



DATE / REF

17/03/2017

SF/6481

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Mr N Earp
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Dear Nigel,

Re: The Proposed Redevelopment of 125 Shaftesbury Avenue – Daylight and Sunlight

GIA have prepared this letter in order to address the various points raised within Bethany Cullen’s email of 14.03.17, which follows on from the third party daylight and sunlight review provided by Delva Patman Redler (“DPR”).

It is noted that DPR are in general agreement with GIA’s conclusions regarding the vast majority of impacted properties, including Trentishoe Mansions, but have raised some concern with regards to the potential daylight and sunlight impacts to 1A Phoenix Street. Each of the points raised are considered in detail below.

i. VSC Cutback Exercise

It has been suggested by DPR that small design alterations could potentially mitigate the daylight/sunlight impacts to 1A Phoenix Street.

Consequently, GIA have undertaken a technical cutback exercise in order to understand and illustrate the quantum of the proposed massing that would need to be conceded in order to demonstrate a BRE compliant position. The global cutback equates to c.36,000 sq.ft. GEA. It is assumed that some 30,000 sq.ft. would be attributable to 1A Phoenix Street. Given that the actual VSC change between existing and proposed is between 3%-4% VSC and the area loss to BRE compliance is c.30,000 Sqft, it is not considered that a modest change would have a less substantial impact to these four rooms, as is suggested by the DPR review.

The plot depicting this cutback can be found below in figure 01 (below) and in Appendix 01 of this letter.

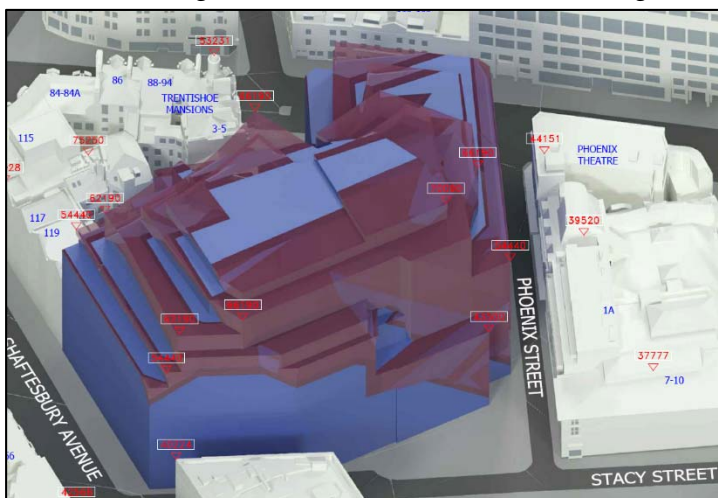


Figure 01 –VSC Cutback

ii. **1A Phoenix Street – Daylight and Sunlight Summary of Results Including:**

- **Existing v Proposed**
- **Balconies Removed Analysis**
- **Mirror Massing Analysis**

Existing v Proposed:

GIA’s technical analysis indicates that 14 rooms fall short of guidance against the VSC/NSL methodologies within 1A Phoenix Street. Of these 14 rooms, four serve Living/Kitchen/Diners and 10 serve bedrooms, where it is acknowledged that there is a lesser expectation of high levels of natural daylight.

When the four LKD’s are assessed in the existing scenario, the highest value of VSC is 5% against a target value of 27% within the BRE Guidelines. When the four LKD’s are assessed against the ADF criteria, three rooms experience a small absolute change (0.2%). One room will experience a 0.3% absolute change, however, the retained value (0.4%) is the same if not better than the existing value of 3/4 rooms in question, as demonstrated in Table 01 below;

Room	Existing ADF	Proposed ADF	Absolute Change
R1/1700	0.7	0.4	-0.3
R1/1701	0.3	0.1	-0.2
R1/1702	0.4	0.2	-0.2
R1/1703	0.4	0.2	-0.2

Table 01 – ADF results for 1A Phoenix Street

Balconies Removed:

It is acknowledged that the presence of overhanging balconies on 1A Phoenix Street imposes an unfair burden on development by limiting the amount of sky component which can reach the centre point of the windows beneath. As a direct consequence, any reduction in VSC, when displayed as a percentage, is likely to be greatly exaggerated. The BRE guidelines recognise that projecting balconies and overhangs restrict the level of daylight that can penetrate the room beneath them, and therefore allow for an additional assessment which removes the burden imposed by the balcony. Section 2.2.11 of the BRE document states:

‘Existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction may result in a large relative impact on the VSC, and on the area receiving direct skylight. One way to demonstrate this would be to carry out an additional calculation of the VSC and area receiving direct skylight, for both the existing and proposed situations, without the balcony in place.’

GIA have undertaken an additional detailed assessment with the balconies of 1A Phoenix Street removed to create a flush façade. Table 02 (below) demonstrates the existing and proposed VSC values for the aforementioned LKDs with and without the balconies in situ. It is clear that in all cases (with the exception of the ground floor room which will naturally be challenged by virtue of its location) the VSC levels will be more than double, and in some cases treble, when the burden imposed by the balconies are removed,

The full set of tabulated results for this assessment can be found within Appendix 02.

Room	Window	Existing VSC (with balconies)	Existing VSC (without balconies)	Proposed VSC (with balconies)	Proposed VSC (without balconies)
R1/1700	W1/1700	3.2	3.2	0.8	0.8
	W2/1700	3.7	3.7	1.3	1.3
	W3/1700	4.1	4.1	1.9	1.9
R1/1701	W/1701	4.4	10.4	1.2	4.7
R1/1702	W1/1702	5	11.7	1.4	5.5
R1/1703	W1/1703	4.9	13.6	1.4	6.6

Table 02 – ‘Balconies removed’ VSC results for 1A Phoenix Street

Mirror Massing Assessment:

It is also acknowledged that the proposal extends onto the vacant portion of the site to the east. As suggested within Appendix F of the BRE Guidelines, GIA have run a further assessment on the site where we have hypothetically created a mirror massing of the 1A Phoenix Street development on this land. Appendix F.5 of the BRE Guidelines states:

‘To ensure the development matches the height and proportions of existing buildings, the VSC and APSH targets for these windows could be set to those which ‘mirror-image’ building of the same height and size, an equal distance away on the other side of the boundary.’

The premise of this mirror massing exercise is to establish whether or not it is the height increase of the proposal or the infilling of the massing along Phoenix Street which is primarily causing the daylighting impact.

Our technical analysis illustrates that under these conditions, all four rooms detailed within Table 03 (below) would experience a de-minimis gain in light condition.

Room	Window	Existing VSC - Mirror Massing	Proposed VSC - Mirror Massing
R1/1700	W1/1700	0.0	0.8
	W2/1700	0.1	1.2
	W3/1700	0.1	1.8
R1/1701	W1/1701	0.1	1.1
R1/1702	W1/1702	0.3	1.3
R1/1703	W1/1703	1.2	1.3

Table 03 – ‘Mirror Massing’ VSC results for 1A Phoenix Street

Figure 02 below visually depicts this baseline of this exercise, which can be seen more clearly in Appendix 03 and the results for which can be found in Appendix 04;

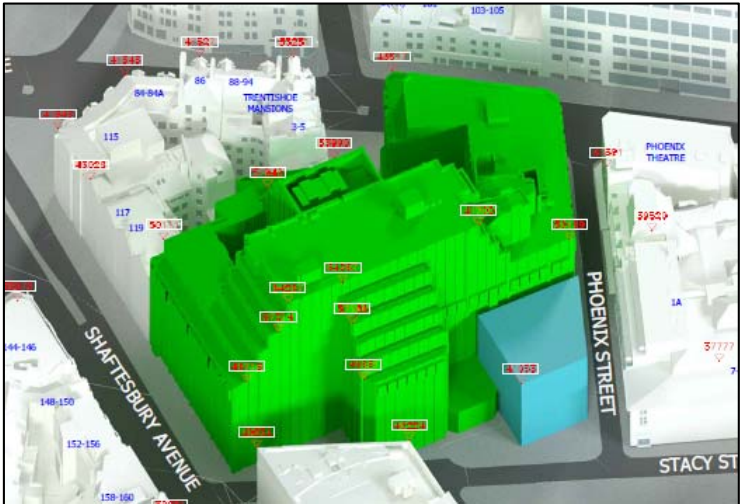


Figure 02 –Mirror Massing (Green – Existing, Blue – Mirrored Baseline)

iii. Sunlight

Paragraph 3.2.3 of the BRE Guidelines state *“Kitchens and bedrooms are less important, although care should be taken not to block out too much sun.”* Further to this, a letter from Dr. Paul Littlefair, the author of the BRE Guidelines, has suggested that bedrooms should not be included in detailed sunlight analysis, which can be found within Appendix 05.

