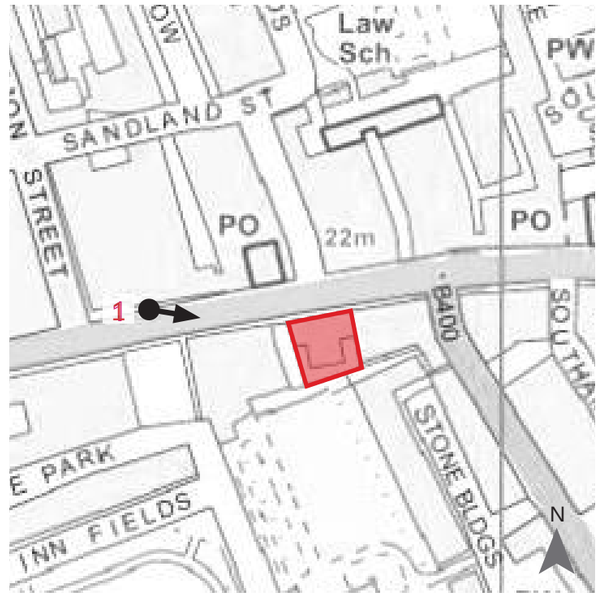
PHOTOVIEWPOINT 1 - EXISTING VIEW

Existing View.



Viewpoint Location

PHOTOVIEWPOINT 1 - PROPOSED VIEW

Proposed View.

PHOTOVIEWPOINT 1 - PROPOSED VIEW SHOWING CUMULATIVE EFFECTS

Proposed View + Cumulative (294-295 High Holborn)

PHOTOVIEWPOINT 2 - EXISTING VIEW

Existing View.

Viewpoint Location

PHOTOVIEWPOINT 2 - PROPOSED VIEW

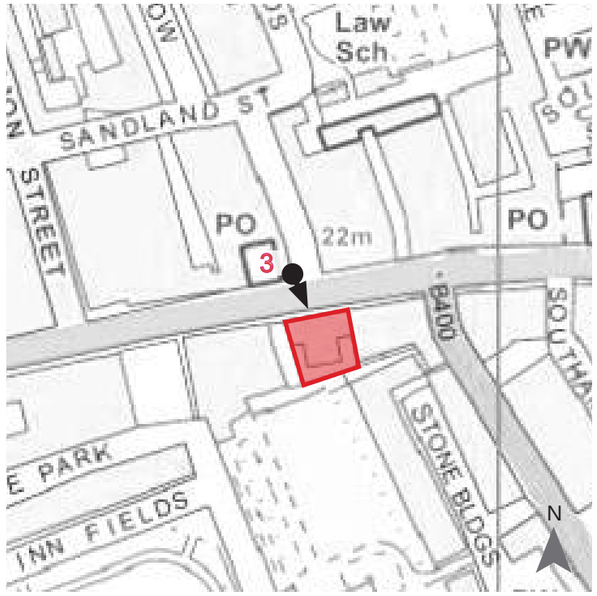
Proposed View.

PHOTOVIEWPOINT 2 - PROPOSED VIEW SHOWING CUMULATIVE EFFECTS

Proposed View + Cumulative (294-295 High Holborn)

PHOTOVIEWPOINT 3 - EXISTING VIEW

Existing View.



Viewpoint Location

PHOTOVIEWPOINT 3 - PROPOSED VIEW

Proposed View.

PHOTOVIEWPOINT 3 - PROPOSED VIEW SHOWING CUMULATIVE EFFECTS

Proposed View + Cumulative (294-295 High Holborn)

PHOTOVIEWPOINT 4 - EXISTING VIEW

Existing View.

Viewpoint Location

PHOTOVIEWPOINT 4 - PROPOSED VIEW

Proposed View.

APPENDIX 1: AVR METHODOLOGY

Overview
The process of generating verified views (also referred to as accurate visual representations (AVR)) for the Proposed Development at 296-302 Lincoln House, High Holborn, 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 imported and aligned 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 9th December 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 17mm and 24mm lenses were used.

