Schatunowski Brooks

BRE Daylight/Sunlight Report

GVA
10 Stratton Street
London
W1J 8JR

1-5 Portpool Lane,

London Borough of Camden

Spot Property Company Ltd

September 2014

For and on behalf of GVA Grimley Ltd

CONTENTS

Appendices

1. Introduction

1.1 GVA Schatunowski Brooks has been instructed by Spot Property Company Ltd to provide initial advice to help mitigate potential daylight and sunlight losses to the neighbouring residential property to the north-east. The evolution of the scheme can be seen by reference to the recessed upper floors to the north-east of the scheme. This will have the benefit of helping to maintain the daylight and sunlight to the neighbouring property, providing some external amenity space to the new occupants, whilst maintaining a consistent streetscape at the front property.

1.2 We have subsequently been instructed to undertake a detailed assessment of the impact to daylight and sunlight amenity of existing residential neighbours as a result of the proposals at 1-5 Portpool Lane, London, EC1.

1.3 The proposals consist of demolition of the current 1-5 Portpool Lane property to provide a five-storey (above ground) residential apartment block, with external balcony amenity space.

1.4 The detailed assessment model was based upon the following:

- Site inspection and photographs taken by Stiff + Trevillion on 30 October 2013.
- Ordnance survey data.
- Z-mapping 3D computer model received November 2013.
- Stiff + Trevillion Architect's plans, elevations and section drawings received on 29th July 2014.
- Bing Maps and Google Street View.

2.5 The software that we have used to calculate our findings is the market leading rights of light, daylight and sunlight software Sol for AutoCAD 2012 created by Waterslade software development. Further details in relation to the software developer and their software can be found using the following hyperlink: http://www.waterslade.com/services/software_dev.htm. The daylight and sunlight results are calculated by applying the BRE methodology.

2. Daylight Planning Principles

2.1 The Building Research Establishment (BRE) Guidelines – Site Layout Planning for Daylight and Sunlight: a guide to good practice is the document referred to by most local authorities. The BRE Guide gives advice on site layout planning to achieve good daylighting and sunlighting, within buildings and in the open spaces between them.

2.2 The introduction to the Guidelines state: -

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

Daylighting

2.3 The requirements governing daylighting to existing residential buildings around a development site are set out in Part 2.2 of the guidelines. The amount of light available to any window depends upon the amount of unobstructed sky that can be seen from the centre of the window under consideration. The amount of visible sky and consequently the amount of available skylight is assessed by calculating the vertical sky component (VSC) at the centre of the window. The guidelines advise that bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines also suggest that distribution of daylight within rooms is reviewed although bedrooms are considered to be less important.

2.4 The VSC can be calculated by using the skylight indicator provided as part of the guidelines, by mathematical methods using what is known as a Waldram diagram or by 3D CAD modelling.

2.5 The guidelines state the following:-

"*If this vertical sky component is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the vertical sky component with the new development in place, is*

both less than 27% and less than 0.8 times its former value, then occupants of the existing building will notice the reduction in the amount of skylight."

2.6 It must be interpreted from this criterion that a 27% VSC constitutes adequacy, but where this value cannot be achieved a reduction of up to 0.8 times its the former value (this is the same as saying a 20% reduction when compared against the existing condition) would not be noticeable and would not therefore be considered material.

2.7 The VSC calculation only measures light reaching the outside plane of the window under consideration, so this is considered more a measure of the potential for good daylight within a given room. Depending upon the room and window size, the room may still be adequately lit with a lesser VSC value than the target values referred to above.

2.8 The no sky-line or daylight distribution (DD) contour shows the extent of light penetration into the room at working plane level, 850mm above floor level. If a substantial part of the room falls behind the no sky-line contour, the distribution of light within the room may look poor.

2.9 Appendix C of the BRE Guidelines sets out various more detailed tests that assess the interior daylight conditions of proposed habitable rooms. These include the calculation of the average daylight factors (ADF) and no sky-lines.