In discounting the bedrooms within 1A Phoenix Street from the sunlight analysis, GIA would therefore consider there to be 10 rooms within 1A Phoenix Street that face within 90° of due south and are therefore relevant for sunlight assessment. Of these 10 rooms, 5/10 are fully compliant with the APSH criteria set out within the BRE



Guidelines. A further room will have an annual retained value of 35% (against a target value of 25%) and only falls short in winter sunlight, when arguably there is a lesser expectation of high sunlight levels.

The remaining four rooms are LKD's and are the same rooms as explained above. When the aforementioned mirror massing scenario is run for sunlight, the results also demonstrate hypothetical gains and de minimis losses in sunlight enjoyment. The same conclusions noted for daylight are therefore also relevant for sunlight.

I trust the above further clarifies the position on daylight amenity to 1A Phoenix Street, but should you have any further queries, please do not hesitate to contact me.

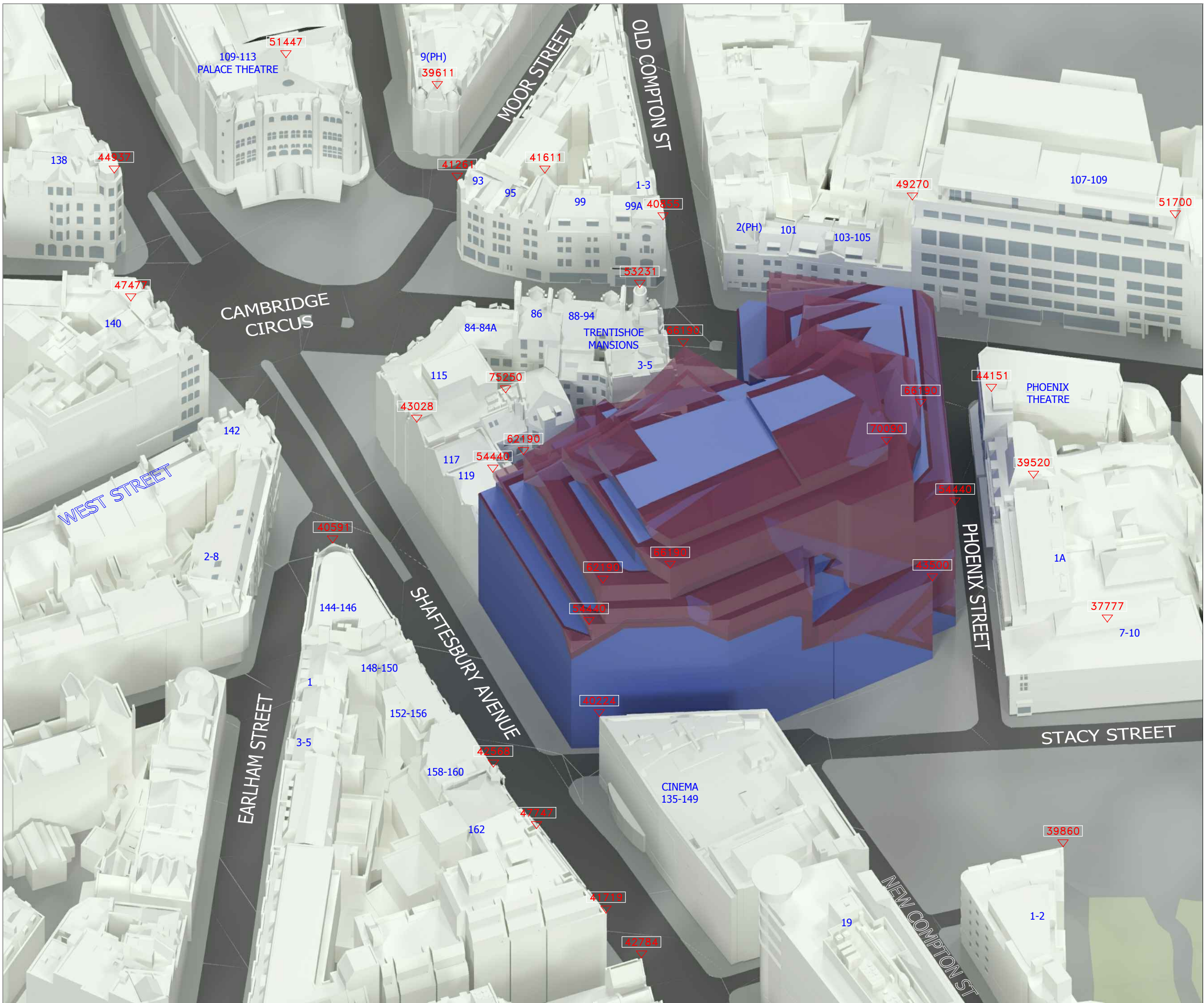
Yours sincerely
For and on behalf of GIA



Stephen Friel
Partner
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Appendix 01

Cutback Plots



SOURCES OF INFORMATION

ROSS LAIRD LTD
 IR06 & IR07-6481 - PARTIAL SITE SURVEY

VERTEX MODELLING
 IR7-6481 - PHOTOGRAMMETRIC MODEL

FIND MAPS
 IR7-6481 - DIGITAL OS EXTRACT

CAMDEN PLANNING WEBSITE
 PROPOSAL DRAWINGS - 1A PHOENIX STREET
 WESTMINSTER PLANNING WEBSITE
 PROPOSAL DRAWINGS -
 107-109 CHARING CROSS ROAD

LIGHTWELLS SURVEY - DSDHA
 IR29-6481 RECEIVED 25.08.15

DSDHA
 IR40-6481 - PROPOSED 3D MODEL

ALL INFORMATION DISPLAYED IS SUBJECT TO A COMPLETE VERIFIABLE SITE SURVEY BEING UNDERTAKEN. GIA TAKES NO RESPONSIBILITY ON THE ACCURACY OR RELIABILITY OF THE DISPLAYED DATA SINCE A VERIFIED SITE SURVEY WAS NOT MADE AVAILABLE PRIOR TO THE GENERATION OF SUCH INFORMATION.

