

Our ref: LT/19314

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29 November 2023

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Dear Pamela

George West House – Internal daylight illuminance report

Delva Patman Redler have been engaged by the Applicant to assess the daylight provision to the dwellings contained within the consented development at George West House (“the Site”) as filed under 19/03122/FUL as varied at Lambeth planning portal.

It is our understanding that following this, the Applicant submitted a planning application to install some air conditioning units, plant enclosure and other associated works at ground floor level as filed under 22/03923/FUL, however this was refused by officers.

Officers had concerns that the air conditioning unit which is proposed on being to the rear of the site would have some potential daylight effects to the bedrooms within the proposed units which are located at basement and ground floor levels.

We have therefore assessed the daylight provision to these two bedrooms to understand whether these spaces would be materially affected pre and post introduction of the air conditioning unit.

Planning Guidance

BRE Report 209, ‘Site Layout Planning for Daylight and Sunlight: A guide to good practice’ (2022)

The leading publication providing national guidance on the provision of daylight and sunlight to new development, is ‘*Site Layout Planning for Daylight and Sunlight: A guide to good practice*’ (BR209, third edition, 2022) published by the Building Research Establishment (hereafter referred to as “the BRE guide”). It is referred to in development plan documents or supplementary planning documents of most planning authorities. It is intended to be used in conjunction with the interior daylighting recommendations in BS EN17037:2018 ‘*Daylight in buildings*’ and in CIBSE’s lighting guide, *LG 10 ‘Daylighting - a guide to designer’*.

The BRE guide states:

Summary

This guide gives advice on site layout planning to achieve good daylighting and sun lighting, within buildings and in the open spaces between them. It is intended to be used in conjunction with the interior daylight recommendations for new buildings in the British Standard, ‘Daylight in buildings’, BS EN 17037... It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.

Introduction

Also at:

Delva Patman Redler
The Quay
12 Princes Parade
Liverpool L3 1BG

Delva Patman Redler
40 Berkeley Square
Bristol
BS8 1HP

(Its) main aim is ... to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between the buildings for good interior and exterior conditions.

The guide is intended for building designers and their clients, consultants and planning officials. The advice given 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. In special circumstances the developer or planning authority may wish to use different target values.

British Standard, BS EN 17037:2018, 'Daylight in buildings' (May 2019)

British Standard, BS EN 17037:2018, '*Daylight in buildings*' provides a standard and methodology by which to assess daylight and sunlight provision in new buildings. Its general recommendations for daylight provision in a space may not be achievable for some buildings in the UK, particularly dwellings; for example, those with basement rooms or significant external obstructions, such as those in dense urban areas or in existing buildings being refurbished or converted into dwellings. The standard's National Annex therefore provides guidance on minimum daylight provision in UK dwellings.

Assessment Methodology & Numerical Guidelines

The technical assessments that underpin this daylight provision study have been carried out in accordance with the assessment methodologies recommended in the BRE guide.

Daylight provision in new rooms may be checked using either of the methods described in the BRE guide: either direct prediction of daylight illuminance levels using hourly climate data, or the use of the daylight factor, which is a ratio of unobstructed external illuminance under overcast sky conditions. Both are measures of the overall amount of daylight in a space. We have calculated daylight provision using the illuminance method.

The amount of daylight inside a room will depend on:

- the view of sky and level of obstruction outside the window(s);
- the surface reflectance's of the external environment;
- the size, position and diffuse light transmittance of the window glazing; and
- the surface reflectance's of the room surfaces.

Appendix C of the BRE guide gives recommendations for typical and maximum reflectance's of exterior and interior surfaces and glazing transmittance.

Numerical guidelines

The following minimum recommendations are given for housing in the UK:

- 100 lux in bedrooms
- 150 lux in living rooms
- 200 lux in kitchens

These are the median illuminances, to be exceeded over at least 50% of the assessment points in the room for at least half of the annual daylight hours.

They are minimum recommended values for locations where a predominantly daylit appearance is not achievable; for example, in basements or with significant external obstructions, such as in a dense urban area or with tall trees outside, or for existing buildings being refurbished or converted into dwellings.

Calculation model

The assessments require preparation of a 3D computer model of the development and its window apertures and internal spaces together with nearby obstructions.

The daylight assessment requires reasonable parameters to be used for internal and external surface reflectance's, diffuse light transmittance of the glazing, and maintenance factors for the effects of dirt that are a representative of the proposed completed building.

The information and parameters used in our computer modelling and analysis are stated below in Table 1.

