RIGHT OF LIGHT CONSULTING
Chartered Surveyors

Daylight and Sunlight Report

(Neighbouring Properties)

1 October 2021

22 and 23 Maryon Mews,
London NW3 2PU

RICS
Regulated by RICS

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CONTENTS

1 EXECUTIVE SUMMARY

1.1 Overview

1.1.1 Right of Light Consulting has been commissioned by Mr Stack & Ms Clark-Darby to undertake a daylight and sunlight study of the proposed development at 22 and 23 Maryon Mews, London NW3 2PU.

1.1.2 The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, 2nd Edition' by P J Littlefair 2011.

1.1.3 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring property at 21 Maryon Mews. No other neighbouring properties are considered to be impacted by the proposal.

1.1.4 The window key in Appendix 1 identifies the windows analysed in this study. Appendix 2 gives the numerical results of the various daylight and sunlight tests.

1.1.5 The results demonstrate that the proposed development will have a relatively low impact on the light receivable by its neighbouring property. Non-compliance with the BRE recommendations is limited to the daylight tests in respect of window 10 at 21 Maryon Mews. In our opinion, taking into account the overall high level of compliance with the BRE recommendations, and the mitigating factors set out in section 4, the proposed development is acceptable in terms of daylight and sunlight.

2 INFORMATION SOURCES

2.1 Drawings

2.1.1 This report is based on the following drawings:

Heathwalker Studio

337 01	Location Plan	Rev -
337 02	Existing Site Plan	Rev -
337 11	Existing Ground and First Floor Plans	Rev -
337 12	Existing Second and Roof Plans	Rev -
337 14	Existing Elevation 1	Rev -
337 15	Existing Second and Third Floor Plans	Rev -
337 16	Existing Elevation 4	Rev -
337 17	Existing Section	Rev -
337+Existing	Existing Architects 3D Model	Rev -
337 20	Proposed Site Plan	Rev -
337 21	Proposed Ground and First Plans	Rev -
337 22	Proposed Second and Third Plans	Rev -
337 23	Proposed Roof Plan	Rev -
337 24	Proposed Elevation 1	Rev -
337 25	Proposed Elevation 2 & 3	Rev -
337 26	Proposed Elevation 4	Rev -
337 27	Proposed Section	Rev -
337+Proposed	Proposed Architects 3D Model	Rev -

Greenhatch Group

39521_01_P	Topographical Survey	Rev 0
39521_02_ES	Existing Elevations & Sections	Rev 0
39521_02_P	Existing Floor Plans	Rev 0

Promap OS Plan

1573175-1674754-720-0	Promap	Rev -

2.2 Daylight Distribution Room Layout Information

2.2.1 The daylight distribution test has been applied based on the following room layout information:

Online Local Authority planning records

21 Maryon Mews:

MMG/1	Plans as Existing	Rev -

3 METHODOLOGY OF THE STUDY

3.1 Local Planning Policy

3.1.1 We understand that the Local Authority take the conventional approach of considering daylight and sunlight amenity with reference to the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, 2nd Edition' by P J Littlefair 2011. A new European standard BS EN 17037 'Daylight in Buildings' was published in May 2019. An update to the BRE guide to take into account the European standard is expected sometime in 2021. It is not yet clear, how and to what extent, the European recommendations will be adopted by the BRE and Local Authorities.

3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The BRE guide states:

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

3.2 National Planning Policy Framework

3.2.1 The BRE numerical guidelines should be considered in the context of the National Planning Policy Framework (NPPF), which stipulates that local planning authorities should take a flexible approach to daylight and sunlight to ensure the efficient use of land. The NPPF states:

3.2.2 "Local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards)."

3.3 Daylight to Windows

3.3.1 Diffuse daylight is the light received from the sun which has been diffused through the sky. Even on a cloudy day, when the sun is not visible, a room will continue to be lit with light from the sky. This is diffuse daylight.

3.3.2 Diffuse daylight calculations should be undertaken to all rooms within domestic properties, where daylight is required, including living rooms, kitchens and bedrooms. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. These room types are non-habitable and do not have a requirement for daylight.

3.3.3 The BRE guide states that the tests may also be applied to non-domestic buildings where there is a reasonable expectation of daylight. The BRE guide explains that this would normally include schools, hospitals, hotels and hostels, small workshops and some offices. The BRE guide is not explicit in terms of which types of offices it regards as having a requirement for daylight. However, it is widely accepted amongst consultants and local authorities, that for planning purposes, offices (which are commercial in nature) do not have a requirement for daylight. The point is touched on in the 'Daylighting and Sunlighting' guidance note published by the Royal Institution of Chartered Surveyors (RICS), which gives guidance to surveyors on how to produce their reports:

3.3.4 "The report should establish the limits of the assessment. For example, existing commercial premises are rarely assessed for loss of amenity."

3.3.5 The BRE guide contains three tests which measure diffuse daylight:

Test 1 Vertical Sky Component

3.3.6 The Vertical Sky Component is a measure of available skylight at a given point on a vertical plane. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.

