



Daylight & Sunlight Report

**20 John Street,
London
WC1N 2DR**

11th March 2013



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Daylight & Sunlight Report

**20 John Street,
Bloomsbury
London,
WC1N 2DR**

Prepared for:-

**GFZ Investments Limited
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Prepared by

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Date

11th March 2013

Contents

- 1.0 Instruction
- 2.0 Principles
- 3.0 Information
- 4.0 Proposals
- 5.0 Adjoining Properties
- 6.0 Daylight
- 7.0 Sunlight
- 8.0 Conclusion

Appendices

- Appendix A - Principles of Daylight and Sunlight
- Appendix B - CHP Drawing Numbers **1698-01, 02, 06, 07, 08 and 09**
- Appendix C. - Daylight Results
- Appendix D - Sunlight Results

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1.0 Instruction

- 1.1** In accordance with our instructions we have considered the proposals for the site with reference to the Building Research Establishments 2011 publication "Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice".

2.0 Principles

- 2.1** To assist in the understanding of this report, attached at Appendix A are the Principles of Daylight and Sunlight.

3.0 Information

- 3.1** We have made reference to the following information:-

Marek Wojciechowski Architects

Proposed drawings referenced:- P_01 to 10 and 11 and 2312_Basement_R0, Ground_R1, First_R0, Second_R1, Third_R0, Roof_R0, Elevations_R0 and Sections_R0

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Site Photographs and online research

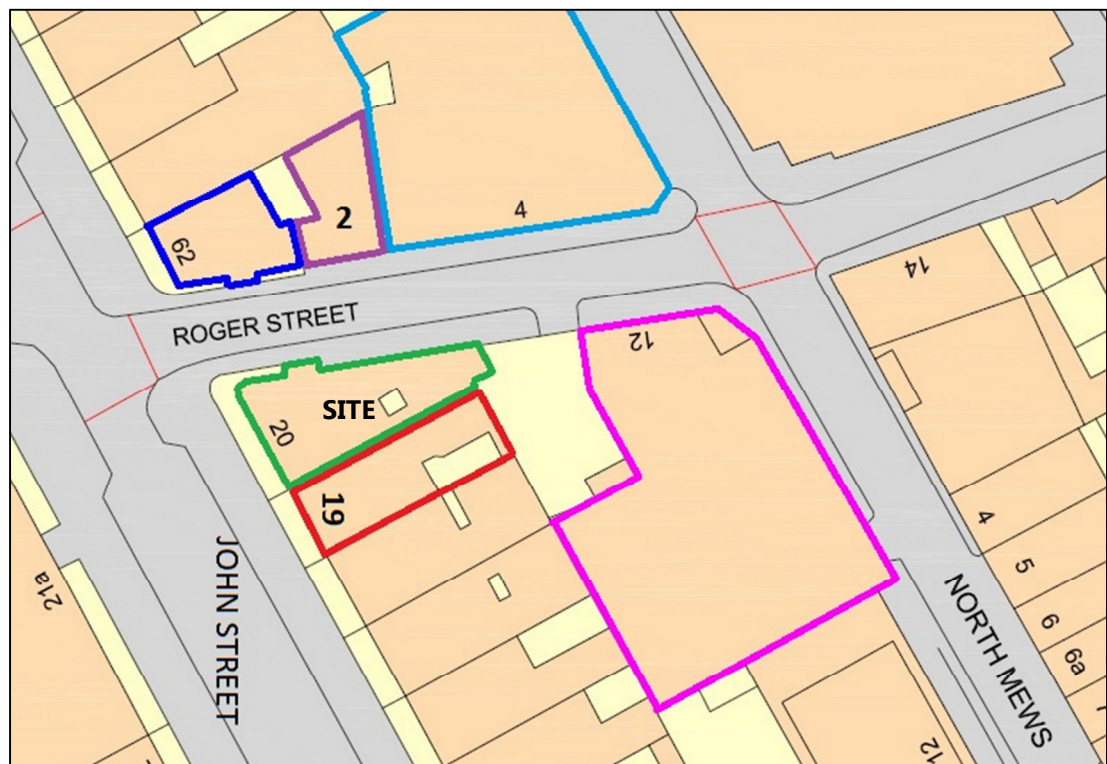
4.0 Proposals

- 4.1** The proposals are for the reinstatement of the original residential use together with additional accommodation to the rear as illustrated on drawing numbers 1698-06, 07, 08 and 09 attached at Appendix B.

5.0 Adjoining Properties

5.1 From our on-site observations the neighbouring residential properties that need to be analysed are listed below and their location is indicated on the plan:-

- 19 John Street– outlined red
- 62 Doughty Street– outlined dark blue
- 2 Roger Street– outlined purple
- 4 Roger Street– outlined light blue
- 12 Roger Street – outlined pink



6.0 Daylight

6.1 With regard to daylight to the neighbouring residential properties, we have considered the Vertical Sky Component (VSC) to all habitable rooms. This establishes the amount of daylight enjoyed on the face of the window.

6.2 The BRE Guidelines state that if the VSC calculated at the centre of each window is 27% or more, then enough skylight should be reaching the window. If with the new development in place the window does not achieve 27% VSC but is more than 0.8 times its former value then the guidelines state that skylight is unlikely to be seriously affected.

6.3 The BRE Guidelines in relation to daylight also make reference to BS 8206 Part 2 which contains advice and guidance on internal daylighting. This should also be read in conjunction with the Guidelines.

6.4 BS8206 Part 2 makes reference to two analyses, the Average Daylight Factor (ADF) and the No Sky Line (NSL).

6.5 The ADF analysis takes into account the size of the window in question, the size of the room it serves and any other windows serving the room. The recommended minimum ADF levels depend on the room use with these being 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

6.6 In relation to the NSL, the BRE Guidelines state that a significant area of the room should not lie behind the NSL and that bedrooms are less important than living rooms.

6.7 19 John Street

6.7.1 This property is located immediately to the west of the site and whilst it would appear to provide office accommodation, we have considered the implications the proposals will have on its daylight.

6.7.2 As demonstrated by the results set out in the table attached at Appendix C, all windows will have a very small reduction in their daylight either achieving a VSC of greater than 27% or 0.8 times the existing value following the implementation of the proposals. The proposals will therefore achieve the VSC tests.

6.7.3 We have also considered daylight distribution within this property. As demonstrated by the results set out on the table attached at Appendix C, all rooms will have a significant portion of each room will lie in front of the NSL once the proposals are constructed.

6.7.4 In relation to this property we would therefore confirm that following the implementation of the proposals the BRE Guidelines are met.

6.8 62 Doughty Street

6.8.1 This property is located to the north of the site on the opposite side of Roger Street from the site. It has been assumed that this property provides residential accommodation.

6.8.2 As demonstrated by the results set out in the table attached at Appendix C, all windows will have a very small reduction in their daylight either achieving a VSC of greater than 27% or 0.8 times the existing value following the implementation of the proposals. The proposals will therefore achieve the VSC tests.

6.8.3 We have also considered daylight distribution within this property. As demonstrated by the results set out on the table attached at Appendix C, all rooms will have a significant portion of the room in front of the NSL.

