843	169352.503	8.816
29	519178.651	168817.511	18.729
30	519386.109	169088.299	16.466

View 1

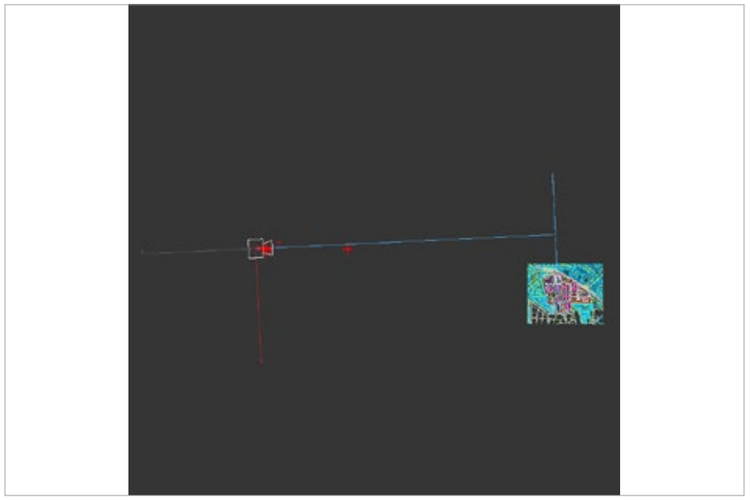
3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
101	516261.282	169461.864	9.374
102	516261.304	169461.827	8.930
103	516262.942	169463.997	9.405
104	516262.940	169464.001	8.951
105	516265.511	169466.182	9.404
106	516265.499	169466.185	8.968
107	516286.417	169474.351	9.635
108	516273.499	169468.602	9.490
109	516270.773	169463.740	9.465
110	516267.451	169458.602	9.511
111	516284.077	169463.730	9.711
112	516350.164	169453.690	11.035
113	516354.794	169463.062	10.826
114	516351.387	169472.055	10.986
115	516475.297	169526.156	10.316
116	516355.797	169423.504	10.145
117	517122.596	169454.511	14.821

3.2 OS survey points marked on base photograph



3.3 View 1 camera location

Eastings	516257.097m
Northings	169463.454m
AOD height	10.390m
Approx distance to centre of site	2947m
Approx bearing from North	87°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

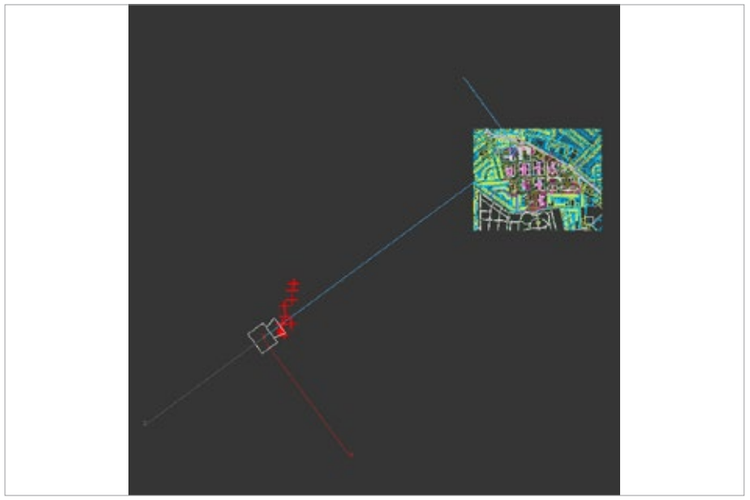
View 2a

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
2A01	517812.671	168362.489	20.807
2A02	517821.891	168454.861	22.564
2A03	517810.360	168365.538	33.352
2A04	517768.689	168330.410	5.347
2A05	517813.904	168415.106	23.713
2A06	517771.872	168274.222	8.815
2A07	517802.948	168232.710	20.736
2A08	517753.485	168187.701	8.591
2A09	517769.857	168168.321	11.183
2A10	517748.293	168180.971	7.064
2A11	517749.445	168200.503	7.429
2A12	517756.492	168229.951	6.928
2A13	517809.662	168232.193	14.476

3.2 OS survey points marked on base photograph

3.3 View 2a camera location

Eastings	517648.977m
Northings	168151.721m
AOD height	6.032m
Approx distance to centre of site	1785m
Approx bearing from North	54°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

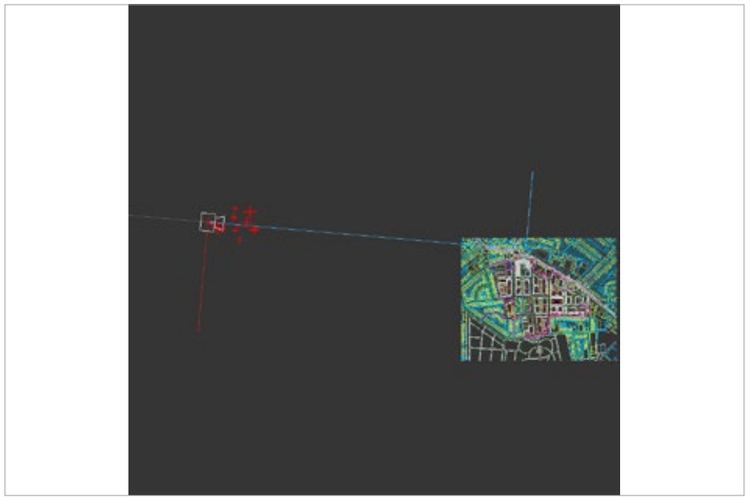
View 3

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
301	517779.923	169452.686	33.749
302	517773.861	169412.963	18.799
303	517664.620	169390.220	13.722
304	517662.473	169390.665	15.443
305	517847.770	169437.659	38.211
306	517832.455	169388.796	33.751
307	517865.363	169353.319	18.974
308	517780.300	169350.882	20.766
309	517792.352	169373.756	14.518
310	517674.701	169382.300	12.469
311	517698.341	169362.734	17.279
312	517800.375	169309.191	20.851
313	517662.782	169388.257	11.967
314	517719.554	169360.410	17.313
315	517662.694	169383.703	12.006
316	517659.383	169392.399	12.151
317	517867.055	169358.587	23.197