3.3.7 The BRE guide states that the total amount of skylight can be calculated by finding the Vertical Sky Component at the centre of each main window. The BRE guide does not define the term 'main window'. However, in our opinion, where a room has

multiple windows, the largest window is usually taken as the main window and the smaller window(s) as secondary. Although we generally follow the practice of testing all windows, including secondary windows, our interpretation of the BRE guide is that the Vertical Sky Component targets do not apply to secondary windows.

Test 2 Daylight Distribution

3.3.8 The distribution of daylight within a room can be calculated by plotting the 'no sky line'. The no sky line is a line which separates areas of the working plane that do and do not have a direct view of the sky. Daylight may be adversely affected if, after the development, the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.

3.3.9 The BRE guide states that both the total amount of skylight (Vertical Sky Component) and its distribution within the building (Daylight Distribution) are important. The BRE guide states that where room layouts are known, the impact on the daylighting distribution can be found by plotting the 'no sky line' in each of the main rooms. Therefore, we are of the opinion that application of the test is not a requirement of the BRE guide where room layouts are not known. We don't endorse the practice of applying the test based on assumed room layouts, because the test is very sensitive to the size and layout of the room and the results are likely to be misleading. However, we can provide additional daylight distribution data upon request by the local authority, if neighbouring room layout information is confirmed.

Test 3 - Average Daylight Factor

3.3.10 The Average Daylight Factor (ADF) can be calculated using the following formula:

$$df = \frac{T\ Aw\ \theta}{A\ (1-R^2)}\ \%$$

where

T is the diffuse visible transmittance of the glazing
Aw is the net glazed area of the window (m^2)
A is the total area of the room surfaces (m^2)
R is their average reflectance
Θ is the angle of visible sky in degrees

3.3.11 The ADF test is applied to habitable rooms within domestic properties.

3.3.12 For the purpose of this study, we have assumed BRE internal reflectance coefficients pertaining to medium wooden floors (0.4), light painted walls (0.8) and matt white painted ceilings (0.85).

3.3.13 We have assumed that each window is double-glazed and has a glazed area that equates to 80% of the structural opening size. A glazing transmittance value, inclusive of a maintenance to allow for the effect of dirt and grime on the glazing, of 0.68 has been used.

3.3.14 To achieve a predominately daylit appearance, the guide recommends an ADF of 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary lighting is provided. The guide also gives minimum recommendations for dwellings of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. The minimum targets have been adopted for the purpose of this study.

3.4 Sunlight availability to Windows

3.4.1 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The guide states that kitchens and bedrooms are less important, although care should be taken not to block too much sunlight. The tests should also be applied to non-domestic buildings where there is a particular requirement for sunlight.

3.4.2 The test is intended to be applied to main windows which face within 90 degrees of due south. However, the BRE guide explains that if the main window faces within 90 degrees of due north, but a secondary window faces within 90 degrees of due south, sunlight to the secondary window should be checked. For completeness, we have tested all windows which face within 90 degrees of due south. The BRE guide states that sunlight availability may be adversely affected if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and
- receives less than 0.8 times its former sunlight hours during either period and
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

3.5 Overshadowing to Gardens and Open Spaces

3.5.1 The availability of sunlight should be checked for all open spaces where sunlight is required. This would normally include:

- Gardens, usually the main back garden of a house
- Parks and playing fields
- Children's playgrounds
- Outdoor swimming pools and paddling pools
- Sitting out areas, such as those between non-domestic buildings and in public squares
- Focal points for views such as a group of monuments or fountains.

3.5.2 One way to consider overshadowing is by preparing shadow plots. However, the BRE guide states that it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing is to be expected. Therefore, shadow plots are of limited use as interpretation of the plots is subjective. Shadow plots have not been undertaken as part of this study.

3.5.3 The BRE guide also contains an objective overshadowing test which has been adopted for the purpose of this study. The guide recommends that at least 50% of the area of each amenity space listed above should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sunlight on 21 March is less than 0.8 times its former value, then the loss of light is likely to be noticeable.

4 RESULTS OF THE STUDY

4.1 Windows & Amenity Areas Considered

4.1.1 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring property at 21 Maryon Mews.

4.1.2 Appendix 1 provides a plan and photographs to indicate the positions of the windows and outdoor amenity areas analysed in this study. Appendix 2 lists the detailed numerical daylight and sunlight test results.

4.2 Daylight to Windows

Vertical Sky Component

4.2.1 All windows at 21 Maryon Mews with a requirement for daylight pass the Vertical Sky Component test with the exception of window 10. However, there are mitigating factors to consider.

4.2.2 Window 10 appears to serve a bedroom. The BRE guide states that daylight is required in living rooms, kitchens and bedrooms. In the context of daylight distribution, the guide states that bedrooms are less important. The guide does not distinguish between the relative importance of daylight in respect of the vertical sky component text. However, in our opinion less weight should be given to bedrooms than living rooms, on the basis that bedrooms are likely to be used less than living rooms during daylight hours.

