Daylight / Sunlight Report

Linton House, Highgate Road, Kentish Town

DATE: 26th April 2013

Prepared By:

Savills (UK) Ltd
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LINTON HOUSE, HIGHGATE ROAD – DAYLIGHT AND SUNLIGHT

1.0 INTRODUCTION

Savills (UK) Ltd have been instructed to provide a Daylight and Sunlight report in respect of a detailed planning application for the extension of Linton House, Highgate Road in Kentish Town. This report considers the effect of the latest April 2013 scheme proposals prepared by Clive Sall Architecture.

This report, and the associated technical appendices, assess the daylight and sunlight amenity and overshadowing to the proposed scheme and the relevant neighbouring units by reference to BRE Guidance Note 209: Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (the BRE guidelines) 2011.

Drawings illustrating of the existing buildings on site (drawings SV0294/01-02) and the scheme proposal (drawings SVO294/03-04) are attached at appendix 1. Appendix 2 contains window maps illustrating the window references used in respect of our technical analysis which should be referred to when interpreting the results spreadsheets at Appendix 3.

2.0 SOURCES OF INFORMATION

Proposed Scheme

Clive Sall Architecture

Proposed Scheme Drawings
152 Series Drawings
Received April 2013

Site Survey

Mobile CAD

Savills Commercial Limited

Site Photography

Ordnance Survey

Digital Superplan Data

3.0 BRIEF DESCRIPTION OF THE SITE

The existing Linton House is a large office building arranged over ground plus four upper storeys. There is also a basement level. The proposals extend the existing building with the provision of a new

residential storey at roof level. The proposals step back from the existing parapet line to mitigate the effects upon neighbouring properties.

Linton House is neighboured to the north west, south east and west by commercial premises including the Highgate Business centre and Highgate studies. The only residential properties neighbouring the site are situated across Highgate Road to the north east between 44 and 58 Highgate Road. These properties comprise a mix of more historic terraced and semi detached properties and more recent flatted units. All of the residential units include elements of habitable accommodation at lower ground or basement level.

4.0 STANDARD SURVEY LIMITATIONS

In producing our report we have utilised the information set out at 2.0 above including the use of measured survey information where available.

In addition to Standard Survey Limitations the following assumptions also apply.

- Best estimates were made in establishing building use (residential or commercial) and room uses; generally these were made from external observations and recourse to planning records where available.

- When floor plans of surrounding properties were not available, room depths have been assumed from external observations. Where no indicators of room depth were available a standard of 14ft was used in respect of residential properties.

5.0 DAYLIGHT AND SUNLIGHT (NEIGHBOURING PROPERTIES)

The impact of a proposal in respect of daylight and sunlight amenity should be assessed by reference to the BRE guidance report: Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice (2011). Explanatory notes providing details of the various assessment methodologies utilised under the guidelines can be found in appendix 4 of this report.

It is important to remember that the BRE Guide states that 'the advice given here is not mandatory and should not be seen as an instrument of planning policy'. Furthermore, daylight criteria should be 'interpreted flexibly because natural lighting is only one of many factors'. Based upon these statements it is important to apply the guidance and target levels sensibly and flexibly taking into account the context of the site.

Similarly it is also important to understand that the design or positioning of a neighbouring property may not allow for good daylight/sunlight regardless any development on a neighbouring site. In any event the guidelines acknowledge that the need for good daylighting should be weighed against other site specific considerations and that, in some cases, different target values than those suggested in the guidelines should be applied.

The initial assessment methodology in respect of daylighting set out in the BRE guidelines is that of Vertical Sky Component (VSC). This assessment considers sky visibility at the window face of neighbouring properties and expresses this as a percentage. The guidelines recommend that the windows of neighbouring properties enjoy total VSC of at least 27% following construction of a proposal or that the VSC level is reduced to no less than 0.8 times its former value (i.e. a 20% reduction) by a proposal.

Further to the VSC test the BRE guide goes on to consider the no-sky line within properties. This No-Sky Line (also known as the no-sky contour or daylight distribution) test considers the area of a room at desk height that can see a small proportion of sky. The BRE guidelines do not set absolute target levels for no sky-line but suggest that the No-Sky Contour should not be reduced by more than 20% when comparing an existing situation to that following construction of a planning proposal.

An appendix to the BRE guidelines contains a further daylight assessment method known as Average Dayilght Factor (ADF) which is also codified in the British Standard for daylighting. The ADF seeks to provide a ratio of internal to external illuminance. The ADF test takes into account a number of variable including VSC, window transmittance, surface reflectance, room area and room use and may therefore be particularly representative of resultant light levels. The BRE guidelines / British Standard sets the following recommended ADF levels for habitable room uses:

- 1% Bedroom
- 1.5% Living Room
- 2.0% Kitchens

Only those windows facing within 90 degrees of due south can receive direct sunlight in the UK and therefore windows outside of this orientation are not relevant for analysis. The BRE guidelines states that the main windows of living rooms and conservatories are relevant for analysis and that the impact of a proposed scheme should be assessed by reference to the Annual Probable Sunlight Hours (APSH) methodology. APSH provides an indication of sunlight enjoyed by a window as a percentage of the total potential maximum sunlighting. The guidelines suggest that, following a development, windows should receive at least 25% total APSH with 5% of this total being enjoyed in the winter months. The guidelines also allow for a 20% reduction in sunlighting when compared to the former value.

Daylight and Sunlight Detail

Planning policy seeks to protect daylight and sunlight amenity principally to residential uses. As in most Local Authorities Daylight and Sunlight is assessed by reference to BRE Guidance Note 209: Site Layout Planning for Daylight and Sunlight 2011.

The following neighbouring residential properties were found to be sufficiently proximate to the site and relevant for assessment:

- 44-52 (Even) Highgate Road
- 54-58 Highgate Road

44-52 Highgate Road

These properties are situated across Highgate Road to the north east of the site. These properties are historic houses arranged over basement, ground and two upper storeys. 52 Highgate Road also has a third storey mansard level.

The results of our technical analysis show that the scheme has little adverse effect on the Vertical Sky Component (VSC) to the windows serving these properties. The scheme sets back from the existing parapet line and all VSC levels remain well within 0.8 times their former value (i.e. a 20% reduction) indeed the majority of changes do not exceed c.5%-10%. This is wholly compliant with the BRE targets with such losses being considered unnoticeable.

The windows of the Highgate Road properties which face the site are within 90 degrees of due south. Main living room windows are therefore relevant for APSH sunlight assessment under the BRE guide. For completeness we have analysed all the windows of these properties that face the site.

As with the diffuse daylight results there is little adverse impact to direct sunlight under the proposal. The majority of windows serving 44-52 Highgate Road maintain APSH sunlight levels in excess of the absolute BRE target of 25% APSH with at least 5% during the winter months. A small number of basement rooms fall below the 25% target but do not experience a change of more than 4% total APSH. This is considered unnoticeable and is wholly compliant with the BRE targets.

54-58 Highgate Road

54-58 Highgate Road is a more recent block of flatted units also situated across Highgate Road to the north east of the site. The property has windows at lower ground, ground and to two upper storeys.

The results of our technical analysis again show little change to diffuse daylight with Vertical Sky Component (VSC) remaining well within 0.8 times its former value and being fully compliant with the BRE targets.

APSH sunlight availability has also been tested and all windows are found to retain APSH levels in excess of the BRE targets of 25% APSH with at least 5% APSH enjoyed during the winter months.

6.0 CONCLUSION

This practice has considered the potential effects upon daylight and sunlight amenity of the Clive Sall Architecture proposals for Linton House, Highgate Road.

The only residential properties facing the site are situated to the north east across Highgate Road. The results of our technical analysis show the effect upon neighbouring residential properties to generally be minimal. In all cases the primary Vertical Sky Component daylighting test is adhered to with levels remaining at or within 0.8 times there former value. In addition the direct sunlight has been assessed to the south facing windows and again was found to be fully compliant with the APSH targets set out in the BRE guide.

