Daylight and Sunlight Report

14 Roger Street,
London WC1N 2JR

19th April 2013

CHP
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Daylight & Sunlight Report

14 ROGER STREET, LONDON WC1N 2JR

Prepared for

WSS London
c/o 28 Margaret Street
London
W1W 8RZ

Prepared by	**Date**
James M A Crowley	19th April 2013

Contents

Appendices

This report is solely for the benefit of **WSS London** and the benefit cannot be transferred to any other party without the express written consent of CHP Surveyors Limited.

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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:-

Ordnance Survey

Site Plan

Marek Wojciechowski Architects

Drawings referenced 12076_P_01, 02, 03, 04, 05, 06, 07 and 13

CHP Surveyors Limited

Site Photographs and online research

4.0 Proposals

4.1 The proposals are to extend the existing structure to provide additional accommodation at fourth floor level and carry out internal alterations to provide residential accommodation as indicated on drawing numbers 1719_01, 02, 03 and 04 attached at Appendix B.

5.0 Adjoining Properties

5.1 From our on-site observations the only neighbouring properties that provide residential accommodation and will be able to see the proposals are :-

- 79 Grays Inn Road
- 81 Grays Inn Road

6.0 Daylight

6.1 With regard to the impact of the proposals on the 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 it 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 We have also considered the impact of the proposals on the No Sky Line (NSL) which tests the daylight distribution within a room. 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 79 Grays Inn Road

6.7.1 This property is located to the north east of the site and provides residential accommodation at second and third floor level.

6.7.2 Our analysis demonstrates as set out in table attached at Appendix B, all windows will achieve a VSC of greater than 0.8 times the existing.

6.7.3 We have also analysed the daylight distribution for each room. This demonstrates that in all instances a significant area or an area greater than 0.8 times the existing will lie in front of the NSL.

6.7.3 In relation to these properties our analysis demonstrates that the BRE Guidelines are achieved.

6.8 81 Grays Inn Road

6.8.1 This property is located to the north east of the site and provides residential accommodation at first, second and third floor level.

6.8.2 Our analysis of the window serving a habitable room achieves a VSC of greater than 0.8 times the existing.

6.8.3 We have also analysed the daylight distribution for the habitable room and the area in front of the NSL is greater than 0.8 times the existing each room.

6.8.4 In relation to these properties our analysis demonstrates that the BRE Guidelines are achieved.

6.9 Internal Analysis

6.9.1 We have in accordance with the BRE Guidelines and BS8206 Part 2 considered the level of daylight the proposed lower ground floor bedroom will achieve.

6.9.2 Our analysis demonstrates that the recommended minimum ADF of 1% will be achieved.

6.9.3 The analysis therefore demonstrates that the lower ground floor accommodation will achieve good levels of natural daylight.

7.0 Sunlight

7.1 The guidelines require that all windows within 90º 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, where the difference in the ADPSH is more than 4%, 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 79 Grays Inn Road

7.2.1 As set out in the table attached at Appendix D all windows will achieve a total APSH percentage of greater than 0.8 times the existing with at least 5% or the same as the existing during the winter months.

7.2.2 The BRE Guidelines in relation to sunlight for this property are therefore achieved.

7.3 81 Grays Inn Road

7.3.1 As set out in the table attached at Appendix D the window serving the habitable room will achieve a total APSH percentage of greater than 027% with at least 5% during the winter months.

7.3.2 The BRE Guidelines in relation to sunlight for this property are therefore achieved

8.0 Conclusion

8.1 Our analysis demonstrates that in relation to daylight all windows serving habitable rooms to the neighbouring properties will achieve a VSC of more than 0.95 times the existing, well in excess of that permitted within the BRE Guidelines.

8.2 Our No Sky Line analysis demonstrates that a significant portion of the room or greater than 0.8 times the existing area will lie in front of this and that they will therefore enjoy good daylight distribution.