4.2.3 The Vertical Sky Component test and Average Daylight Factor test are used to measure the amount of diffuse daylight in each room. The Vertical Sky Component test measures the access to visible sky from a point at the center of each main window. Where a window does not satisfy the Vertical Sky Component test, it does not automatically follow that daylighting will be of a poor standard. Depending on factors such the size of its window and type of glazing, a room may still receive satisfactory levels of daylight. This can be checked by applying the Average Daylight factor test - which takes into account these additional variables. In the case of this development, the results of the Average Daylight Factor test indicate that the room served by window 10 will surpass the minimum recommended level of daylight

following the proposal with an ADF score of 2.2% against a target of 1% (see Appendix 3).

4.2.4 Finally, the BRE guide states that its numerical guidelines should be interpreted flexibly since natural lighting is only one of many factors in site layout design.

Daylight Distribution

4.2.5 We have undertaken the Daylight Distribution test where room layouts are known. All rooms with a requirement for daylight pass the daylight distribution test with the exception of window 10. However, as stated above in the Vertical Sky Component Test, window 10 appears to serve a bedroom and in our opinion less weight should be given to bedrooms than living rooms, on the basis that bedrooms are likely to be used less than living rooms during daylight hours.

4.2.6 Additionally, the result is marginal with before/after ratio of 0.78 against the BRE target of 0.8.

4.3 Sunlight to Windows

4.3.1 All windows that face within 90 degrees of due south have been tested for direct sunlight. All windows with a requirement for sunlight pass both the total annual sunlight hours test and the winter sunlight hours test. The proposed development therefore satisfies the BRE direct sunlight to windows requirements.

4.4 Overshadowing to Gardens and Open Spaces

4.4.1 There are no nearby gardens or amenity areas directly to the north of the development. The proposed development will therefore not create any new areas which receive less than two hours of sunlight on 21 March. The proposed development therefore satisfies the BRE overshadowing to gardens and open spaces requirements.

4.5 Conclusion

4.5.1 The results demonstrate that the proposed development will have a relatively low impact on the light receivable by its neighbouring property. Non-compliance with the BRE recommendations is limited to the daylight tests in respect of window 10 at 21 Maryon Mews. In our opinion, taking into account the overall high level of compliance

with the BRE recommendations, and the mitigating factors set out in section 4, the proposed development is acceptable in terms of daylight and sunlight.

5 CLARIFICATIONS

5.1 General

5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.

5.1.2 The study is limited to assessing daylight, sunlight and overshadowing to neighbouring properties as set out in section 2.2, 3.2 and 3.3 of the BRE Guide.

5.1.3 The study is based on the information listed in section 2 of this report. The study has been undertaken without access to the proposed development site or neighbouring properties.

5.1.4 This study does not calculate the effects of trees and hedges on daylight, sunlight and overshadowing to gardens. The BRE guide states that it is usual to ignore the effect of existing trees.

5.1.5 The impact on solar panels is a material planning consideration. However, the BRE guide does not provide assessment criteria for this. The assessment of impact on any neighbouring solar panels is therefore beyond the scope of this report.

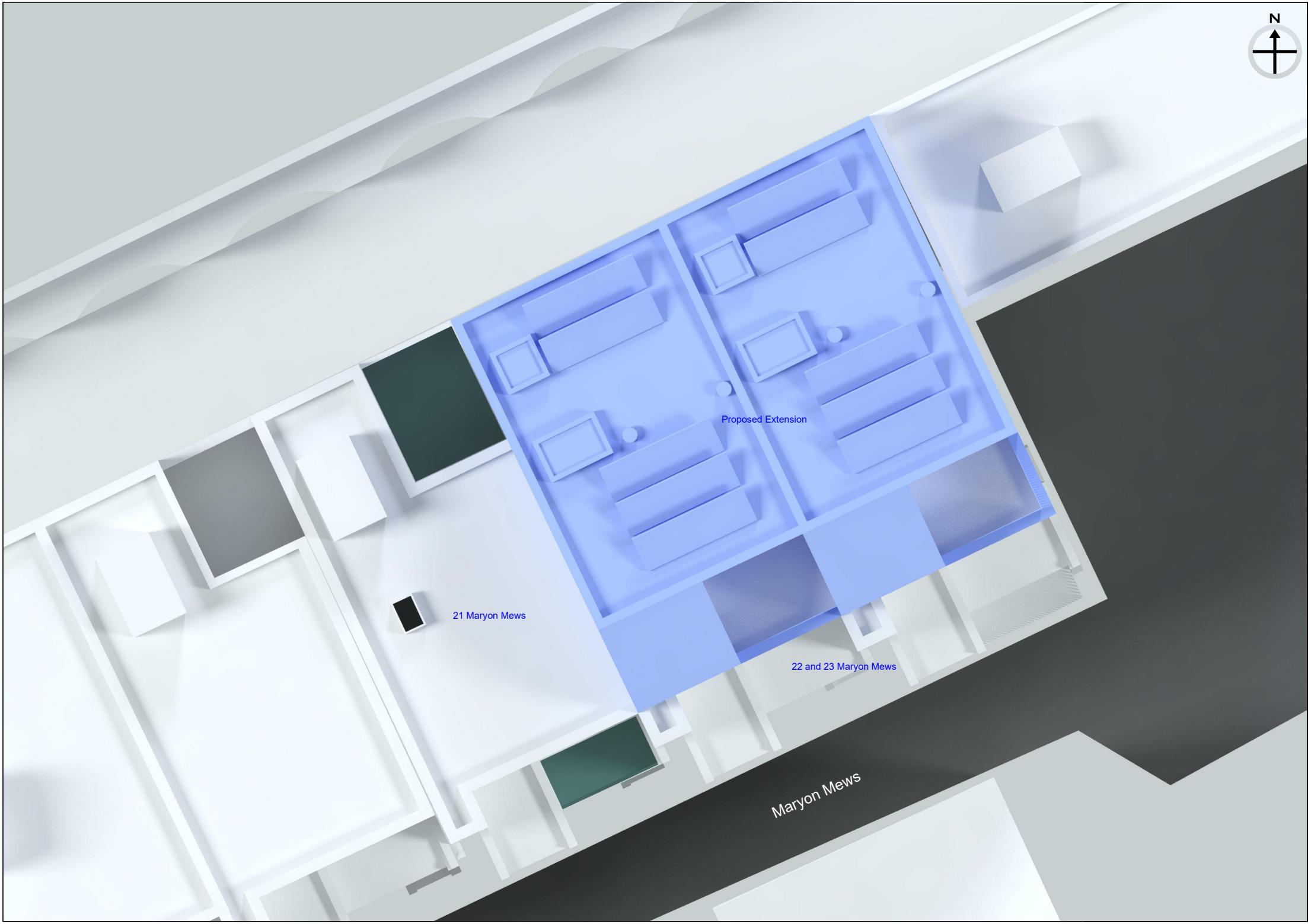
5.1.6 We have undertaken the study following the guidelines of the RICS publication "Surveying Safely". Where limited access or information is available, assumptions will have been made which may affect the conclusions reached in this report. For example, where neighbouring room uses are not known, we will either make an assumption regarding the use, or take the prudent approach of treating the use of the room as being used for domestic purposes. Therefore, the report may need to be updated if room uses are confirmed by the local authority or by the consultation responses.