2.10 The ADF value determines the level of interior illumination that can be compared with the British Standard, BS 8206: Part 2. This recommends a minimum of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

2.11 BS8206-2: 2008 notes that "Where one room serves more than one purpose, the minimum average daylight factor should be that for the room type with the highest value. For example, in a space which combines a living room and a kitchen the minimum average daylight factor should be 2%".

Sunlighting

2.12 Requirements for protection of sunlighting to existing residential buildings around a development site are set out in Part 3.2 of the BRE guidelines. There is a requirement to assess windows of surrounding properties where the main windows face within 90

degrees of due south. The calculations are taken at the window reference point at the centre of each window on the plane of the outside surface of the wall.

2.13 The guidelines further state that kitchens and bedrooms are less important in the context of considering sunlight, although care should be taken not to block too much sun. The guidelines sets the following standard:-

"If this 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 the room should still receive enough sunlight. The sunlight availability indicator in Appendix A can be used to check this.

Any reduction in sunlight access below this level should be kept to a minimum. If the available sunlight hours are both less than the amount given and less than 0.8 times their former value, either over the whole year or just during the winter months then the occupants of the existing building will notice the loss of sunlight."

2.14 To summarize the above, a good level of sunlight to a window is 25% annual probable sunlight hours, of which 5% should be in winter months. Where sunlight levels fall below the suggested level, a comparison with the existing condition is reviewed and if the ratio reduction is within 0.8 (the same as saying a 20% reduction) its former value or the reduction in sunlight received over the whole year is 4% or less, then the sunlight loss will not be noticeable.

2.15 Where sunlight reductions fall below a ratio of 0.8 (the same as saying greater than 20%) then the sunlight losses may be noticeable to occupants.

3. Report

3.1 Attached drawing BRE30 illustrates graphically the proposal in context with the neighbouring properties. These can be found with the daylight and sunlight tables by reference to Appendix 1.

3.2 In accordance with the BRE Guidelines we have only considered residential properties or those with a specific requirement for daylight, such as schools or hospitals etc.

3.3 We have identified one such property in the immediate vicinity, a five-storey residential mansion block of flats, **1-17 Sheene Buildings**, to the north-east, which forms part of a larger estate immediately to the east.

3.4 We have undertaken on-line research to try to establish the internal arrangements for the individual flats at the south-west corner of the block. Unfortunately, we have been unable to ascertain the internal arrangements and therefore the room arrangements used for the Average Daylight Factor (ADF) and No Sky-Line (NSL) tests have been estimated.

3.5 As the internal arrangements are unknown, we have had to assume that all the rooms tested are habitable. However, we suspect that the bank of windows on the south elevation may serve non-habitable spaces, but these have been analysed nevertheless.

3.6 It should be noted that the current neighbouring properties, including 1-17 Sheene Buildings, are considerably taller that the existing 1-5 Portpool Lane building, which sits below that current streetscape. These neighbouring properties restrict the amount daylight and sunlight available to 1-17 Sheene Buildings, burdening the land currently occupied by the existing 1-5 Portpool Lane building. This is especially prevalent in respect of those south-facing windows that look directly toward a large block within the same estate.

3.7 The BRE Guidelines describe in section 2.3 *Adjoining Development Land*, an assessment of an imaginary *'mirror image'* of the neighbouring property, to establish whether they have acted as a *'good neighbour'*, allowing a similar building to be constructed on neighbouring development land whilst retaining sufficient daylight and sunlight to the neighbouring property. Whilst this assessment has not be undertaken, it is clear that if a

massing of similar proportions to 1-17 Sheene Buildings was assessed on the site of 1-5 Portpool Lane, the losses would be considerably greater than the current proposals.

