1 Wadham Gardens, Lomdon, NW3

Internal Daylight Report

22nd November, 2021

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Internal Daylight Report

1 Wadham Gardens,
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Prepared for:-

Marcus Cooper Group
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NW8 6EB

Prepared by	**Date**
James M A Crowley	22nd November 2021

Contents

Appendices

This report is solely for the benefit of **Marcus Cooper Group** 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 Executive Summary

1.1 In accordance with our instructions by Marcus Cooper Group, we have considered the level of daylight the proposed lower ground floor accommodation will achieve with reference to the Building Research Establishment's publication "*Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice*" (2011) (the '**BRE Guidelines**', the Mayor of London's Housing SPG (November 2011) and BS8206 Part 2.

1.2 The standards and tests applied within this assessment are briefly described in Appendix A.

1.3 The results of our analysis demonstrates that in all instances the recommended minimum level of daylight will be achieved, taking into account the use of each room. The proposals will therefore achieve the BRE Guidelines and the Mayor of London's Housing SPG.

2.0 Instruction

2.1 We have been instructed by Marcus Cooper Group to establish the level of daylight the proposed residential accommodation will enjoy.

3.0 Assessment

3.1 To ensure that this assessment has been appropriately considered, the level of daylight the proposed accommodation will enjoy, an analysis set out in the BRE Guidelines and BS8206 Part 2 has been undertaken.

3.2 These publications set out recommendations as to the minimum level of daylight a room should enjoy, depending on its use, by calculating the Average Daylight Factor.

3.3 The Average Daylight Factor is the average illuminance on the working plan in the room and takes into account the amount of unobstructed sky the window serving the room can see, the size of the window, the size of the room, the reflectance expected from the surfaces within the room and the reduction in daylight that will occur as it passes through the glazing.

4.0 Information

4.1 We have made reference to the following information:-

Ordnance Survey
Site Plan.

Hub Architects
Drawing numbers 1179-00 EXISTING, 01 EXISTING, 02 EXISTING, 03 EXISTING, 04 EXISTING, 05 EXISTING, 06 EXISTING, 07 EXISTING, 01C PROPOSED, 02C PROPOSED, 03C PROPOSED and 04 PROPOSED

CHP Surveyors Limited
Site visit and online research.

5.0 Proposals

5.1 Marcus Cooper Group are submitting a Planning Application to provide residential accommodation at lower ground floor level.

6.0 Methodology

6.1 From the survey information provided, we have produced a 3D computer model of the existing site. We have then produced a 3D computer model of the proposed lower ground floor accommodation for the site, including the proposed windows.

6.2 Using a specialist computer programme, we have undertaken the required analysis as set out in the BRE Guidelines.

7.0 Daylight

7.1 With regard to the level of daylight proposed accommodation can enjoy, BS8206 Part 2 sets out recommended levels of daylight depending on the room use. The daylight levels are established by calculating the Average Daylight Factor.

7.2 ADF is calculated using the formula:

$D = T\ W\ O\ M / [A\ (1 - R^2]$

Where:
T = Transmittance for glass
W = Net area of window glass
M = Maintenance factor, allowing for effects of dirt
A = Total area of indoor surfaces
R = Average Reflectance of area A

7.3 The recommended level of ADF depends on the room use, with these being 2% for a kitchen, 1.5% for a living room and 1% for a bedroom.

7.4 The accommodation to be provided at lower ground floor level is bedrooms and associated bathrooms.

7.5 Our analysis has considered each bedroom and the results are set out in the table attached at Appendix C with the rooms analysed indicated on Drawing Number 2055-01 attached at Appendix B. This demonstrates that in all instances the recommended minimum ADF is achieved or exceeded.

8.0 Conclusion

8.1 Our analysis has considered seven habitable rooms proposed at lower ground floor and demonstrates that in all instances the recommended ADF is achieved.

8.2 Our analysis therefore demonstrates that the Building Research Establishment's publication "*Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice*", the Mayor of London's Housing SPG and BS 8206 are met.