Equipment Used for Photography
- Canon 5D mkII digital SLR camera (35mm)
- Canon TS-E 17mm f/4L
- Canon TS-E 24mm f/3.5L
- Tripod indexed pan head
- 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
- Leica 1200 series GPS Smartnet enabled dual receiver (GPS and GLONASS)
- Leica Total Station (1201 or TS16) 1’ accuracy with 1000m reflectorless laser

Field Survey Methodology
- Camera locations: where possible, the camera position will be used as a setup point for the total station, enabling the re-creation of the view as seen in the imagery and reducing the risk of wrong interpretation of detail. Connection is usually via GPS Smartnet derived control points in OSGB datum and grid. 3-4 control stations are used, to ensure long distance accuracies and to identify possible outliers.
- Reference points visible in the photography are measured with reflectorless means from the total station. If longdistance views have suitable detail too far from the camera station, further setups are used closer to the detail. Common visible detail points are observed from different setup points to check and increase accuracy achieved.
- Accuracies of camera positions are to the low centimetre, while accuracies of surveyed detail will vary due to setup geometry and distance, but will be usually in the low centimetre but always below 30 centimetre (if views are over 5km).

Data Processing and Delivery
Data is processed using industry standard software (Leica GeoOffice and TerraModel) to create points listings. A3 verification plots or digital photos are marked up with the surveyed points to aid identification. All points are to OSGB36 grid and datum, to allow the use of common Ordnance Survey products and industry standard site surveys.

The Proposed Development
Preconstruct imported a 3D model of the proposed development as supplied by the project architect. The model was subsequently aligned to the OSGB36 co-ordinate system.

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.

For the AVR3 representation a lighting simulation system was created in the 3D model environment to match the theoretical sunlight conditions at the time of day of the photograph.

Using a photo editing package [Adobe Photoshop] the photography, survey reference point render and proposed development render were aligned.

** 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 2: SOURCES OF AVR DATA

SUPPLIED DATA

Asset	Description	Supplier	Reference	Date	Comment
Verification (survey) Data	Text file	AG surveys	Q2834	14/12/16	Imported using proprietary script. Complete point file and surveyors notes available on request. Origin Shift -530875 E, -181550 N
Development Model	Autodesk FBX Exported from Revit	EPR Architects	10323-EPR-00-XX-M3-A-Central_barry-3DView-_3D_ PRECONSTRUCTVP1WITHSITE_(Use_For_AVR)	14/12/16	Amends and additions made to model under instruction from Architect.
Survey Drawings of Existing Building	DWG	Supplied by EPR Architects. Drawn by Plowman Craven	33494E-01A.dwg (Section) 33494F-02A-GF.dwg (GF Plan) 33494RoL-01A Footprint.dwg (Site plan)	14/12/16	Drawings used to Align 'Development Model' to OSGB36 co-ordinate system
Consented Scheme Model	Autodesk FBX Exported from Revit	EPR Architects	10323-EPR-00-XX-M3-A-Central	27/11/17	Used to show consented adjacent scheme to illustrate cumulative effects
Consented Scheme Drawings	DWG	Supplied by EPR Architects. Drawn by Independent Architects Ltd	294-295 High Holborn Elevations-05-05-2017 294-295 High Holborn Plans-05-05-2017	27/11/17	

GENERATED DATA (BY PRECONSTRUCT)

Asset	Description	Reference	Date	Comment
3D Model (Scene) .max	Scene files generated in 3Ds Max Design 2017 to combine supplied survey and model data.	4345_EPR_LincolnHouse_AVR\ MaxRender	14/12/16	
3D Model (Scene) .max		Xref BUILD Neighbouring	04/12/17	