3.2 OS survey points marked on base photograph

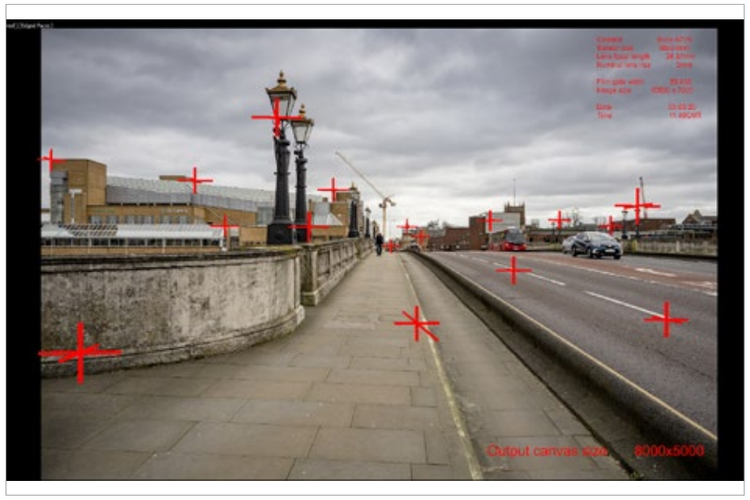
3.3 View 3 camera location

Eastings	517653.535m
Northings	169389.784m
AOD height	11.600m
Approx distance to centre of site	1557m
Approx bearing from North	95°

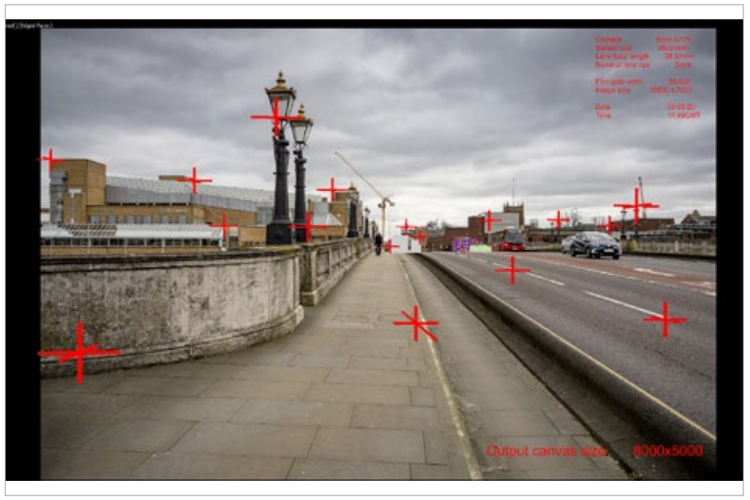


3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line



3.6 Screen grab of camera matching to survey data



3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

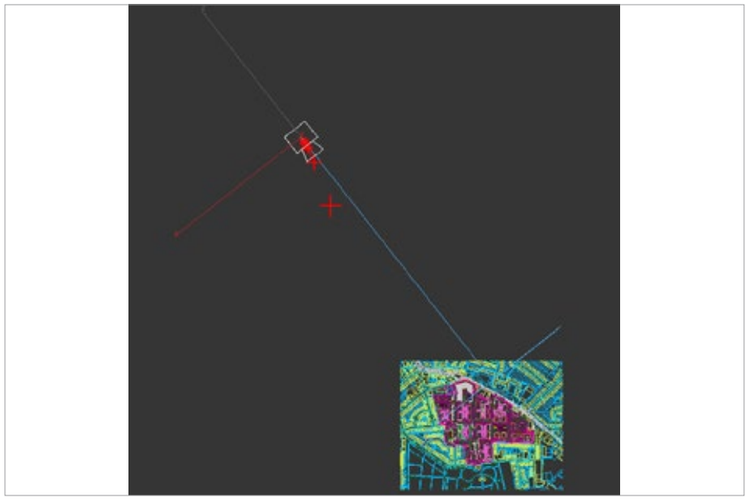
View 4

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
401	518389.647	170273.598	14.490
402	518388.718	170288.937	11.718
403	518393.763	170271.369	11.785
404	518388.689	170283.975	9.782
405	518513.559	169998.305	19.238
406	518442.703	170187.091	14.734
407	518415.079	170256.027	11.903
408	518418.045	170247.767	14.042
409	518426.530	170225.058	11.187
410	518411.048	170267.559	11.939
411	518405.442	170282.218	16.279
412	518403.083	170287.903	11.156
413	518389.144	170294.581	8.611
414	518403.302	170275.199	10.990
415	518397.359	170251.340	14.274

3.2 OS survey points marked on base photograph

3.3 View 4 camera location

Eastings	518384.424m
Northings	170299.516m
AOD height	8.534m
Approx distance to centre of site	1462m
Approx bearing from North	142°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

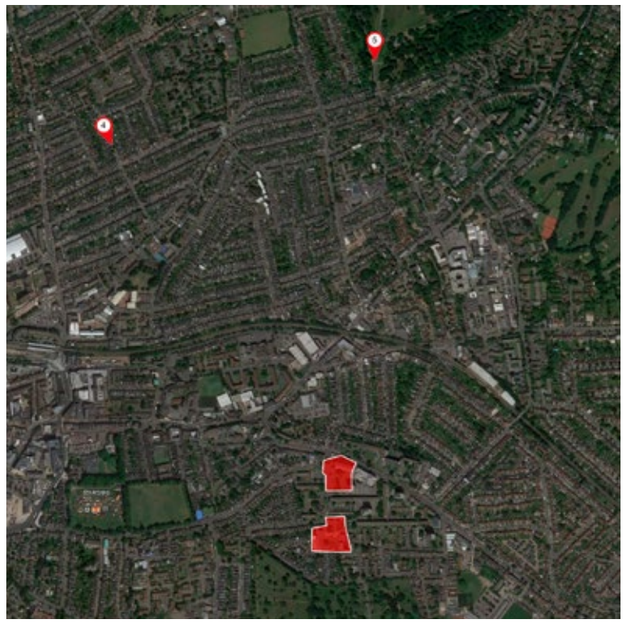
3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 5