6.8.4 In relation to this property we would therefore confirm that following the implementation of the proposals the BRE Guidelines are met.

6.9 2 Roger Street

6.9.1 This property is located to the north of the site on the opposite side of Roger Street and provides residential accommodation.

6.9.2 As demonstrated by the results set out in the table attached at Appendix C, all windows will have a very small reduction in their daylight either achieving a VSC of greater than 27% or 0.8 times the existing value following the implementation of the proposals. The proposals will therefore achieve the VSC tests.

6.9.3 We have also considered daylight distribution within this property. As demonstrated by the results set out on the table attached at Appendix C, all rooms will have a significant portion of the room in front of the NSL.

6.9.4 In relation to this property we would therefore confirm that following the implementation of the proposals the BRE Guidelines are met.

6.10 4 Roger Street

6.10.1 This property is located to the north east of the site on the opposite side of Roger Street and it has been assumed that it provides residential accommodation.

6.10.2 As demonstrated by the results set out in the table attached at Appendix C, all windows will have a very small reduction in their daylight either achieving a VSC of greater than 27% or 0.8 times the existing value following the implementation of the proposals. The proposals will therefore achieve the VSC tests.

6.10.3 We have also considered daylight distribution within this property. As demonstrated by the results set out on the table attached at Appendix C, all rooms will have a significant portion of the room in front of the NSL.

6.10.4 In relation to this property we would therefore confirm that following the implementation of the proposals the BRE Guidelines are met.

6.11 12 Roger Street

6.11.1 This property is located to the east of the site and it has been assumed that it provides residential accommodation.

6.11.2 As demonstrated by the results set out in the table attached at Appendix C, all windows serving habitable rooms will achieve a VSC of greater than 27% following the implementation of the proposals. The proposals will therefore achieve the VSC tests.

6.11.3 We have also considered daylight distribution within this property. As demonstrated by the results set out on the table attached at Appendix C, all rooms will have a significant portion of the room in front of the NSL once the proposals are constructed.

6.11.4 In relation to this property we would therefore confirm that following the implementation of the proposals the BRE Guidelines are met.

6.12 Internal analysis

6.12.1 In accordance with the London Plan as well as the BRE Guidelines, we have considered the level of daylight the proposed units will enjoy by calculating the ADF.

6.12.2 As indicated by drawing numbers 1698-01 and 02 attached at Appendix B, the recommended minimum ADF is achieved or generally exceeded in all except four instances, with in two cases being very close the numerical figures suggested.

6.12.3 With the property being listed it is not possible to adjust the fenestration to address this.

6.12.4 Whilst the numerical values may not be achieved in every instance, taking into account the location of the property and that it is listed we consider that the aims of the London Plan and BRE Guidelines are met.

7.0 Sunlight

7.1 The guidelines require that all windows within 90° of due south be considered. It states that if the window achieves 25% of Annual Probable Sunlight Hours (APSH), including at least 5% of annual probable sunlight hours during the winter months or more than 0.8 times its existing value, the implementation of the proposals should not have an adverse effect on sunlight. The guidelines however also state that sunlight is less important in relation to bedrooms.

7.2 62 Doughty Street

7.2.1 As can be seen from the table attached at Appendix D, in all instances the implementation of the proposals will result in no change in its access to sunlight. The BRE Guidelines are therefore met.

7.3 2 Roger Street

7.3.1 As can be seen from the table attached at Appendix D, in all instances, an APSH of 25% is achieved. Whilst in the winter months the value is greater than 0.8 times the existing. The BRE Guidelines are therefore met.

7.4 4 Roger Street

7.4.1 As can be seen from the table attached at Appendix D, in all instances a APSH of 25% is achieved with during the winter months the value being greater than 0.8 times the existing, if there is a change. The BRE Guidelines are therefore met.

8.0 Conclusion

8.1 Our analysis of the implications the implementation of the proposals will have on the neighbouring properties daylight demonstrates that for all instances a VSC of greater than 27% or 0.8 times the existing values is achieved.

8.2 Our daylight distribution analysis demonstrates that all rooms will have a significant portion of the room in front of the NSL or greater than 0.8 times the existing area.

8.3 In relation to the proposed accommodation, there are four rooms that do not achieve the recommended numerical values reflecting the listed nature of the property.

8.4 With regards to sunlight, for those windows that need to be analysed, our results demonstrate that in all instances windows will achieve 25% APSH with at least 5% during the winter months or at least 0.8 times the existing.

8.5 Our analysis therefore demonstrates that that the aims of the Building Research Establishments 2011 publication "Site Layout Planning for Daylight and Sunlight. A

Guide to Good Practice" are met in relation to the neighboring residential properties and that we consider taking into account the location of the property and that it is listed, the aims are achieved with regards to the proposed accommodation.

Appendix A

Principles of Daylight and Sunlight

In 2011 the Building Research Establishment (BRE) published a handbook called *"Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice."*

As stated within the Introduction of this document, the main aim is:-

"To help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions."

Within the introduction the document goes onto state:-

"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. It's aim is to help, rather than constrain the Designer. Although it gives numerical guidelines, these should be interpreted flexibly..."

It must therefore be appreciated as can be seen from the above extracts of the Introduction of this document and reiterated throughout, the handbook is for guidance only.

DAYLIGHT

When considering daylight, the handbook introduces a number of ways of assessing this. The first check is to establish whether the proposals will subtend an angle of 25° from the centre of the window. If it does not then it is considered there will be good daylight.

(i) No Sky Line

This divides those areas that can see direct daylight from those which cannot and helps to indicate how good the distribution of daylight is in a room. The guidelines is that, should the implementation of a scheme result in the area receiving direct skylight less than 0.8 times the existing area, then this will be noticeable to the occupier.

(ii) Vertical Sky Component (VSC)

This may be calculated using either the skylight indicators of Waldram Diagrams contained within the handbook and is the ratio of the direct sky illuminance falling on the vertical wall at a reference point, to the simultaneous horizontal illuminance under an unobstructed sky.

The principle is that from the face of a window, with no obstruction 50% of the hemisphere is visible which equates to 40% VSC.

The Handbook sets out different guidelines when considering both new developments and existing buildings adjacent to a development, but in both situations these are applicable to principal rooms, such as kitchens and living rooms.

New Developments

In general a building will retain the potential for good interior diffuse lighting provided that on all its main faces:-

an obstruction, measured in a vertical section perpendicular to the main face, from a point 2m above ground level, subtends an angle of more than 25° to the horizontal.

or

if (a) is not satisfied, then all points on the main face on a line 2m above ground level are within 4m (measured sideways) of a point which has a vertical sky component of 27% or more.

Existing Buildings

If any part of a new building or extension measured in a vertical section perpendicular to a main window wall or an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be case if either:-

the VSC measured at the centre of an existing main window is less than 27% and less than 0.8 times its former value.

or

- (b) the area of the working plane level is a room which can receive direct sunlight is reduced to less than 0.8 times its former value.