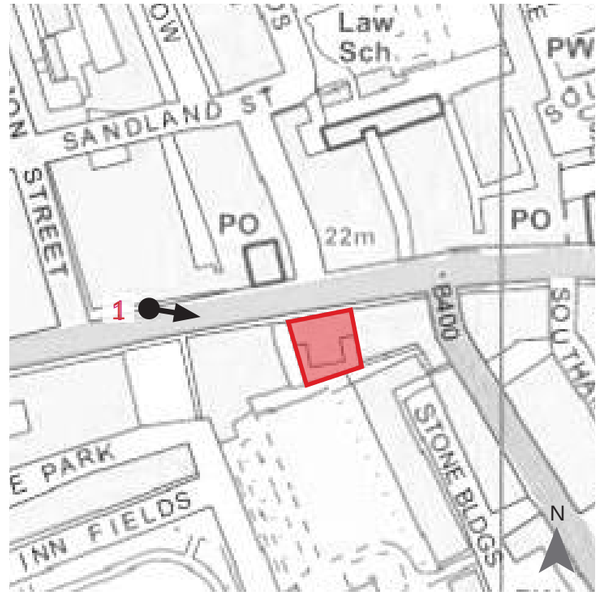
PHOTOGRAPHY DATA

VP	Description	Type	Method	Easting	Northing	Height (Ground)	Tripod Height	Camera	Lens	Focal Length	Shift	Orientation	HFOV	Date	Time
1	High Holborn - view looking east	AVR3	Verified	530829.12	181595.90	23.68m	1.65m	Canon 5D mkII	TS-E 24mm f/3.5L	24mm	7mm	Landscape	73.4°	09/12/2016	12:24
2	High Holborn - view looking west	AVR3	Verified	530963.13	181619.49	21.87m	1.65m	Canon 5D mkII	TS-E 24mm f/3.5L	24mm	7mm	Landscape	73.4°	09/12/2016	12:06
3	High Holborn / Brownlow Street	AVR3	Verified	530899.18	181612.70	22.69m	1.65m	Canon 5D mkII	TS-E 17mm f/4L	17mm	9mm	Landscape	93.3°	09/12/2016	10:49
4	Brownlow Street	AVR3	Verified	530893.75	181644.10	23.24m	1.65m	Canon 5D mkII	TS-E 17mm f/4L	17mm	8mm	Portrait	70.4°	09/12/2016	11:07

APPENDIX 3: AVR VERIFICATION DATA
PHOTOVIEWPOINT 1

VP	Description	Type	Method	Easting	Northing	Height (Ground)	Tripod Height	Camera	Lens	Focal Length	Shift	Orientation	HFOV	Date	Time
1	High Holborn - view looking east	AVR3	Verified	530829.12	181595.90	23.68m	1.65m	Canon 5D mkII	TS-E 24mm f/3.5L	24mm	7mm	Landscape	73.4°	09/12/2016	12:24

Survey Reference Points

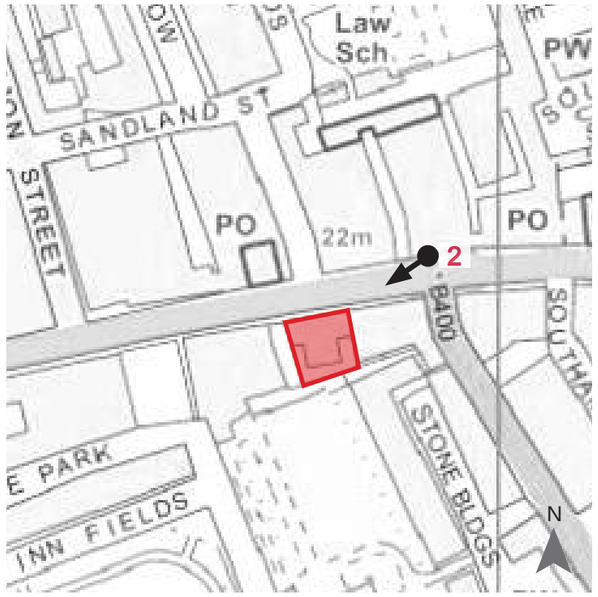


Tripod Location

PHOTOVIEWPOINT 2

VP	Description	Type	Method	Easting	Northing	Height (Ground)	Tripod Height	Camera	Lens	Focal Length	Shift	Orientation	HFOV	Date	Time
2	High Holborn - view looking west	AVR3	Verified	530963.13	181619.49	21.87m	1.65m	Canon 5D mkII	TS-E 24mm f/3.5L	24mm	7mm	Landscape	73.4°	09/12/2016	12:06