1-17 Sheene Buildings – BRE/31 & BRE/32

3.8 For daylight, the VSC results indicate that 26 of the 29 windows tested (90%) will satisfy the BRE Guidelines by virtue of retaining 27% VSC or 0.8 of their former value. Where windows fall short of these values, particularly at ground and first floor, this is as a result of poor existing daylight levels caused by the neighbouring properties, making these windows particularly sensitive to change and reliant on daylight from over the development land. This culminates in a disproportionately large percentage change, whereas in fact the absolute VSC losses range between 1%-1.5% only.

3.9 Also, all of the windows in question serve rooms with multiple windows, of which, at least one satisfies that guidelines. Taking an aggregate of all windows serving the room, it should be considered that any loss of daylight to the room is unlikely to be noticeable.

3.10 The ADF results confirm that to 16 of the18 rooms tested (89%), any daylight loss is unlikely to be noticeable by virtue of retaining 0.8 of their former value. The two rooms that do not, one at ground and one at first, are once again subject to existing site restraints, which result in disproportionately high percentage reductions, whereas in both instances the reduction less than 0.5% and therefore unlikely to be noticeable.

3.11 Also, it is likely that that the two rooms is question either serve non-habitable spaces or bedroom which the BRE Guideline considers to be 'less important".

3.12 Therefore it should be considered that any loss of daylight to this property is unlikely to be noticeable and the BRE Guidelines are satisfied.

3.13 For sunlight, when applying the Annual Probable Sunlight Hours (APSH) test, the results confirm that of the 29 windows tested 28 (96%) will either retain the guideline values of 25% annual sunlight or 0.8 of their former value or a reduction of less than 4% and therefore any loss will not be noticeable. The one remaining window W1/20, will only have a minor technical transgression, retaining 0.72 of its former value when compared to 0.8 guideline.

3.14 There are several reductions in winter sunlight; however these are almost inevitable as any loss to the existing poor sunlight values will manifest themselves as a disproportionately large percentage change. When reviewing the absolute reductions the majority of these losses are small and unlikely to be noticeable.

3.15 Therefore it should be considered that the reduction in sunlight is unlikely to be noticeable.

4. Conclusions

4.1 The London Borough of Camden's planning policy seeks to safeguard daylight and sunlight to existing buildings and points to the guidance published in BRE Report 209 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'.

4.2 We have undertaken a comprehensive study of the impact of the proposed development on the relevant rooms within the proposed neighbouring dwelling. The tests were undertaken in accordance with the BRE Report 209 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' (second edition, 2011).

4.3 It is clear that existing site constraints resulting from the neighbouring properties restrict daylight and sunlight availability to the 1-17 Sheene Building, such that the development land has been burdened to provide the remaining daylight and sunlight. This is especially prevalent when considering the building directly to the south of the Sheene Building, as this almost completely obscures the south-facing windows restricting daylight and in particular low-lying winter sunlight.

4.4 Also it should be considered that any impacts are much smaller than if a 'mirror image' scheme was implemented, with no design consideration for the neighbours, commensurate with existing neighbouring buildings.

4.5 When considering the windows and rooms that face toward the 1-17 Sheene Building, the majority of the rooms will satisfy the BRE Guidelines. Where they do not, the absolute reductions demonstrate that the impact on the neighbouring building is relatively modest and unlikely to be noticeable.

4.6 In conclusion, in the round, the proposal adheres to the BRE guidelines and does not materially reduce sunlight or daylight to existing surrounding properties. In my opinion the London Borough of Camden's planning policy on daylight and sunlight will be satisfied.