8.3 79 and 81 Grays Inn Road will therefore still enjoy good levels of daylight

8.4 Our analysis of the proposed bedrooms at lower ground floor also demonstrates that these will enjoy good levels of natural light.

8.5 Our sunlight analysis shows that an APSH of greater than 25% with at least 5% during the winter months or greater than 0.8 times the existing values will be achieved.

8.6 79 and 81 Grays Inn Road sunlight will not be adversely affected.

8.7 The results of our analysis therefore demonstrate that the aims of the Building Research Establishments 2011 publication "Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice" are met.

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 25^0 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:-

(a) 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 25^0 to the horizontal.

or

(a) 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 25^0 to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be case if either:-

(a) 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 90^0 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 90^0 of due south

or

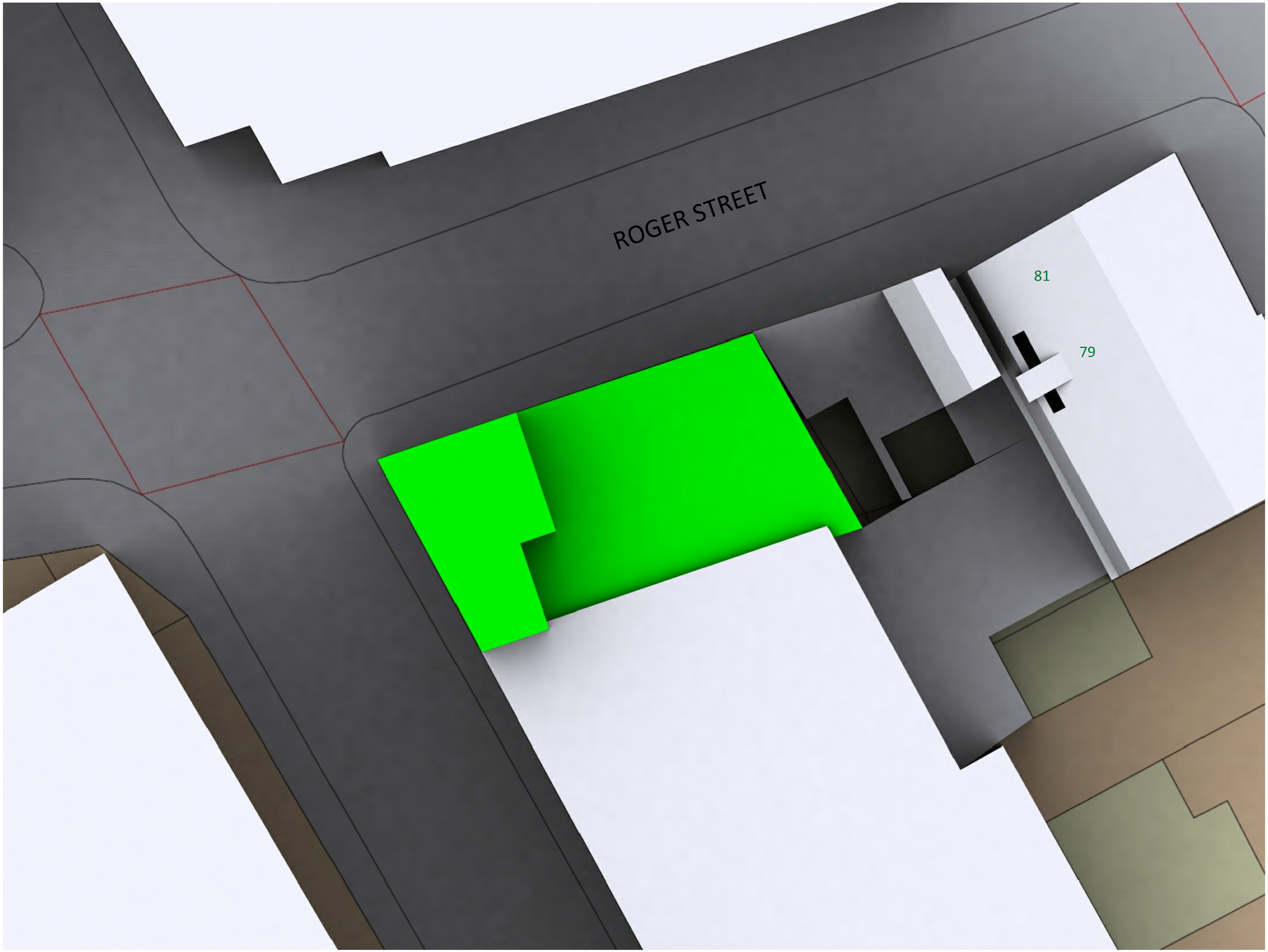
on this window wall, all points on a line 2m above ground level are within 4m (measured sideways) of a point which receives at least a quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months, between 21 September and 21 March.