NOTES:

N.B. DO NOT SCALE OFF THIS DRAWING

PROPOSED SCHEME SHOWN IN BLUE

PROJECT:

125 SHAFTESBURY AVENUE
 LONDON WC2

DRAWING NAME:

3D VIEW
 PROPOSED SCHEME
 IR40-6481 RECEIVED 27.05.2016

DWN BY	SCALE	CHK BY	STATUS	DATE
TBE	NTS@A3		ROL	20.12.16
PROJ No.	REL No.	IS No.	DWG No.	REV No.
6481	REL015	IS004	002	A



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Appendix 02

Balconies Removed Results

Vertical Sky Component (VSC)

Vertical Sky Component							Average Daylight Factor									
Room	Window	Room Use	Existing	Proposed	Loss	%	Room	Window	Room Use	Glazed Area	Existing		Proposed		Loss	%
											ADF	Total	ADF	Total		
1A PHOENIX STREET (NO RIGHTS OF LIGHT)																
R2/1699	W2/1699	BEDROOM	2	1	1	50.0	R2/1699	W2/1699	BEDROOM	6.4	1.3	1.3	0.9	0.9	0.4	30.76923077
R3/1699	W3/1699	BEDROOM	1.1	0.2	0.9	81.8	R3/1699	W3/1699	BEDROOM	2.8	0.4	0.4	0.1	0.1	0.3	75
R4/1699	W4/1699	BEDROOM	2.4	1.8	0.6	25.0	R4/1699	W4/1699	BEDROOM	2.1	0.6	0.6	0.5	0.5	0.1	16.66666667
R5/1699	W5/1699	BEDROOM	2.8	1.9	0.9	32.1	R5/1699	W5/1699	BEDROOM	6.5	1.9	1.9	1.6	1.6	0.3	15.78947368
R6/1699	W6/1699	BEDROOM	2.8	1.9	0.9	32.1	R6/1699	W6/1699	BEDROOM	5.6	1	1	0.9	0.9	0.1	10
R1/1700	W1/1700	LKD	3.2	0.8	2.4	75.0	R1/1700	W1/1700	LKD	5.3	0.2		0.1			
R1/1700	W2/1700	LKD	3.7	1.3	2.4	64.9	R1/1700	W2/1700	LKD	6.4	0.3		0.2			
R1/1700	W3/1700	LKD	4.1	1.9	2.2	53.7	R1/1700	W3/1700	LKD	2.2	0.1	0.7	0.1	0.4	0.3	42.85714286
R2/1700	W4/1700	LKD	5.3	4.5	0.8	15.1	R2/1700	W4/1700	LKD	2.1	0.1		0.1			
R2/1700	W5/1700	LKD	5.8	5	0.8	13.8	R2/1700	W5/1700	LKD	6.5	0.4		0.4			
R2/1700	W6/1700	LKD	6.6	5.7	0.9	13.6	R2/1700	W6/1700	LKD	5.6	0.4	0.9	0.4	0.9	0	0
R1/1701	W1/1701	LKD	10.4	4.7	5.7	54.8	R1/1701	W1/1701	LKD	5.1	0.6	0.6	0.4	0.4	0.2	33.33333333
R2/1701	W2/1701	BEDROOM	11.2	5.6	5.6	50.0	R2/1701	W2/1701	BEDROOM	6.4	1.8	1.8	1.2	1.2	0.7	38.88888889
R3/1701	W3/1701	Bedroom	5.8	1.8	4	69.0	R3/1701	W3/1701	Bedroom	2.8	0.4		0.1			
R3/1701	W7/1701	Bedroom	13.4	8.2	5.2	38.8	R3/1701	W7/1701	Bedroom	2.7	0.5	0.9	0.3	0.4	0.5	55.55555556
R4/1701	W4/1701	Bedroom	13.8	10.9	2.9	21.0	R4/1701	W4/1701	Bedroom	2.1	0.7		0.6			
R4/1701	W8/1701	Bedroom	14.5	9.9	4.6	31.7	R4/1701	W8/1701	Bedroom	3.6	0.7	1.5	0.6	1.2	0.3	20
R5/1701	W5/1701	BEDROOM	15.8	12.4	3.4	21.5	R5/1701	W5/1701	BEDROOM	6.5	3.4	3.4	3	3	0.5	14.70588235
R6/1701	W6/1701	UNKNOWN	16.6	13.2	3.4	20.5	R6/1701	W6/1701	UNKNOWN	5.6	1.3	1.3	1.1	1.1	0.2	15.38461538
R1/1702	W1/1702	LKD	11.7	5.5	6.2	53.0	R1/1702	W1/1702	LKD	5.1	0.9	0.9	0.5	0.5	0.4	44.44444444
R2/1702	W2/1702	BEDROOM	12.7	6.5	6.2	48.8	R2/1702	W2/1702	BEDROOM	6.4	2	2	1.2	1.2	0.8	40
R3/1702	W3/1702	Bedroom	6.9	2.3	4.6	66.7	R3/1702	W3/1702	Bedroom	2.8	0.5		0.1			
R3/1702	W7/1702	Bedroom	14.8	9.1	5.7	38.5	R3/1702	W7/1702	Bedroom	2.7	0.5	1	0.4	0.4	0.5	50
R4/1702	W4/1702	Bedroom	15	11.9	3.1	20.7	R4/1702	W4/1702	Bedroom	2.1	0.8		0.7			
R4/1702	W8/1702	Bedroom	16	10.9	5.1	31.9	R4/1702	W8/1702	Bedroom	3.6	0.8	1.6	0.6	1.3	0.3	18.75
R5/1702	W5/1702	BEDROOM	17.5	13.7	3.8	21.7	R5/1702	W5/1702	BEDROOM	6.5	3.6	3.6	3.1	3.1	0.5	13.88888889
R6/1702	W6/1702	UNKNOWN	18.3	14.4	3.9	21.3	R6/1702	W6/1702	UNKNOWN	5.6	1.3	1.3	1.1	1.1	0.2	15.38461538
R1/1703	W1/1703	LKD	13.6	6.6	7	51.5	R1/1703	W1/1703	LKD	5.1	1	1	0.5	0.5	0.4	40
R2/1703	W2/1703	BEDROOM	14.8	8.1	6.7	45.3	R2/1703	W2/1703	BEDROOM	6.4	2.3	2.3	1.4	1.4	0.8	34.7826087
R3/1703	W3/1703	Bedroom	8.9	3.6	5.3	59.6	R3/1703	W3/1703	Bedroom	2.8	0.6		0.3			
R3/1703	W7/1703	Bedroom	16.4	10.2	6.2	37.8	R3/1703	W7/1703	Bedroom	2.7	0.5	1.1	0.4	0.7	0.5	45.45454545
R4/1703	W4/1703	Bedroom	16.8	13.3	3.5	20.8	R4/1703	W4/1703	Bedroom	2.1	0.9		0.7			
R4/1703	W8/1703	Bedroom	17.7	12.1	5.6	31.6	R4/1703	W8/1703	Bedroom	3.6	0.8	1.7	0.7	1.4	0.3	17.64705882

Vertical Sky Component							Average Daylight Factor									
Room	Window	Room Use	Existing	Proposed	Loss	%	Room	Window	Room Use	Glazed Area	Existing		Proposed		Loss	%
											ADF	Total	ADF	Total		
R5/1703	W5/1703	BEDROOM	19.9	15.4	4.5	22.6	R5/1703	W5/1703	BEDROOM	6.5	4	4	3.3	3.3	0.7	17.5
R6/1703	W6/1703	UNKNOWN	20.8	16.3	4.5	21.6	R6/1703	W6/1703	UNKNOWN	5.6	1.5	1.5	1.2	1.2	0.2	13.33333333
R1/1704	W1/1704	BEDROOM	15.6	7.8	7.8	50.0	R1/1704	W1/1704	BEDROOM	5.3	1.4	1.4	0.8	0.8	0.6	42.85714286
R2/1704	W2/1704	BEDROOM	17	9.6	7.4	43.5	R2/1704	W2/1704	BEDROOM	6.8	2.8	2.8	1.9	1.9	1	35.71428571
R3/1704	W3/1704	BEDROOM	18.7	12.2	6.5	34.8	R3/1704	W3/1704	BEDROOM	7.3	3.8	3.8	2.8	2.8	1	26.31578947
R4/1704	W4/1704	BEDROOM	20.5	15	5.5	26.8	R4/1704	W4/1704	BEDROOM	8.1	4.1	4.1	3.3	3.3	0.8	19.51219512
R5/1704	W5/1704	BEDROOM	22.1	16.8	5.3	24.0	R5/1704	W5/1704	BEDROOM	6.7	3.4	3.4	2.8	2.8	0.6	17.64705882
R6/1704	W6/1704	BEDROOM	23.3	18.3	5	21.5	R6/1704	W6/1704	BEDROOM	6.2	2.5	2.5	2.1	2.1	0.4	16
R1/1705	W1/1705	LKD	21.9	14.2	7.7	35.2	R1/1705	W1/1705	LKD	18.1	3.3	3.3	2.4	2.4	0.9	27.27272727
R2/1705	W2/1705	LKD	25.1	19.2	5.9	23.5	R2/1705	W2/1705	LKD	19.6	3.9	3.9	3.2	3.2	0.7	17.94871795