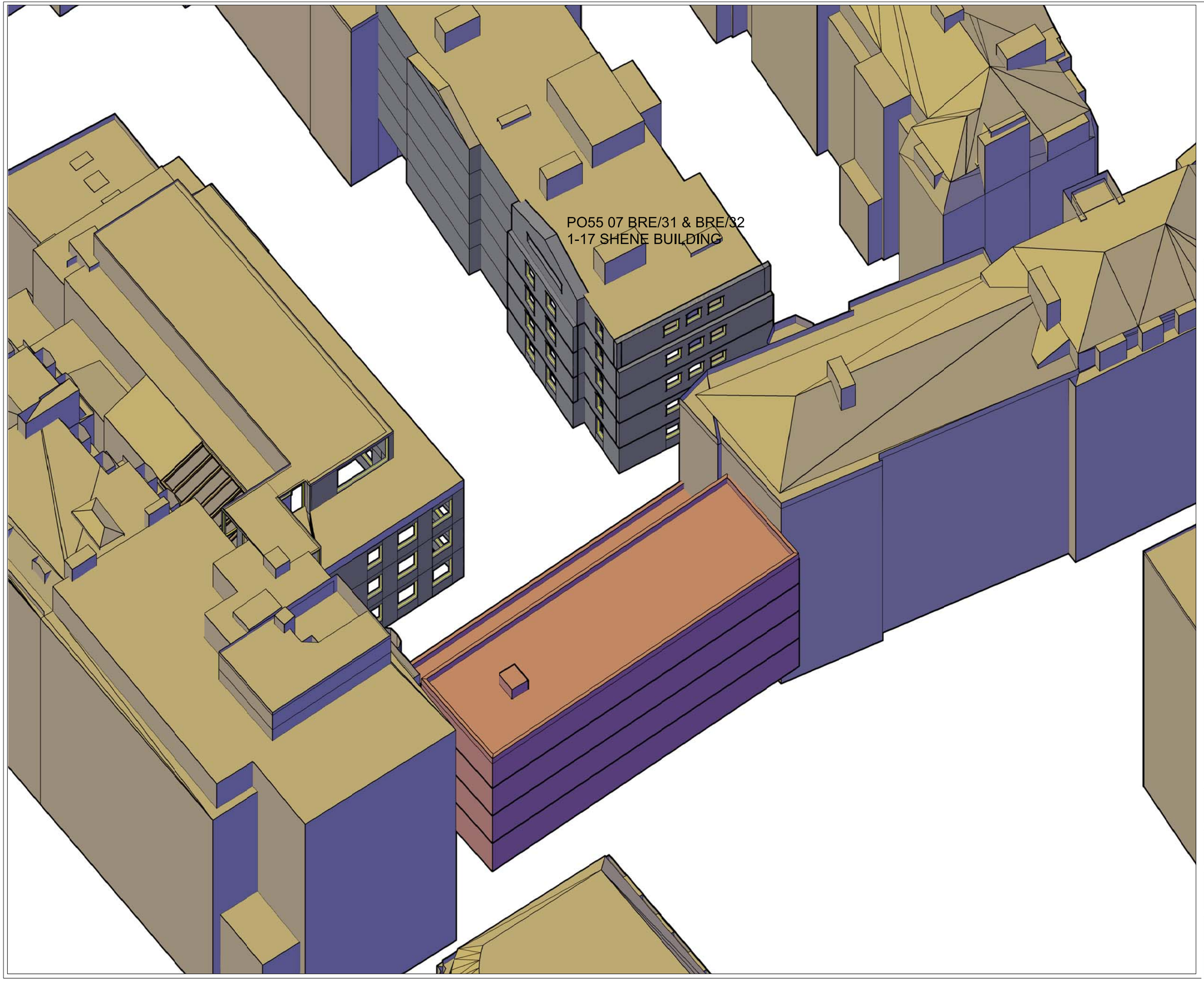
Report

Appendices

Report

Appendix I

Drawings plus Associated Technical Results Data



Sources of Information

EXISTING SITE

INFO SENT ON 25 NOV 2013
1-5 Portpool Ln - Location Plan.PDF
MJW_1-5 PORTPOOL .PDF

PROPOSED SITE

INFO SENT ON 29 July 2014
Basement.DWG
Ground.DWG
First.DWG
Second.DWG
Third.DWG
Fourth.DWG
Roof.DWG
Front elevation.DWG
Rear elevation.DWG
Side elevation.DWG
Section AA.DWG