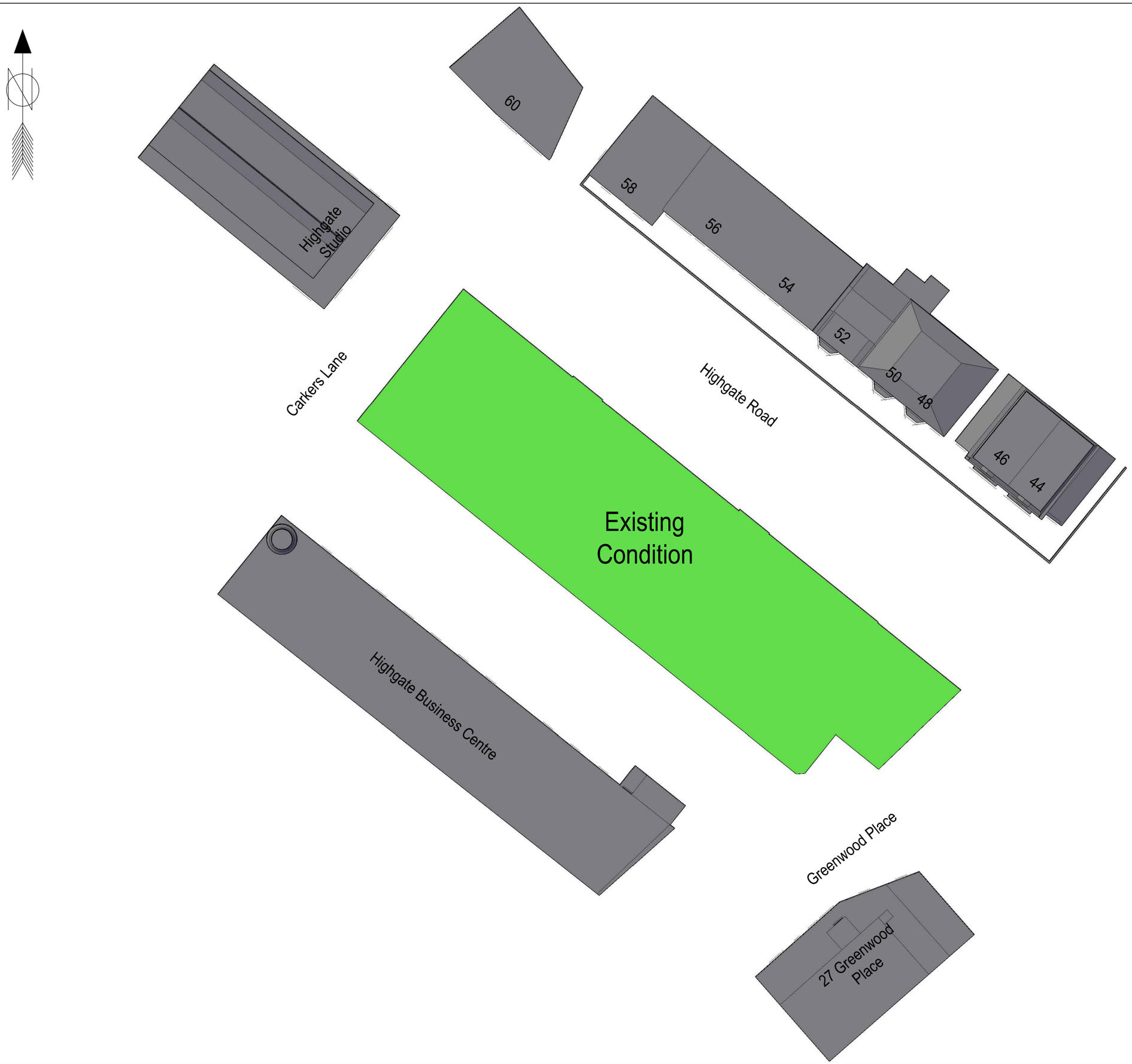
Overall the application proposal result in no significant daylight and sunlight impacts upon neighbouring residential properties. The effect of the proposal fully accords with the BRE guide and complies with the relevant planning policy.

For and on behalf of Savills (UK) Ltd

Jonathan Lonergan
Director

APPENDIX 1

Existing / Proposed Drawings



Sources of Information

Mobile CAD
Linton House - Elevations March 2013 (REV A).dwg
Linton House 3D dwg.dwg
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Linton House_recoered.dwg
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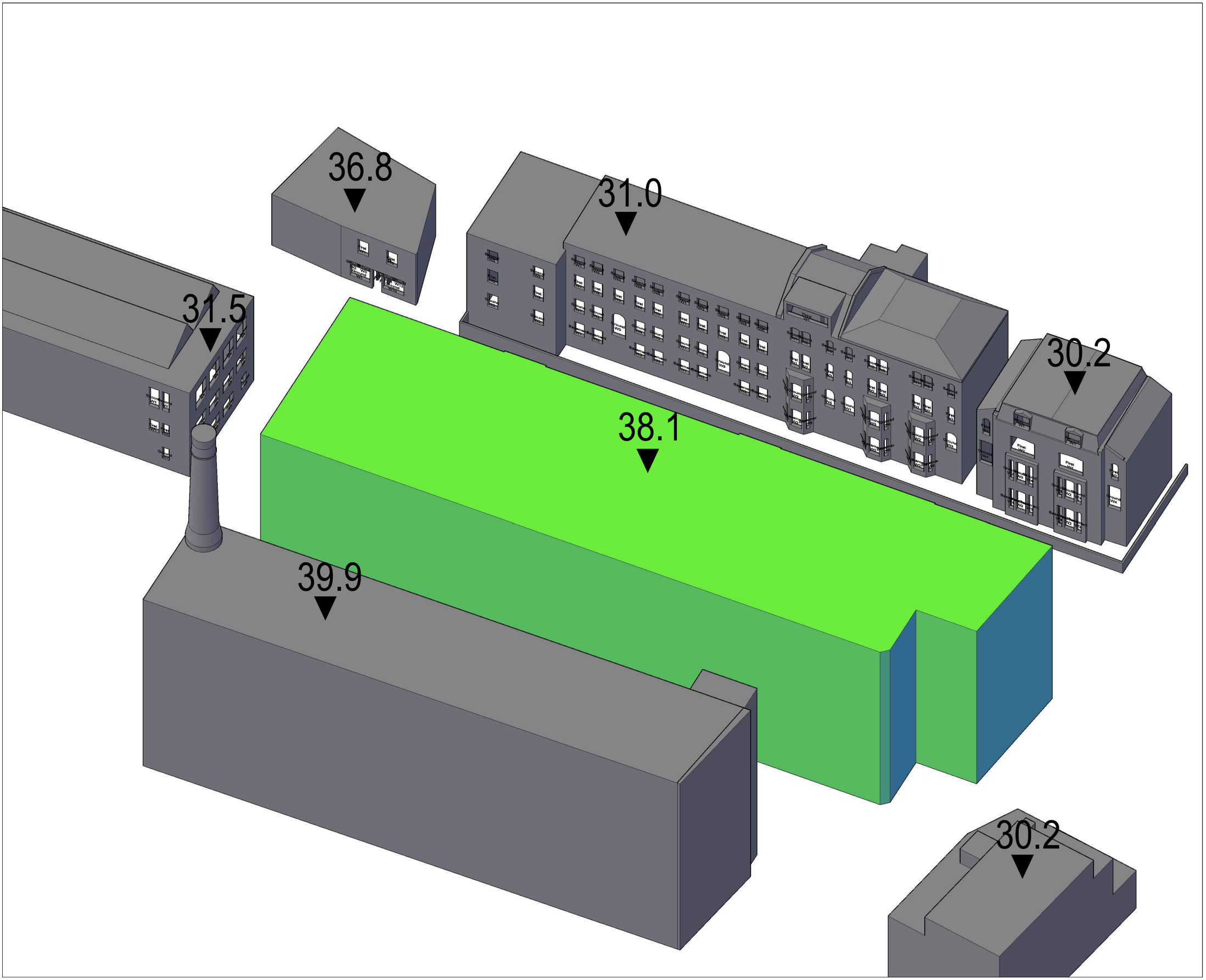
Project: Linton House