(iii) Average Daylight Factor (ADF)

This takes into account not only the obstruction externally, but also the size of the window concerned and the area of the room it serves. In addition, depending on the nature of the room, the handbook sets out different levels of ADF, with kitchens only being 2%, lounges 1.5% and bedrooms 1%.

In summary, VSC gives a good indication as to whether sufficient daylight is going to be enjoyed, because it is a calculation on the face of the window, however if all the information can be obtained to calculate ADF's, this is a more realistic analysis.

SUNLIGHT

This is measured in a similar method to calculating VSC and relates to windows within 90° of due south.

The BRE handbook has calculated that the total annual probable sunlight hours amount to 1486.

Again the handbook sets out criteria for both new developments and existing buildings.

(i) New Developments

In general, a dwelling or non-domestic building which has a particular requirement for sunlight will appear reasonably sunlit provided that:-

at least one main window wall faces within 90° of due south

or

on this window wall, all points on a line 2m above ground level are within 4m (measured sideways) of a point which receives at least a quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months, between 21 September and 21 March.

(ii) Existing Buildings

If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlight of the existing dwelling may be affected. This will be the case if a point at the centre of the window, in the plane of the inner window wall, receives in the year less than one quarter of annual probable sunlight hours including at least 5% of annual probable sunlight hours in the Winter months between 21 September and 21 March or less than 0.8 times its former sunlight hours during either period.