Appendix A

Principles of Daylight and Sunlight

In 2011 the Building Research Establishment (BRE) published a handbook titled "Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice" to provide advice to building designers on site layout planning in order to achieve good daylight and sunlight amenity to the proposed development, the open spaces between the proposed blocks and the existing surrounding properties.

As stated within the Introduction of this document, the aim of these guidelines 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.*"

The application of the BRE Guidelines are suited more to low density suburban development sites where there is a greater flexibility for site layout planning. In dense urban development sites, these are usually constrained often by adjacent buildings and the guidelines state that these should be applied more flexibly in these instances, as contained within the introduction of the BRE Guidelines:- "*The Guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guides, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design…*"

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

Daylight

Daylight assessments should be undertaken to habitable rooms where the occupants can expect to receive a reasonable amount of daylight.

The first assessment 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. The BRE Guidelines advise:- "*If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of a lowest window, subtends an angle of more than 25° to the horizontal may be affected."*

This assessment is most appropriate for well spaced, low density or low rise, uniform proposed developments. It is not an appropriate assessment for dense urban environments where the existing building on the development site already subtends at an angle greater than 25° to the horizontal from the subject window. It is for this reason that this 25° assessment is generally dispensed with and the more detailed analysis outlined below is undertaken.

- **Vertical Sky Component (VSC)**

  The Vertical Sky Component (VSC) analysis establishes the amount of available daylight received directly from the sky for each individual window. The reference point for the analysis being the centre of the window, on the plane of the outer window wall.

  The VSC is the amount of direct sky a window enjoys, expressed as a percentage of the amount of direct sky a horizontal, unobstructed rooflight would receive.

  The maximum percentage of direct skylight a vertical window can receive is 40%. The BRE have determined that where a VSC of 27% is achieved, then daylight should reach the window of an existing building.

  Where a VSC of less than 27%, is either before the implementation of the proposals enjoyed, or it is enjoyed following the implementation, then the BRE Guidelines state that provided the new value is greater than 0.8 times the existing value, daylight will not be significantly affected.

- **Daylight Distribution**

  The Daylight Distribution analysis is undertaken at working plane level, with this set at 0.85m above floor level of a dwelling.

  The BRE Guidelines state that provided a significant area of the room, which is considered to be 80% is in front of the No Sky Line (the point behind which at desk top level no sky is visible) or at least 0.8 times the existing area, then the room will enjoy good daylight distribution.

  If in the existing situation this is not the case, the BRE Guidelines state that provided that the area following the implementation of the proposals is at least 0.8 times the existing area, there will not be a significant affect.

Sunlight

This analysis is undertaken in a similar method to calculating VSC. Within residential accommodation the analysis for a sunlight analysis relates to the main windows that are within 90º of due south. It is considered that sunlight to kitchens and bedrooms is less important, although care should be taken not to block out too much.

Within commercial or non-domestic buildings, the use of the building will determine whether a sunlight assessment is required.

In relation to neighbouring residential buildings, if a window is facing within 90º of due south and overlooking any part of the proposals subtends an angle of more than 25º 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.

- **Annual Probable Sunlight Hours (APSH)**

The 'Probable Sunlight Hours' can be defined as the total number of hours in the year that sun is expected to shine.