Drawing: Plan view of existing condition

Date	Scale
16/04/2013	NTS
Drawn By: PS	Checked By: IT

Drawing No.	Rev.
SV0294	01

01



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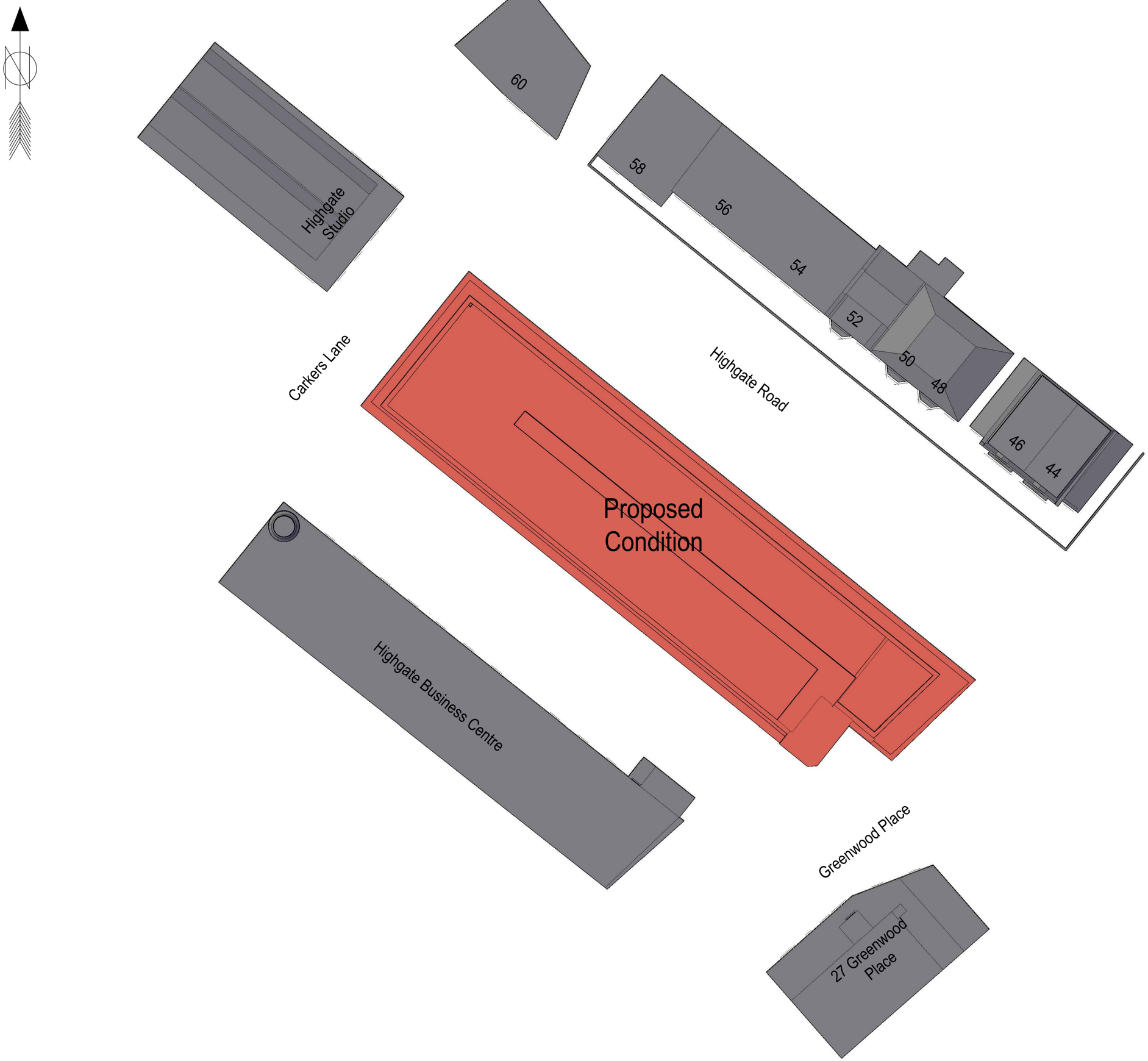
Drawing: 3D view of existing condition

Date	Scale	
16/04/2013	NTS	
Drawn By: PS	Checked By: IT	
Drawing No.		Rev.
SV0294	01	01



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Drawing No.	Rev.
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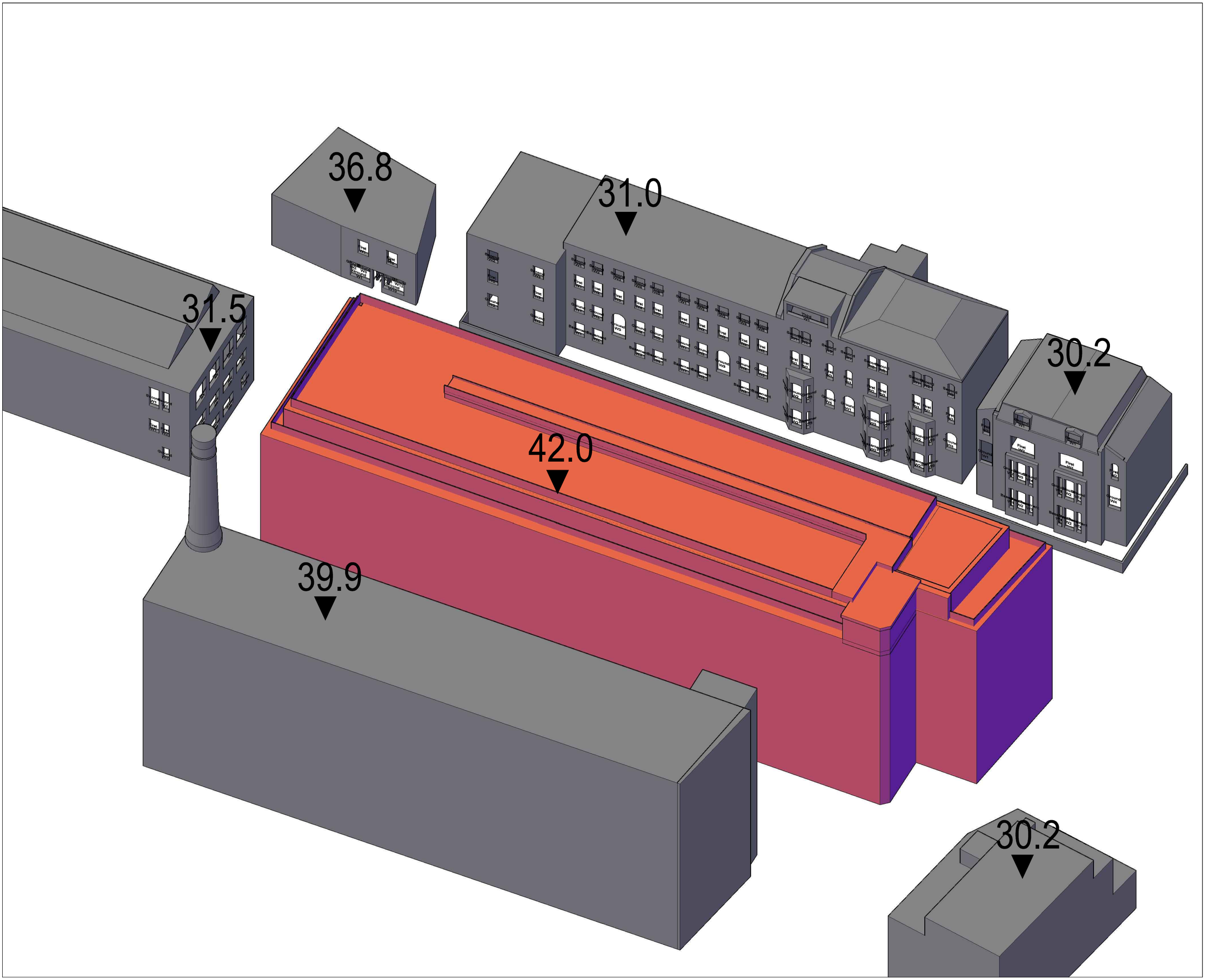

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Project	Linton House
Drawing	3D view of proposed condition

Date	16/04/2013	Scale	NTS
Drawn By	PS	Checked By	IT
Drawing No.			Rev.
SV0294	04		01

APPENDIX 2

Window Maps

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Project: Linton House

Drawing: Window Map
58 - 60 Highgate Road

Date	16/04/2013	Scale	NTS
Drawn By	PS	Checked By	IT
Drawing No.			Rev.
SV0294	WM01		01