(ii) Existing Buildings

If a living room of an existing dwelling has a main window facing within 90^0 of due south, and any part of a new development subtends an angle of more than 25^0 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



SOURCES

Notes

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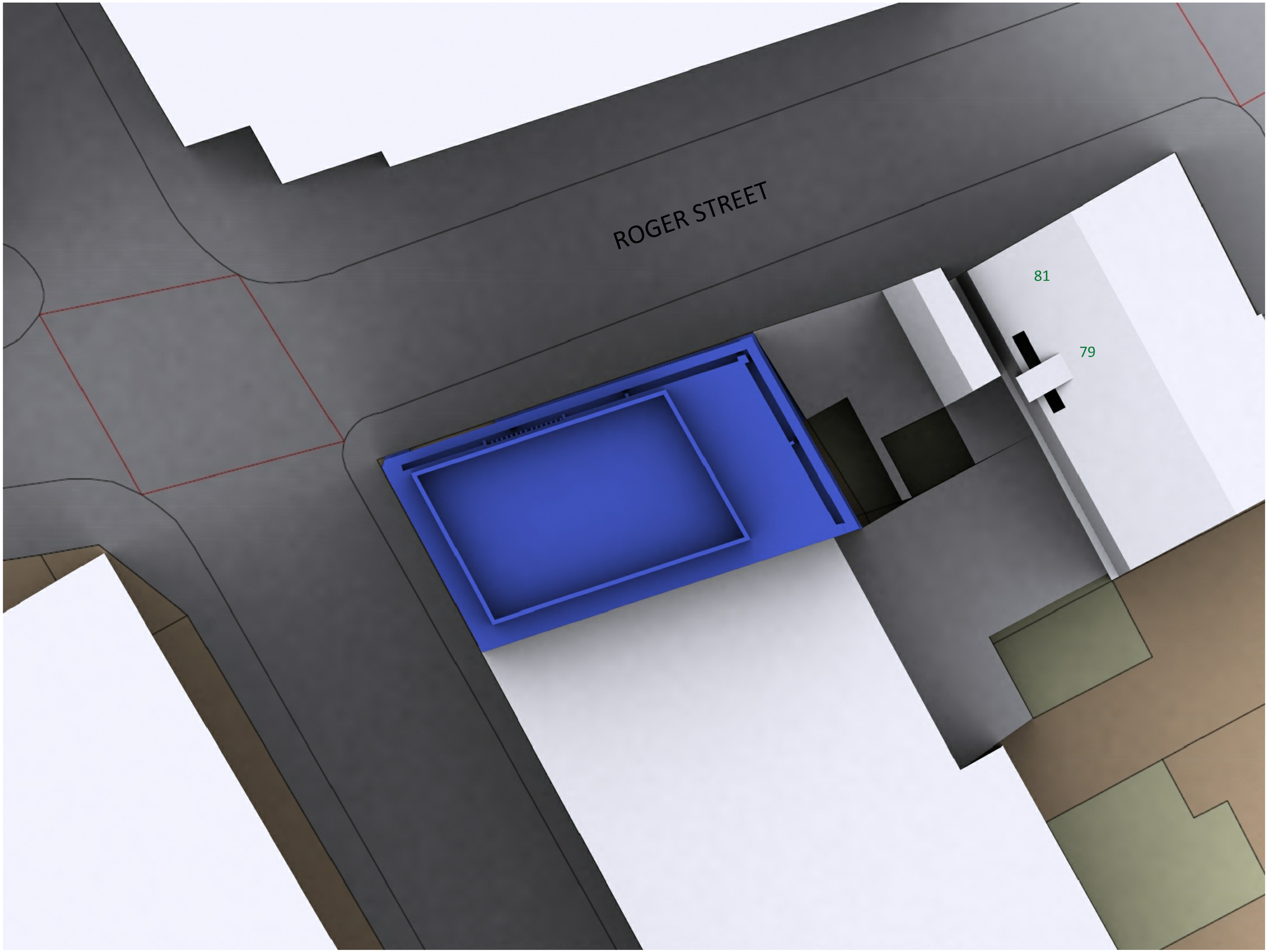
PROJECT TITLE
14 ROGER ST