SURROUNDING SITE

ZMAP
INFO SENT ON 27 NOV 2013

INFO SENT ON 25 NOV 2013
88 GRAY'S INN ROAD.PDF

GVA

08449 02 03 04
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10 Stratton Street, London, W1J 8JR
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Project Name
1-5 Portpool
London

Client
Mumbo Jumbo World Ltd

Drawing Title
3D View: Existing site
showing location of tested properties

Drawn By	Chk'd By	Scale @ A3	Date
RTN	-	N/A	29/08/14

Project No.	Drawing No.	Revision
PO55/07	BRE/29	-

DAYLIGHT

A3

PO55 07 BRE/31 & BRE/32
1-17 SHENE BUILDING

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MJW_1-5 PORTPOOL .PDF

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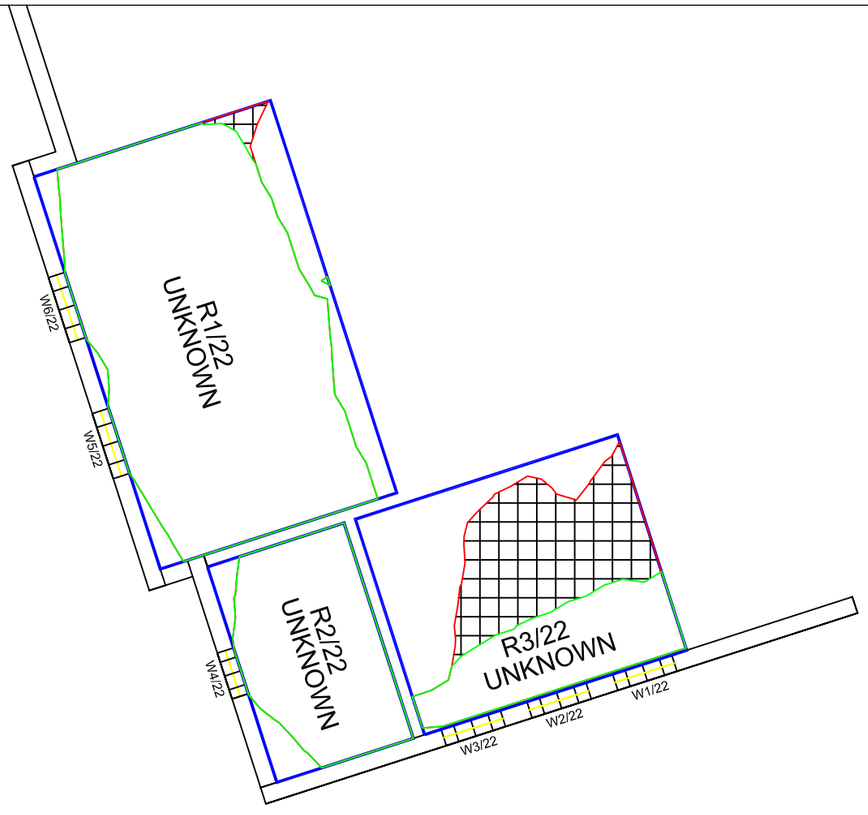
RTN	-	N/A	29/08/14

