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DAYLIGHT & SUNLIGHT REPORT

7 Greenaway Gardens, London NW3 7DJ

Our Ref: 4638

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Appendix 1 – Detailed results of the daylight and sunlight assessment within new bedroom.

1 Introduction

- 1.1.1 eb7 have been instructed to assess the effect of the proposed refurbishment at 7 Greenaway Gardens, Hampstead on daylight and sunlight to the new bedroom created within Lower Ground Floor (identified as LG.14).
- 1.1.2 We have not been asked to consider any other room within the property.
- 1.1.3 The methodology and criteria used for these assessments is provided by the Building Research Establishment's (BRE) guidance 'Site layout planning for daylight and sunlight: A guide to good practice' (BRE 209 2nd edition, 2011).
- 1.1.4 In order to carry out an assessment, we have generated a 3D computer model (Test Environment) of the existing site, the key surrounding properties and the proposed scheme. Using this model and our specialist software, we have calculated the internal daylight levels to the lower ground floor bedroom.
- 1.1.5 The numerical criteria suggested within the BRE guidelines has been applied to each of the assessments mentioned above. It is important to note that these guidelines are not a rigid set of rules, but are advisory and need to be applied flexibly according to the specific context of a site.

2 Guidance

2.1 Daylight & sunlight for planning

'Site layout planning for daylight and sunlight: A guide to good practice', BRE 2011

- 2.1.1 The Building Research Establishment (BRE) Report 209, *'Site layout planning for daylight and sunlight: A guide to good practice'*, is the reference document used by most local authorities for assessing daylight and sunlight in relation to new developments. Commonly referred to as 'the BRE guidelines', it provides various testing methodologies to calculate the potential light levels received by neighbours of a development site and provided within proposed new development.

Detailed daylight assessments

- 2.1.2 The guidance outline three detailed methods for calculating daylight: the Vertical Sky Component (VSC), the No-Sky Line (NSL) and the Average Daylight Factor (ADF).
- 2.1.3 The VSC and NSL are primarily used for the assessment of existing neighbouring buildings, while the ADF test is generally recommended for proposed rather than existing dwellings. The ADF may also sometimes be useful as a supplementary analysis for existing buildings, particularly newer ones, and a number of local authorities request this as a standard measurement for impact assessments. It can help in judging whether an impact on daylight, which might otherwise be deemed 'noticeable', is nonetheless acceptable, when considered in the broader town planning context.
- 2.1.4 The VSC test measures the amount of sky that is visible to a specific point on the outside of a property, which is directly related to the amount of daylight that can be received. It is measured on the outside face of the external walls, usually at the centre point of a window.
- 2.1.5 The NSL test calculates the distribution of daylight within rooms by determining the area of the room at desk / work surface height (the 'working plane') which can and cannot receive a direct view of the sky and hence 'sky light'. The working plane height is set at 850mm above floor level within residential property.
- 2.1.6 For the above methods, the guidance suggests that existing daylight may be noticeably affected by new development if: -
- Windows achieve a VSC below 27% and are reduced to less than 0.8 times their former value; and / or
 - Levels of NSL within rooms are reduced to less than 0.8 times their former values.
- 2.1.7 Where rooms are greater than 5m in depth and lit from only one side, the

guidance recognises that “a greater movement of the no sky-line may be unavoidable” (page 8, paragraph 2.2.10).

Daylight to new buildings

- 2.1.8 The ADF method calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and considers the physical nature of the room behind the window, including window transmittance and surface reflectivity. The BRE guidance and British Standard sets the following recommended ADF levels for habitable room uses: -

Bedrooms	1% ADF
Living rooms & dining rooms	1.5% ADF
Kitchens	2% ADF

Table 1 - ADF targets by room use

- 2.1.9 For multi-purpose living / kitchen / diner arrangements the higher 2% ‘kitchen’ target can be difficult to achieve due to the depth of internal space. In such cases, it is not uncommon to apply the living room 1.5% target instead as this is the predominant use of the space.