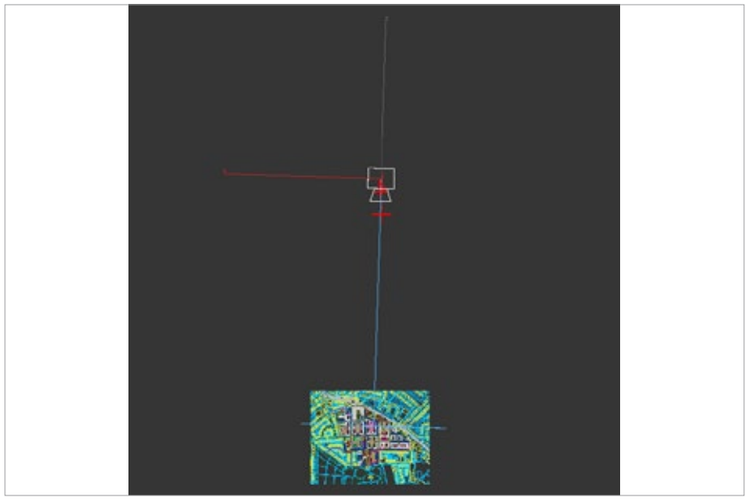
3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
501	519244.728	170586.593	22.719
502	519244.761	170586.570	22.267
503	519242.804	170586.645	22.368
504	519242.841	170586.647	21.924
505	519239.204	170586.778	22.239
506	519239.204	170586.786	21.803
507	519236.275	170579.089	21.995
508	519239.482	170577.965	22.088
509	519246.053	170577.817	22.674
510	519244.662	170569.637	22.306
511	519243.098	170543.740	22.786
512	519251.706	170525.840	22.449
513	519238.416	170512.812	20.909
514	519245.451	170374.866	24.040
515	519236.435	170567.905	21.748

3.2 OS survey points marked on base photograph



3.3 View 5 camera location

Eastings	519242.225m
Northings	170591.629m
AOD height	23.498m
Approx distance to centre of site	1521m
Approx bearing from North	182°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

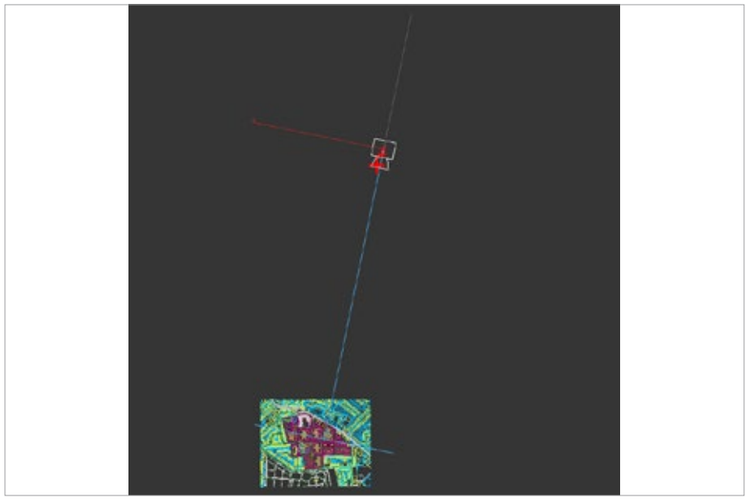
View 6

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
601	519619.569	170938.882	52.218
602	519619.557	170938.890	51.782
603	519617.749	170939.204	52.197
604	519617.751	170939.195	51.751
605	519615.406	170939.261	52.174
606	519615.405	170939.250	51.720
607	519610.373	170931.617	52.050
608	519616.360	170931.456	52.133
609	519620.437	170931.216	52.241
610	519615.251	170909.255	52.146
611	519607.603	170911.678	52.101
612	519574.816	170829.674	51.534
613	519569.547	170839.057	53.457
614	519578.314	170841.955	53.593
615	519587.287	170902.085	53.541

3.2 OS survey points marked on base photograph

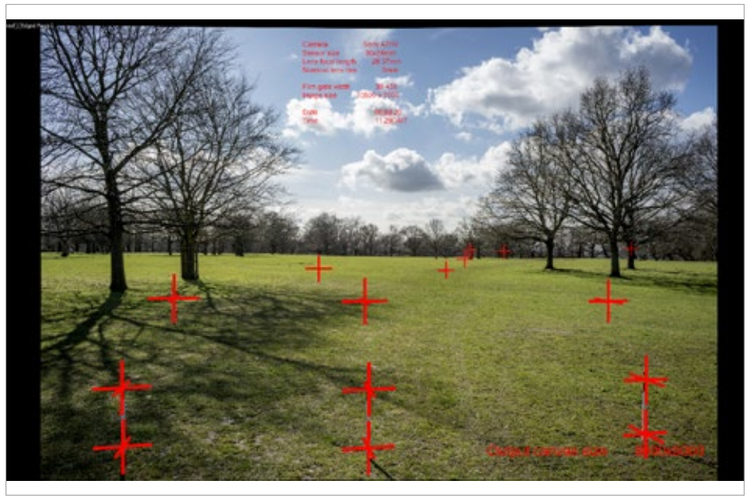
3.3 View 6 camera location

Eastings	519618.511m
Northings	170943.160m
AOD height	53.247m
Approx distance to centre of site	1922m
Approx bearing from North	192°