Sources of Information

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Project: Linton House

Drawing: Window Map
48 - 56 Highgate Road

Date	Scale
16/04/2013	NTS
Drawn By	**Checked By**
PS	IT

Drawing No.		Rev.
SV0294	WM02	01

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Project: Linton House

Drawing: Window Map
44 - 46 Highgate Road

Date	Scale
16/04/2013	NTS
Drawn By: PS	Checked By: IT

Drawing No.		Rev.
SV0294	WM03	01

APPENDIX 3

Daylight / Sunlight Results

Address	Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Window	Room Use	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
58 Highgate Road															
Ground	R1	W1	22.70	22.69	0.00	0.01	R1	W1	Unknown	0.92		0.92			
		W2	22.28	21.32	0.96	4.32		W2		0.90	1.83	0.88	1.80	0.03	1.48
Ground	R2	W3	20.79	19.67	1.12	5.40	R2	W3	Unknown	0.99	0.99	0.95	0.95	0.04	3.71
First	R1	W1	34.26	34.25	0.00	0.01	R1	W1	Unknown	1.25		1.25			
		W2	25.78	24.34	1.44	5.59		W2		1.00	2.25	0.96	2.21	0.04	1.80
First	R2	W3	24.30	22.60	1.70	6.99	R2	W3	Unknown	1.10	1.10	1.05	1.05	0.05	4.97
Second	R1	W1	38.38	38.38	0.00	0.01	R1	W1-L	Unknown	0.03		0.03			
								W1-U		0.90		0.90			
		W2	28.98	27.07	1.91	6.60		W2-L		0.02		0.02			
								W2-U		0.71	1.66	0.67	1.62	0.04	2.25
Second	R2	W3	27.67	25.40	2.27	8.19	R2	W3-L	Unknown	0.02		0.02			
								W3-U		0.79	0.82	0.74	0.76	0.05	6.22
56 Highgate Road															
Basement	R1	W1	12.95	11.92	1.03	7.95	R1	W1	Unknown	0.97	0.97	0.92	0.92	0.05	5.14
Basement	R2	W2	16.90	15.84	1.07	6.31	R2	W2	Unknown	1.36	1.36	1.31	1.31	0.06	4.09
Basement	R3	W3	18.28	17.15	1.14	6.22	R3	W3	Unknown	1.45	1.45	1.39	1.39	0.06	4.10
Basement	R4	W4	18.39	17.22	1.16	6.32	R4	W4	Unknown	1.31	1.31	1.26	1.26	0.06	4.20
Ground	R1	W1	15.47	13.98	1.48	9.60	R1	W1	Unknown	1.08	1.08	1.01	1.01	0.07	6.26
Ground	R2	W2	19.85	18.31	1.54	7.77	R2	W2	Unknown	1.51	1.51	1.43	1.43	0.08	5.18
Ground	R3	W3	20.33	18.86	1.48	7.27	R3	W3-L	Unknown	0.14		0.13			
								W3-U		2.32	2.46	2.21	2.34	0.12	4.90
Ground	R4	W4	21.39	19.74	1.64	7.69	R4	W4	Unknown	1.60	1.60	1.52	1.52	0.08	5.22
Ground	R5	W5	21.47	19.79	1.68	7.82	R5	W5	Unknown	1.45	1.45	1.37	1.37	0.08	5.35
First	R1	W1	18.92	16.87	2.05	10.84	R1	W1	Unknown	1.23	1.23	1.15	1.15	0.09	7.19
First	R2	W2	23.84	21.71	2.13	8.94	R2	W2	Unknown	1.71	1.71	1.60	1.60	0.11	6.22
First	R3	W3	25.04	22.83	2.21	8.81	R3	W3	Unknown	1.58	1.58	1.48	1.48	0.10	6.25
First	R4	W4	25.25	22.98	2.27	9.00	R4	W4	Unknown	1.80	1.80	1.68	1.68	0.12	6.41
First	R5	W5	25.27	22.95	2.32	9.18	R5	W5	Unknown	1.63	1.63	1.52	1.52	0.11	6.56
Second	R1	W1	26.02	23.48	2.54	9.75	R1	W1	Unknown	1.23	1.23	1.14	1.14	0.09	7.03
Second	R2	W2	28.81	26.17	2.64	9.15	R2	W2	Unknown	1.57	1.57	1.46	1.46	0.11	6.91
Second	R3	W3	28.99	26.27	2.73	9.41	R3	W3	Unknown	1.41	1.41	1.31	1.31	0.10	7.15
Second	R4	W4	28.91	26.10	2.81	9.71	R4	W4	Unknown	1.59	1.59	1.47	1.47	0.12	7.37
Second	R5	W5	28.83	25.97	2.87	9.94	R5	W5	Unknown	1.44	1.44	1.33	1.33	0.11	7.52

Address	Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Window	Room Use	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
54 Highgate Road															
Basement	R1	W1	18.36	17.17	1.19	6.47	R1	W1	Unknown	1.31	1.31	1.25	1.25	0.06	4.33
Basement	R2	W2	18.36	17.16	1.20	6.55	R2	W2	Unknown	1.44	1.44	1.37	1.37	0.06	4.40
Basement	R3	W3	18.20	16.97	1.22	6.72	R3	W3	Unknown	1.47	1.47	1.41	1.41	0.07	4.46
Basement	R4	W4	17.93	16.70	1.23	6.83	R4	W4	Unknown	1.43	1.43	1.37	1.37	0.06	4.47
Ground	R1	W1	21.45	19.73	1.72	8.02	R1	W1	Unknown	1.44	1.44	1.36	1.36	0.08	5.51
Ground	R2	W2	21.44	19.70	1.74	8.12	R2	W2	Unknown	1.59	1.59	1.50	1.50	0.09	5.59
Ground	R3	W3	20.69	19.06	1.63	7.87	R3	W3-L	Unknown	0.14		0.13			
								W3-U		2.34	2.48	2.21	2.35	0.13	5.36
Ground	R4	W4	21.34	19.57	1.77	8.28	R4	W4	Unknown	1.63	1.63	1.54	1.54	0.09	5.68
Ground	R5	W5	21.17	19.40	1.77	8.37	R5	W5	Unknown	1.58	1.58	1.49	1.49	0.09	5.69
First	R1	W1	25.21	22.84	2.37	9.41	R1	W1	Unknown	1.62	1.62	1.51	1.51	0.11	6.74
First	R2	W2	25.18	22.78	2.40	9.53	R2	W2	Unknown	1.78	1.78	1.66	1.66	0.12	6.83
First	R3	W3	25.15	22.73	2.42	9.63	R3	W3	Unknown	1.65	1.65	1.53	1.53	0.11	6.89
First	R4	W4	25.11	22.67	2.43	9.70	R4	W4	Unknown	1.83	1.83	1.70	1.70	0.13	6.93
First	R5	W5	25.11	22.67	2.44	9.72	R5	W5	Unknown	1.77	1.77	1.65	1.65	0.12	6.95
Second	R1	W1	28.73	25.80	2.93	10.20	R1	W1	Unknown	1.43	1.43	1.32	1.32	0.11	7.71
Second	R2	W2	28.68	25.71	2.97	10.34	R2	W2	Unknown	1.58	1.58	1.45	1.45	0.12	7.81
Second	R3	W3	28.64	25.64	2.99	10.46	R3	W3	Unknown	1.46	1.46	1.34	1.34	0.11	7.88
Second	R4	W4	28.59	25.58	3.01	10.54	R4	W4	Unknown	1.61	1.61	1.49	1.49	0.13	7.93
Second	R5	W5	28.58	25.56	3.02	10.56	R5	W5	Unknown	1.57	1.57	1.44	1.44	0.12	7.95
52 Highgate Road															
Basement	R1	W1	16.94	16.18	0.77	4.52	R1	W1-L	Unknown	0.01		0.01			
								W1-U		0.23		0.23			
		W2	17.12	16.08	1.04	6.07		W2-L		0.04		0.04			
								W2-U		0.67		0.65			
		W3	17.82	17.11	0.71	4.00		W3-L		0.02		0.01			
								W3-U		0.24	1.22	0.23	1.17	0.04	3.42
Ground	R1	W1	19.77	18.59	1.18	5.98	R1	W1-L	Unknown	0.02		0.02			
								W1-U		0.25		0.24			
		W2	20.39	18.76	1.64	8.04		W2-L		0.05		0.05			
								W2-U		0.76		0.71			
		W3	20.64	19.52	1.12	5.43		W3-L		0.02		0.02			
								W3-U		0.26	1.35	0.25	1.29	0.06	4.64
Ground	R2	W4	20.30	18.65	1.65	8.14	R2	W4-L	Unknown	0.09		0.08			
								W4-U		1.13	1.21	1.06	1.14	0.07	5.63