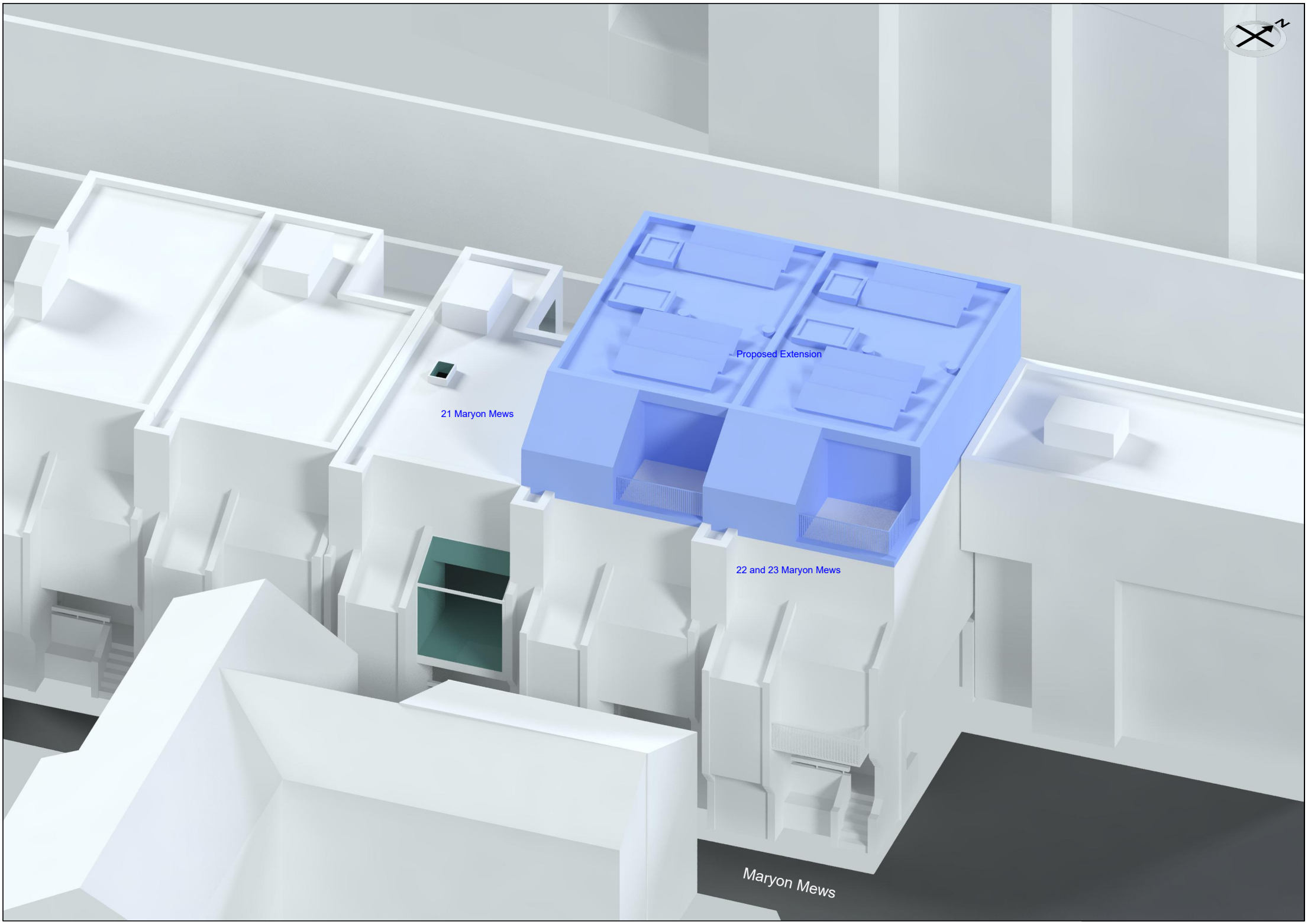
5.1.7 This report is based upon and subject to the scope of work set out in Right of Light Consulting's quotation and standard terms and conditions.