Detailed sunlight assessments

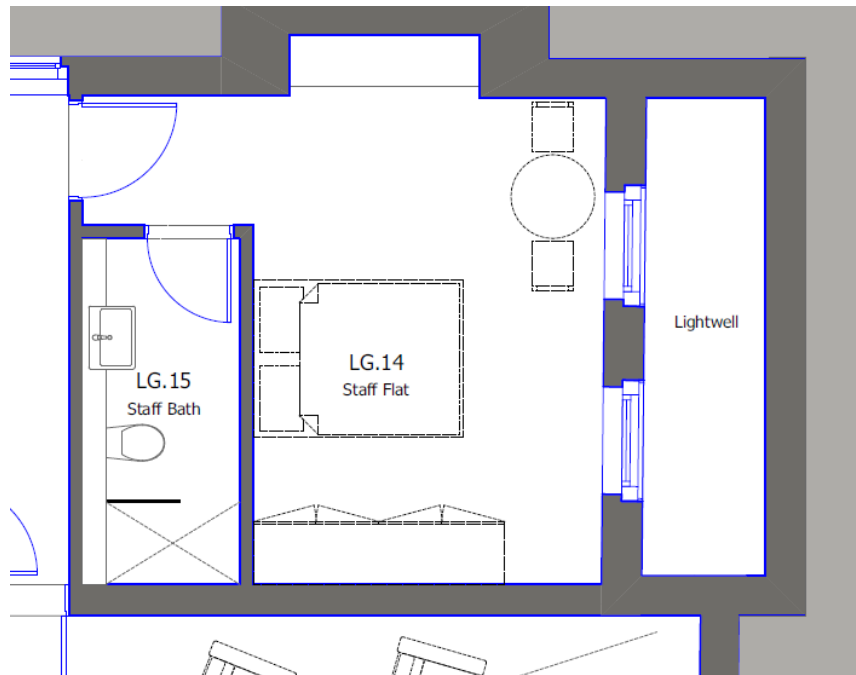
- 2.1.10 For sunlight, the Annual Probable Sunlight Hours (APSH) test calculates the percentage of probable hours of sunlight received by a window or room over the course of a year.
- 2.1.11 In assessing sunlight effects to existing properties surrounding a new development, only those windows orientated within 90° of due south and which overlook the site require assessment. The main focus is on living rooms, with bedrooms and kitchens deemed less important.
- 2.1.12 The guidelines suggest that the main living rooms within new buildings should achieve at least 25% of annual sunlight hours, with 5% during the winter period. For neighbouring buildings, the guide suggests that occupiers will notice the loss of sunlight if the APSH to main living rooms is both less than 25% annually (with 5% during winter) and that the amount of sunlight, following the proposed development, is reduced by more than 4%, to less than 0.8 times its former value.

3 Application of the guidance

3.1 Scope of assessment

Assessment for proposed accommodation

- 3.1.1 Our assessment has considered only the new proposed lower ground floor bedroom within the scheme as shown below;



- 3.1.2 For sunlight the BRE acknowledges that windows with a predominantly northern orientation are unlikely to satisfy its targets and that main living rooms are most important. Therefore, as the bedroom faces due north, sunlight has not been considered here.

3.2 Application of the numerical criteria

- 3.2.1 The opening paragraphs of the BRE guidelines state:

"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... In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".

- 3.2.2 It is therefore very important to apply the BRE guidance sensibly and flexibly, with

careful consideration of the specific site context. Its numerical targets theoretically apply to any built environment, from city centres to rural villages. However, in more tightly constrained environments, achieving the default BRE targets can be very challenging and conflict with other beneficial factors of site layout design.

- 3.2.3 With the above in mind, rigid adherence to the BRE in certain situations could easily result in an inappropriate form of development. In which case it may be appropriate to adopt lower target values more appropriate to the location concerned. This is acknowledged in the BRE guidance at paragraph 2.2.3 (page 7):

"Note that numerical values given here are purely advisory. Different criteria maybe used, based on the requirements for daylighting in an area viewed against other site layout constraints."