Address	Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Window	Room Use	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
First	R1	W1	24.96	22.55	2.41	9.67	R1	W1-L	Unknown	0.04		0.04			
								W1-U		0.77		0.71			
		W2	24.99	22.58	2.41	9.64		W2-L		0.04		0.04			
								W2-U		0.77	1.61	0.71	1.49	0.11	7.06
First	R2	W3	25.03	22.64	2.39	9.54	R2	W3-L	Unknown	0.05		0.04			
								W3-U		0.93	0.98	0.86	0.91	0.07	7.20
Second	R1	W1	29.05	25.97	3.09	10.63	R1	W1-L	Unknown	0.05		0.05			
								W1-U		0.73		0.67			
		W2	29.07	25.99	3.08	10.60		W2-L		0.05		0.05			
								W2-U		0.73	1.57	0.67	1.44	0.13	8.23
Second	R2	W3	29.08	26.02	3.06	10.52	R2	W3-L	Unknown	0.07		0.06			
								W3-U		0.91	0.98	0.84	0.90	0.08	8.34
Third	R1	W1	33.09	29.52	3.57	10.80	R1	W1	Unknown	3.86	3.86	3.52	3.52	0.34	8.78
50 Highgate Road															
Basement	R1	W1	16.50	15.68	0.83	5.01	R1	W1-L	Unknown	0.02		0.02			
								W1-U		0.25		0.24			
		W2	17.58	16.59	0.99	5.63		W2-L		0.05		0.05			
								W2-U		0.74		0.71			
		W3	17.64	17.04	0.60	3.41		W3-L		0.02		0.02			
								W3-U		0.25	1.32	0.25	1.28	0.04	3.25
Ground	R1	W1	20.22	18.58	1.63	8.08	R1	W1-L	Unknown	0.10		0.10			
								W1-U		1.30	1.41	1.23	1.33	0.08	5.57
Ground	R2	W2	19.61	18.34	1.27	6.46	R2	W2-L	Unknown	0.02		0.02			
								W2-U		0.27		0.26			
		W3	20.75	19.17	1.57	7.58		W3-L		0.05		0.05			
								W3-U		0.83		0.78			
		W4	20.47	19.51	0.96	4.70		W4-L		0.02		0.02			
								W4-U		0.28	1.47	0.27	1.40	0.07	4.44
First	R1	W1	25.07	22.71	2.36	9.41	R1	W1-L	Unknown	0.05		0.05			
								W1-U		0.94	0.99	0.87	0.92	0.07	7.12
First	R2	W2	25.09	22.77	2.31	9.23	R2	W2-L	Unknown	0.05		0.05			
								W2-U		0.79		0.73			
		W3	25.12	22.83	2.30	9.14		W3-L		0.05		0.05			
								W3-U		0.79	1.67	0.73	1.56	0.11	6.77
Second	R1	W1	29.10	26.06	3.04	10.43	R1	W1-L	Unknown	0.07		0.07			
								W1-U		0.92	0.99	0.85	0.91	0.08	8.27
Second	R2	W2	29.08	26.10	2.98	10.25	R2	W2-L	Unknown	0.07		0.06			
								W2-U		0.74		0.68			
		W3	29.11	26.15	2.96	10.16		W3-L		0.07		0.06			
								W3-U		0.74	1.61	0.68	1.48	0.13	7.97
48 Highgate Road															
Basement	R1	W1	15.03	14.19	0.84	5.58	R1	W1-L	Unknown	0.01		0.01			
								W1-U		0.23		0.22			
		W2	18.15	17.20	0.94	5.20		W2-L		0.05		0.05			
								W2-U		0.76		0.73			

Address	Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Window	Room Use	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
		W3	19.97	19.45	0.52	2.63		W3-L		0.02		0.02			
								W3-U		0.28	1.35	0.27	1.31	0.04	3.05
Ground	R1	W1	18.39	17.11	1.29	7.00	R1	W1-L	Unknown	0.02		0.02			
								W1-U		0.26		0.25			
		W2	21.21	19.71	1.50	7.09		W2-L		0.05		0.05			
								W2-U		0.84		0.80			
		W3	22.27	21.42	0.85	3.81		W3-L		0.02		0.02			
								W3-U		0.30	1.49	0.29	1.43	0.06	4.19
Ground	R2	W4	21.34	19.88	1.45	6.82	R2	W4-L	Unknown	0.12		0.12			
								W4-U		1.34	1.46	1.27	1.39	0.07	4.78
First	R1	W1	25.36	23.14	2.22	8.75	R1	W1-L	Unknown	0.05		0.05			
								W1-U		0.79		0.74			
		W2	25.44	23.24	2.19	8.62		W2-L		0.05		0.05			
								W2-U		0.80	1.69	0.75	1.58	0.11	6.43
First	R2	W3	25.67	23.55	2.12	8.26	R2	W3-L	Unknown	0.06		0.06			
								W3-U		0.95	1.01	0.89	0.95	0.06	6.29
Second	R1	W1	29.27	26.41	2.87	9.79	R1	W1-L	Unknown	0.07		0.06			
								W1-U		0.74		0.69			
		W2	29.35	26.51	2.83	9.65		W2-L		0.07		0.06			
								W2-U		0.74	1.62	0.69	1.50	0.12	7.62
Second	R2	W3	29.53	26.78	2.74	9.29	R2	W3-L	Unknown	0.08		0.08			
								W3-U		0.92	1.00	0.85	0.92	0.07	7.45
46 Highgate Road															
Basement	R1	W1	19.55	18.82	0.73	3.73	R1	W1-L	Unknown	0.01		0.01			
								W1-U		0.36		0.35			
		W2	19.83	19.12	0.71	3.58		W2-L		0.03		0.02			
								W2-U		0.82		0.80			
		W3	20.16	19.47	0.69	3.43		W3-L		0.01		0.01			
								W3-U		0.37	1.60	0.36	1.56	0.04	2.59
Ground	R1	W1	18.44	17.09	1.34	7.29	R1	W1-L	Unknown	0.12		0.12			
								W1-U		2.05	2.17	1.95	2.07	0.11	4.88
Ground	R2	W2	22.78	21.55	1.23	5.40	R2	W2-L	Unknown	0.01		0.01			
								W2-U		0.42		0.40			
		W3	23.03	21.83	1.20	5.21		W3-L		0.03		0.03			
								W3-U		0.95		0.92			
		W4	23.32	22.15	1.16	4.99		W4-L		0.01		0.01			
								W4-U		0.43	1.86	0.41	1.79	0.07	3.85
First	R1	W1	21.84	19.91	1.93	8.84	R1	W1-L	Unknown	0.06		0.05			
								W1-U		1.05	1.11	0.99	1.04	0.07	6.28
First	R2	W2	26.33	24.60	1.73	6.58	R2	W2-L	Unknown	0.12		0.11			
								W2-U		2.10	2.22	2.00	2.11	0.11	4.79
Second	R1	W1	29.73	27.46	2.27	7.64	R1	W1	Unknown	1.34	1.34	1.26	1.26	0.08	5.84
44 Highgate Road															
Basement	R1	W1	21.33	20.70	0.63	2.95	R1	W1-L	Unknown	0.01		0.01			
								W1-U		0.39		0.38			

Address	Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Window	Room Use	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
		W2	21.75	21.15	0.61	2.79		W2-L		0.03		0.03			
								W2-U		0.88		0.86			
		W3	22.24	21.65	0.58	2.63		W3-L		0.01		0.01			
								W3-U		0.40	1.72	0.39	1.68	0.03	2.02
Ground	R1	W1	24.33	23.28	1.06	4.35	R1	W1-L	Unknown	0.01		0.01			
								W1-U		0.45		0.43			
		W2	24.72	23.70	1.02	4.12		W2-L		0.03		0.03			
								W2-U		1.01		0.98			
		W3	25.15	24.17	0.98	3.90		W3-L		0.02		0.01			
								W3-U		0.46	1.98	0.45	1.92	0.06	3.07
Ground	R2	W4	24.37	23.64	0.72	2.97	R2	W4-L	Unknown	0.14		0.14			
								W4-U		2.38	2.52	2.33	2.47	0.05	1.96
First	R1	W1	27.76	26.30	1.46	5.27	R1	W1-L	Unknown	0.12		0.12			
								W1-U		2.21	2.33	2.12	2.24	0.09	3.96
First	R2	W2	26.91	25.86	1.05	3.91	R2	W2-L	Unknown	0.06		0.06			
								W2-U		1.21	1.28	1.18	1.24	0.03	2.68
Second	R1	W1	30.92	29.02	1.90	6.14	R1	W1	Unknown	1.39	1.39	1.33	1.33	0.07	4.81