APPENDICES

APPENDIX 1

WINDOW & GARDEN KEY


N
Proposed Extension
21 Maryon Mews
22 and 23 Maryon Mews
Maryon Mews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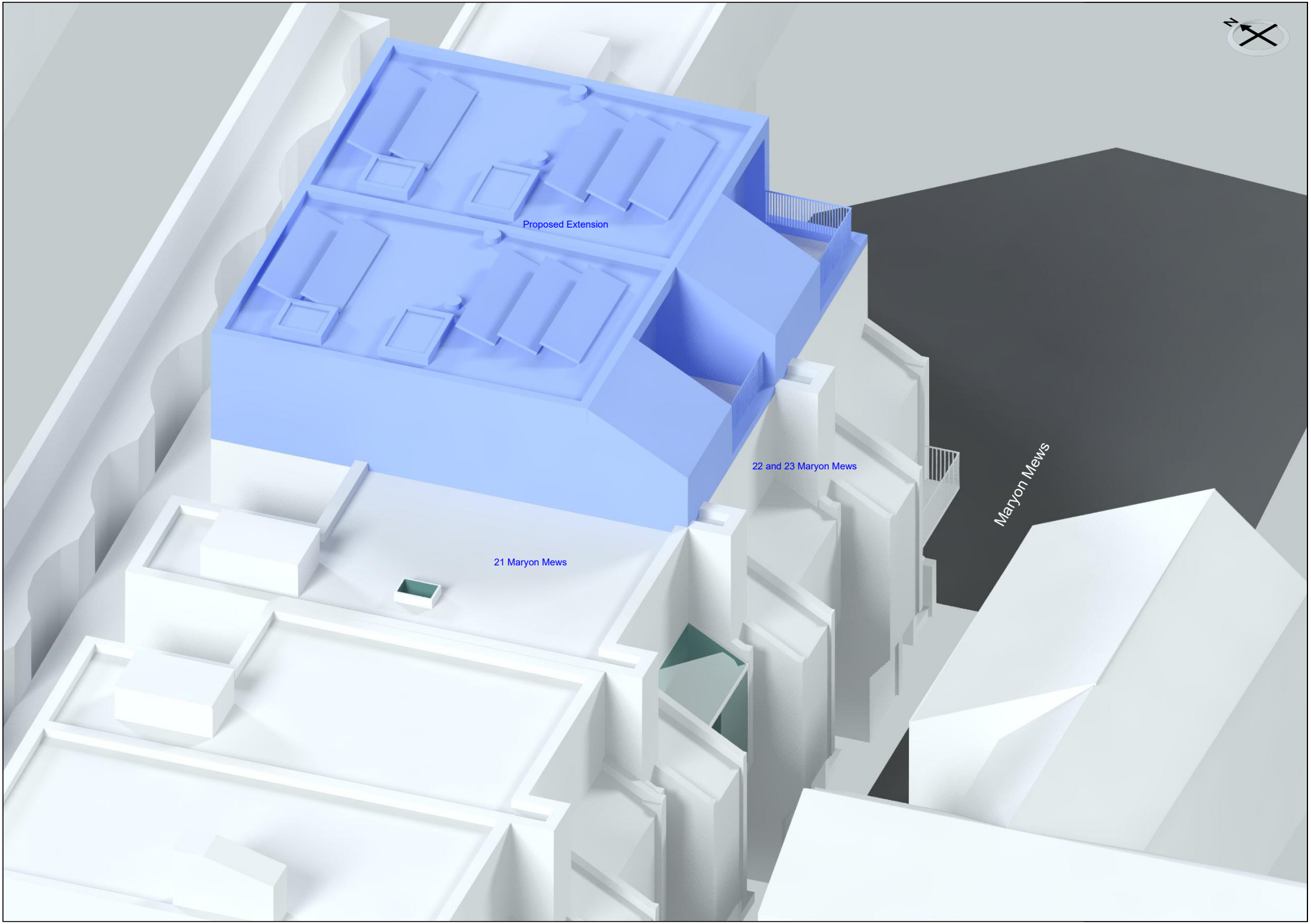
22 and 23 Maryon Mews
Maryon Mews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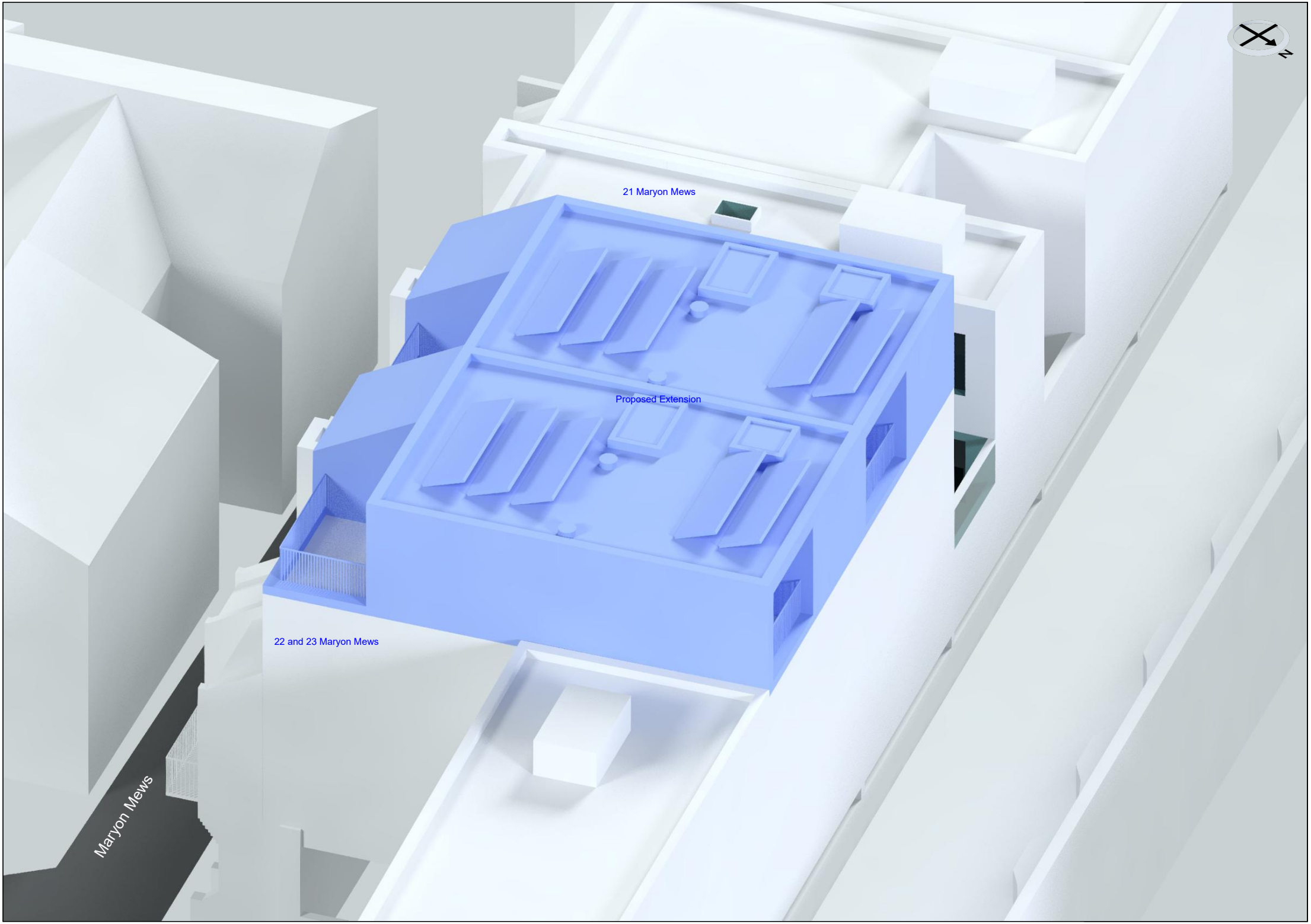