DRAWING TITLE
PLAN VIEW
EXISTING

SCALE	DATE	ISSUE
NTS	190413	01

DWG NO	REV
1719_01	-



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PROJECT TITLE
14 ROGER ST

DRAWING TITLE
PLAN VIEW
PROPOSED

SCALE	DATE	ISSUE
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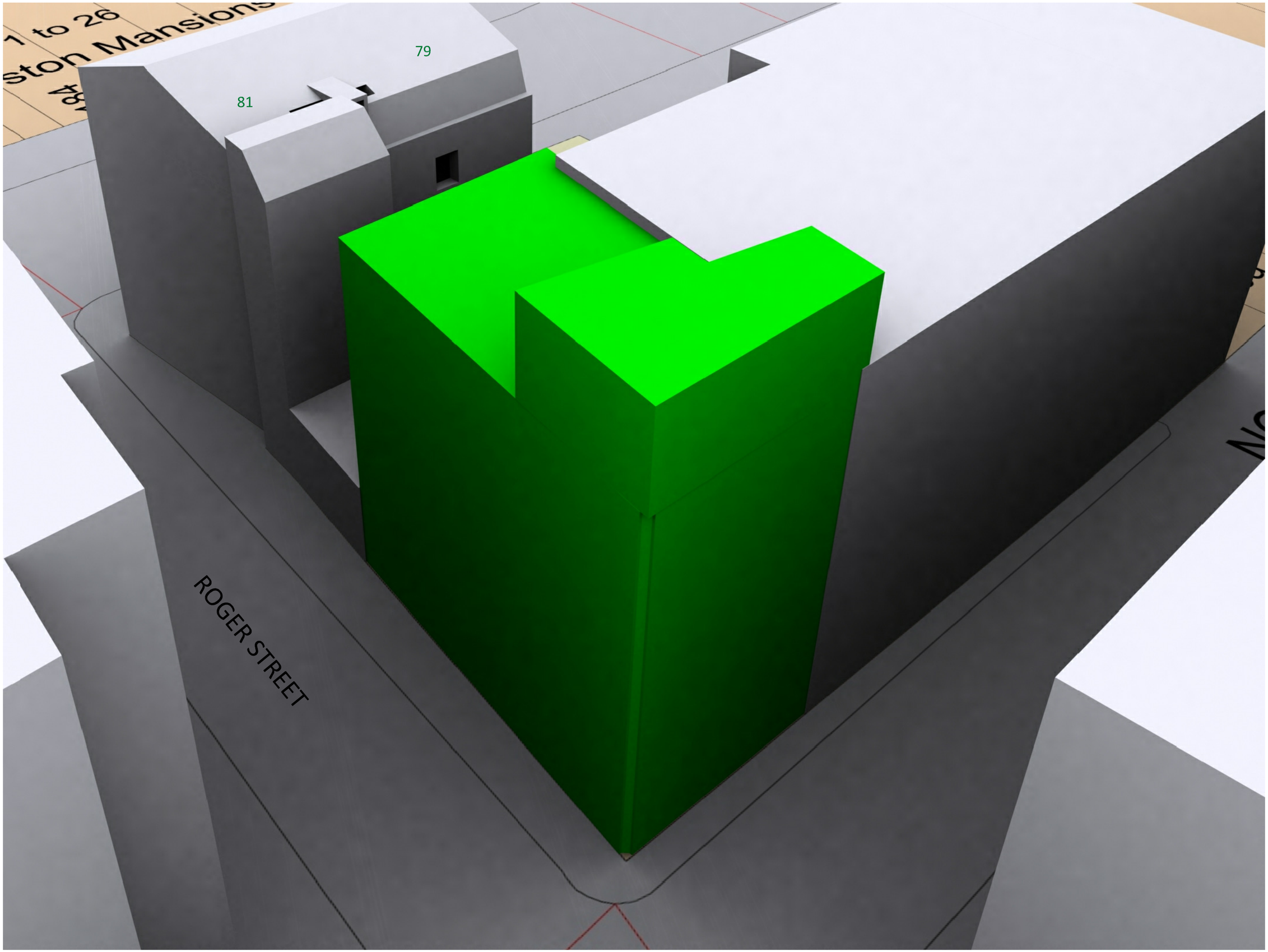
DWG NO	REV
1719_02	-



