

11.0 References

References

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- Ref 6: Natural England (2011): London's Natural Signatures: The London Landscape Framework, Natural England.
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- Ref 12: Bridget Cherry and Nikolaus Pevsner (2002): The Buildings of England, London 2: South, Yale University Press.
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- Ref 14: Royal Borough of Greenwich (2016): Charlton Village Conservation Area Draft Character Appraisal. Royal Borough of Greenwich.

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Appendix A - Non Technical Methodology for AVRs

Overview

The process of generating verified views (also referred to as accurate visual representations (AVR) for the Proposed Development of Charlton Riverside was carried out by Troopers Hill.

Troopers Hill 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 Troopers Hill. 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

Troopers Hill visited the site on the 20th July, 5th August 2016, 24th June, and 28th June 2016 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 a 24mm (73.7° horizontal field of view) and 17mm lens (93.3° horizontal field of view) was used.

Equipment Used for Photography

- Canon 5D SR digital SLR camera (35mm)
- Canon TSe 17mm f/4L
- Canon TSe 24mm f/3.5L II
- 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
- Hilti nails

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

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

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

The Verification Process

The collected survey control 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 2015.

SOURCES OF AVR DATA

SUPPLIED DATA

Asset	Description	Supplier	Reference	Date	Comment
Verification (survey) Data	Text file	AG Surveys	2793	11.08.16	Imported using proprietary script. Complete point file and surveyors notes available on request. Origin Shift -541146 E -221026 N
Planning Drawings	Autocad DWG	Simpson Haugh & Partners	BUCC001_PL_001 Site Plan.dwg	15.11.16	Proposed plans and elevations.
Development Model	Autocad 3D Model	Simpson Haugh & Partners	10046-Z0-G200-3.dwg	17.11.16	Proposed development model.
Materials Reference	Design and Access Statement	Simpson Haugh & Partners	10046_DAS_DRAFT_161115_HIGHRES_01.pdf	17.11.16	
Landscape Proposals	Landscape Design and Access Statement	Cameo & Partners	C0034 DAS [REV 01]- Hi res.pdf	18.11.16	Reference for landscape proposals across site.

GENERATED DATA (BY TROOPERS HILL)

Asset	Description	Reference	Date	Comment
3D Model	Scene file generated in 3Ds Max Design 2015 to combine supplied survey and modelled data.	RCKWL_CH_GRN_C231_AVR3_118.11.16.max	30.11.16	