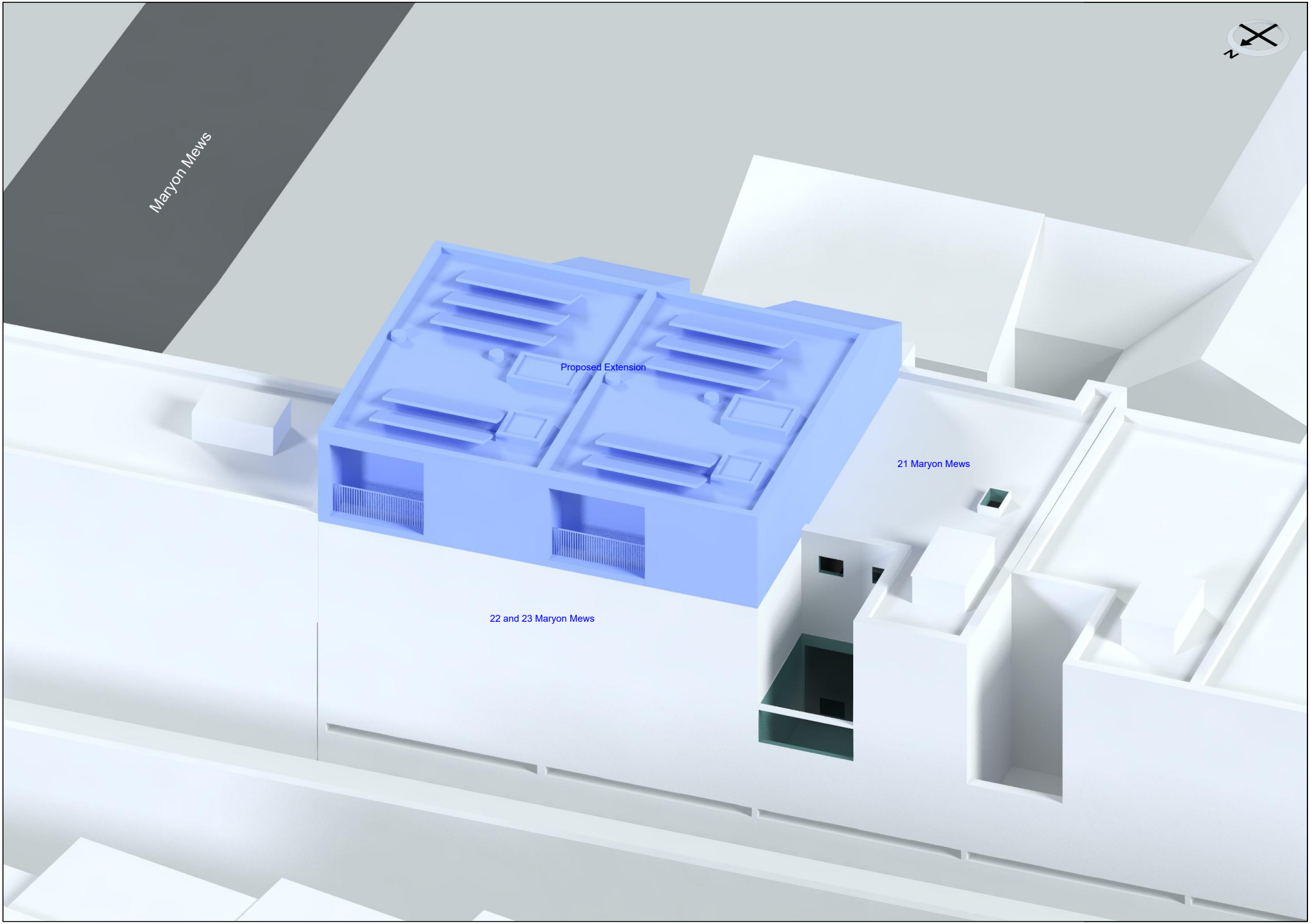
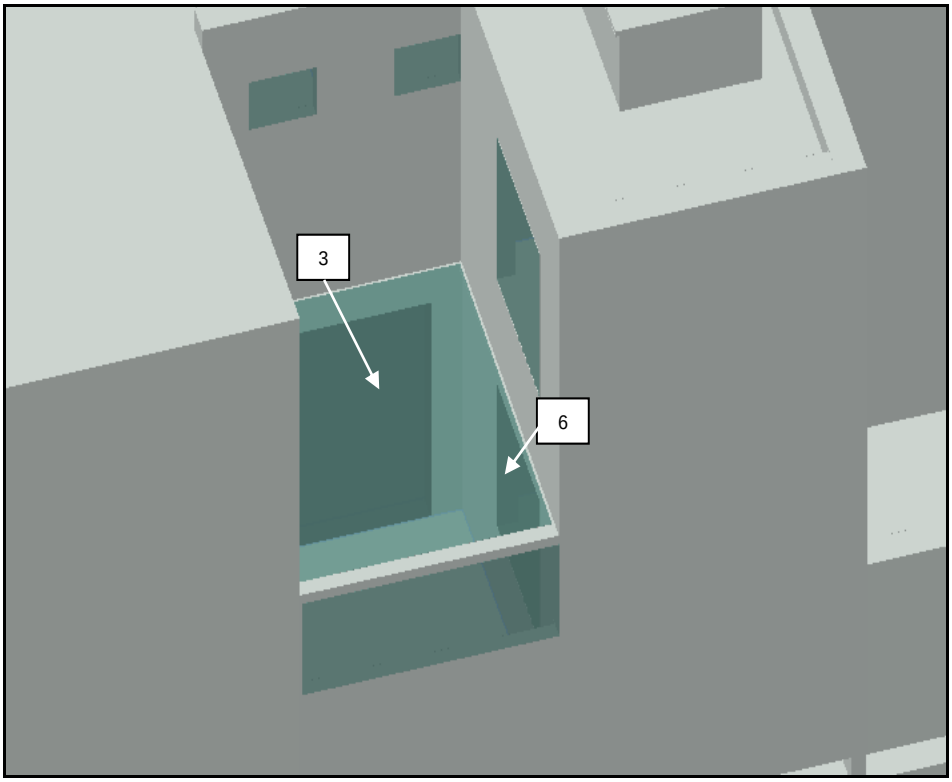
22 and 23 Maryon Mews
21 Maryon Mews
Maryon Mews