				EXISTING		PROPOSED		% Loss	% Loss
Floor	Room	Window	Room Us	Total	Winter	Total	Winter	Total	Winter
58 Highgat									
Ground	R1	W2	Unknown	49	6	48	6	2.04	0.00
Ground	R2	W3	Unknown	49	8	47	8	4.08	0.00
First	R1	W2	Unknown	57	11	53	8	7.02	27.27
First	R2	W3	Unknown	57	12	52	9	8.77	25.00
Second	R1	W2	Unknown	62	14	59	11	4.84	21.43
Second	R2	W3	Unknown	63	15	59	12	6.35	20.00
56 Highgat									
Basement	R1	W1	Unknown	38	6	34	6	10.53	0.00
Basement	R2	W2	Unknown	42	6	38	6	9.52	0.00
Basement	R3	W3	Unknown	42	6	37	6	11.90	0.00
Basement	R4	W4	Unknown	44	6	39	6	11.36	0.00
Ground	R1	W1	Unknown	42	8	38	6	9.52	25.00
Ground	R2	W2	Unknown	46	8	42	6	8.70	25.00
Ground	R3	W3	Unknown	47	8	44	6	6.38	25.00
Ground	R4	W4	Unknown	48	8	44	6	8.33	25.00
Ground	R5	W5	Unknown	50	8	46	6	8.00	25.00
First	R1	W1	Unknown	48	12	45	10	6.25	16.67
First	R2	W2	Unknown	52	12	49	10	5.77	16.67
First	R3	W3	Unknown	56	12	53	10	5.36	16.67
First	R4	W4	Unknown	56	12	53	10	5.36	16.67
First	R5	W5	Unknown	57	12	53	10	7.02	16.67
Second	R1	W1	Unknown	58	17	52	12	10.34	29.41
Second	R2	W2	Unknown	62	17	55	12	11.29	29.41
Second	R3	W3	Unknown	64	17	57	12	10.94	29.41
Second	R4	W4	Unknown	65	17	58	12	10.77	29.41
Second	R5	W5	Unknown	65	17	58	12	10.77	29.41
54 Highgat									
Basement	R1	W1	Unknown	44	6	39	6	11.36	0.00
Basement	R2	W2	Unknown	43	5	38	5	11.63	0.00
Basement	R3	W3	Unknown	40	5	35	5	12.50	0.00
Basement	R4	W4	Unknown	37	4	32	4	13.51	0.00
Ground	R1	W1	Unknown	50	8	45	6	10.00	25.00
Ground	R2	W2	Unknown	50	8	45	6	10.00	25.00
Ground	R3	W3	Unknown	48	8	46	7	4.17	12.50
Ground	R4	W4	Unknown	51	9	46	7	9.80	22.22
Ground	R5	W5	Unknown	48	6	43	4	10.42	33.33
First	R1	W1	Unknown	58	12	54	10	6.90	16.67
First	R2	W2	Unknown	58	12	54	10	6.90	16.67
First	R3	W3	Unknown	58	12	54	10	6.90	16.67
First	R4	W4	Unknown	57	12	53	10	7.02	16.67
First	R5	W5	Unknown	57	12	53	10	7.02	16.67
Second	R1	W1	Unknown	65	17	58	12	10.77	29.41
Second	R2	W2	Unknown	65	17	58	12	10.77	29.41
Second	R3	W3	Unknown	65	17	58	12	10.77	29.41
Second	R4	W4	Unknown	64	17	57	12	10.94	29.41
Second	R5	W5	Unknown	64	17	58	13	9.38	23.53
52 Highgat									
Basement	R1	W1	Unknown	17	0	13	0	23.53	0.00
Basement	R1	W2	Unknown	37	7	34	7	8.11	0.00
Basement	R1	W3	Unknown	34	6	31	6	8.82	0.00
Ground	R1	W1	Unknown	25	1	22	0	12.00	100.00
Ground	R1	W2	Unknown	46	8	43	7	6.52	12.50
Ground	R1	W3	Unknown	42	8	40	7	4.76	12.50
Ground	R2	W4	Unknown	46	8	41	6	10.87	25.00
First	R1	W1	Unknown	56	12	52	10	7.14	16.67
First	R1	W2	Unknown	56	12	52	10	7.14	16.67
First	R2	W3	Unknown	57	13	52	11	8.77	15.38
Second	R1	W1	Unknown	64	17	60	13	6.25	23.53
Second	R1	W2	Unknown	64	17	60	13	6.25	23.53
Second	R2	W3	Unknown	64	17	59	13	7.81	23.53
Third	R1	W1	Unknown	72	23	65	18	9.72	21.74
50 Highgat									
Basement	R1	W1	Unknown	17	0	13	0	23.53	0.00
Basement	R1	W2	Unknown	38	8	35	8	7.89	0.00
Basement	R1	W3	Unknown	33	7	30	7	9.09	0.00
Ground	R1	W1	Unknown	40	7	35	5	12.50	28.57
Ground	R2	W2	Unknown	24	0	22	0	8.33	0.00
Ground	R2	W3	Unknown	47	9	44	8	6.38	11.11
Ground	R2	W4	Unknown	42	9	39	7	7.14	22.22
First	R1	W1	Unknown	57	13	52	11	8.77	15.38
First	R2	W2	Unknown	57	13	52	11	8.77	15.38
First	R2	W3	Unknown	57	13	52	11	8.77	15.38
Second	R1	W1	Unknown	64	17	59	13	7.81	23.53
Second	R2	W2	Unknown	64	17	58	13	9.38	23.53
Second	R2	W3	Unknown	64	17	58	13	9.38	23.53
48 Highgat									
Basement	R1	W1	Unknown	17	0	13	0	23.53	0.00
Basement	R1	W2	Unknown	39	10	36	10	7.69	0.00
Basement	R1	W3	Unknown	38	10	35	10	7.89	0.00

				EXISTING		PROPOSED		% Loss	% Loss
Floor	Room	Window	Room Us	Total	Winter	Total	Winter	Total	Winter
Ground	R1	W1	Unknown	25	1	21	0	16.00	100.00
Ground	R1	W2	Unknown	49	11	46	11	6.12	0.00
Ground	R1	W3	Unknown	45	12	43	11	4.44	8.33
Ground	R2	W4	Unknown	47	11	42	10	10.64	9.09
First	R1	W1	Unknown	58	14	53	12	8.62	14.29
First	R1	W2	Unknown	58	14	53	12	8.62	14.29
First	R2	W3	Unknown	57	13	52	11	8.77	15.38
Second	R1	W1	Unknown	65	18	60	15	7.69	16.67
Second	R1	W2	Unknown	65	18	60	15	7.69	16.67
Second	R2	W3	Unknown	65	18	60	15	7.69	16.67
46 Highgat									
Basement	R1	W1	Unknown	39	12	37	12	5.13	0.00
Basement	R1	W2	Unknown	39	12	37	12	5.13	0.00
Basement	R1	W3	Unknown	40	13	38	13	5.00	0.00
Ground	R1	W1	Unknown	32	6	27	5	15.63	16.67
Ground	R2	W2	Unknown	49	12	46	12	6.12	0.00
Ground	R2	W3	Unknown	49	12	46	12	6.12	0.00
Ground	R2	W4	Unknown	50	13	47	13	6.00	0.00
First	R1	W1	Unknown	40	8	36	7	10.00	12.50
First	R2	W2	Unknown	59	16	54	15	8.47	6.25
Second	R1	W1	Unknown	65	19	60	16	7.69	15.79
44 Highgat									
Basement	R1	W1	Unknown	45	17	43	17	4.44	0.00
Basement	R1	W2	Unknown	45	17	43	17	4.44	0.00
Basement	R1	W3	Unknown	44	17	43	17	2.27	0.00
Ground	R1	W1	Unknown	54	17	51	17	5.56	0.00
Ground	R1	W2	Unknown	54	17	51	17	5.56	0.00
Ground	R1	W3	Unknown	54	17	51	17	5.56	0.00
Ground	R2	W4	Unknown	54	20	54	20	0.00	0.00
First	R1	W1	Unknown	61	18	56	17	8.20	5.56
First	R2	W2	Unknown	59	20	58	20	1.69	0.00
Second	R1	W1	Unknown	67	20	63	19	5.97	5.00

APPENDIX 4

Savills Guidance Notes – Daylight and Sunlight

Daylight and Sunlight Guidance Notes

October 2011

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SAVILLS COMMERCIAL LIMITED

SAVILLS GUIDANCE NOTES - AN OVERVIEW OF DAYLIGHT AND SUNLIGHT

1.0 INTRODUCTION

1.1 Daylight and sunlight are amenities enjoyed by the inhabitants of a building. Whilst 'Rights to Light' have been acknowledged in England and Wales for hundreds of years, recently issues surrounding the need for adequate lighting has become more important to Local Authorities, particularly when assessing the design of a development and the impact it may have on surrounding properties.

1.2 Daylight and sunlight considerations are now commonly incorporated within Unitary Development Plans (UDP's) and Local Plans and play an important part in many planning applications. This is principally enforced via Environmental Impact Assessments (EIAs), which were introduced under the EIA Regulations 1999[1].

1.3 Clearly, where analysis is required, this must follow relevant guidance, most notably Building Research Establishment (BRE) Guidance Note 209 – '*Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'*.[2]

1.4 Broadly speaking, the aim of the BRE guide is to help to ensure that conditions in the local environment are considered. The aim of this is to secure sufficient sunlight and daylight for new developments and surrounding neighbours in order to promote good interior and exterior conditions. Needless to say, where daylight and sunlight is not considered or is not provided for in accordance with the relevant guidance, the Planning Application would be subject to potential failure and an extensive redesign process in order to rectify any shortfalls.

1.5 Although Local Authorities do have subtle differences in their application of daylight and sunlight criteria, BRE Guidance Note 209 provides the basis of most Local Authority requirements.

1.6 There are many factors that need to be taken into account when assessing daylight and sunlight in respect of a proposed development, therefore it is important that a holistic case specific approach is taken in order that all variables can be accounted for.