Survey Reference Points

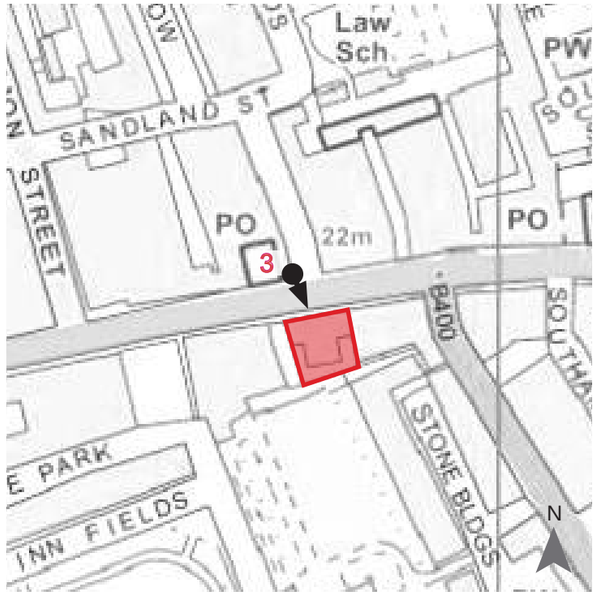



Tripod Location

PHOTOVIEWPOINT 3

VP	Description	Type	Method	Easting	Northing	Height (Ground)	Tripod Height	Camera	Lens	Focal Length	Shift	Orientation	HFOV	Date	Time
3	High Holborn / Brownlow Street	AVR3	Verified	530899.18	181612.70	22.69m	1.65m	Canon 5D mkII	TS-E 17mm f/4L	17mm	9mm	Landscape	93.3°	09/12/2016	10:49

Survey Reference Points

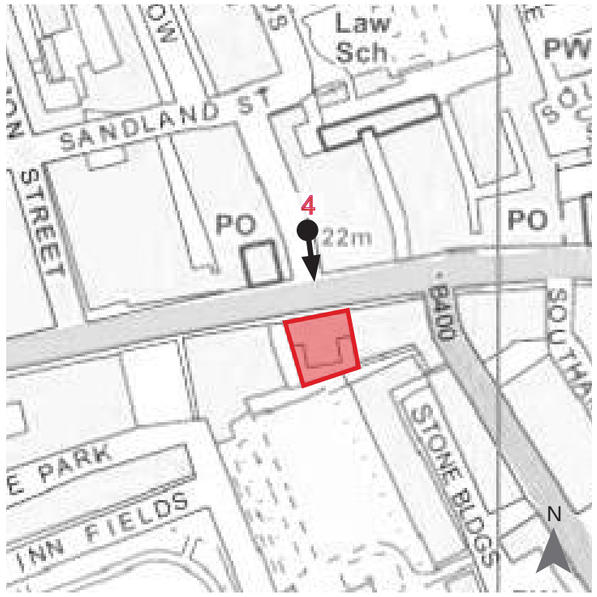


Tripod Location

PHOTOVIEWPOINT 4

VP	Description	Type	Method	Easting	Northing	Height (Ground)	Tripod Height	Camera	Lens	Focal Length	Shift	Orientation	HFOV	Date	Time
4	Brownlow Street	AVR3	Verified	530893.75	181644.10	23.24m	1.65m	Canon 5D mkII	TS-E 17mm f/4L	17mm	8mm	Portrait	70.4°	09/12/2016	11:07

Survey Reference Points



Tripod Location

TABLE OF SURVEY REFERENCE POINTS

Point ID	X (Easting)	Y (Northing)	Height AOD (m)
VP01	530829.12	181595.90	23.68
VP02	530963.13	181619.49	21.87
VP03	530899.18	181612.70	22.69
VP04	530893.75	181644.10	23.24
100	530887.93	181587.68	46.67
101	530863.93	181583.27	50.61
102	530847.77	181580.66	41.36
103	530847.77	181580.66	32.01
104	530846.17	181580.80	27.30
105	530873.59	181585.34	26.58
106	530849.88	181598.09	31.51
107	530849.42	181599.57	26.24
108	530888.64	181608.18	30.07
109	531027.40	181628.33	44.16
110	531193.92	18162714	51.64
200	530910.34	181591.62	45.68
201	530910.32	181591.59	29.30
202	530937.40	181596.35	46.09
203	530949.20	181598.43	26.33
204	530878.49	181585.84	50.63
205	530832.02	181577.79	51.87
206	530950.70	181619.97	26.51
207	530948.07	181619.76	30.11
300	530904.93	181590.68	26.44
301	530929.55	181593.63	48.88
302	530927.45	181594.62	26.62
303	530925.65	181594.20	35.82
304	530920.11	181593.20	42.34
305	530920.11	181593.18	32.51
306	530910.29	181591.47	35.80
307	530899.28	181589.55	35.80
308	530889.48	181587.84	32.54
309	530889.49	181587.84	42.36
310	530888.35	181586.11	49.97
311	530886.09	181587.33	27.21
312	530895.95	181592.54	25.14
313	530913.90	181592.19	23.93
400	530909.28	181589.77	48.97
401	530908.96	181591.38	26.03
402	530903.01	181590.24	26.03
403	530902.83	181586.69	52.18
404	530903.45	181613.99	42.84
405	530901.69	181627.48	43.66
406	530910.71	181628.39	48.51
407	530910.04	181629.09	38.97
408	530898.15	181639.12	26.33
409	530901.60	181625.32	29.06
410	530899.23	181611.20	27.60
411	530898.69	181612.04	28.46
412	530899.58	181610.84	36.87
413	530897.61	181615.95	40.92
414	530895.20	181623.76	40.94
415	530893.46	181630.49	40.11
416	530891.71	181635.29	30.06
417	530891.63	181635.48	27.09
418	530892.65	181632.64	23.64