No Skyline (NSL)

Room/ Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft
1A PHOENIX STREET (NO RIGHTS OF LIGHT)					
R2/1699	BEDROOM	120.68	54.82	43.26	11.57
R3/1699	BEDROOM	92.86	16.90	6.33	10.57
R4/1699	BEDROOM	85.41	58.57	54.67	3.89
R5/1699	BEDROOM	98.90	60.38	57.52	2.86
R6/1699	BEDROOM	183.27	62.14	56.98	5.16
R1/1700	LKD	420.24	240.86	141.53	99.33
R2/1700	LKD	430.15	324.53	311.43	13.10
R1/1701	LKD	308.51	110.12	61.02	49.11
R2/1701	BEDROOM	152.19	82.97	52.28	30.69
R3/1701	Bedroom	153.98	82.63	43.43	39.20
R4/1701	Bedroom	150.79	136.07	126.14	9.93
R5/1701	BEDROOM	99.73	87.90	83.39	4.51
R6/1701	UNKNOWN	317.14	147.29	133.76	13.53
R1/1702	LKD	308.51	113.20	62.12	51.08
R2/1702	BEDROOM	152.19	85.02	53.51	31.51
R3/1702	Bedroom	153.98	87.03	48.23	38.80
R4/1702	Bedroom	150.79	138.66	127.52	11.13
R5/1702	BEDROOM	99.73	89.97	84.04	5.93
R6/1702	UNKNOWN	317.14	158.99	142.14	16.85
R1/1703	LKD	308.51	117.07	65.13	51.94
R2/1703	BEDROOM	152.19	88.28	56.22	32.06
R3/1703	Bedroom	153.98	91.12	54.67	36.45
R4/1703	Bedroom	150.79	141.49	129.48	12.02
R5/1703	BEDROOM	99.73	92.43	84.84	7.59
R6/1703	UNKNOWN	317.14	167.01	148.36	18.65
R1/1704	BEDROOM	247.43	124.32	69.72	54.60
R2/1704	BEDROOM	143.91	96.31	64.95	31.35
R3/1704	BEDROOM	115.10	102.75	89.51	13.24
R4/1704	BEDROOM	126.92	116.46	108.26	8.20
R5/1704	BEDROOM	144.02	126.81	112.76	14.05
R6/1704	BEDROOM	203.66	155.44	132.37	23.07
R1/1705	LKD	468.24	441.99	431.42	10.57
R2/1705	LKD	470.51	418.27	399.44	18.84

Annual Probable Sunlight Hours (APSH)

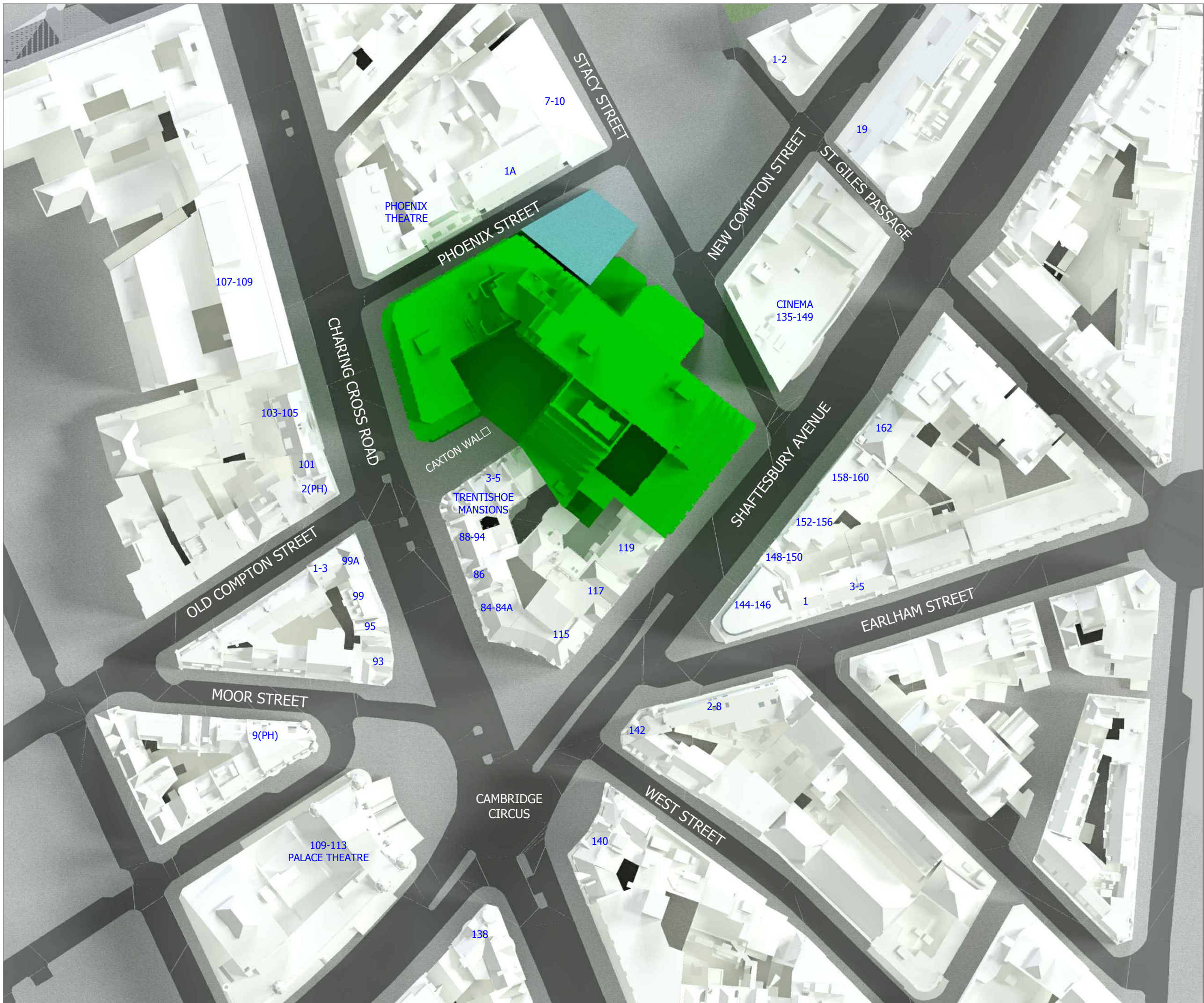
Room	Window	Room Use	Existing		Window Proposed		Winter Loss	Annual Loss	Winter %Loss	Annual %Loss	Room Existing		Room Proposed		Winter %Loss	Annual %Loss
			Winter APSH	Annual APSH	Winter APSH	Annual APSH					Winter APSH	Annual APSH	Winter %Loss	Annual %Loss		
1A PHOENIX STREET (NO RIGHTS OF LIGHT)																
R1/1699	W1/1699	SUMED_ENTRAN	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0.0	0
R2/1699	W2/1699	BEDROOM	1	2	1	1	0	1	0.00	50.00	1	2	1	1	0.0	50
R3/1699	W3/1699	BEDROOM	1	3	1	2	0	1	0.00	33.33	1	3	1	2	0.0	33
R4/1699	W4/1699	BEDROOM	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0.0	0
R5/1699	W5/1699	BEDROOM	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0.0	0
R6/1699	W6/1699	BEDROOM	0	3	0	0	0	3	0.00	100.00	0	3	0	0	0.0	100
R1/1700	W1/1700	LKD	1	15	0	5	1	10	100.00	66.67						
R1/1700	W2/1700	LKD	0	14	0	6	0	8	0.00	57.14						
R1/1700	W3/1700	LKD	0	16	0	9	0	7	0.00	43.75	1	17	0	9	100.0	47
R2/1700	W4/1700	LKD	0	16	0	15	0	1	0.00	6.25						
R2/1700	W5/1700	LKD	1	20	1	17	0	3	0.00	15.00						
R2/1700	W6/1700	LKD	1	20	1	17	0	3	0.00	15.00	1	21	1	18	0.0	14
R1/1701	W1/1701	LKD	1	19	0	8	1	11	100.00	57.89	1	19	0	8	100.0	58
R2/1701	W2/1701	BEDROOM	2	24	1	10	1	14	50.00	58.33	2	24	1	10	50.0	58
R3/1701	W3/1701	Bedroom	2	16	2	6	0	10	0.00	62.50						
R3/1701	W7/1701	Bedroom	1	30	1	18	0	12	0.00	40.00	3	33	3	22	0.0	33
R4/1701	W4/1701	Bedroom	1	26	1	19	0	7	0.00	26.92						
R4/1701	W8/1701	Bedroom	2	33	1	20	1	13	50.00	39.39	2	35	1	24	50.0	31
R5/1701	W5/1701	BEDROOM	2	31	2	22	0	9	0.00	29.03	2	31	2	22	0.0	29
R6/1701	W6/1701	UNKNOWN	1	34	1	23	0	11	0.00	32.35	1	34	1	23	0.0	32
R1/1702	W1/1702	LKD	1	21	0	8	1	13	100.00	61.90	1	21	0	8	100.0	62
R2/1702	W2/1702	BEDROOM	2	28	1	16	1	12	50.00	42.86	2	28	1	16	50.0	43