2.0 BRE GUIDANCE NOTE 209

2.1 The BRE Guide is often the main document used by Local Authorities when considering daylight and sunlight as part of the planning approval process. It provides the basis of what level of loss can be considered 'material' (i.e. at which point levels become unacceptable) - therefore assisting in the process of development control.

2.2 It is important to emphasise that whilst the BRE Guidelines are not mandatory and should not to be used as an instrument of planning policy, they have become an important 'guide' to planners when considering the design of a proposed development and the impact it will have upon the surrounding urban area.

2.3 The BRE Guide states:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument in planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design. In special circumstances the developer or Planning Authority

[1] Correct title being the 'Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999'.

[2] This document was first published in 1991 as a direct commission from the Department of the Environment. BRE 209 was most recently updated in October 2011. The document superseded the 1971 Department of the Environment *'Sunlight and daylight'* guidance document. BRE Guide 209 takes into account the British Standard Code of Practice for Daylighting; BS8206 Part 2 - a stand alone document which also provides guidance on this matter.

may wish to use different target values. For example, in an historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be un avoidable if new developments are to match the height and proportions of existing buildings".

2.4 BRE Guide 209 (2011) sets out a number of circumstances where it may be appropriate to consider alternative daylight and sunlight target levels which are particularly relevant in respect of dense city-centre development. These circumstances include:

- Where the provision of balconies to neighbouring properties makes them particularly sensitive to development of neighbouring properties it may be appropriate to analyse the position without these balconies in place.

- Where there is an extant planning consent for a site the effect of the permitted scheme may be used as a benchmark when considering future revised or alternative schemes.

- The target levels adopted should be consistent with the site context. Therefore where a higher degree of obstruction is evident to existing neighbouring properties similar targets may be considered in respect of new development.

- Where a neighbouring property has windows close to a joint site boundary it should not take more than its share of light and there should be parity between the constraints imposed on neighbouring sites. This may be assessed by considering a 'mirror-image' of the affected property as the baseline position for development of the neighbouring site.

2.5 The greatest need, under normal circumstances, for daylight and sunlight is to 'habitable' rooms of residential buildings. This is acknowledged within the guidelines, which place the most emphasis on these uses. Indeed Local Authorities are usually only concerned with the impact to 'habitable' rooms and this is often reflected in the drafting of local planning policy.

2.6 The BRE Guide considers both daylight and sunlight. These factors are discussed separately below.

3.0 DAYLIGHT

3.1 Daylight, or skylight, is the amount of light that enters a room and should not be confused with sunlight (discussed later) which is direct sunlight. Daylight can be used to determine the loss of light to a building as a result of a neighbouring development or the internal quality of daylight within a room.

3.2 Initially, when considering the impact to a nearby building the BRE Guide states that where a new development falls beneath a 25 degree angle, taken from the centre of a neighbouring window or a point 1.6m above ground level in relation to floor to ceiling windows, then there will be no material impact on daylight and no further analysis is required. If this is not the case then the BRE Guide recommends that further analysis is undertaken to establish if there will be adequate daylight or, to be precise, light from the sky.

3.3 The BRE Guide and other relevant supporting documentation suggests various methods for calculating daylight;

- Vertical Sky Component (VSC)
- No Sky Contours or Daylight Distribution (NSC/DD)
- Average Daylight Factor (ADF)

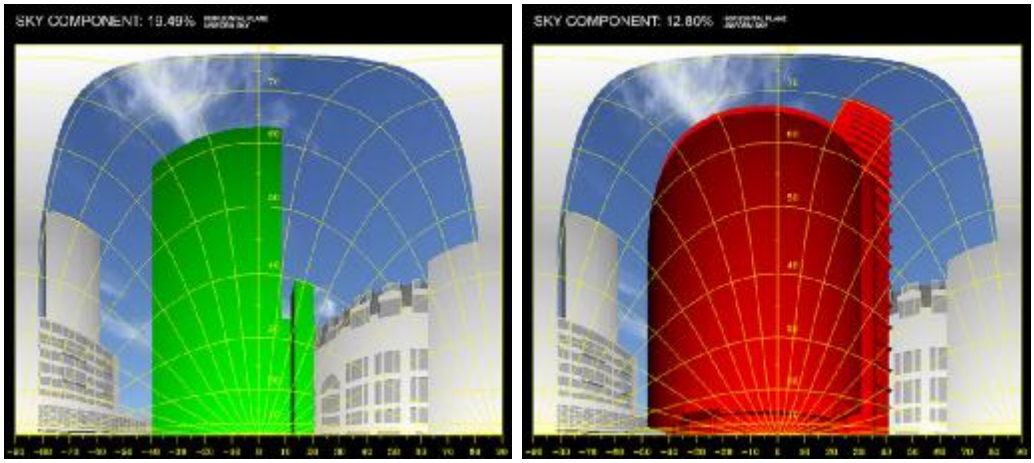
4.0 VERTICAL SKY COMPONENT (VSC)

4.1 This is the measure of the amount of skylight incident on a vertical plane (i.e. a window). Where establishing the daylight falling upon a window we consider the light at the centre of the window. The VSC is calculated by assessing the ratio of skylight available as a percentage of the unobstructed skylight

available at that same point. For a uniform sky, the maximum value is 50% (since the point is on a vertical plane, clearly only half the hemisphere of light can contribute). For a CIE[3] sky, the maximum value is 39.6%.

4.2 The guidelines state that if the VSC at the centre of a window is less than 27% and less than 0.8 times its former value as a result of the development in question, the diffuse day lighting of the existing building will be adversely affected. A value of 27% corresponds to an infinite obstruction angle of 25 degrees - which is why at 25 degrees and above we can normally discount the need for any further daylight and sunlight analysis (see 3.2 Above). Again it is important to note that the BRE Guide (as with all the BRE guidelines) can be interpreted with a degree of flexibility and this is not a hard and fast rule.

4.3 One way of measuring the VSC and displaying any change clearly is by using a Waldram Diagram. As can be seen (below), this method can be used to provide an easy to understand pictorial representation of the pre and post construction VSC.



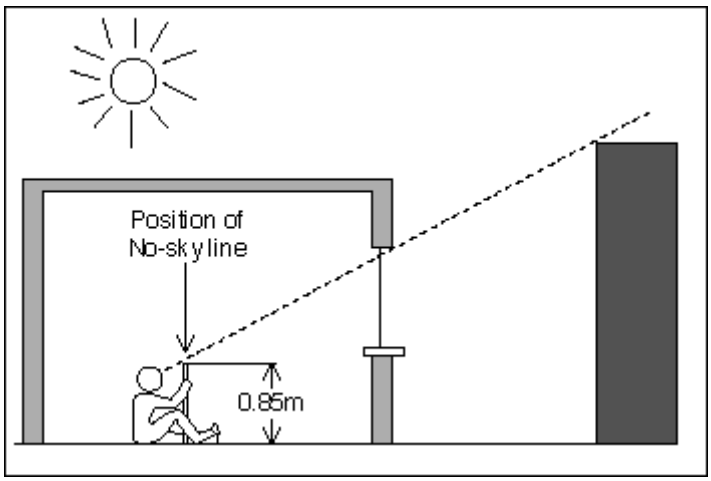
An Example Of A Waldram Diagram Analysis

4.4 As already established an unobstructed view from the vertical plane of a window would give a VSC value of 39.6%, this would correspond to 50% of the hemisphere. The diagram shows how 12.8% of the sky remains after an obstruction has been erected which, when compared with the existing situation shows a marked decrease from the original 19.49% VSC. This is less than 0.8 times it's former value and is less than the 27% recommended. Consequently the VSC for this window would fall beneath the guideline BRE target value – and, as a result, introduce potential planning risk. Accordingly, on this hypothetical project, we would need to work closely with Planners and Architects in order to mitigate this problem and secure planning consent.

[3] Commission Internationale d'Eclairage – the creator of the model for a standard overcast sky.