21 Maryon Mews
Proposed Extension
22 and 23 Maryon Mews
Maryon Mews

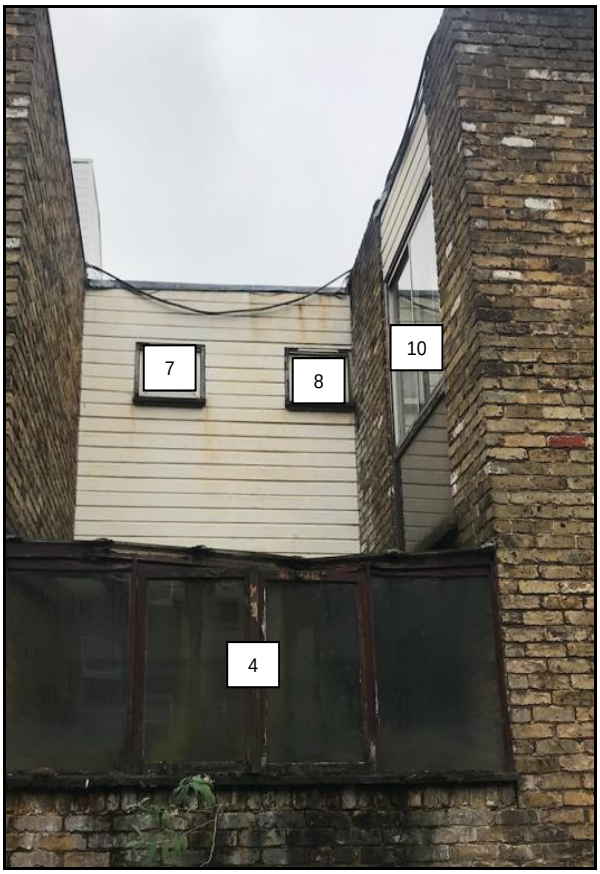

Maryon Mews
Proposed Extension
21 Maryon Mews
22 and 23 Maryon Mews

Neighbouring Windows

21 Maryon Mews



21 Maryon Mews



21 Maryon Mews

21 Maryon Mews

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Vertical Sky Component
22 and 23 Maryon Mews, London NW3 2PU

Reference	Room Use	Vertical Sky Component			
		Before	After	Loss	Ratio
21 Maryon Mews					
First Floor					
Window 1	Living Room	28.6%	28.6%	0.0%	1.0
Window 2	Living Room	53.3%	53.1%	0.2%	1.0
Window 3	Living Room	12.0%	11.5%	0.5%	0.96
Window 4	Glazed in area	33.8%	33.8%	0.0%	1.0
Window 5	Glazed in area	38.9%	34.2%	4.7%	0.88
Window 6	Kitchen	11.2%	9.4%	1.8%	0.84
Window 9	Staircase & Landing	98.6%	95.2%	3.4%	0.97
Second Floor					
Window 7	Bathroom/WC	25.9%	20.1%	5.8%	0.78
Window 8	Bathroom/WC	21.3%	16.9%	4.4%	0.79
Window 10	Bedroom	23.3%	14.4%	8.9%	0.62

Appendix 2 - Daylight Distribution
22 and 23 Maryon Mews, London NW3 2PU

Reference	Room Use	Daylight Distribution			
		Before	After	Loss	Ratio
21 Maryon Mews					
First Floor					
Windows 1 to 3	Living Room	98%	98%	0.0%	1.0
Windows 4 & 5	Glazed in area	100%	100%	0.0%	1.0
Window 6	Kitchen	77%	73%	4.0%	0.95
Window 9	Staircase	87%	87%	0.0%	1.0
Second Floor					
Window 7	Bathroom/WC	90%	81%	9.0%	0.9
Window 8	Bathroom/WC	90%	88%	2.0%	0.98
Window 9	Landing	100%	100%	0.0%	1.0
Window 10	Bedroom	99%	77%	22.0%	0.78

Appendix 2 - Sunlight to Windows
22 and 23 Maryon Mews, London NW3 2PU

Reference	Room Use	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
21 Maryon Mews									
First Floor									
Window 1	Living Room	61%	61%	0%	1.0	14%	14%	0%	1.0
Window 2	Living Room	81%	81%	0%	1.0	27%	27%	0%	1.0
Window 9	Staircase & Landing	99%	92%	7%	0.93	30%	30%	0%	1.0

APPENDIX 3

AVERAGE DAYLIGHT FACTOR TEST RESULTS

Appendix 4 - Average Daylight Factor Workings
22 and 23 Maryon Mews, London NW3 2PU

Reference	Target ADF based on room use		Average Daylight Factor Coefficients						Actual ADF	
	Primary room use	ADF	T	Aw	A	R	Existing theta	Proposed theta	Existing	Proposed
21 Maryon Mews										
Window 10 (lower)			0.65	0.08	47.8	0.7	51.0	40.7	0.0%	0.0%
Window 10 (upper)			0.65	1.88	47.8	0.7	58.7	43.8	3.0%	2.2%
Total ADF for room	Bedroom	1.0%							**3.0%**	**2.2%**