SUNLIGHT ANALYSIS

Room	Window	Room Use	Window								Room						
			Existing		Proposed		Winter Loss	Annual Loss	Winter %Loss	Annual %Loss	Existing		Proposed		Winter %Loss	Annual %Loss	
			Winter APSH	Annual APSH	Winter APSH	Annual APSH					Winter APSH	Annual APSH	Winter APSH	Annual APSH			
R3/1702	W3/1702	Bedroom	2	18	2	9	0	9	0.00	50.00							
R3/1702	W7/1702	Bedroom	2	36	2	23	0	13	0.00	36.11	3	38	3	26	0.0	32	
R4/1702	W4/1702	Bedroom	2	31	1	23	1	8	50.00	25.81							
R4/1702	W8/1702	Bedroom	2	37	1	25	1	12	50.00	32.43	3	41	1	30	66.7	27	
R5/1702	W5/1702	BEDROOM	2	34	2	24	0	10	0.00	29.41	2	34	2	24	0.0	29	
R6/1702	W6/1702	UNKNOWN	3	39	2	30	1	9	33.33	23.08	3	39	2	30	33.3	23	
R1/1703	W1/1703	LKD	2	30	0	15	2	15	100.00	50.00	2	30	0	15	100.0	50	
R2/1703	W2/1703	BEDROOM	3	35	1	19	2	16	66.67	45.71	3	35	1	19	66.7	46	
R3/1703	W3/1703	Bedroom	2	23	2	12	0	11	0.00	47.83							
R3/1703	W7/1703	Bedroom	2	38	2	25	0	13	0.00	34.21	3	41	3	28	0.0	32	
R4/1703	W4/1703	Bedroom	3	33	2	23	1	10	33.33	30.30							
R4/1703	W8/1703	Bedroom	3	43	3	29	0	14	0.00	32.56	4	45	3	31	25.0	31	
R5/1703	W5/1703	BEDROOM	3	44	3	34	0	10	0.00	22.73	3	44	3	34	0.0	23	
R6/1703	W6/1703	UNKNOWN	5	47	3	35	2	12	40.00	25.53	5	47	3	35	40.0	26	
R1/1704	W1/1704	BEDROOM	4	41	2	21	2	20	50.00	48.78	4	41	2	21	50.0	49	
R2/1704	W2/1704	BEDROOM	5	45	2	25	3	20	60.00	44.44	5	45	2	25	60.0	44	
R3/1704	W3/1704	BEDROOM	4	47	2	32	2	15	50.00	31.91	4	47	2	32	50.0	32	
R4/1704	W4/1704	BEDROOM	6	53	4	36	2	17	33.33	32.08	6	53	4	36	33.3	32	
R5/1704	W5/1704	BEDROOM	7	54	5	38	2	16	28.57	29.63	7	54	5	38	28.6	30	
R6/1704	W6/1704	BEDROOM	7	57	5	41	2	16	28.57	28.07	7	57	5	41	28.6	28	
R1/1705	W1/1705	LKD	5	54	3	35	2	19	40.00	35.19	5	54	3	35	40.0	35	
R2/1705	W2/1705	LKD	9	63	6	47	3	16	33.33	25.40	9	63	6	47	33.3	25	

Appendix 03

Mirror Massing Plots



SOURCES OF INFORMATION

ROSS LAIRD LTD
 IR06 & IR07-6481 - PARTIAL SITE SURVEY

VERTEX MODELLING
 IR7-6481 - PHOTOGRAMMETRIC MODEL

FIND MAPS
 IR7-6481 - DIGITAL OS EXTRACT

CAMDEN PLANNING WEBSITE
 PROPOSAL DRAWINGS - 1A PHOENIX STREET
 WESTMINSTER PLANNING WEBSITE
 PROPOSAL DRAWINGS -
 107-109 CHARING CROSS ROAD

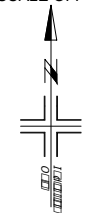
LIGHTWELLS SURVEY - DSDHA
 IR29-6481 RECEIVED 25.08.15

DSDHA
 IR40-6481 - PROPOSED 3D MODEL

ALL INFORMATION DISPLAYED IS SUBJECT TO A COMPLETE VERIFIABLE SITE SURVEY BEING UNDERTAKEN. GIA TAKES NO RESPONSIBILITY ON THE ACCURACY OR RELIABILITY OF THE DISPLAYED DATA SINCE A VERIFIED SITE SURVEY WAS NOT MADE AVAILABLE PRIOR TO THE GENERATION OF SUCH INFORMATION.

NOTES:

N.B. DO NOT SCALE OFF THIS DRAWING



ALL HEIGHTS AND DIMENSIONS GIVEN IN mm AOD

EXISTING SCENARIO SHOWN IN GREEN
 MIRROR MASSING SHOWN IN CYAN

PROJECT:

125 SHAFESBURY AVENUE
 LONDON WC2

DRAWING NAME:

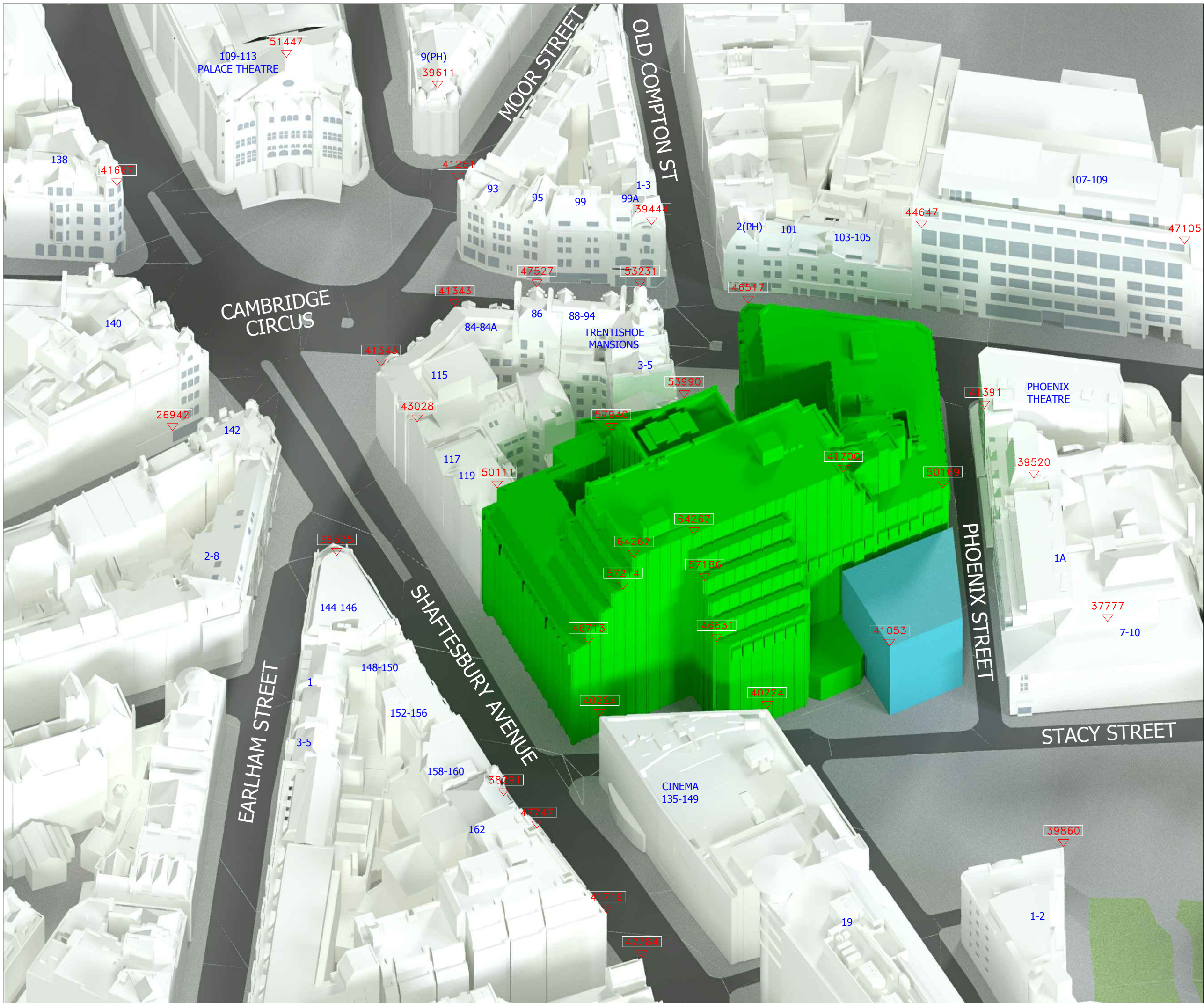
PLAN VIEW
 EXISTING SCENARIO MIRROR MASSING

DWN BY	SCALE	CHK BY	STATUS	DATE
CRC	1:750@A3		ROL	03.03.17
PROJ No.	REL No.	IS No.	DWG No.	REV No.
6481	REL015	IS011	001	A



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SOURCES OF INFORMATION

ROSS LAIRD LTD
 IR06 & IR07-6481 - PARTIAL SITE SURVEY

VERTEX MODELLING
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CAMDEN PLANNING WEBSITE
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LIGHTWELLS SURVEY - DSDHA
 IR29-6481 RECEIVED 25.08.15

DSDHA
 IR40-6481 - PROPOSED 3D MODEL

ALL INFORMATION DISPLAYED IS SUBJECT TO A COMPLETE VERIFIABLE SITE SURVEY BEING UNDERTAKEN. GIA TAKES NO RESPONSIBILITY ON THE ACCURACY OR RELIABILITY OF THE DISPLAYED DATA SINCE A VERIFIED SITE SURVEY WAS NOT MADE AVAILABLE PRIOR TO THE GENERATION OF SUCH INFORMATION.

NOTES:

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS AND DIMENSIONS GIVEN IN mm AOD
 EXISTING SCENARIO SHOWN IN GREEN
 MIRROR MASSING SHOWN IN CYAN

PROJECT:

125 SHAFTESBURY AVENUE
 LONDON WC2

DRAWING NAME:

3D VIEW
 EXISTING SCENARIO MIRROR MASSING

DWN BY	SCALE	CHK BY	STATUS	DATE
CRC	NTS@A3		ROL	03.03.17
PROJ No.	REL No.	IS No.	DWG No.	REV No.
6481	REL015	IS011	002	A



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Appendix 04

Mirror Massing Results

Vertical Sky Component (VSC)

Vertical Sky Component							Average Daylight Factor									
Room	Window	Room Use	Existing	Proposed	Loss	%	Room	Window	Room Use	Glazed Area	Existing ADF	Total	Proposed ADF	Total	Loss	%
1A PHOENIX STREET (NO RIGHTS OF LIGHT)							1A PHOENIX STREET (NO RIGHTS OF LIGHT)									
R2/1699	W2/1699	BEDROOM	1.4	1.0	0.4	28.6	R2/1699	W2/1699	BEDROOM	6.4	0.5	0.5	0.9	0.9	-0.4	-80.0
R3/1699	W3/1699	BEDROOM	0.8	0.2	0.6	75.0	R3/1699	W3/1699	BEDROOM	2.8	0.2	0.2	0.1	0.1	0.1	50.0
R4/1699	W4/1699	BEDROOM	1.8	1.8	0.0	0.0	R4/1699	W4/1699	BEDROOM	2.1	0.4	0.4	0.5	0.5	-0.1	-25.0
R5/1699	W5/1699	BEDROOM	2.3	1.9	0.4	17.4	R5/1699	W5/1699	BEDROOM	6.5	1.2	1.2	1.6	1.6	-0.4	-33.3
R6/1699	W6/1699	BEDROOM	2.3	1.9	0.4	17.4	R6/1699	W6/1699	BEDROOM	5.6	0.7	0.7	0.9	0.9	-0.2	-28.6
R1/1700	W1/1700	LKD	0.0	0.8	-0.8	0.0	R1/1700	W1/1700	LKD	5.3	0.0		0.1			
R1/1700	W2/1700	LKD	0.1	1.2	-1.1	-1100.0	R1/1700	W2/1700	LKD	6.4	0.0		0.2			
R1/1700	W3/1700	LKD	0.1	1.8	-1.7	-1700.0	R1/1700	W3/1700	LKD	2.2	0.0	0.0	0.1	0.3	-0.3	-
R2/1700	W4/1700	LKD	0.7	4.5	-3.8	-542.9	R2/1700	W4/1700	LKD	2.1	0.0		0.1			
R2/1700	W5/1700	LKD	1.2	5.0	-3.8	-316.7	R2/1700	W5/1700	LKD	6.5	0.2		0.4			
R2/1700	W6/1700	LKD	3.0	5.7	-2.7	-90.0	R2/1700	W6/1700	LKD	5.6	0.2	0.4	0.4	0.9	-0.5	-125.0
R1/1701	W1/1701	LKD	0.1	1.1	-1.0	-1000.0	R1/1701	W1/1701	LKD	5.1	0.0	0.0	0.1	0.1	-0.1	-
R2/1701	W2/1701	BEDROOM	0.1	1.7	-1.6	-1600.0	R2/1701	W2/1701	BEDROOM	6.4	0.1	0.1	0.5	0.5	-0.4	-400.0
R3/1701	W3/1701	Bedroom	0.0	0.0	0.0	0.0	R3/1701	W3/1701	Bedroom	2.8	0.0		0.0			
R3/1701	W7/1701	Bedroom	5.6	8.0	-2.4	-42.9	R3/1701	W7/1701	Bedroom	2.7	0.2	0.2	0.3	0.3	-0.1	-50.0
R4/1701	W4/1701	Bedroom	1.0	5.8	-4.8	-480.0	R4/1701	W4/1701	Bedroom	2.1	0.1		0.4			
R4/1701	W8/1701	Bedroom	6.1	9.9	-3.8	-62.3	R4/1701	W8/1701	Bedroom	3.6	0.4	0.5	0.6	0.9	-0.4	-80.0
R5/1701	W5/1701	BEDROOM	1.8	6.5	-4.7	-261.1	R5/1701	W5/1701	BEDROOM	6.5	0.8	0.8	1.6	1.6	-0.8	-100.0
R6/1701	W6/1701	UNKNOWN	3.2	6.7	-3.5	-109.4	R6/1701	W6/1701	UNKNOWN	5.6	0.4	0.4	0.6	0.6	-0.2	-50.0
R1/1702	W1/1702	LKD	0.3	1.3	-1.0	-333.3	R1/1702	W1/1702	LKD	5.1	0.0	0.0	0.2	0.2	-0.2	-
R2/1702	W2/1702	BEDROOM	0.2	2.1	-1.9	-950.0	R2/1702	W2/1702	BEDROOM	6.4	0.1	0.1	0.6	0.6	-0.5	-500.0
R3/1702	W3/1702	Bedroom	0.1	0.1	0.0	0.0	R3/1702	W3/1702	Bedroom	2.8	0.0		0.0			
R3/1702	W7/1702	Bedroom	7.6	9.0	-1.4	-18.4	R3/1702	W7/1702	Bedroom	2.7	0.3	0.3	0.4	0.4	-0.1	-33.3
R4/1702	W4/1702	Bedroom	1.3	6.6	-5.3	-407.7	R4/1702	W4/1702	Bedroom	2.1	0.1		0.4			
R4/1702	W8/1702	Bedroom	8.2	10.9	-2.7	-32.9	R4/1702	W8/1702	Bedroom	3.6	0.5	0.6	0.6	1.0	-0.4	-66.7
R5/1702	W5/1702	BEDROOM	2.2	7.4	-5.2	-236.4	R5/1702	W5/1702	BEDROOM	6.5	0.9	0.9	1.7	1.7	-0.8	-88.9
R6/1702	W6/1702	UNKNOWN	3.7	7.5	-3.8	-102.7	R6/1702	W6/1702	UNKNOWN	5.6	0.4	0.4	0.6	0.6	-0.2	-50.0
R1/1703	W1/1703	LKD	1.2	1.3	-0.1	-8.3	R1/1703	W1/1703	LKD	5.1	0.1	0.1	0.2	0.2	-0.1	-100.0
R2/1703	W2/1703	BEDROOM	1.2	2.0	-0.8	-66.7	R2/1703	W2/1703	BEDROOM	6.4	0.2	0.2	0.5	0.5	-0.3	-150.0
R3/1703	W3/1703	Bedroom	0.6	0.2	0.4	66.7	R3/1703	W3/1703	Bedroom	2.8	0.0		0.0			
R3/1703	W7/1703	Bedroom	10.6	10.1	0.5	4.7	R3/1703	W7/1703	Bedroom	2.7	0.5	0.5	0.4	0.4	0.1	20.0
R4/1703	W4/1703	Bedroom	2.3	6.4	-4.1	-178.3	R4/1703	W4/1703	Bedroom	2.1	0.1		0.4			
R4/1703	W8/1703	Bedroom	11.3	12.0	-0.7	-6.2	R4/1703	W8/1703	Bedroom	3.6	0.8	0.9	0.7	1.0	-0.1	-11.1