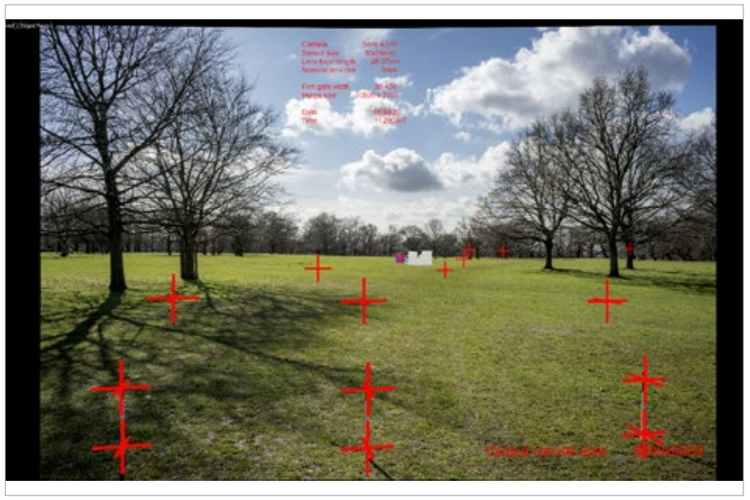


3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line



3.6 Screen grab of camera matching to survey data



3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

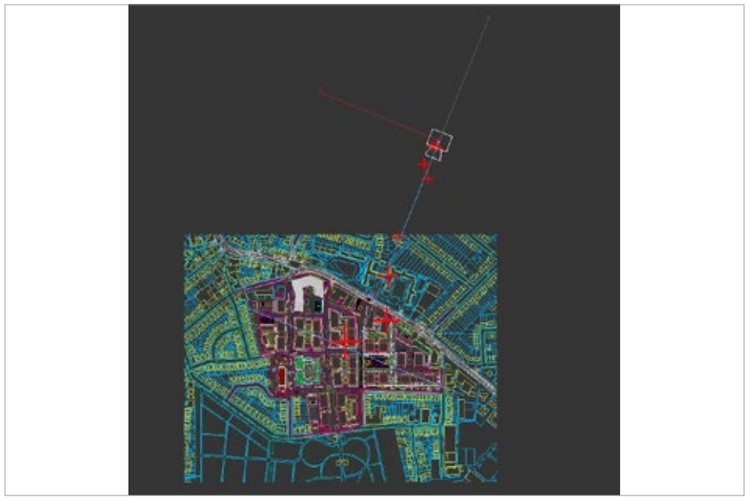
View 7

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
701	519403.754	169520.769	16.467
702	519399.919	169511.735	16.267
703	519396.453	169514.277	15.413
704	519402.380	169528.622	15.685
705	519405.801	169511.776	20.739
706	519376.942	169444.715	19.645
707	519308.813	169312.402	21.539
708	519282.369	169119.878	63.043
709	519187.839	169073.022	61.118
710	519392.699	169518.978	20.654
711	519385.614	169518.374	24.019
712	519386.322	169518.137	18.113
713	519368.452	169477.776	20.303
714	519285.602	169221.859	36.160
715	519396.118	169525.729	15.462

3.2 OS survey points marked on base photograph

3.3 View 7 camera location

Eastings	519403.424m
Northings	169532.300m
AOD height	15.668m
Approx distance to centre of site	513m
Approx bearing from North	202°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 8

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
801	519631.465	169344.060	20.789
802	519624.203	169331.894	27.985
803	519617.953	169321.726	20.729
804	519605.382	169300.859	21.677
805	519612.975	169331.116	25.977
806	519382.022	169002.700	60.502
807	519604.458	169341.370	29.343
808	519617.437	169341.313	24.931
809	519630.560	169349.691	22.658
810	519614.514	169336.418	24.923
811	519375.579	169075.237	24.134
812	519628.589	169346.213	20.768
813	519616.683	169335.796	21.027
814	519390.059	169050.785	38.523
815	519548.645	169253.931	19.148

3.2 OS survey points marked on base photograph

3.3 View 8 camera location

Eastings	519633.223m
Northings	169351.157m
AOD height	21.035m
Approx distance to centre of site	534m
Approx bearing from North	223°

3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

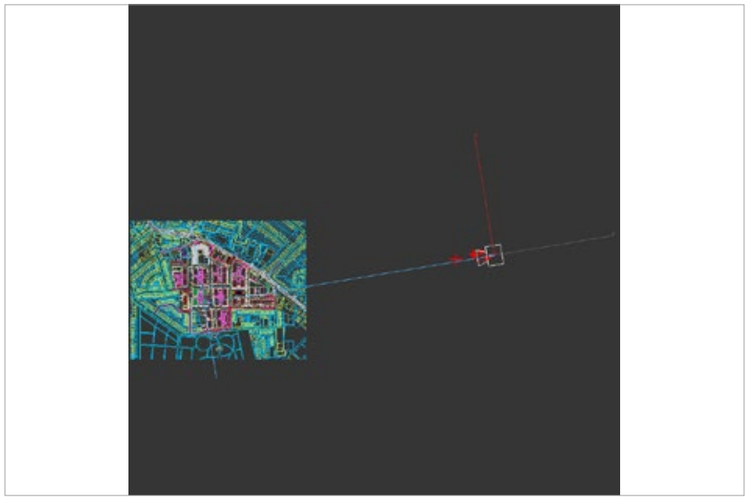
View 9

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
901	520284.241	169164.471	16.236
902	520275.590	169163.800	18.670
903	520269.559	169163.034	16.662
904	520263.062	169158.499	22.185
905	520291.192	169171.755	15.256
906	520286.750	169178.414	14.202
907	520272.694	169172.030	16.662
908	520235.094	169155.633	22.016
909	520145.571	169158.892	18.457
910	520218.749	169175.616	16.705
911	520216.709	169182.307	18.774
912	520243.021	169188.010	22.288
913	520253.284	169186.920	16.280

3.2 OS survey points marked on base photograph

3.3 View 9 camera location

Eastings	520302.722m
Northings	169176.050m
AOD height	14.140m
Approx distance to centre of site	1130m
Approx bearing from North	261°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 10