Appendix B

Notes

KEY

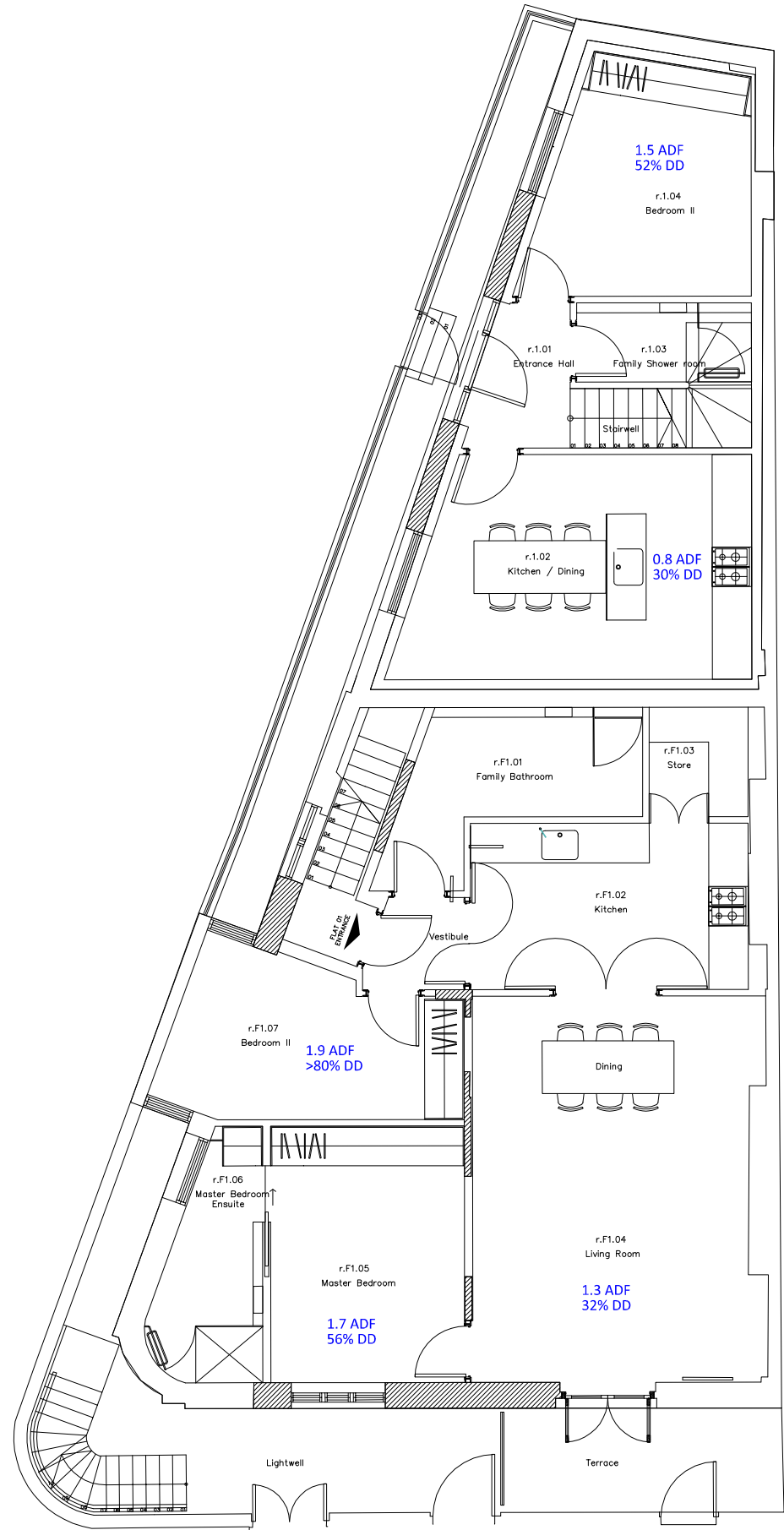


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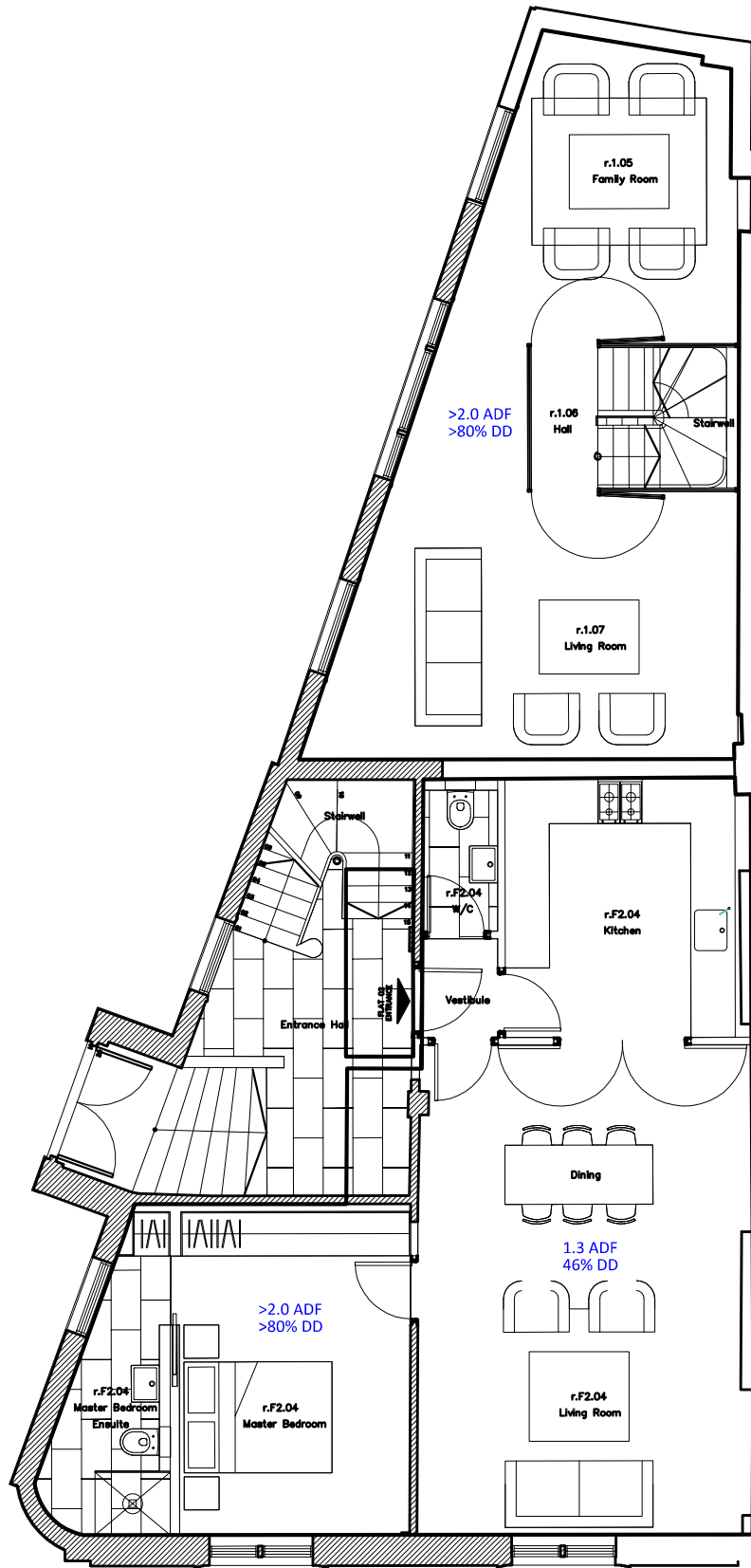
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20 John Street

DRAWING TITLE
Internal Adf & Nosky

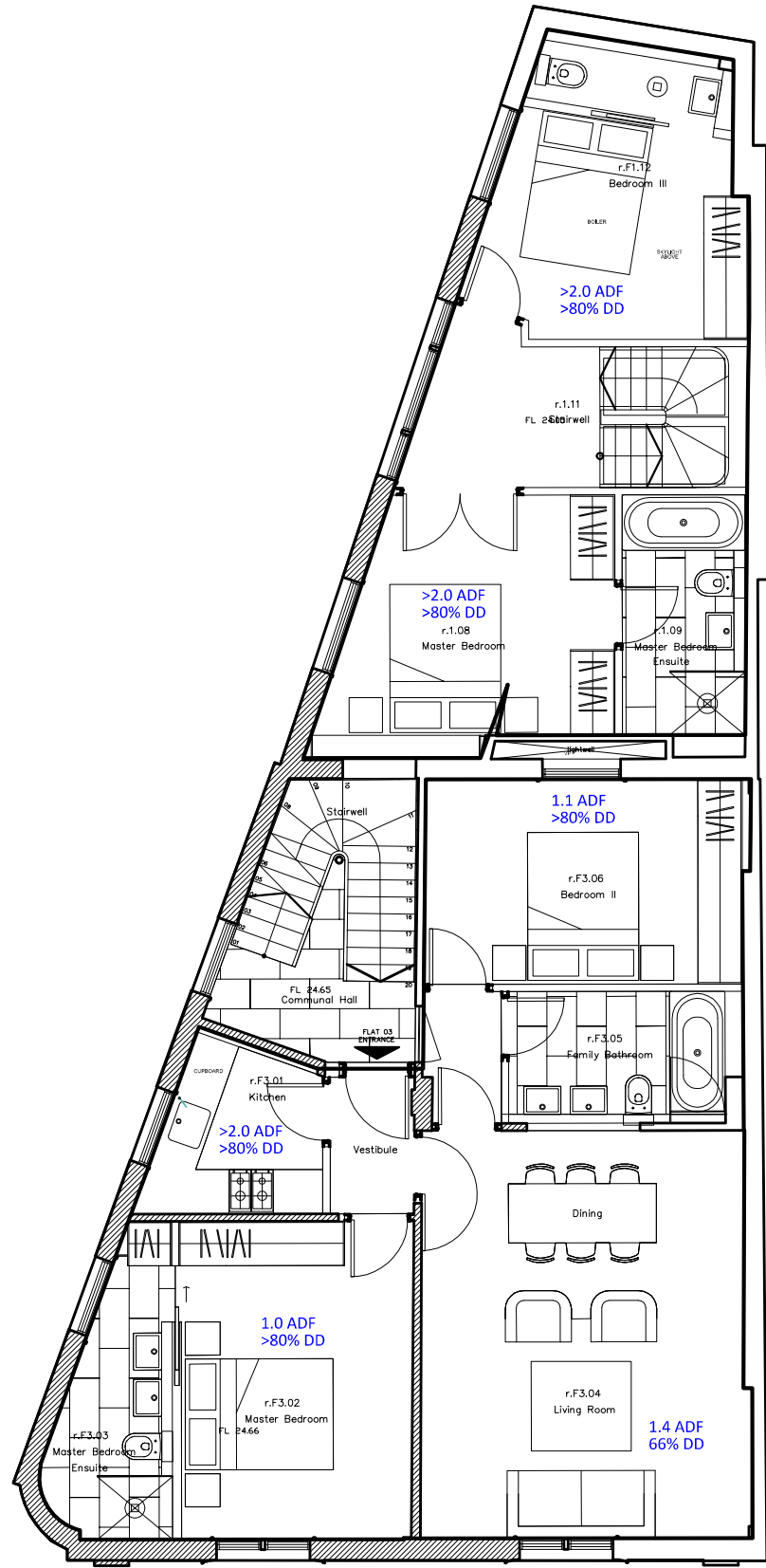
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DWG NO		REV
1698_01		-