Vertical Sky Component							Average Daylight Factor									
Room	Window	Room Use	Existing	Proposed	Loss	%	Room	Window	Room Use	Glazed Area	Existing		Proposed		Loss	%
											ADF	Total	ADF	Total		
R5/1703	W5/1703	BEDROOM	3.1	7.0	-3.9	-125.8	R5/1703	W5/1703	BEDROOM	6.5	0.8	0.8	1.6	1.6	-0.8	-100.0
R6/1703	W6/1703	UNKNOWN	4.4	7.2	-2.8	-63.6	R6/1703	W6/1703	UNKNOWN	5.6	0.4	0.4	0.6	0.6	-0.2	-50.0
R1/1704	W1/1704	BEDROOM	13.8	7.6	6.2	44.9	R1/1704	W1/1704	BEDROOM	5.3	1.3	1.3	0.8	0.8	0.5	38.5
R2/1704	W2/1704	BEDROOM	14.8	9.3	5.5	37.2	R2/1704	W2/1704	BEDROOM	6.8	2.6	2.6	1.8	1.8	0.8	30.8
R3/1704	W3/1704	BEDROOM	16.0	12.2	3.8	23.8	R3/1704	W3/1704	BEDROOM	7.3	3.4	3.4	2.8	2.8	0.6	17.6
R4/1704	W4/1704	BEDROOM	17.4	15.0	2.4	13.8	R4/1704	W4/1704	BEDROOM	8.1	3.8	3.8	3.3	3.3	0.5	13.2
R5/1704	W5/1704	BEDROOM	18.9	16.8	2.1	11.1	R5/1704	W5/1704	BEDROOM	6.7	3.1	3.1	2.7	2.7	0.4	12.9
R6/1704	W6/1704	BEDROOM	20.8	18.3	2.5	12.0	R6/1704	W6/1704	BEDROOM	6.2	2.3	2.3	2.1	2.1	0.2	8.7
R1/1705	W1/1705	LKD	21.6	14.0	7.6	35.2	R1/1705	W1/1705	LKD	18.1	3.3	3.3	2.4	2.4	0.9	27.3
R2/1705	W2/1705	LKD	24.7	19.2	5.5	22.3	R2/1705	W2/1705	LKD	19.6	3.8	3.8	3.2	3.2	0.6	15.8

No Skyline (NSL)

Room/ Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft
1A PHOENIX STREET (NO RIGHTS OF LIGHT)					
R2/1699	BEDROOM	120.68	13.21	42.62	-29.41
R3/1699	BEDROOM	92.86	8.73	6.37	2.36
R4/1699	BEDROOM	85.41	29.17	51.88	-22.71
R5/1699	BEDROOM	98.90	44.19	57.50	-13.31
R6/1699	BEDROOM	183.27	49.81	56.88	-7.07
R1/1700	LKD	420.24	15.92	137.91	-122.00
R2/1700	LKD	430.15	154.96	303.09	-148.14
R1/1701	LKD	308.51	10.92	55.16	-44.24
R2/1701	BEDROOM	152.19	8.05	48.84	-40.79
R3/1701	Bedroom	153.98	10.10	33.83	-23.74
R4/1701	Bedroom	150.79	48.73	122.28	-73.54
R5/1701	BEDROOM	99.73	56.85	81.39	-24.54
R6/1701	UNKNOWN	317.14	68.34	105.91	-37.57
R1/1702	LKD	308.51	17.19	56.69	-39.50
R2/1702	BEDROOM	152.19	8.15	49.16	-41.01
R3/1702	Bedroom	153.98	16.39	37.83	-21.44
R4/1702	Bedroom	150.79	61.37	123.88	-62.51
R5/1702	BEDROOM	99.73	57.31	81.65	-24.33
R6/1702	UNKNOWN	317.14	72.48	112.10	-39.61
R1/1703	LKD	308.51	18.93	57.08	-38.15
R2/1703	BEDROOM	152.19	10.81	49.29	-38.47
R3/1703	Bedroom	153.98	28.90	41.45	-12.55
R4/1703	Bedroom	150.79	75.35	125.48	-50.13
R5/1703	BEDROOM	99.73	57.52	81.54	-24.02
R6/1703	UNKNOWN	317.14	73.12	110.76	-37.64
R1/1704	BEDROOM	247.43	106.87	65.43	41.44
R2/1704	BEDROOM	143.91	85.90	63.09	22.81
R3/1704	BEDROOM	115.10	101.24	89.01	12.24
R4/1704	BEDROOM	126.92	116.33	108.22	8.11
R5/1704	BEDROOM	144.02	103.98	112.65	-8.67
R6/1704	BEDROOM	203.66	133.79	130.43	3.36
R1/1705	LKD	468.24	441.88	430.10	11.78
R2/1705	LKD	470.51	418.22	398.51	19.70

Annual Probable Sunlight Hours (APSH)