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1001	519632.712	169020.949	14.818
1002	519623.645	169013.614	16.321
1003	519615.220	169012.152	18.673
1004	519590.584	169005.688	24.229
1005	519560.020	169005.008	24.941
1006	519625.035	169021.895	16.883
1007	519381.936	168987.448	60.480
1008	519399.675	169029.996	29.549
1009	519526.300	169030.529	18.261
1010	519294.178	169116.141	58.363
1011	519595.284	169040.849	23.799
1012	519609.717	169031.524	15.105
1013	519592.115	169036.579	17.141
1014	519595.971	169028.631	20.085
1015	519427.353	169013.213	22.128
1016	519603.568	169018.835	15.330
1017	519400.824	169043.719	35.557

3.2 OS survey points marked on base photograph

3.3 View 10 camera location

Eastings	519636.486m
Northings	169022.594m
AOD height	13.734m
Approx distance to centre of site	461m
Approx bearing from North	264°

3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 11

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1101	518932.898	169298.736	17.269
1102	518943.546	169293.842	14.657
1103	518940.716	169296.394	11.243
1104	518915.317	169298.495	12.452
1105	518929.200	169288.792	12.433
1106	518897.118	169304.425	9.601
1107	518894.404	169301.372	9.638
1108	519131.806	169133.424	54.349
1109	519274.224	169109.703	59.508
1110	519043.952	169237.653	18.959
1111	518965.261	169258.518	11.880
1112	518948.931	169256.300	17.287
1113	518924.348	169264.616	16.153
1114	518937.197	169261.614	12.019
1115	518910.145	169276.190	10.435
1116	518894.139	169295.893	12.012
1117	518895.422	169296.313	9.699
1118	518905.469	169298.509	10.362

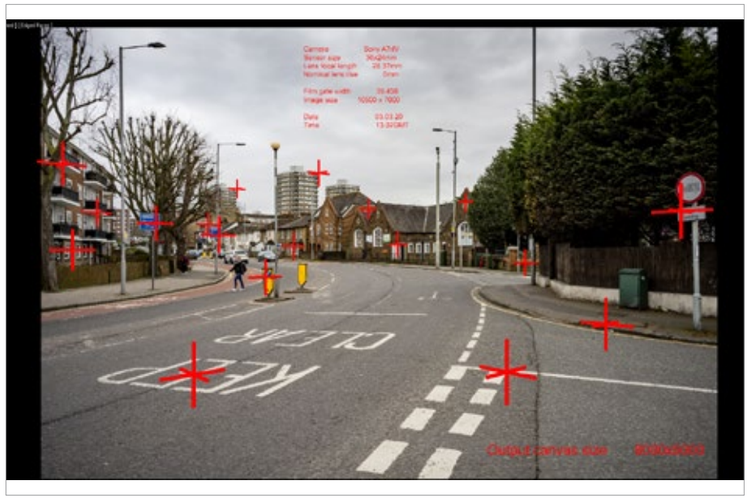
3.2 OS survey points marked on base photograph

3.3 View 11 camera location

Eastings	518890.377m
Northings	169307.289m
AOD height	9.592m
Approx distance to centre of site	372m
Approx bearing from North	132°

3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line



3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

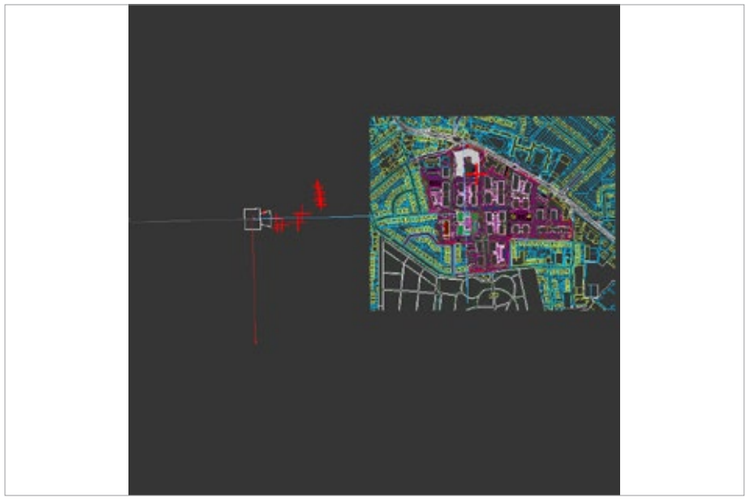
View 12

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1201	518666.230	169117.555	13.493
1202	518670.716	169108.429	16.579
1203	518674.249	169094.454	15.891
1204	518671.990	169086.899	14.820
1205	518675.945	169077.848	14.832
1206	518672.841	169070.648	11.631
1207	518678.813	169058.117	12.801
1208	519131.569	169148.796	54.285
1209	518622.198	169034.065	10.099
1210	518547.824	169020.949	9.939
1211	518609.458	169007.482	20.185
1212	518563.915	169000.864	12.532
1213	518501.441	169008.119	11.008
1214	518484.151	169013.686	11.294
1215	518512.944	169036.546	11.634
1216	518549.888	168990.892	14.301

3.2 OS survey points marked on base photograph

3.3 View 12 camera location

Eastings	518477.948m
Northings	169017.096m
AOD height	9.328m
Approx distance to centre of site	702m
Approx bearing from North	89°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