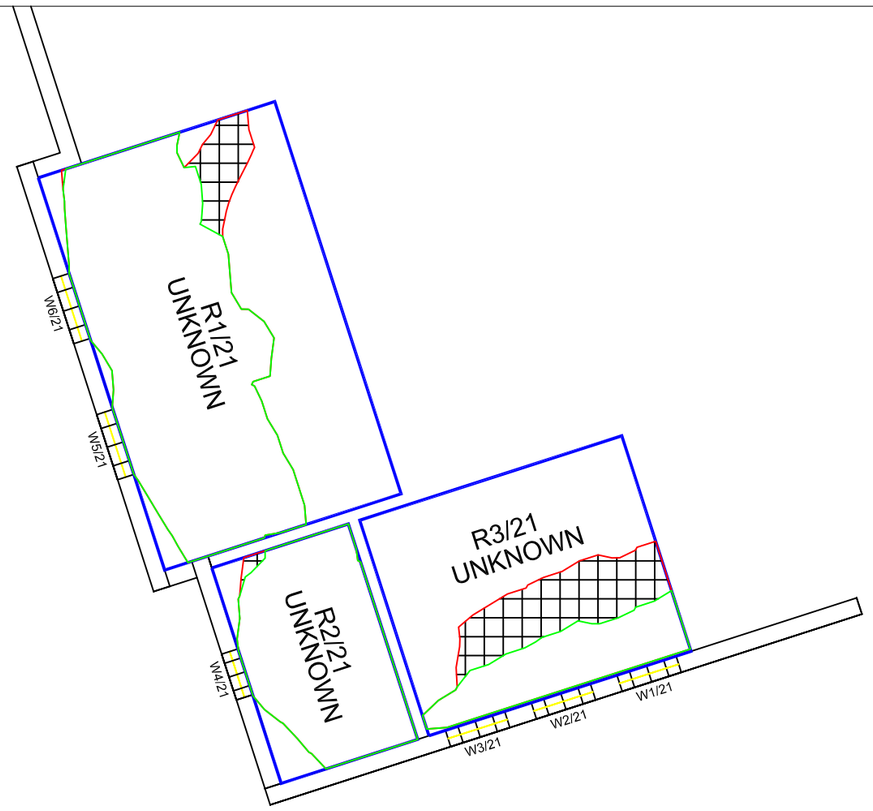
Project No.	Drawing No.	Revision
PO55/07	BRE/30	-

DAYLIGHT
A3

GROUND FLOOR



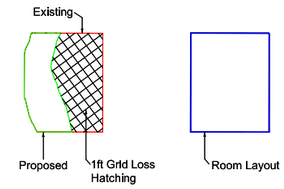
SECOND FLOOR



FIRST FLOOR

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

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Drawing Title

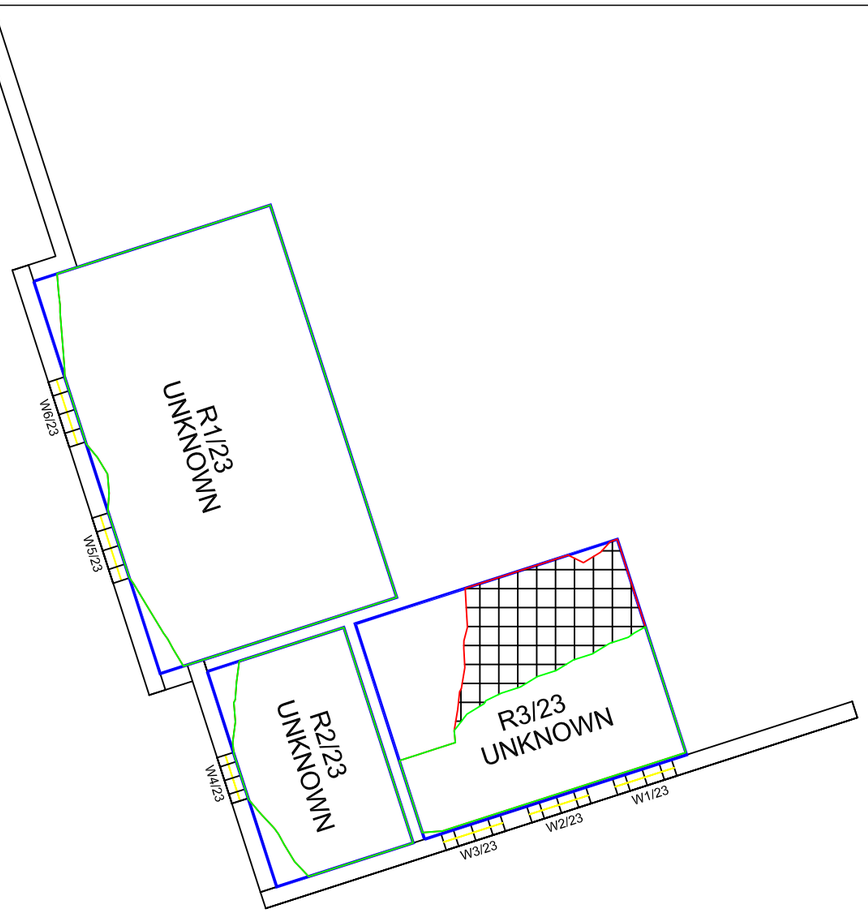
No Sky Line contours for
1-17 Shene Building