BASEMENT



GROUND



FIRST

Notes

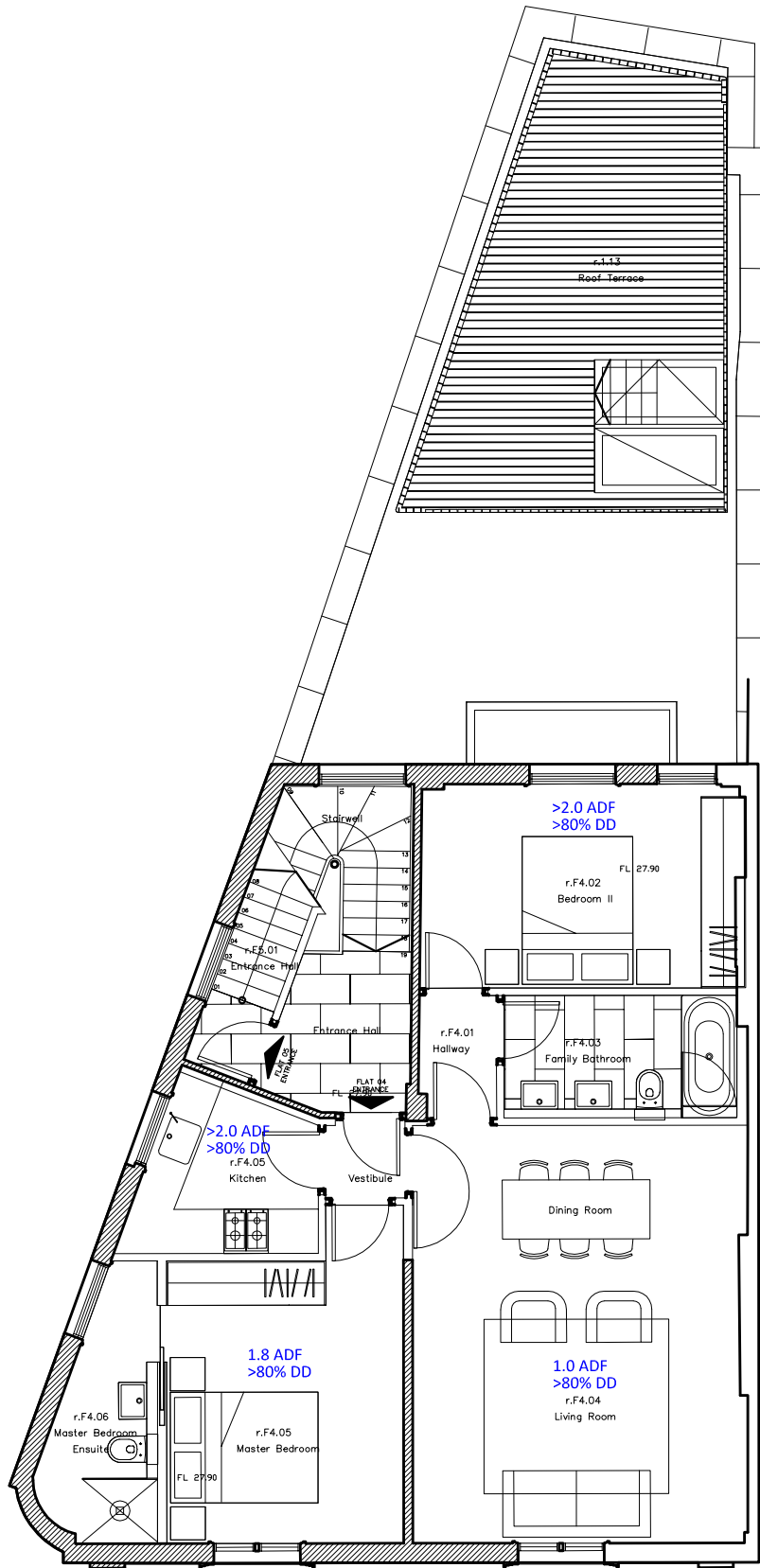
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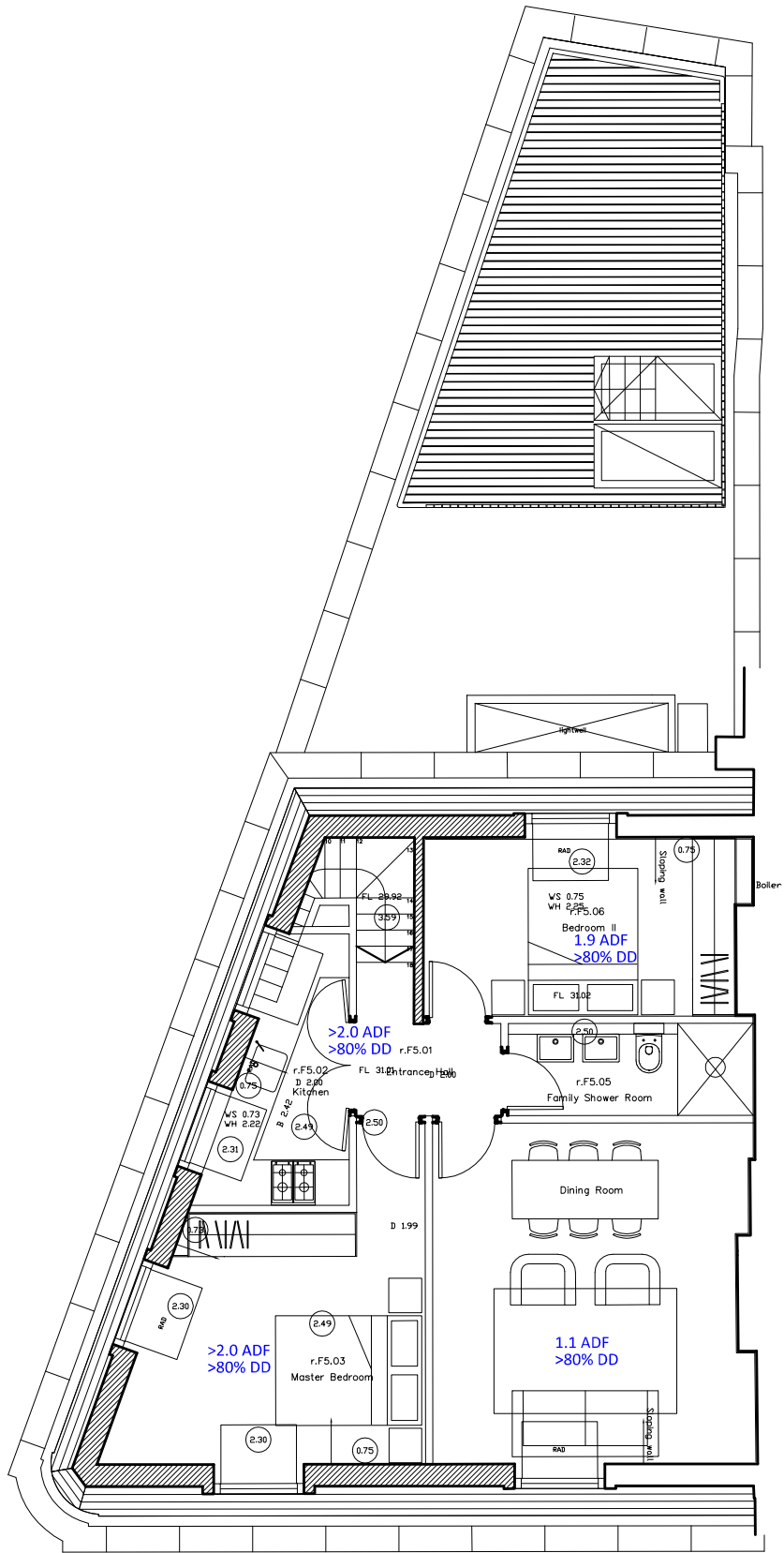
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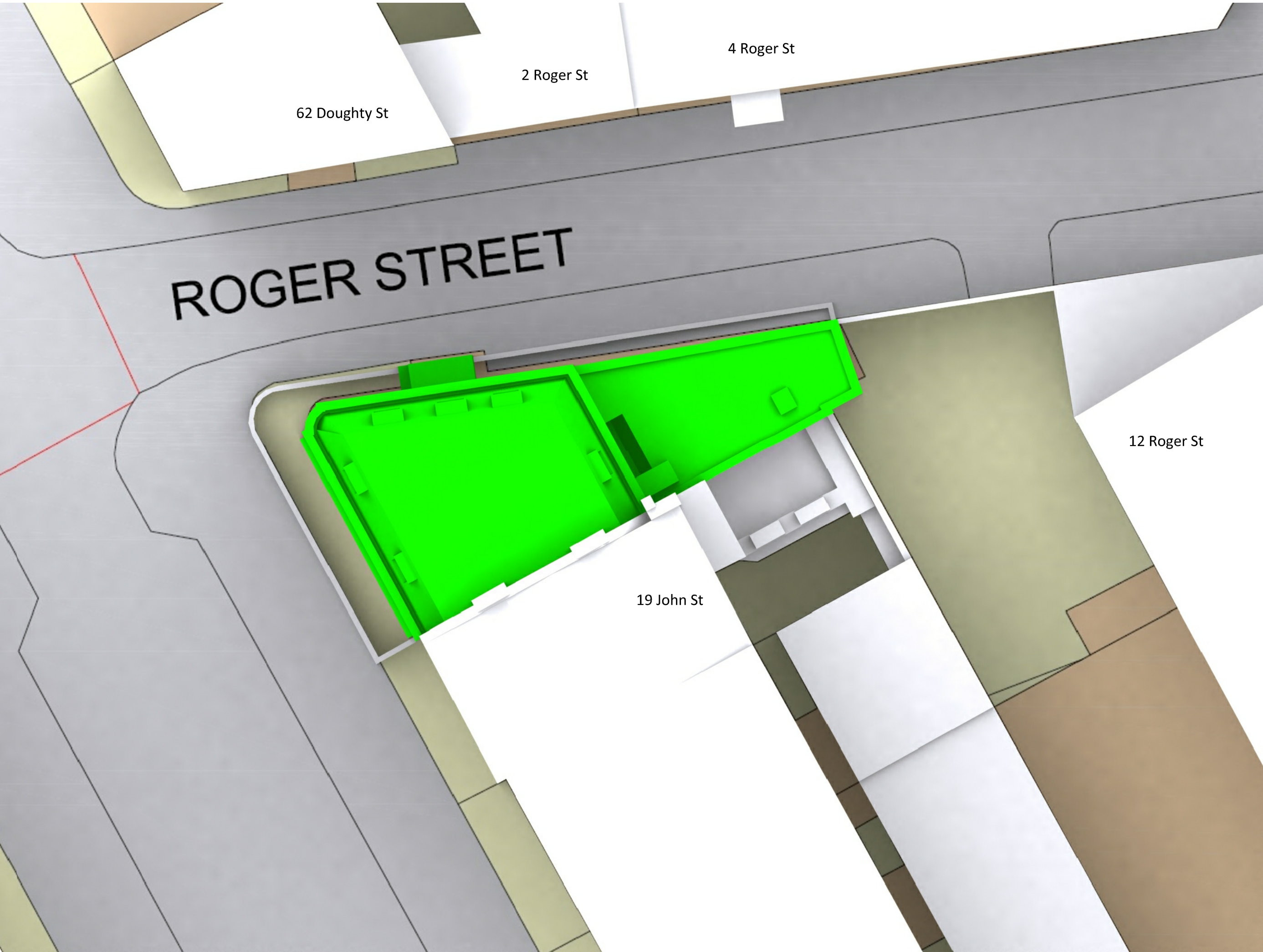
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Internal Adf & Nosky