PHOTOGRAPHY DATA

VP	Description	Type	Method	Easting	Northing	Height	Tripod Height	Camera	Lens	Focal Length	Rise	HFOV	Date	Time	Post Processing
1	Gallions Road/ Bugsby's Way	AVR3	Verified	540875.52	178713.35	5.52	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+6mm	73.7°	20/07/2016	14:54	Curves and sharpening
2	Atlas Gardens	AVR3	Verified	541038.36	178890.78	3.49	1.60	Canon 5D SR	TS-E17mm f/4L	17mm	+6mm	93.3°	20/07/2016	15:30	Curves and sharpening
3	Derrick Gardens	AVR3	Verified	541025.38	178991.56	3.82	1.60	Canon 5D SR	TS-E17mm f/4L	17mm	+5mm	93.3°	20/07/2016	15:48	Curves and sharpening
4	Woolwich Road roundabout	AVR3	Verified	541400.95	178599.88	5.17	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	20/07/2016	13:56	Curves and sharpening
5	Herringham Road	AVR3	Verified	541392.76	179190.86	2.57	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	20/07/2016	12:35	Curves and sharpening
6	Stone Lake Industrial Park	AVR3	Verified	541415.95	178897.1	1.35	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	05/08/2016	08:28	Curves and sharpening
7	Anchor and Hope Lane (spur road)	AVR3	Verified	541052.5	179108.43	5.34	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	20/07/2016	16:41	Curves and sharpening
8	Charlton Church Lane/ Woolwich Road	AVR3	Verified	541112.27	178491.3	4.15	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	24/06/2016	09:57	Curves and sharpening
9	Charlton Train Station	AVR3	Verified	541184.12	178376.75	11.25	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	24/06/2016	08:55	Curves and sharpening
10	Charlton Church Lane/ Nadine Street	AVR1	Verified	541269.96	178154.36	24.26	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+3mm	73.7°	24/06/2016	15:44	Curves and sharpening
11	Warren Court/ Church Lane	AVR1	Verified	541355.35	178000.09	35.65	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+3mm	73.7°	28/06/2016	11:21	Curves and sharpening
12	Harvey Gardens/ The Valley	AVR1	Verified	541433.87	178461.7	4.15	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	24/06/2016	14:41	Curves and sharpening
13	Charlton Lane/ Fairfield Grove / Thorntree Road	AVR1	Verified	541757.19	178095.83	38.7	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+3mm	73.7°	24/06/2016	14:04	Curves and sharpening
14	Victoria Way/ Eastcombe Avenue	AVR1	Verified	540801.32	178076.83	23.36	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+3mm	73.7°	28/06/2016	12:07	Curves and sharpening
15	Maryon Park outlook	AVR1	Verified	541816.66	178741.48	35.75	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	0mm	73.7°	24/06/2016	12:22	Curves and sharpening
16	Woolwich Church Street/ Woolwich Road roundabout	AVR1	Verified	542142.15	179067.8	4.86	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+2mm	73.7°	24/06/2016	10:57	Curves and sharpening
17	Westfield Street	AVR1	Verified	542075.48	179114.58	2.3	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+4mm	73.7°	24/06/2016	11:26	Curves and sharpening
18	Thames Barrier Park	AVR1	Verified	541392.34	179814.3	5.67	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	0mm	73.7°	28/06/2016	09:53	Curves and sharpening
19	Lyle Park	AVR1	Verified	540488.67	179740.57	5.16	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+2mm	73.7°	28/06/2016	16:02	Curves and sharpening
20	Riverside walkway, adjacent to Greenwich Peninsula Emirates Air Line Station	AVR1	Verified	539572.25	179868.78	5.46	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	+2mm	73.7°	28/06/2016	14:38	Curves and sharpening
21	Coxmount Road	AVR1	Verified	541755	178438.93	17.44	1.60	Canon 5D SR	TS-E24mm f/3.5L II	24mm	0mm	73.7°	24/06/2016	13:33	Curves and sharpening

