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Daylight Report on Flat G.10 Carlow House, Camden, London

Overshadowing

• Daylight & Sunlight • Light Pollution •

Solar Glare • Daylight Design

Director:	A. Cartmell
Client:	Galliard homes
Date:	Juily 2016
Version:	v. 3
Project:	P993/Carlow House

Contents

Appendices

1 Executive Summary

1.1 The scope of this report is to consider the potential levels of daylight that will be enjoyed within proposed studio Flat G.10 of Carlow House, Camden, London. Consideration has also been given to the potential outlook.

1.2 Average Daylight Factor (ADF), No-Sky Line (NSL) and Annual Probable Sunlight Hours (APSH) assessments have been undertaken to the proposed studio.

1.3 The results of the ADF assessment show that the studio will enjoy levels of daylight above that recommended by the BRE guidelines. A good level of daylight distribution will also be enjoyed within the room even though the results are not quite in line with the BRE guidelines.

1.4 With the studio windows being orientated very slightly towards north-east sunlight assessments in accordance with the BRE guidelines are technically not required. However, an APSH test has been undertaken which shows that good levels of sunlight will still be enjoyed for an urban area.

1.5 With regards to outlook, the fact that the room will receive an Average Daylight Factor above that recommended by the BRE guidelines, and a good level of daylight distribution for an urban area, shows that the windows are not significantly obscured by the existing built form along Camden High Road. It is therefore considered that the studio, although having a single aspect, will have an adequate outlook.

1.6 Overall, the proposed studio flat is considered to be able to enjoy good levels of daylight and sunlight.

2 Introduction

2.1 Point 2 Surveyors have been appointed by Galliard Homes to give internal daylight advice with regards to the proposed studio Flat G.10 of Carlow House, Camden, London.

2.2 The scope of this report is to consider the potential internal daylight levels that will be enjoyed to the proposed studio flat.

2.3 The assessment set out in this report has been based on the submitted plans by Buckley Gray Yeoman Architects. We have utilised a topographical 3D model of the area (by Z-Mapping Ltd) when undertaking our assessments.

2.4 Illustrative and tabular results, as well as a 3D view of our assessment model, can be found at Appendix A.

3 Planning Policy

3.1 The site is located within the London Borough of Camden and in accordance with Camden's planning policy, the analysis and conclusions drawn within this report are primarily based on the methodology and recommendations of the Building Research Establishment (BRE) report entitled 'Site layout planning for daylight and sunlight: A guide to good practice'. (referred as the BRE guidelines).

Methodology

3.2 It is important to note that daylight, sunlight and overshadowing issues are just one of many design factors to consider. It is, therefore, sometimes necessary to apply the BRE guideline criteria flexibly, having regard to a site's location and /or the density of development in the surrounding area. This is supported by the BRE guidelines which state within the opening summary:

> *"This guide is a comprehension revision of the 1991 edition of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the developments and its location".*

Daylighting

3.3 Where the internal arrangements of the proposed habitable room are known, the Average Daylight Factor (ADF) calculation can be undertaken. This calculation takes into account the size and shape of the room and window, the reflectance of the room's surfaces and diffuse transmittance of the glazing as well as the amount of blue sky calculated in the Vertical Sky Component calculation.

3.4 The BRE guidelines set out the ADF test at Appendix C, and further guidance, such as on the reflectance of certain materials, are given within BS8206-2:2008.

3.5 The BRE guidelines and BS 8206-2:2008 suggest that the following ADF values should be achieved for the following room types:

- Bedrooms 1%;
- Living Rooms 1.5%; and
- Kitchens 2%.

3.6 The ADF results are obtained for each room individually and expressed as a percentage. Where there are two or more windows serving one room, the ADF is found separately for each window, and the results summed.

3.7 BS 8206-2 suggests that where a room has more than one use i.e. a kitchen, living room and dining room, the higher of the ADF values for the uses should be used. With an open plan living / dining / kitchen area, the kitchen has the highest value of 2% ADF, and it is this therefore that would be used. However, although the above is considered best practice it is also appropriate to consider whether the room without the kitchen area would achieve the suggested standard for a living room (1.5% ADF).

3.8 The windows within the proposed development are understood to be double glazed and a factor of 0.70 has been used for the glass transmission factor (T). A factor of 0.92 for the correction factor for dirt (M) has then been used which represents an urban residential apartment with vertical glazing which can be easily cleaned.

3.9 The BRE guidelines suggest that where a window has glazing below the working plane an additional factor needs to be introduced. The BRE guidelines suggest that the lower part of the glazing should be treated as a separate window and the ADF from this 'separate window' should have the extra factor applied to it.