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DWG NO	REV	
1698_02	-	



SECOND



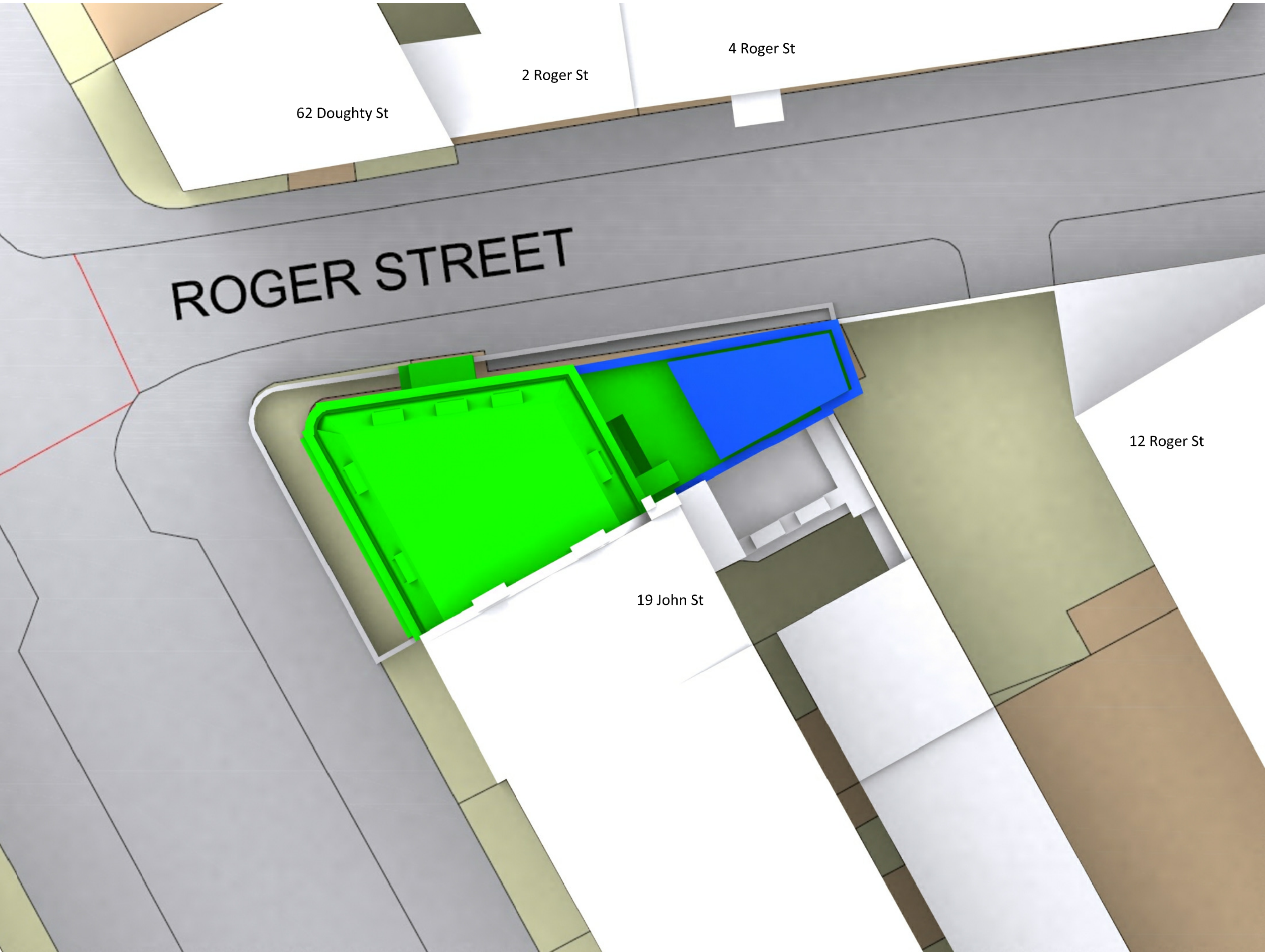


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PROJECT TITLE
20 John Street