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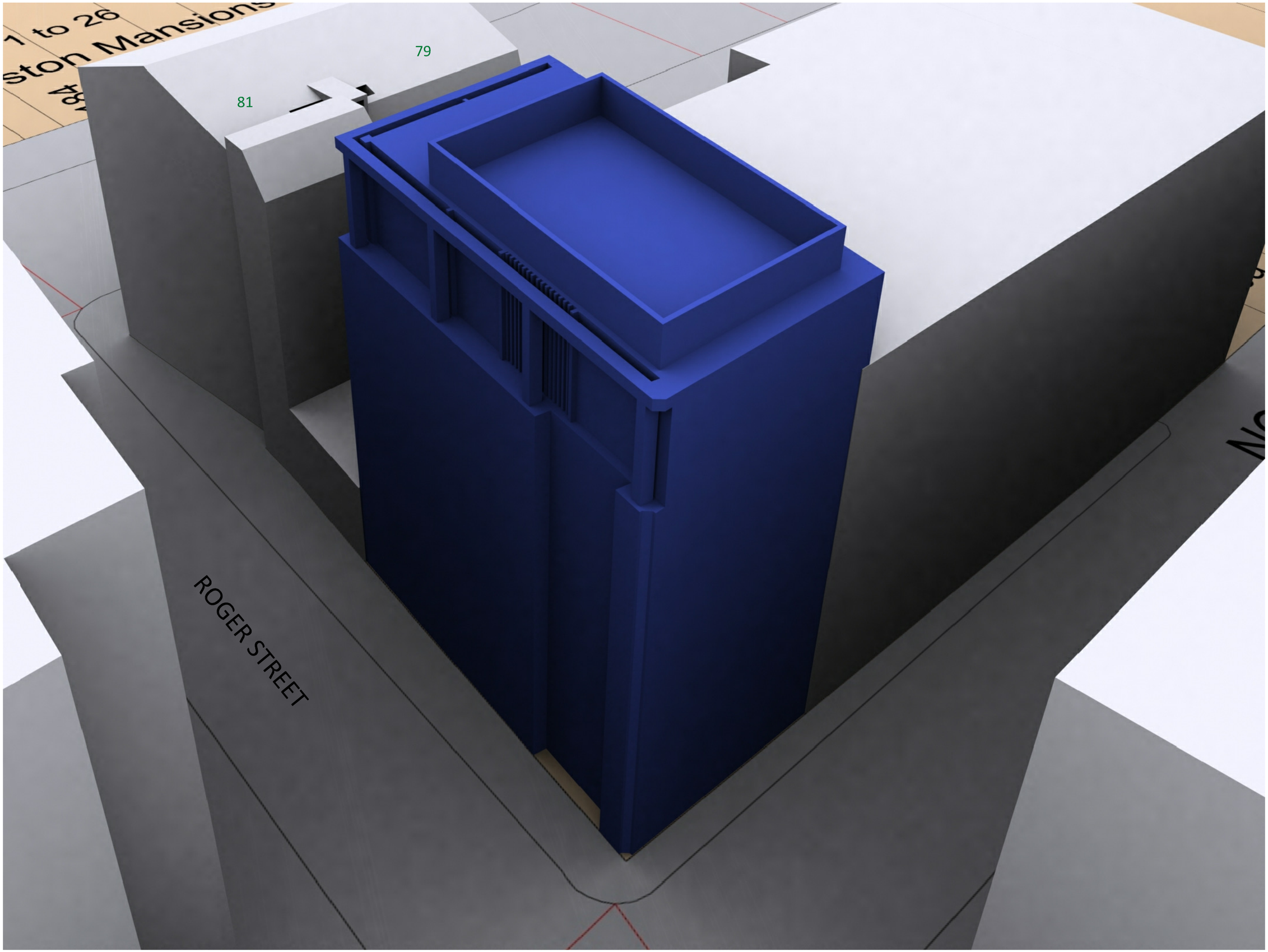
PROJECT TITLE
14 ROGER ST