Table 1 – Window and room parameters used in illuminance calculations

Parameter	Value – Proposed Dwellings
Maintenance factor (dirt on glass)	0.92 for vertical windows with normal exposure in residential developments in urban locations with good maintenance
Diffuse light transmittance of glazing	0.68
Frame and glazing bar factor	0.85
Internal surface reflectance's	Reflectance's taken from guidelines: 0.8 for white ceilings 0.7 for pale cream walls 0.4 for light wood floors
External scheme walls	0.2
Surrounding buildings	0.3
Air conditioning unit	0.3

We have compiled our 3D computer model from the following information:

- Context massing: 3D computer model of the existing surrounding massing produced from photogrammetry (aerial photography) supplied by Collado Collin via Zmap
- Consented development: 3D model and 2D drawings supplied by Collado Collins in November 2023
- Air Conditioning drawings: 2D drawings of the unit supplied by Collado Collins in November 2023 via Soundplanning

Results of internal daylight assessment

The two bedrooms were considered for assessment pre and post introduction of the air conditioning unit to understand the lux levels achieved.

The results of the assessments are shown below in tabulated form below with these shown graphically in the room location plans in Appendix 1.

Table 2 – Summary of illuminance results without air conditioning unit

Property & room attributes					Daylight (BRE 2022)			
Floor	Flat/Unit no.	Room ref.	Property type	Room use	Daylight (illum)			Room Satisfies?
					Target illum (lx)	Median illum (lx)	% area ≥target	
George West House								
B01	Plan(s)	R1	Residential	Bedroom	100	6	0%	No
F00	Plan(s)	R1	Residential	Bedroom	100	81	51%	No

Table 3 – Summary of illuminance results with air conditioning unit

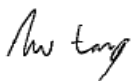
Property & room attributes					Daylight (BRE 2022)			
Floor	Flat/Unit no.	Room ref.	Property type	Room use	Daylight (illum)			Room Satisfies?
					Target illum (lx)	Median illum (lx)	% area ≥target	
George West House								
B01	Plan(s)	R1	Residential	Bedroom	100	5	0%	No
F00	Plan(s)	R1	Residential	Bedroom	100	76	50%	No

Summary

The technical assessment demonstrates that the bedrooms fall below the minimum target lux levels recommended for proposed units before the introduction of the air conditioning unit. These two bedrooms would continue to fall below the minimum target lux levels post introduction. Whilst there would be a slight reduction in the lux levels experienced by the two bedrooms, it is considered that this would not materially alter the internal daylight provision. Furthermore, the air conditioning unit itself would be hidden in the backdrop of the neighbouring building known as 16 Porteus Place which helps to mitigate any adverse effects.

I trust this is all in order however if you have any questions then please do not hesitate to contact me.

Yours sincerely



Lok Tang MSc APAEWE
 Partner
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Appendix 1



NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

Median illuminance (lux)

Lightest yellow	≥ 200
Light yellow	≥ 150
Yellow	≥ 100
Orange	≥ 50
Darkest orange	< 50

SOURCE DATA:

Drawings used:
 Existing and surrounding buildings:
 Collado Collins LLP:
 3D model received (24/07/2019):
 18044_GWH - Central w Z-Map.dwg

2D Neighbouring Survey received (17/07/2019): LF1186 - Elevations.dwg;
 LF1186 - Topographic.dwg

Existing 3D model received (21/07/2019):
 190731_18044_GWH - Z-Map EXISTING.dwg

Z Map

Proposed scheme:
 ColladoCollins Architects:
 Dwg No: 18044-SK20-100 Rev C3,
 SK20-101 Rev C4
 3D model received 15.11.2023 -
 18044_GWH_Central_t-combes - 3D View.dwg

NOTES:

Illuminance level calculated in accordance with the BRE guide 2022:
 "A space is considered to provide adequate daylight if a target illuminance level is achieved across a 50% of the space for at least half of the daylight hours (4,380) in the year."
 SDA presents percentage of area achieves the target illuminance (lux) for at least half of daylight hours.
 MI presents median illuminance (lux) value for each room.

Values of target illuminance for room types in UK dwellings:

Room type	Target Illuminance (lux)
Kitchen/LKD	200
Living room/LD	150
Bedroom	100



REV	Description	Drawn	Date

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 Chartered Surveyors

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 Liverpool 0151 242 0980
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TITLE:
 GEORGE WEST HOUSE, 2 - 3
 CLAPHAM COMMON
 LONDON, SW4 0QL

DRAWING:
 DAYLIGHT ILLUMINANCE STUDY
 Plan View

AC Excluded

DRAWN: RM	JOB NBR:
SCALE: 1:100@A3	19314
DATE: 20.11.2023	
DWG NO: ST_002	REV: -





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Median illuminance (lux)

Lightest yellow	≥ 200
Light yellow	≥ 150
Yellow	≥ 100
Orange	≥ 50
Dark orange	< 50

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B01

Values of target illuminance for room types in UK dwellings:

Room type	Target Illuminance (lux)
Kitchen/LKD	200
Living room/LD	150
Bedroom	100



F00



REV	Description	Drawn	Date

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DRAWING:
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 Plan View

AC Included

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