Drawn By	Chk'd By	Scale @ A3	Date
RTN	-	1/100	29/08/14

Project No.	Drawing No.	Revision
PO55/07	BRE/31	-

DAYLIGHT

A3

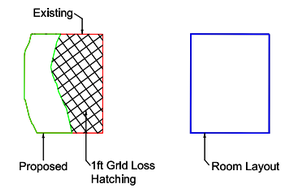


THIRD FLOOR

FOURTH FLOOR

Legend

Daylight



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Proposed No-Sky Line Contour

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RTN	-	1/100	29/08/14

Project No.	Drawing No.	Revision
PO55/07	BRE/32	-

DAYLIGHT

A3

1-5 PORTPOOL

BRE DAYLIGHT ANALYSIS

July 2014 scheme

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
1-17 SHENE BUILDING - BRE/31 & BRE/32										
Ground floor										
R1/20	UNKNOWN	W2/20	15.78	14.72	6.72%	1.74	1.70	2.52%	43.45%	5.77%
		W3/20	15.88	15.00	5.54%					
R2/20	UNKNOWN	W1/20	15.20	13.74	9.61%	1.46	1.41	3.69%	69.17%	5.72%
R3/20	UNKNOWN	W4/20	5.04	3.96	21.43%	0.93	0.58	37.62%	14.84%	46.47%
		W5/20	6.04	4.33	28.31%					
		W6/20	4.35	3.69	15.17%					
First floor										
R1/21	UNKNOWN	W5/21	19.72	18.60	5.68%	1.96	1.93	1.83%	58.44%	6.76%
		W6/21	19.64	18.81	4.23%					
R2/21	UNKNOWN	W4/21	19.34	17.53	9.36%	1.66	1.61	3.31%	87.96%	1.24%
R3/21	UNKNOWN	W1/21	5.87	5.23	10.90%	1.10	0.78	28.94%	21.69%	47.64%
		W2/21	6.82	5.65	17.16%					
		W3/21	8.32	6.24	25.00%					
Second floor										
R1/22	UNKNOWN	W5/22	23.92	22.99	3.89%	2.24	2.21	1.12%	86.83%	1.23%
		W6/22	23.86	23.23	2.64%					
R2/22	UNKNOWN	W4/22	23.72	21.85	7.88%	1.89	1.84	2.49%	89.17%	0.00%

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
R3/22	UNKNOWN	W1/22	8.67	8.02	7.50%	1.58	1.33	15.82%	30.44%	55.36%
		W2/22	9.86	8.56	13.18%					
		W3/22	11.89	9.37	21.19%					
Third floor										
R1/23	UNKNOWN	W5/23	28.36	27.81	>27	2.53	2.52	0.51%	97.09%	0.00%
		W6/23	28.28	27.96	>27					
R2/23	UNKNOWN	W4/23	28.08	26.74	4.77%	2.10	2.07	1.57%	91.05%	0.00%
R3/23	UNKNOWN	W1/23	15.16	14.60	3.69%	2.35	2.21	6.00%	48.10%	38.17%
		W2/23	16.01	15.02	6.18%					
		W3/23	17.66	15.74	10.87%					
Fourth floor										
R1/24	UNKNOWN	W5/24	30.84	30.73	>27	2.41	2.40	0.21%	95.49%	0.00%
R2/24	UNKNOWN	W4/24	31.72	31.24	>27	2.42	2.40	0.58%	91.17%	0.00%
R3/24	UNKNOWN	W1/24	29.17	28.83	>27	3.85	3.78	1.79%	98.82%	0.00%
		W2/24	29.30	28.77	>27					
		W3/24	29.66	28.74	>27					