3.10 The BRE guidelines suggest that the factor to take should be equal to the proposed floor finish reflectance. It is understood that the reflectance of the walls, ceilings and floors surfaces within the proposals are intended to be 'light colours'. A value of 0.4 has therefore been used as the floor reflectance which is equivalent to a mid-reflectant finish such as a light timber veneer.

3.11 In conjunction with the ADF test the BRE guidelines and BS 8206-2:2008 suggest that the distribution of daylight is assessed using the No Sky Line (NSL) test. This test separates those areas of the working plane that can receive direct skylight and those that cannot.

3.12 When dealing with proposed properties the BRE guidelines suggest that a room should enjoy good levels of daylight distribution if 80% of the working plane is in front of the No-Sky Line. However, for urban areas, and in our experience, this is often not achieved. It is our view that for built up areas that a target of 50% is more appropriate.

Sunlight

3.13 For Sunlight the principle test is the Annual Probable Sunlight Hours (APSH) test. The BRE guidelines suggest that a window will continue to receive good levels of sunlight if it can receive 25% of the APSH, of which 5% are in the winter months. However, for urban areas, and in our experience, this is often not achieved unless the window is orientated directly towards south. It is our view that for built up areas that an annual target of 20% is more appropriate.

4 Assessment Results

4.1 The ADF results show the studio will enjoy good levels of daylight in accordance with the BRE guidelines achieving an ADF of 2.09%.

4.2 In addition to the ADF test, the NSL tests show that good levels of daylight distribution will be enjoyed for an urban area with 70.3% of the working plane able to receive some direct daylight.

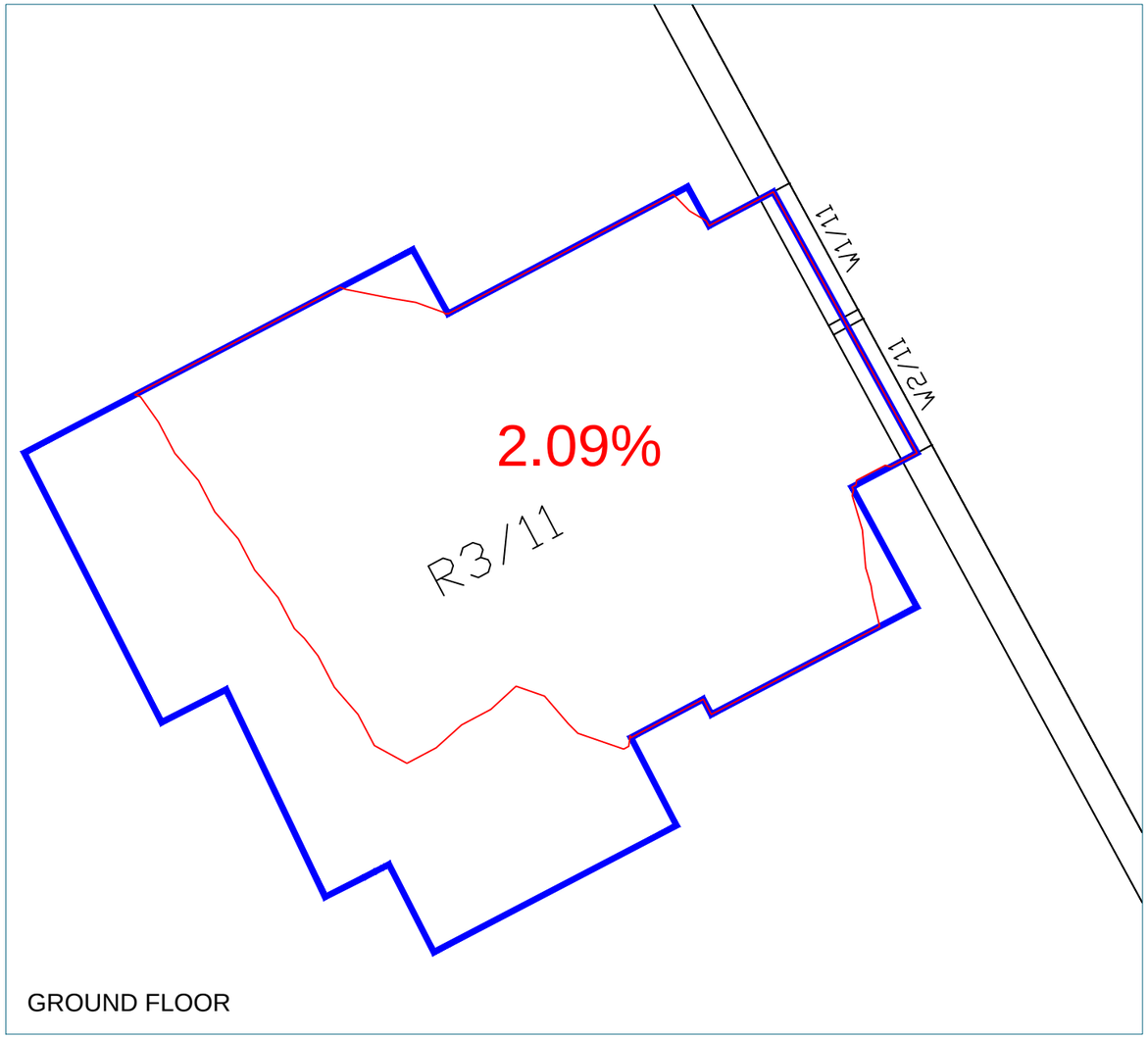
4.3 With the studio windows being orientated very slightly towards north-east sunlight assessments in accordance with the BRE guidelines are technically not required. However, as the studio is single aspect, an APSH test has been undertaken.