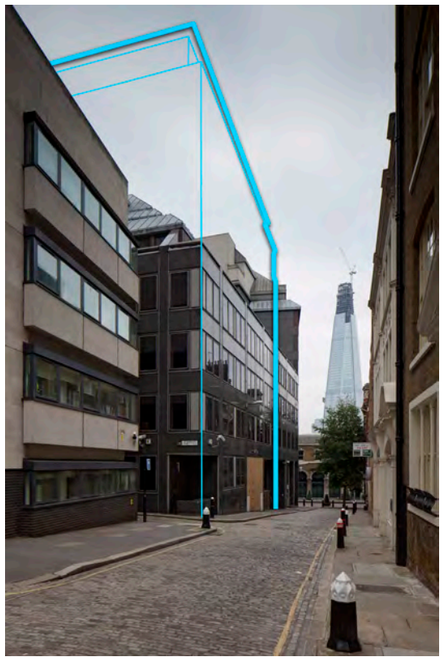
APPENDIX 4: AVR TYPE DESCRIPTION

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.

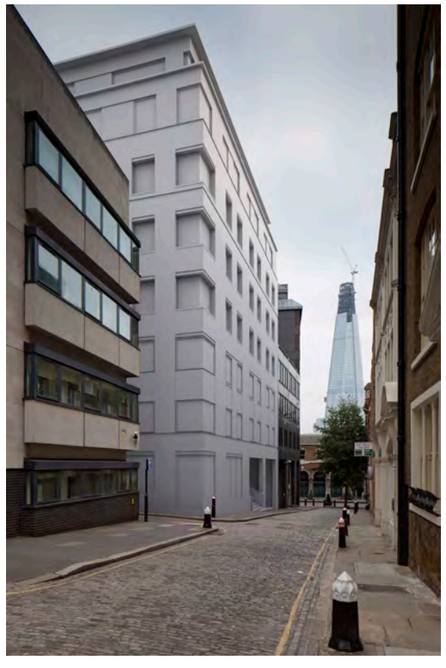
AVR (Level) 0 Location and size of proposal
AVR (Level) 1 Location, size and degree of visibility of proposal
AVR (Level) 2 As level 1 + description of architectural form
AVR (Level) 3 As level 2 + use of materials

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

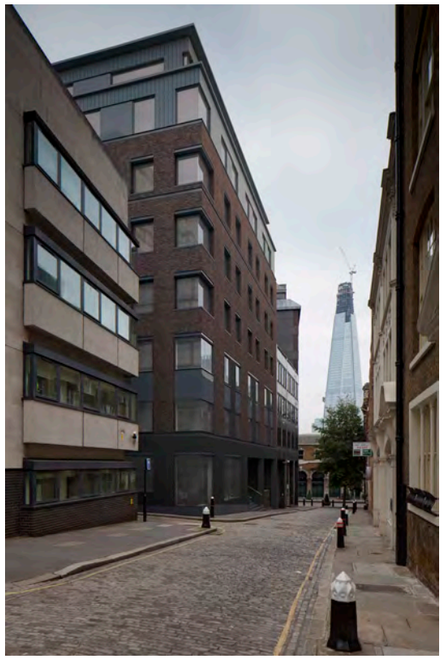
AVR1
Confirming degree of visibility (in this case as an occluded 'wireline' image)



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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