1-5 PORTPOOL

BRE SUNLIGHT ANALYSIS

July 2014 scheme

Available sunlight as a percentage of annual unobstructed total (1486.0 Hrs)

		Existing %			Proposed %					
Room use	Window Ref	Summer	Winter	Total	Summer	Winter	Total	% Loss of Summer	% Loss of Winter	% Loss of Total
1-17 SHENE BUILDING - BRE/31 & BRE/32										
Ground floor										
UNKNOWN	W1/20	21	1	22	16	0	16	23.81%	100.00%	27.27%
UNKNOWN	W2/20	18	4	22	17	1	18	5.56%	75.00%	18.18%
UNKNOWN	W3/20	19	6	25	19	1	20	0.00%	83.33%	20.00%
UNKNOWN	W4/20	16	0	16	12	0	12	25.00%	0.00%	25.00%
UNKNOWN	W5/20	17	0	17	13	0	13	23.53%	0.00%	23.53%
UNKNOWN	W6/20	12	0	12	11	0	11	8.33%	0.00%	8.33%
First floor										
UNKNOWN	W1/21	14	0	14	14	0	14	0.00%	0.00%	0.00%
UNKNOWN	W2/21	17	2	19	16	0	16	5.88%	100.00%	15.79%
UNKNOWN	W3/21	18	2	20	17	0	17	5.56%	100.00%	15.00%
UNKNOWN	W4/21	25	5	30	22	0	22	12.00%	100.00%	26.67%
UNKNOWN	W5/21	24	8	32	24	3	27	0.00%	62.50%	15.63%
UNKNOWN	W6/21	25	9	34	25	4	29	0.00%	55.56%	14.71%
Second floor										
UNKNOWN	W1/22	18	2	20	18	1	19	0.00%	50.00%	5.00%
UNKNOWN	W2/22	23	4	27	23	1	24	0.00%	75.00%	11.11%
UNKNOWN	W3/22	23	3	26	23	0	23	0.00%	100.00%	11.54%
UNKNOWN	W4/22	30	10	40	30	1	31	0.00%	90.00%	22.50%
UNKNOWN	W5/22	30	10	40	30	5	35	0.00%	50.00%	12.50%
UNKNOWN	W6/22	30	10	40	30	7	37	0.00%	30.00%	7.50%
Third floor										
UNKNOWN	W1/23	44	4	48	44	2	46	0.00%	50.00%	4.17%
UNKNOWN	W2/23	41	7	48	41	4	45	0.00%	42.86%	6.25%
UNKNOWN	W3/23	43	8	51	43	4	47	0.00%	50.00%	7.84%
UNKNOWN	W4/23	34	13	47	34	7	41	0.00%	46.15%	12.77%
UNKNOWN	W5/23	34	13	47	34	10	44	0.00%	23.08%	6.38%
UNKNOWN	W6/23	33	14	47	33	11	44	0.00%	21.43%	6.38%
Fourth floor										
UNKNOWN	W1/24	56	20	76	56	19	75	0.00%	5.00%	1.32%
UNKNOWN	W2/24	56	18	74	56	17	73	0.00%	5.56%	1.35%
UNKNOWN	W3/24	57	19	76	57	16	73	0.00%	15.79%	3.95%
UNKNOWN	W4/24	37	16	53	37	15	52	0.00%	6.25%	1.89%
UNKNOWN	W5/24	32	16	48	32	16	48	0.00%	0.00%	0.00%