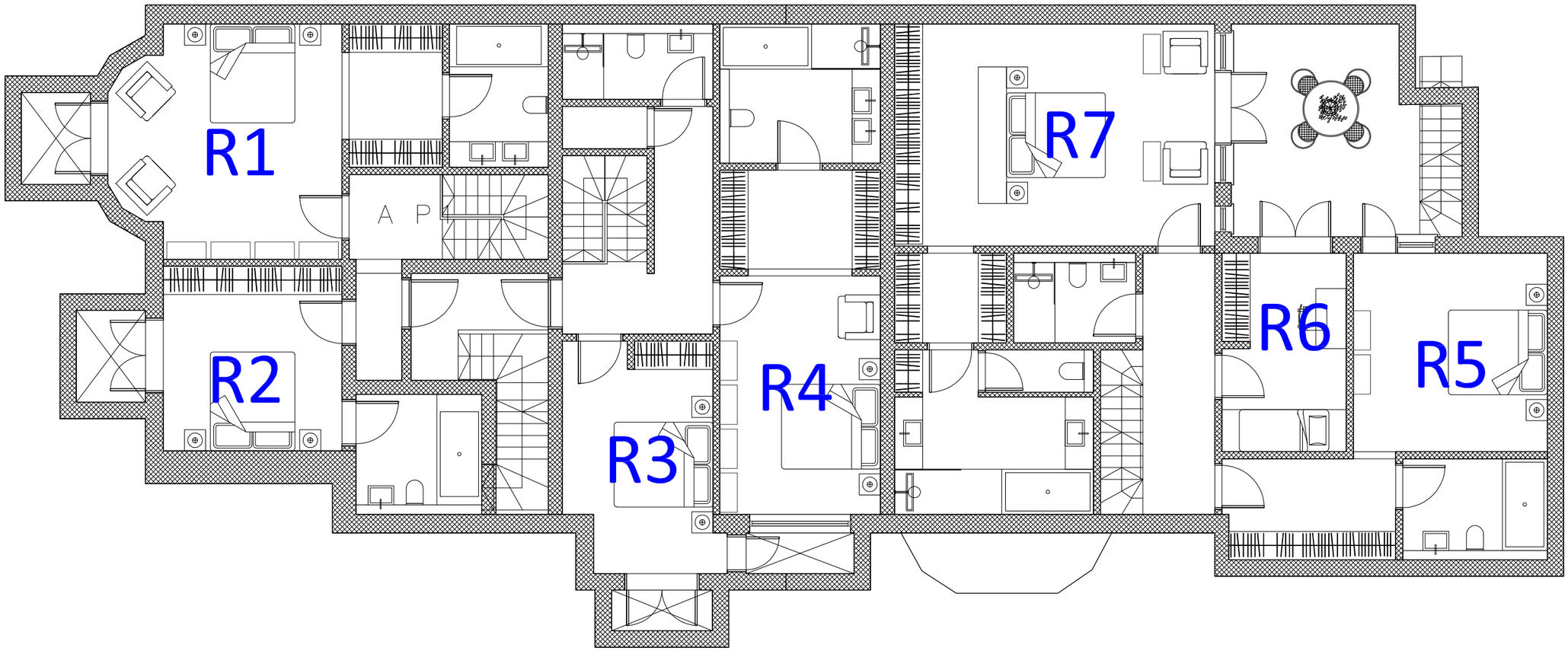
The APSH assessment is undertaken to the main window of residential buildings, where the window faces 90° of due south. Within the BRE Guidelines it sets out the criteria for this assessment:-

"*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 sunlighting of the existing dwelling may be adversely effected. This will be the case if a point at the centre of the window, in the plane of the inner window wall, received in the year less than one quarter (25%) of annual probable sunlight hours including at least 5% of annual probable sunlight hours between 21 September and 21 March, and less than 0.8 times its former sunlight hours during either period.*"

In summary, if it does not achieve the specific numerical values, the sunlight to an existing building may be reduced by 20% in either the annual or winter periods before that loss becomes noticeable as a result of a proposed development.

Appendix B

Sources



Lower Ground Floor

KEY

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PROJECT TITLE
Wadham Gardens

DRAWING TITLE
Internal Room Map

SCALE	DATE	ISSUE
NTS	19-10-2015	-

DWG NO	REV
2055_01	

Appendix C

1 Wadham Gardens, London NW3

Internal Daylight Results

LEVEL	ROOM	ROOM USE	REQUIRED	PROPOSED
Basement	R1	Bedroom	1.0	1.0
	R2	Bedroom	1.0	1.5
	R3	Bedroom	1.0	1.0
	R4	Bedroom	1.0	1.0
	R5	Bedroom	1.0	1.1
	R6	Bedroom	1.0	1.8
	R7	Bedroom	1.0	1.5