5.0 NO SKY CONTOUR (NSC) / DAYLIGHT DISTRIBUTION (DD)

5.1 The NSC measures the point, at desktop level, where sky is no longer visible through a window. See below:



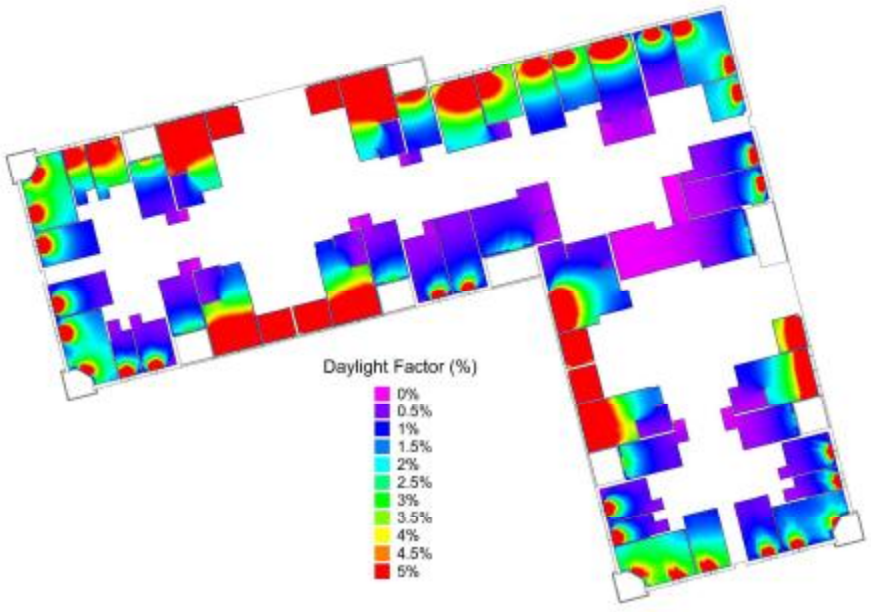
How To Establish The Location Of The No Sky Contour

5.2 The NSC is similar to the VSC approach in that the BRE guidelines state that 20% reduction to the existing area of sky visibility at the is considered acceptable. Accurate assessment of the position of the No-Sky Contour is reliant upon knowing room layout although an adequate indication of the position may achieved by adopting appropriate assumptions based upon external observations.

5.3 The NSC, which is sometimes referred to as the Daylight Distribution (DD), enables a greater understanding of the spread of daylighting within a room. The BRE Guide does not relate this methodology of analysis to 'room use', instead it is used to simply provide an understanding of the 'change' caused by the proposed development.

6.0 AVERAGE DAYLIGHT FACTOR

6.1 Average Daylight Factor or ADF is qualitative assessment of the amount of daylight within a room, in other words it is used to show how well a room is illuminated (see diagram below).



Daylight Factor Analysis With Results Indicated On A Floor Plan In False Colour

6.2 The BRE Guidelines define ADF as;

"Ratio of total daylight flux[4] incident upon the working plane, expressed as a percentage of the outdoor luminance on a horizontal plan due to an unobstructed CIE Standard Overcast Sky"

6.3 ADF values can be calculated for rooms within a proposed development to ensure the quality of daylight will be adequate.

6.4 Factors on which the ADF depend are: VSC at the face of each window, the Total Window Area, Total Wall Area, Wall Reflectivity and Window Transmission. There are no specific BRE criteria for reduction in ADF if a proposed development were to be implemented, but since the ADF is related to the VSC via the obstruction angle, a reduction in VSC leads to a reduction in ADF.

6.5 The BRE Guide states that for a predominantly daylit room the ADF should be 5% or more if there is no supplementary electric lighting, or 2% or more if there is supplementary electric lighting. There are additional recommended ADF levels for dwellings with supplementary lighting.

6.6 They are[5];

- *2.0% - Kitchens*
- *1.5% - Living Rooms*
- *1.0% - Bedrooms*

6.7 The ADF methodology is not cited in the main text of the BRE Guide and is principally intended as design tool to ensure appropriate amenity within new-build units. Consideration of the Average Daylight Factor can however have several benefits over the VSC method of analysis given its consideration of both room use and layout. It is also the principal method used by both the British Standard, the British Standards Institute and CIBSE[6] - bodies of reference used in the compilation of BRE Guide 209.

6.8 Accurate assessment of the Average Daylight Factor requires knowledge of the layout, use and specification of finishes / materials of neighbouring properties. Where exact floor plans and room uses are not available the professional may make realistic assumptions regarding room size and use from external observations and experience and utilise standard transmittance and reflectivity values as set out in Daylight and Window Design: CIBSE Guide LG10.

7.0 SUNLIGHT

7.1 Sunlight to windows is assessed by APSH (Annual Probable Sunlight Hours), which seeks to ascertain the likelihood of a building elevation, within 90 degrees of due south, receiving sunlight in a typical year.

7.2 The BRE guide states that main living room windows and conservatories are relevant for detailed sunlight assessment with other habitable spaces being considered less important.

7.3 The calculation was designed to establish the percentage of APSH on the basis of sunlight availability. The maximum total of annual unobstructed sunlight hours is 1,486 - the percentage APSH relates to this.

7.4 The BRE Guide states;

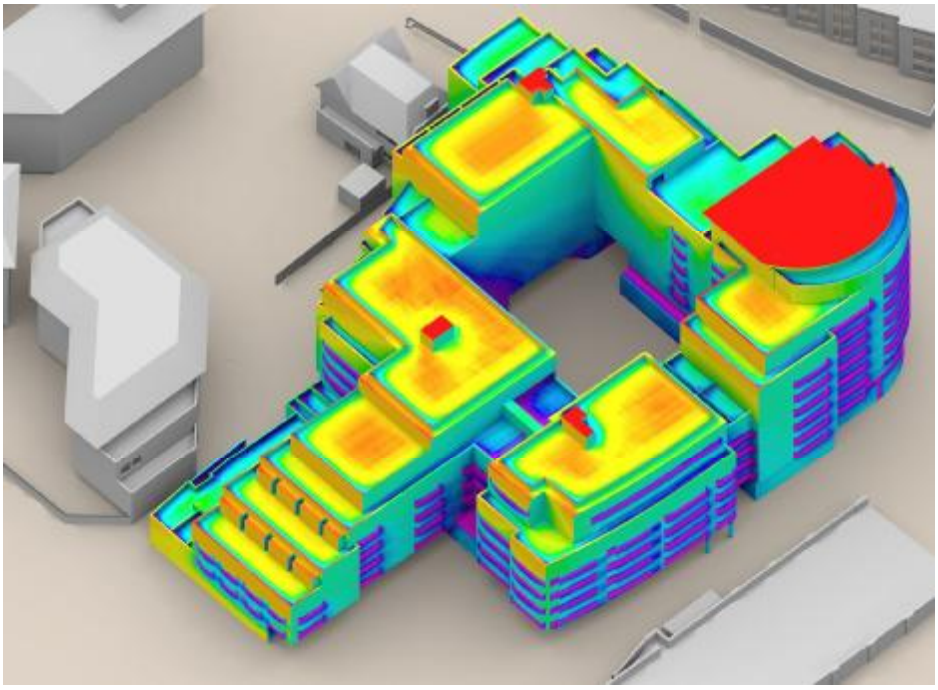
"If a window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21st September and 21st March, then a room should still receive enough sunlight".

[4] Luminous Flux – 'The light emitted by source, or received by a surface (expressed in lumens). The quantity is derived from radiant flux (power) by evaluations the radiation in accordance with the spectral sensitivity of the "standard" eye'.

[5] These figures are also recommended in BS 8206 Part 2 1992 entitled 'Code of Practice for Daylighting'.

[6] Chartered Institute of Building Services Engineers

7.5 The sunlight amenity to relevant windows is only considered to be materially affected if following a development APSH levels are less than 0.8 times their former value. Additionally reductions of 4% total APSH or less are not considered an adverse affect upon a neighbour.



False Colour APSH For A Building

7.6 The diagram, above, provides a false colour representation of the numerical results for sunlight analysis, the red areas show high levels of APSH. Of particular interest is the effect that balconies have on the sunlight hours to vertical surfaces.

7.7

7.8 Diagrams like this can be invaluable in providing a pictorial representation of an otherwise incomprehensible table of results. Together, the tables and images provide background information and graphical representation for planning documents in order that they can be simply and quickly deciphered. This mayuseful for all parties not regularly involved in this type of analysis. Namely, planners, architects, developers and non-professionals, such as the members of the public – who may become involved as part of any public consultation exercise (which is common to most, if not all Planning Applications). This level of clarity enables us to make the complicated field of daylight and sunlight more understandable, therefore helping to speed up the grant of planning consent in this area, whilst providing detailed information for those with a more in depth knowledge in this field.

8.0 SUMMARY

8.1 These brief Guidance Notes are intended as an overview of the topic of daylight and sunlight and are not intended to be exhaustive. They have been drafted in order to provide an insight into the various documents referred to and relied on by planning, development, construction, legal, building services, architectural etc professionals.

8.2 In addition to the core constraints of daylight and sunlight the BRE guideline also deal with additional amenity constraints such as overshadowing of amenity spaces. Larger, more complex, development schemes may also require detailed analysis of factors such as light pollution and solar glare. Our specialist teams are able to fully advise on these issues and assist in the production of Environmental Statements (ES / EIA's) to accompany complex planning applications.

8.3 It is most important to note that where a problem exists with daylight and sunlight, once identified, it can almost certainly be overcome. However, it will need careful analysis and professional assistance to do so. Should any queries Savills professionals are available to provide focused, professional advice.