4.4 The APSH results show that the studio will be able to receive 20% APSH throughout the year with 2% in the winter months. Although slightly below the BRE guidelines criteria (which it must be remembered are based on a sub-urban level of density) the levels of sunlight that will be enjoyed are considered to be good for an urban area.

4.5 With regards to outlook, the fact that the room will receive an Average Daylight Factor above that recommended by the BRE guidelines, and in particular a good level of daylight distribution for an urban area, shows that the windows are not significantly obscured by the existing built form along Camden High Road. It is therefore considered that the studio, having a single aspect, will have an adequate outlook.

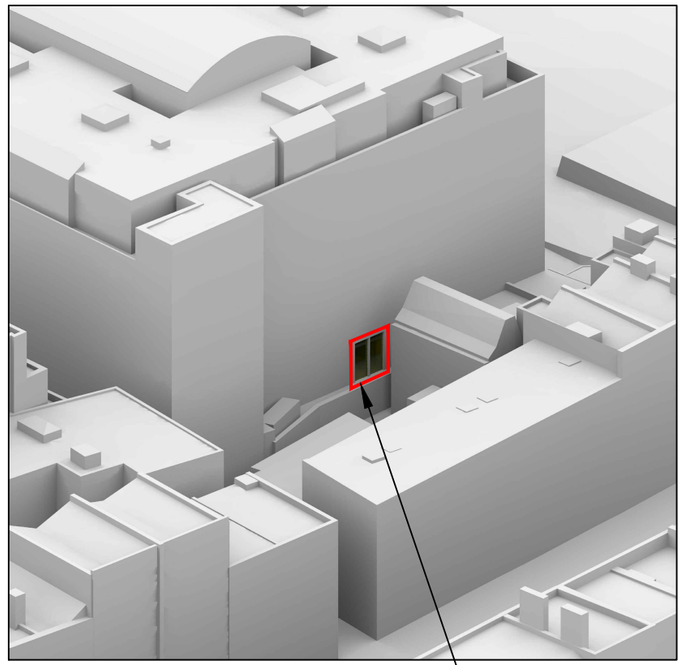
4.6 Overall therefore, the proposed studio flat is considered to be able to enjoy good levels of daylight and sunlight.

Appendix A – Average Daylight Factor and No-Sky Line Results



GROUND FLOOR

VIEW OF 3D MODELLING



WINDOWS ASSESSED

AVERAGE DAYLIGHT FACTOR RESULTS

Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
R3/11	LKD	W1/11	14.11	0.98	
R3/11	LKD	W2/11	17.23	1.10	2.09

NO-SKY LINE (DAYLIGHT DISTRIBUTION) RESULTS

Room/Floor	Room Use	Room Area sq ft	No-Sky Line sq ft	% Of Room Area
R3/11	LKD	344.6	242.3	70.3

ANNUAL PROBABLE SUNLIGHT HOURS RESULTS

Room	Room Use	Room Winter APSH	Room Annual APSH
R3/11	LKD	2	20

Sources: Z-mapping Model
Proposed Layout Plans by Buckley Gray Yeoman

Key:

PROPOSED NO-SKY LINE

2.09% PROPOSED AVERAGE DAYLIGHT FACTOR RESULT

Project: CARLOW HOUSE
CAMDEN
LONDON

Title: AVERAGE DAYLIGHT FACTOR & DAYLIGHT DISTRIBUTION TESTS

TO

PROPOSED UNIT G.10

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Drawn By: AJC

Scale: NTS

Date: JULY 16

Dwg No: **P993/01 - RevA**