DRAWING TITLE
PERSPECTIVE VIEW
EXISTING

SCALE	DATE	ISSUE
NTS	190413	01

DWG NO	REV
1719_03	-



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PROJECT TITLE
14 ROGER ST

DRAWING TITLE
PERSPECTIVE VIEW
PROPOSED

SCALE	DATE	ISSUE
NTS	190413	01

DWG NO	REV
1719_04	-

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PROJECT TITLE
14 ROGER STREET

DRAWING TITLE
INTERNAL ANALYSIS
LOWER GROUND FLOOR

SCALE	DATE	ISSUE
NTS	190413	02
DWG NO		REV
1719_05		-

Appendix C

14 Roger Street, London WC1

Daylight Results

			VSC				NOSKY	
LEVEL	WINDOW	ROOM	EXISTING	PROPOSED	LOSS	% LOSS	EXISTING	PROPOSED
79 Grays Inn Road								
LEV 1	W1	R1	9.6	8.4	1.2	12.5	33%	29%
LEV 2	W2	R2	16.1	13.5	2.6	16.2	70%	56%
LEV 3	W3	R3	27.4	24.0	3.4	12.4	94%	71%
81 Grays Inn Road								
LEV 2	W1	R1	23.2	20.6	2.6	11.2	55%	48%

14 Roger Street, London WC1

Internal Analysis Results

LEVEL	ROOM	ROOM USE	REQUIRED	PROPOSED	NOSKY PROPOSED
Internal					
LEV 0	R1	BEDROOM	1.0	0.6	33%
	R2	BEDROOM	1.0	0.8	35%
	R3	BEDROOM	1.0	1.0	44%
	R4	BEDROOM	1.0	1.2	20%

Appendix D

14 Roger Street, London WC1

Sunlight Results

		EXISTING			PROPOSED			% LOSS	
LEVEL	WINDOW	SUMMER	WINTER	TOTAL	SUMMER	WINTER	TOTAL	WINTER	TOTAL
79 Grays Inn Road									
LEV 1	W1	16.0%	3.0%	19.0%	15.0%	3.0%	18.0%	0.00	5.26
LEV 2	W2	24.0%	9.0%	33.0%	19.0%	9.0%	28.0%	0.00	15.15
LEV 3	W3	27.0%	14.0%	41.0%	23.0%	13.0%	36.0%	7.14	12.20
81 Grays Inn Road									
LEV 2	W1	26.0%	6.0%	32.0%	23.0%	6.0%	29.0%	0.00	9.38