CONTROL POINT DATA

Point #	Eastings	Northings	Height (AOD)
100	540982.67	178751.18	8.89
101	540889	178710.3	8.11
102	540889.27	178710.2	8.78
103	540917.3	178711.25	19.91
104	540967.12	178713.69	19.35
105	541000.58	178712.22	18.9
106	540903.18	178712.97	5.65
107	540905.41	178720.48	15.27
108	540954.85	178747.78	14.7
109	540940	178758.22	18.32
110	540921.3	178751.28	19.32
111	540917.91	178765.67	19.78
112	540816.33	178771.35	17.19
113	540894.68	178735.63	8.35
114	540920.51	178749.22	8.87
115	541097.92	178865.26	20.44
116	540889.5	178715.46	8.11
117	541408.42	178284.4	52.69
200	541078.54	178860	4.6
201	541043.56	178852.19	8.23
202	541050.1	178847.16	12.83
203	541064.61	178848.86	12.32
204	541049.73	178853.72	5.92
205	541056.62	178854.94	5.92
206	541065.98	178853.67	6.34
207	541083.25	178857.08	6.47
208	541080.57	178873.58	6.4
209	541078.95	178882.6	6.32
210	541077.38	178891.81	8.33
211	541050.48	178892.14	11
212	541070.28	178885.98	11.34
213	541081.99	178887.21	13.55
214	541083.38	178878.19	13.51
215	541085.04	178869.24	13.57
216	541080.43	178852.46	13.58
217	541071.48	178850.85	13.48
300	541062.78	178960.96	5.77
301	541028.41	178972.7	5.87
302	541028.89	178972.94	9.63
303	541044.67	178906.2	10.53
304	541043.09	178953.36	12.43
305	541032.67	178977.59	12.27
306	541047.55	178955.93	13.51
307	541051.11	178958.88	5.89
308	541059.2	178960.31	5.92
309	541060.89	178981.89	4.56
310	541043.54	178981.21	5.01
311	541060.88	178981.88	6.54
312	541058.98	178992.25	8.12
313	541030.63	178989.02	3.77
314	541027.56	178984.05	3.74
400	541293.87	178674.44	9.8
401	541398.57	178806.4	8
402	541394.8	178805.06	6
403	541392.18	178803.43	5.99
404	541389.13	178800.84	5.99
405	541375.38	178804.43	7.89
406	541341.73	178613.37	18.46
407	541370.28	178631.15	18.56
408	541388.25	178615.58	17.28
409	541291.61	178656.26	15.13
410	541288.3	178666.03	15.12
411	541283.21	178681.4	15.14
412	541388.23	178615.36	6.89
413	541347.13	178696.29	10.78
414	541389.32	178626.96	8.12
415	541384.52	178629.89	5.7
416	541388.09	178614.92	17.43
500	541351.97	179122.78	4.03
501	541348.78	179170.85	7.36
502	541351.04	179159.58	7.36
503	541351.26	179158.84	8.81
504	541258.33	179088.47	18.54
505	541352.4	178139.36	9.05
506	541382.3	179178.02	8.36
507	541386.08	179184.52	5.15
508	541366.93	179127.88	6.4
509	541331.22	178979.82	13.51
510	541373.44	179077.64	9.43
511	541378.1	179071.52	12.99
512	541392.22	179177.29	5.22
513	541393.28	179177.77	4.38
514	541393.12	179177.63	3.82
515	541388.74	179185.01	2.61
516	541387.88	179182.79	2.53
600	541296.84	178899.12	11.16
601	541406.29	178900.88	2.87
602	541369.69	178921.23	9.34
603	541365.1	178913.06	3.67
604	541206.91	178943.1	15.75
605	541197.87	178906.32	12.02
606	541289.08	178898.76	12.74
607	541297.3	178887.72	13.6
608	541301.88	178871.58	13.8
609	541265.26	178819.96	17.75
610	541290.54	178822.8	12.74
611	541380.9	178874.36	11.87
612	541351.19	178850.12	8.93
613	541411.45	178898.69	2.22
614	541314.4	178814.94	11.65
615	541377.52	178815.02	3.25
700	541068.55	179060.86	11.29
701	541040.03	179067.84	10.1
702	541042.74	179059.83	10.98
703	541048.9	179049.41	12.25
704	541056.52	179018.83	14.43
705	541058.29	179058.26	12.54
706	541053.55	179091.94	10.11
707	541053.22	179090.39	6.89
708	541059.13	179084.46	7.4
709	541081.66	179065.03	8.19
710	541073.59	179062.5	10.09
711	541085.7	179067.21	12.33
712	541071.66	179087.57	9.88
713	541069.55	179094	9.88
714	541068.65	179096.71	10.05
715	541061.06	179099.76	5.23
716	541055.97	179095.57	5.1
717	541068.41	179087.5	5.39
800	541106.32	178523.5	3.51
801	541137.51	178547.07	10.37
802	541129.82	178554.14	10.81
803	541132.38	178545.69	12.23
804	541123.63	178574.47	12.2
805	541118.02	178541.14	15.14
806	541104.78	178581.6	12.67
807	541084.83	178634.25	7.29
808	540889.52	178914.98	10.14
809	541025.47	178737.31	6.05
810	541093.27	178521.26	5.66
811	541080.57	178557.98	10.72
812	541092.65	178519.8	14.91
813	541103.19	178508.07	15.84
814	541106.8	178502.35	7.53
815	541103.02	178501.74	3.93
816	541102.11	178501.02	7.2
817	541126.16	178586.25	14.76
818	540949.91	178982.4	23.26
819	541151.16	178434.1	11.01
820	541186.52	178394.9	12.4
821	541185.9	178428.28	17.25
822	541174.83	178443.83	16.35
823	541175.9	178411.13	18.38
824	541163.08	178413.58	18.07
825	541178.68	178386.72	19.35
826	541185.1	178469.84	15.88
827	541180.91	178400.03	11.85
828	541046.36	178663.91	5.32
829	541160.92	178412.28	12.54
830	541178.08	178384.76	14.61
831	54		

AVR Type Description

To assist agreement between all parties prior to Verified View preparation, the following classification (of Accurate Visual Representation (AVR)) types are presented to broadly define the purpose of a Verified View in terms of the visual properties it presents. This classification is a cumulative scale in which each level incorporates all the properties of the previous and is based on those defined in the Supplementary Planning Guidance document - London View Management Framework, Appendix D.