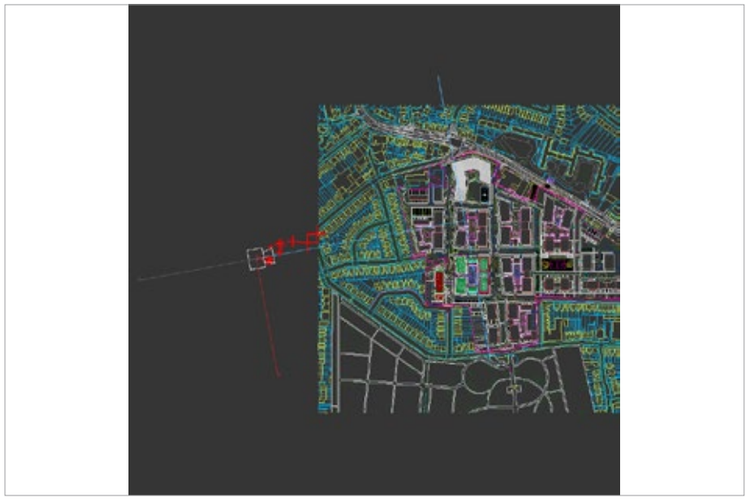
View 13

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1301	518732.691	169056.657	13.167
1302	518747.496	169063.296	10.680
1303	518752.291	169064.537	14.570
1304	518773.812	169067.672	13.390
1305	518752.069	169059.095	11.069
1306	518817.709	169080.334	15.266
1307	518748.787	169046.279	17.783
1308	518727.628	169037.438	14.165
1309	518717.862	169034.025	10.662
1310	518732.301	169034.336	18.545
1311	518734.567	169027.805	18.124
1312	518710.747	169036.860	9.982
1313	518728.997	169030.938	12.898
1314	518799.992	169065.031	17.764
1315	518728.160	169027.059	11.847

3.2 OS survey points marked on base photograph

3.3 View 13 camera location

Eastings	518706.162m
Northings	169035.138m
AOD height	9.953m
Approx distance to centre of site	473m
Approx bearing from North	80°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

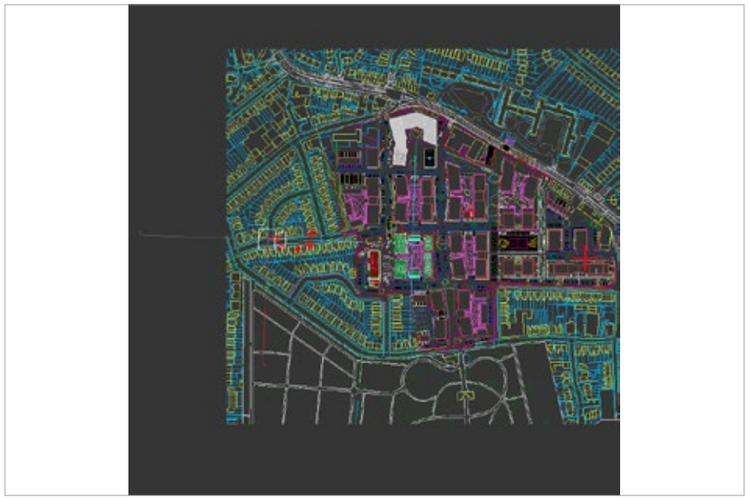
View 14b

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
14B01	518887.858	169034.238	10.131
14B02	518890.761	169027.573	10.215
14B03	518896.384	169035.425	16.031
14B04	519187.440	169073.256	61.161
14B05	519361.341	169002.794	60.463
14B06	518906.199	169035.839	16.026
14B07	518893.648	169036.080	12.563
14B08	518900.831	169018.582	15.652
14B09	518927.775	169015.594	19.355
14B10	518943.674	169021.155	13.061
14B11	518948.884	169021.086	15.996
14B12	519085.199	169037.958	15.669
14B13	518948.669	169038.635	18.479
14B14	518907.636	169019.393	12.940
14B15	518897.083	169029.107	10.118

3.2 OS survey points marked on base photograph

3.3 View 14b camera location

Eastings	518881.459m
Northings	169031.075m
AOD height	10.110m
Approx distance to centre of site	300m
Approx bearing from North	92°



3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 15

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1501	518952.078	168984.017	20.024
1502	518943.571	168976.232	12.796
1503	518955.286	168980.610	16.772
1504	518947.758	168975.904	13.469
1505	518970.014	168981.187	13.617
1506	518975.321	168982.028	16.537
1507	518982.674	168979.278	13.812
1508	519009.584	168980.067	19.030
1509	518936.051	168968.139	10.978
1510	518943.125	168963.591	12.722
1511	518950.763	168959.483	18.643
1512	518969.680	168959.913	19.052
1513	518978.406	168963.889	16.944
1514	518967.766	168965.902	12.135
1515	519133.227	168954.324	24.247

3.2 OS survey points marked on base photograph

3.3 View 15 camera location

Eastings	518931.359m
Northings	168968.197m
AOD height	10.831m
Approx distance to centre of site	268m
Approx bearing from North	84°

3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 16a

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
16A01	519057.631	168855.498	13.812
16A02	519055.540	168861.505	15.198
16A03	519052.651	168865.134	15.557
16A04	519056.143	168881.522	19.292
16A05	519057.223	168950.801	14.200
16A06	519131.300	169133.434	54.372
16A07	519085.204	169062.943	15.260
16A08	519095.158	169103.728	22.663
16A09	519073.758	168932.933	21.838
16A10	519071.194	168911.907	15.554
16A11	519072.040	168906.098	20.841
16A12	519071.464	168891.896	19.459
16A13	519199.774	169063.118	57.427
16A14	519071.592	168866.782	19.755
16A15	519068.019	168863.586	14.892
16A16	519068.407	168874.758	15.659

3.2 OS survey points marked on base photograph

3.3 View 16a camera location

Eastings	519056.045m
Northings	168851.710m
AOD height	13.797m
Approx distance to centre of site	252m
Approx bearing from North	17°

3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 17

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1701	519343.338	168875.332	17.689
1702	519333.285	168870.331	20.473
1703	519268.090	168884.311	24.962
1704	519308.663	168872.136	26.483
1705	519342.829	168879.633	17.820
1706	519331.857	168888.626	23.188
1707	519319.467	168888.851	23.809
1708	519321.780	168883.983	21.063
1709	519309.129	168889.126	24.148
1710	519290.612	168888.132	23.364
1711	519276.256	168887.133	23.632
1712	519209.125	168889.325	22.685
1713	519333.313	168874.509	18.771
1714	519326.983	168887.303	19.932
1715	519328.300	168871.430	25.079