DRAWING TITLE
Plan View
Existing

SCALE	DATE	ISSUE
NTS	110313	01
DWG NO		REV
1698_06		-

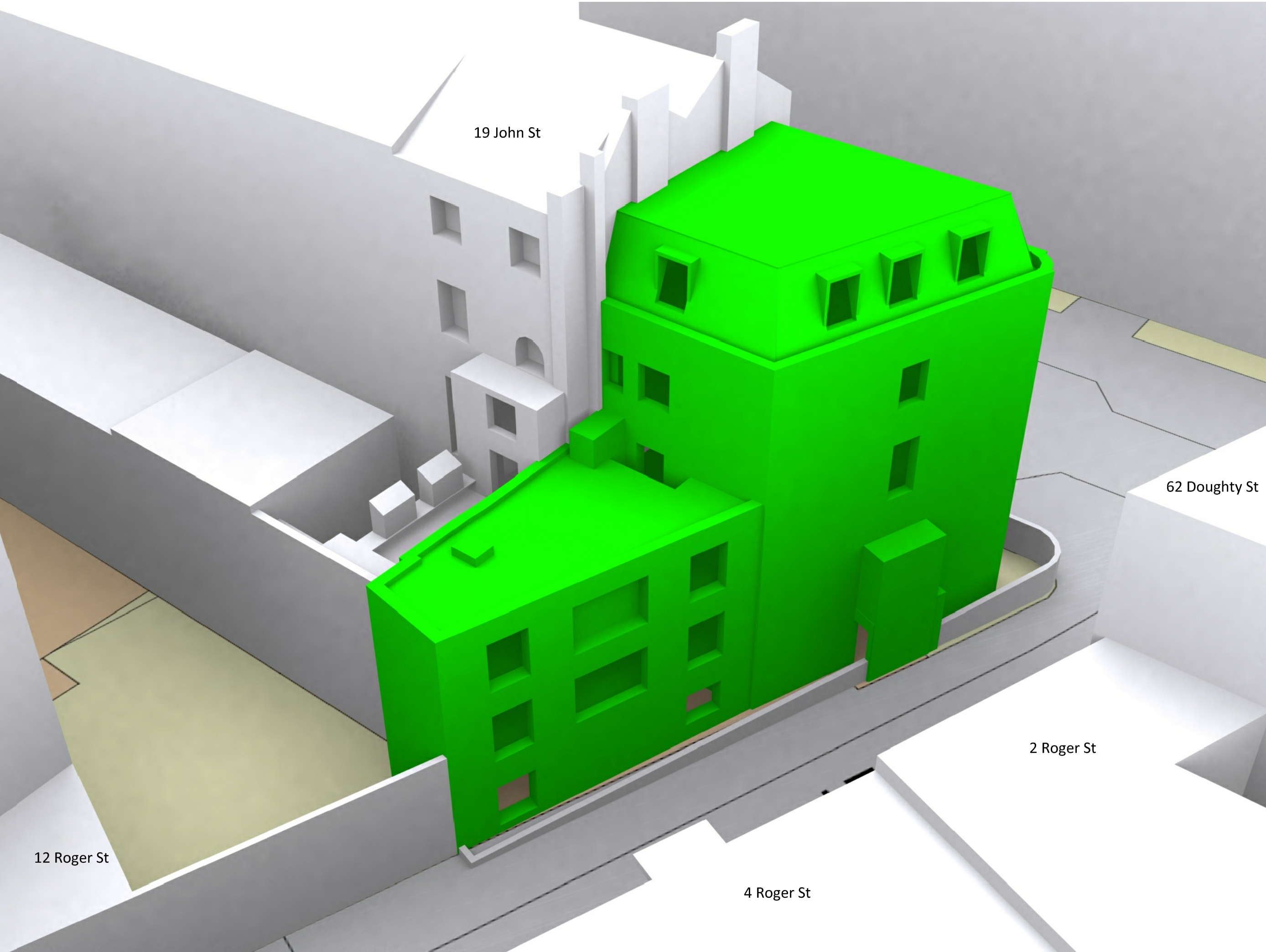


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PROJECT TITLE
20 John Street