AVR (Level) 0 Location and size of proposal

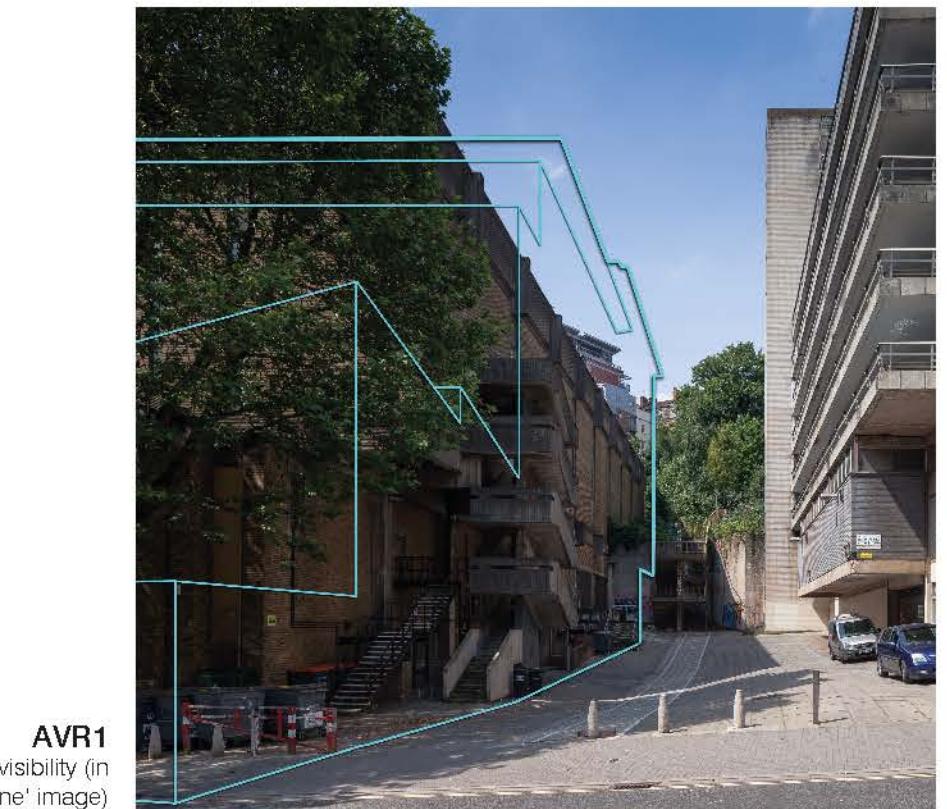
AVR (Level) 1 Location, size and degree of visibility of proposal

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)

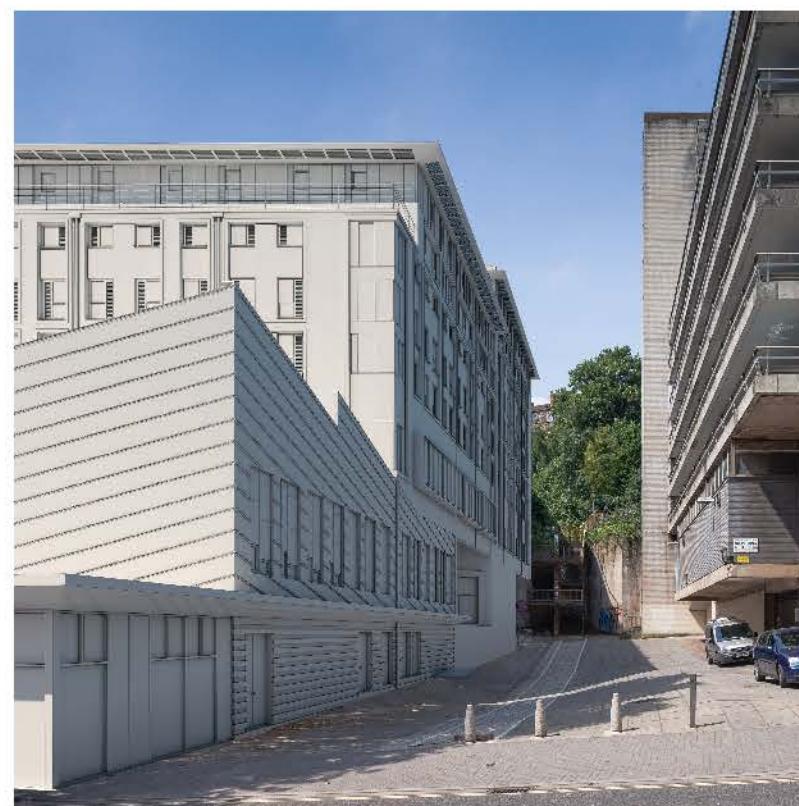


AVR1

Confirming degree of visibility (in this case as a '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)