3.2 OS survey points marked on base photograph

3.3 View 17 camera location

Eastings	519348.150m
Northings	168875.003
AOD height	17.580m
Approx distance to centre of site	260m
Approx bearing from North	282°

3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

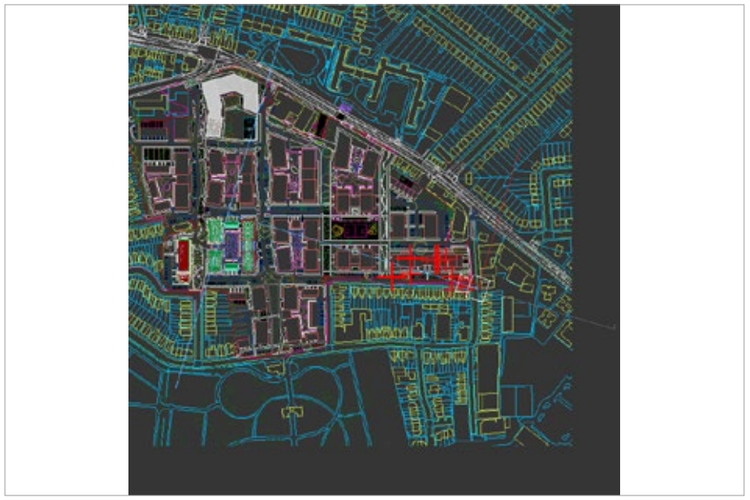
View 18

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1801	519407.935	168956.849	17.233
1802	519408.351	168950.725	17.171
1803	519405.642	168951.409	17.333
1804	519400.484	168947.603	22.575
1805	519394.801	168953.258	22.676
1806	519391.011	168961.412	19.201
1807	519329.565	168970.000	25.280
1808	519361.563	168987.493	21.113
1809	519364.637	168987.684	41.424
1810	519379.980	168948.914	22.794
1811	519403.905	168963.125	20.489
1812	519329.366	168988.767	27.833
1813	519306.390	168965.750	19.805
1814	519383.122	168966.433	29.276
1815	519374.892	168987.755	22.379

3.2 OS survey points marked on base photograph

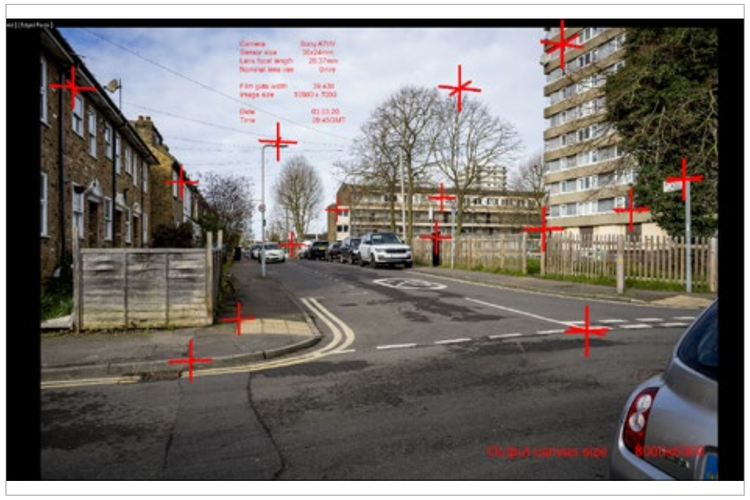
3.3 View 18 camera location

Eastings	519415.322m
Northings	168951.025m
AOD height	16.905m
Approx distance to centre of site	266m
Approx bearing from North	287°

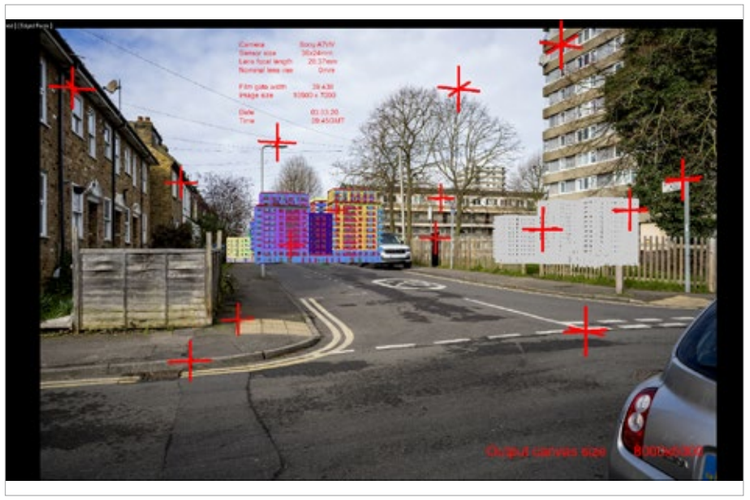


3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line



3.6 Screen grab of camera matching to survey data



3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

View 19

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
1901	519180.645	168798.241	40.276
1902	519169.459	168705.593	16.574
1903	519180.539	168726.919	17.384
1904	519175.944	168722.688	18.132
1905	519172.238	168788.876	28.123
1906	519143.148	169138.210	55.989
1907	519187.659	168705.867	15.927
1908	519192.699	168744.196	19.790
1909	519199.578	168734.365	19.939
1910	519212.547	168734.346	18.067
1911	519199.464	168714.804	16.706
1912	519190.212	168686.942	15.303
1913	519148.629	168754.665	18.973
1914	519189.257	169067.672	59.701
1915	519184.303	168795.332	19.938

3.2 OS survey points marked on base photograph

3.3 View 19 camera location

Eastings	519187.791m
Northings	168680.242m
AOD height	15.284m
Approx distance to centre of site	392m
Approx bearing from North	356°