DRAWING TITLE
Plan View
Proposed

SCALE	DATE	ISSUE
NTS	110313	01
DWG NO		REV
1698_07		-

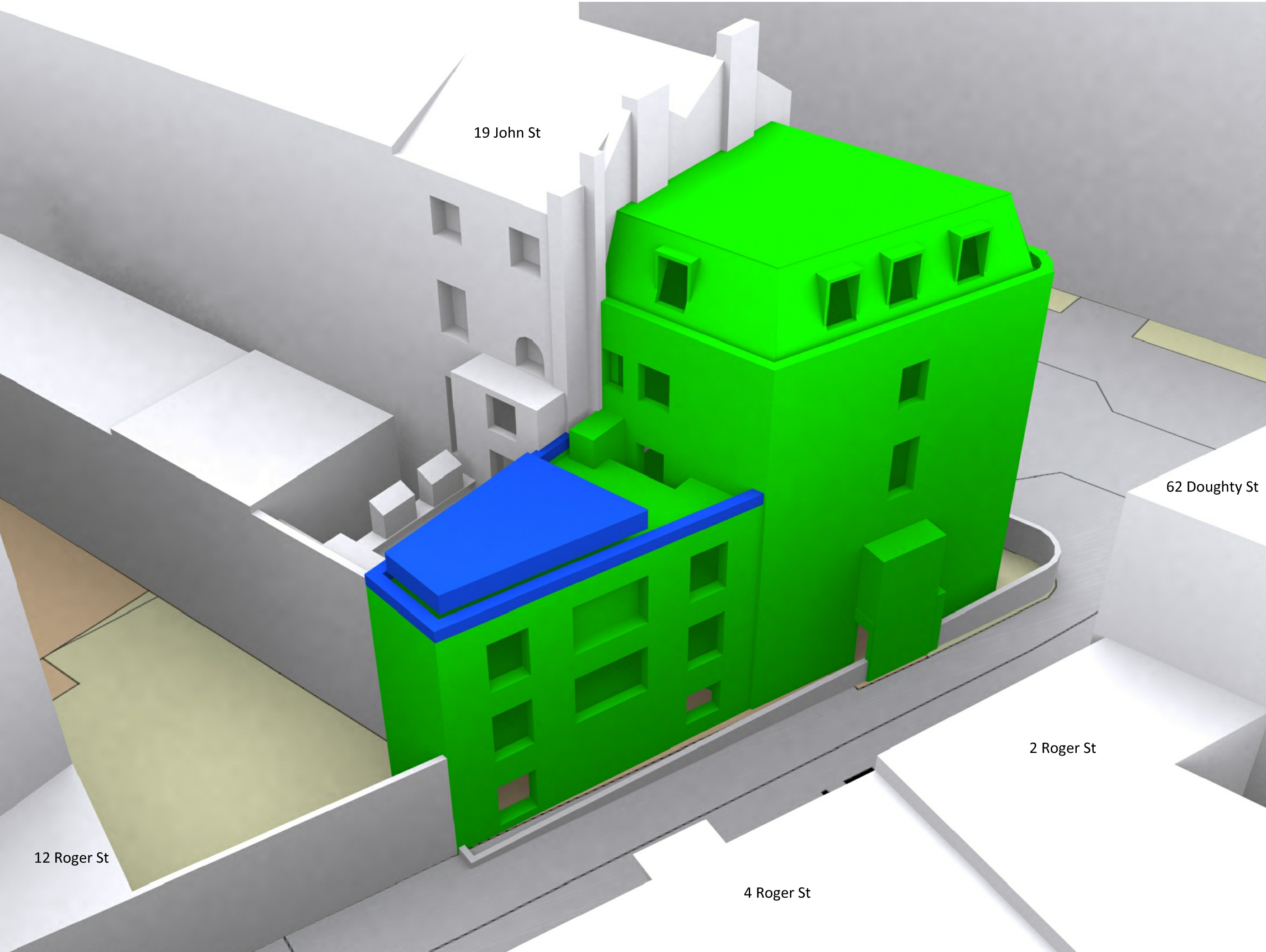


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PROJECT TITLE
20 John Street

DRAWING TITLE
Perspective View
Existing

SCALE NTS	DATE 110313	ISSUE 01
DWG NO 1698_08	REV -	



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PROJECT TITLE
20 John Street

DRAWING TITLE
Perspective View
Proposed

SCALE NTS	DATE 110313	ISSUE 01
DWG NO 1698_09		REV -

Appendix C

20 John Street, London WC1N 2DR

Daylight Results

			VSC				NOSKY	
LEVEL	WINDOW	ROOM	EXISTING	PROPOSED	LOSS	% LOSS	EXISTING	PROPOSED
<u>19 John Street</u>								
LEV 1	W1	R1	23.7	23.6	0.1	0.4	>80%	>80%
	W2	R2	24.9	23.2	1.7	6.8	>80%	>80%
LEV 2	W3	R3	33.4	33.3	0.1	0.3	>80%	>80%
<u>62 Doughty Street</u>								
LEV 1	W1	R1	22.0	21.9	0.1	0.5	>80%	>80%
	W2	R2	21.2	21.0	0.2	0.9	>80%	>80%
LEV 2	W3	R3	27.6	27.6	0.0	0.0	>80%	>80%
	W4	R4	27.2	27.2	0.0	0.0	>80%	>80%
<u>2 Roger Street</u>								
LEV 0	W1	R1	14.8	14.5	0.3	2.0	62%	58%
	W2	R2	15.1	14.7	0.4	2.7	>80%	76%
	W3		15.4	15.0	0.4	2.6		
LEV 1	W4	R3	19.7	19.3	0.4	2.0	>80%	>80%
	W5	R4	20.3	19.8	0.5	2.5	>80%	>80%
	W6		20.8	20.2	0.6	2.9		
LEV 2	W7	R5	25.3	25.1	0.2	0.8	>80%	>80%
	W8	R6	26.1	25.8	0.3	1.2	>80%	>80%
	W9		26.8	26.4	0.4	1.5		
<u>4 Roger Street</u>								
LEV 0	W1	R1	16.6	16.4	0.2	1.2	>80%	>80%
	W2		17.1	16.9	0.2	1.2		
LEV 1	W3	R2	13.8	13.4	0.4	2.9	>80%	>80%
	W4	R3	22.5	22.3	0.2	0.9	>80%	>80%
LEV 2	W5	R4	18.6	18.4	0.2	1.1	>80%	>80%
	W6	R5	27.4	27.4	0.0	0.0	>80%	>80%
<u>12 Roger Street</u>								
LEV 1	W1	R1	23.7	23.4	0.3	1.3	59%	58%
LEV 2	W2	R2	27.9	27.8	0.1	0.4	73%	73%

Appendix D

Sunlight Results

EXISTING					PROPOSED			% LOSS	
LEVEL	WINDOW	SUMMER	WINTER	TOTAL	SUMMER	WINTER	TOTAL	WINTER	TOTAL
<u>19 John Street</u>									
LEV 1	W1	-	-	-	-	-	-	-	-
	W2	-	-	-	-	-	-	-	-
LEV 2	W3	-	-	-	-	-	-	-	-
<u>62 Doughty Street</u>									
LEV 1	W1	31.7%	4.9%	36.6%	31.7%	4.9%	36.6%	0.00	0.00
	W2	31.7%	4.9%	36.6%	31.7%	4.9%	36.6%	0.00	0.00
LEV 2	W3	34.5%	10.6%	45.1%	34.5%	10.6%	45.1%	0.00	0.00
	W4	34.5%	9.2%	43.7%	34.5%	9.2%	43.7%	0.00	0.00
<u>2 Roger Street</u>									
LEV 0	W1	28.2%	0.7%	28.9%	26.8%	0.7%	27.5%	0.00	4.88
	W2	28.2%	0.7%	28.9%	26.8%	0.7%	27.5%	0.00	4.88
	W3	26.8%	0.7%	27.5%	25.4%	0.7%	26.1%	0.00	5.10
LEV 1	W4	31.7%	3.5%	35.2%	31.7%	2.8%	34.5%	19.89	1.99
	W5	31.7%	4.2%	35.9%	31.7%	3.5%	35.2%	16.78	1.98
	W6	32.4%	4.2%	36.6%	32.4%	3.5%	35.9%	16.78	1.91
LEV 2	W7	34.5%	6.3%	40.9%	34.5%	6.3%	40.9%	0.00	0.00
	W8	35.9%	7.8%	43.7%	35.9%	7.8%	43.7%	0.00	0.00
	W9	35.9%	8.5%	44.4%	35.9%	8.5%	44.4%	0.00	0.00
<u>4 Roger Street</u>									
LEV 0	W1	23.9%	2.8%	26.8%	23.9%	2.8%	26.8%	0.00	0.00
	W2	23.2%	2.8%	26.1%	23.2%	2.8%	26.1%	0.00	0.00
LEV 1	W3	23.2%	2.8%	26.1%	23.2%	2.8%	26.1%	0.00	0.00
	W4	33.1%	6.3%	39.4%	33.1%	5.6%	38.7%	11.20	1.80
LEV 2	W5	24.7%	8.5%	33.1%	24.7%	7.8%	32.4%	8.28	2.15
	W6	38.0%	9.2%	47.2%	38.0%	9.2%	47.2%	0.00	0.00
<u>12 Roger Street</u>									
LEV 1	W1	-	-	-	-	-	-	-	-
LEV 2	W2	-	-	-	-	-	-	-	-