1A Phoenix St -mirrormassing test

Room	Window	Room Use	Orientation	Window								Room					
				Existing		Proposed		Winter Loss	Annual Loss	Winter %Loss	Annual %Loss	Existing		Proposed			
				Winter APSH	Annual APSH	Winter APSH	Annual APSH					Winter APSH	Annual APSH	Winter %Loss	Annual %Loss		
1A PHOENIX STREET (NO RIGHTS OF LIGHT)																	
R2/1699	W2/1699	BEDROOM	150	1	2	1	1	0	1	0.00	50.00	1	2	1	1	0.0	50
R3/1699	W3/1699	BEDROOM	150	1	3	1	2	0	1	0.00	33.33	1	3	1	2	0.0	33
R4/1699	W4/1699	BEDROOM	151	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0.0	0
R5/1699	W5/1699	BEDROOM	150	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0.0	0
R6/1699	W6/1699	BEDROOM	150	0	3	0	0	0	3	0.00	100.00	0	3	0	0	0.0	100
R1/1700	W1/1700	LKD	150	0	0	0	4	0	0	0.00	0.00						
R1/1700	W2/1700	LKD	150	0	0	0	6	0	0	0.00	0.00						
R1/1700	W3/1700	LKD	150	0	0	0	8	0	0	0.00	0.00	0	0	0	8	0.0	0
R2/1700	W4/1700	LKD	151	0	6	0	15	0	-9	0.00	-150.00						
R2/1700	W5/1700	LKD	150	0	7	1	17	0	-10	0.00	-142.86						
R2/1700	W6/1700	LKD	150	0	11	1	17	0	-6	0.00	-54.55	0	12	1	18	0.0	-50
R1/1701	W1/1701	LKD	150	0	2	0	7	0	-5	0.00	-250.00	0	2	0	7	0.0	-250
R2/1701	W2/1701	BEDROOM	150	1	1	1	7	0	-6	0.00	-600.00	1	1	1	7	0.0	-600
R3/1701	W3/1701	Bedroom	151	0	0	0	0	0	0	0.00	0.00						
R3/1701	W7/1701	Bedroom	150	0	9	0	17	0	-8	0.00	-88.89	0	9	0	17	0.0	-89
R4/1701	W4/1701	Bedroom	151	0	7	1	18	0	-11	0.00	-157.14						
R4/1701	W8/1701	Bedroom	150	1	11	1	20	0	-9	0.00	-81.82	1	16	1	23	0.0	-44
R5/1701	W5/1701	BEDROOM	150	0	9	2	21	0	-12	0.00	-133.33	0	9	2	21	0.0	-133
R6/1701	W6/1701	UNKNOWN	150	0	8	1	15	0	-7	0.00	-87.50	0	8	1	15	0.0	-88
R1/1702	W1/1702	LKD	150	0	2	0	8	0	-6	0.00	-300.00	0	2	0	8	0.0	-300
R2/1702	W2/1702	BEDROOM	150	1	2	1	9	0	-7	0.00	-350.00	1	2	1	9	0.0	-350
R3/1702	W3/1702	Bedroom	151	0	0	0	0	0	0	0.00	0.00						

1A Phoenix St -mirrormassing test

Room	Window	Room Use	Orientation	Window								Room					
				Existing		Proposed		Winter Loss	Annual Loss	Winter %Loss	Annual %Loss	Existing		Proposed			
				Winter APSH	Annual APSH	Winter APSH	Annual APSH					Winter APSH	Annual APSH	Winter %Loss	Annual %Loss		
R3/1702	W7/1702	Bedroom	150	1	15	1	21	0	-6	0.00	-40.00	1	15	1	21	0.0	-40
R4/1702	W4/1702	Bedroom	151	0	9	1	21	0	-12	0.00	-133.33						
R4/1702	W8/1702	Bedroom	150	1	17	1	25	0	-8	0.00	-47.06	1	22	1	28	0.0	-27
R5/1702	W5/1702	BEDROOM	150	0	11	2	23	0	-12	0.00	-109.09	0	11	2	23	0.0	-109
R6/1702	W6/1702	UNKNOWN	150	1	10	2	19	-1	-9	-100.00	-90.00	1	10	2	19	-100.0	-90
R1/1703	W1/1703	LKD	150	0	9	0	8	0	1	0.00	11.11	0	9	0	8	0.0	11
R2/1703	W2/1703	BEDROOM	150	1	9	1	9	0	0	0.00	0.00	1	9	1	9	0.0	0
R3/1703	W3/1703	Bedroom	151	0	2	0	1	0	1	0.00	50.00						
R3/1703	W7/1703	Bedroom	150	1	24	1	24	0	0	0.00	0.00	1	26	1	24	0.0	8
R4/1703	W4/1703	Bedroom	151	0	12	2	19	0	-7	0.00	-58.33						
R4/1703	W8/1703	Bedroom	150	1	26	2	28	-1	-2	-100.00	-7.69	1	34	2	30	-100.0	12
R5/1703	W5/1703	BEDROOM	150	0	13	3	21	0	-8	0.00	-61.54	0	13	3	21	0.0	-62
R6/1703	W6/1703	UNKNOWN	150	2	14	3	18	-1	-4	-50.00	-28.57	2	14	3	18	-50.0	-29
R1/1704	W1/1704	BEDROOM	150	2	37	1	20	1	17	50.00	45.95	2	37	1	20	50.0	46
R2/1704	W2/1704	BEDROOM	150	3	41	2	24	1	17	33.33	41.46	3	41	2	24	33.3	41
R3/1704	W3/1704	BEDROOM	150	2	43	1	30	1	13	50.00	30.23	2	43	1	30	50.0	30
R4/1704	W4/1704	BEDROOM	150	2	47	4	36	-2	11	-100.00	23.40	2	47	4	36	-100.0	23
R5/1704	W5/1704	BEDROOM	150	2	49	5	38	-3	11	-150.00	22.45	2	49	5	38	-150.0	22
R6/1704	W6/1704	BEDROOM	150	4	54	4	40	0	14	0.00	25.93	4	54	4	40	0.0	26
R1/1705	W1/1705	LKD	150	5	54	3	34	2	20	40.00	37.04	5	54	3	34	40.0	37
R2/1705	W2/1705	LKD	150	8	62	6	46	2	16	25.00	25.81	8	62	6	46	25.0	26

Appendix 05

*Letter from Paul Littlefair
(dated 16th December 2014)*

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16 December 2014

Our Ref. BRE114/6/25

Dear Mr Buckley

XXXXX XXXXX DAYLIGHT AND SUNLIGHT QUERIES

Thank you for your email of 11 December.

You asked about loss of sunlight to existing bedrooms. The BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice' recommends that 'all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.' Normally we would not include loss of sunlight to bedrooms in a detailed analysis; and loss of sunlight to bedrooms would not be treated as a material issue except in bedrooms that also comprised a living space, for example a bed sitting room in an old people's home. Loss of diffuse daylight to bedrooms does need to be taken into account, as stated in paragraph 2.2.2 of the BRE Report.

You also asked about a situation where the winter probable sunlight hours decreased, but the annual probable sunlight hours over the whole year increased (because some parts of the obstructing building were being removed while others were added). 'Site layout planning for daylight and sunlight: a guide to good practice' states that sunlight loss is only significant if the reduction of sunlight received over the whole year is greater than 4% of annual probable sunlight hours. Thus in the situation you describe there would not be a significant loss of sunlight, because loss of winter sun would be more than compensated by extra sunlight at different times of year, and therefore the window would comply with the guidelines as far as sunlight is concerned.

Your email also explained that the courtyard part of the proposed building would be clad in white glazed bricks to reflect extra light to the nearby windows. The vertical sky component, which is the basis for the BRE guidance) does not take account of reflected light. However, having light coloured external surfaces does increase the daylight to neighbouring windows and could offset the loss of light. One way to check this would be to carry out a detailed analysis using software



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that can model the effects of interreflection (the Radiance software you mentioned is an example of this). It is important to use realistic reflectance values and include the effects of windows in the reflecting façade, as windows tend to absorb light. You stated that your modelling resulted in an increase in the internal daylight levels. In this case there would not be any loss of diffuse daylight and therefore there would not be an adverse effect on the amount of daylight in the existing rooms.

Yours sincerely

PJ Littlefair

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