3.4 Screen grab of camera location in 3DS Max software

3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data

3.7 Screen grab of model matched to photograph

3.8 Final camera matched photomontage

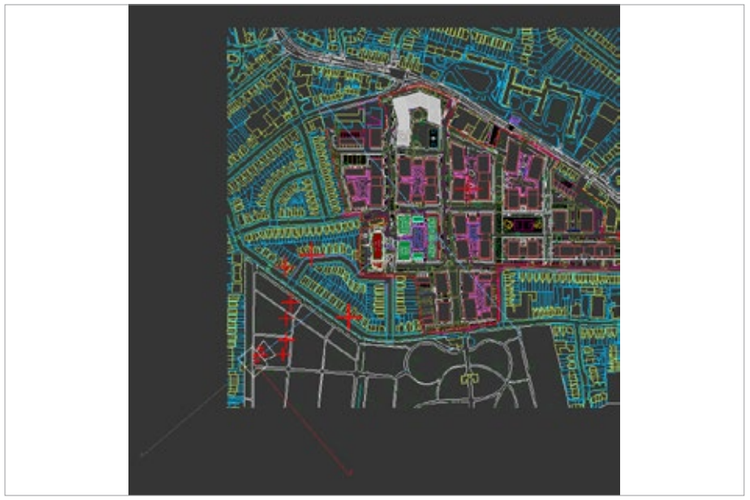
View 20a

3.1 Ordinance survey co-ordinates			
Point Ref	Eastings	Northings	AOD height
20A01	518861.299	168822.530	10.681
20A02	518862.396	168820.900	10.505
20A03	518861.430	168824.782	10.720
20A04	518861.427	168829.783	10.718
20A05	518868.371	168840.860	12.129
20A06	518872.109	168831.071	11.390
20A07	518866.662	168822.410	11.194
20A08	518902.503	168831.486	11.985
20A09	518907.617	168852.090	12.196
20A10	518907.234	168884.335	11.591
20A11	518913.845	168908.290	11.246
20A12	518904.930	168962.251	14.613
20A13	518945.325	168980.179	15.096
20A14	519179.233	169078.192	57.424
20A15	519000.511	168887.161	17.255

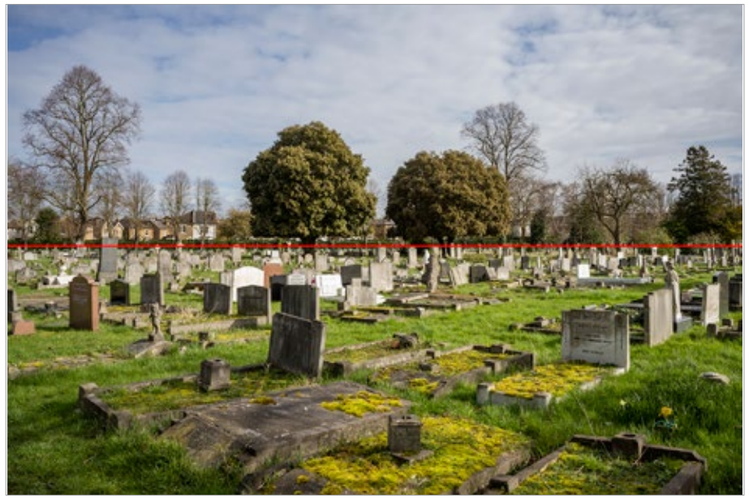
3.2 OS survey points marked on base photograph

3.3 View 20a camera location

Eastings	518858.259m
Northings	168820.144m
AOD height	10.246m
Approx distance to centre of site	407m
Approx bearing from North	50°

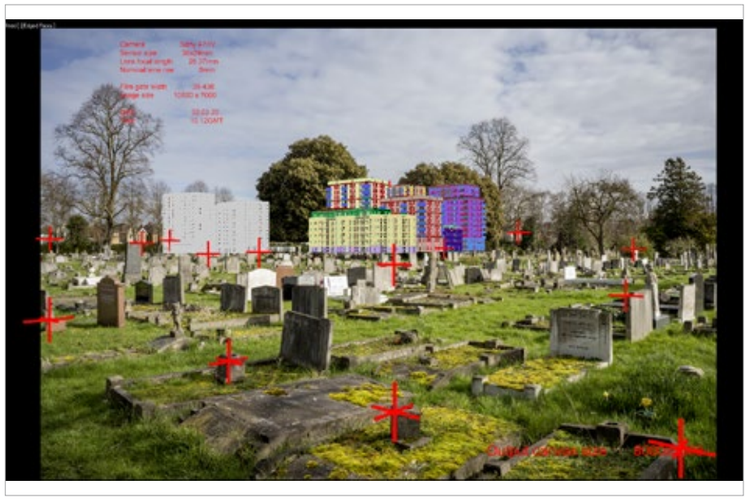


3.4 Screen grab of camera location in 3DS Max software

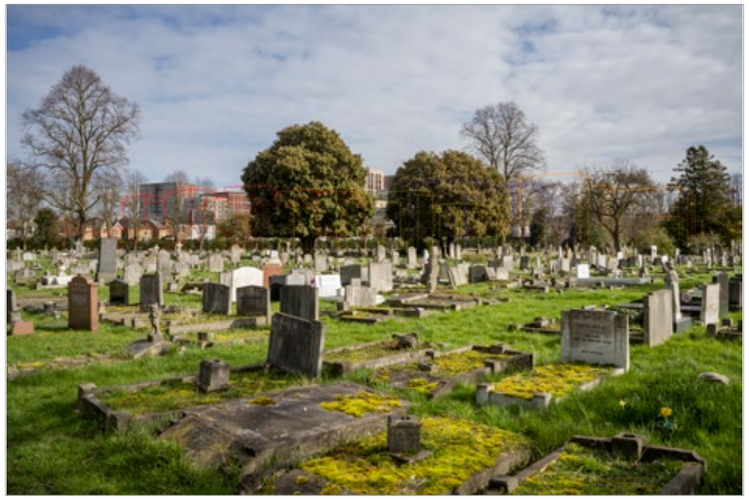


3.5 Screen grab of calculated horizon line

3.6 Screen grab of camera matching to survey data



3.7 Screen grab of model matched to photograph



3.8 Final camera matched photomontage