4 Planning Policy

- 4.1.1 We have considered local, regional and national planning policy relating to daylight and sunlight. In general terms, planning policy advises that new development will only be permitted where it is shown not to cause unacceptable loss of daylight or sunlight amenity to neighbouring properties.
- 4.1.2 The need to protect amenity of neighbours is echoed within recent publications from the Mayor of London and the Secretary of State for Housing, Communities and Local Government. Although, these documents also stress that current guidance needs to be used flexibly where developments are located in urban areas and intend to achieve higher densities. Specifically, these documents suggest that the nationally applicable criteria given within the BRE guidance needs to be applied in consideration of the development's context.

4.2 Local Authority

- 4.2.1 London Borough of Camden Council's Local Plan refers to the following documents as those being used to review adequacy of daylight and sunlight. This Report is therefore based on the following publications which contain the accepted standards for assessing daylight and sunlight:

- Building Research Establishment (BRE) Report "Site Layout Planning for Daylight and Sunlight – a guide to good practice, 2nd Edition, 2011" ("the BRE guide")
- BS8206 – Part 2: 2008 Code of Practice for Daylighting.

- 4.2.2 London Borough of Camden Council's Local Plan contains the following policy guidance under Policy A1 Managing the impact of development:

Sunlight, daylight and overshadowing

- 6.5 Loss of daylight and sunlight can be caused if spaces are overshadowed by development. To assess whether acceptable levels of daylight and sunlight are available to habitable, outdoor amenity and open spaces, the Council will take into account the most recent guidance published by the Building Research Establishment (currently the Building Research Establishment's Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011). Further detail can be found within our supplementary planning document Camden Planning Guidance on amenity.

4.3 The Draft New London Plan – The Mayor of London (July 2019)

- 4.3.1 The Mayor of London's Draft New London Plan gives the following: -

Policy D4 Housing quality and standards

"E Housing development should maximise the provision of dual aspect dwellings and normally avoid the provision of single aspect dwellings. A single aspect

dwelling should only be provided where it is considered a more appropriate design solution to meet the requirements of Policy D1 London's form and characteristics than a dual aspect dwelling and it can be demonstrated that it will have adequate passive ventilation, daylight and privacy, and avoid overheating."

"F The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space."

4.4 The Housing SPG – The Mayor of London (March 2016)

Standards for privacy, daylight and sunlight

"1.3.45 Policy 7.6Bd requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to privacy and overshadowing and where tall buildings are proposed. An appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new development on surrounding properties, as well as within new developments themselves. Guidelines should be applied sensitively to higher density development, especially in opportunity areas, town centres, large sites and accessible locations, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances; the need to optimise housing capacity; and scope for the character and form of an area to change over time.

1.3.46 The degree of harm on adjacent properties and the daylight targets within a proposed scheme should be assessed drawing on broadly comparable residential typologies within the area and of a similar nature across London. Decision makers should recognise that fully optimising housing potential on large sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm."

4.5 Draft SPG 'Good Quality Homes for Londoners' – The Mayor of London (October 2020)

4.5.1 The Mayor of London has produced a draft SPG which includes the following: -

C5.3 Daylight, sunlight and overshadowing

Applying BRE guidelines in relation to neighbouring homes

"Decision-makers should recognise that fully optimising housing potential on sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm.

5 Sources of Information & Assumptions

5.1.1 Architectural drawings have been used to create the test environment.

5.1.2 The full list of sources of information used in this assessment is as follows: -

5.2 SHH Architects & Interior Design

(0941)0401_P01 – Basement Floor Plan

(0941)0402_P01 – Lower Ground Floor Plan

Received dated 17th November 2020

6 The Site and Proposal

- 6.1.1 The site is located at 7 Greenaway Gardens, London, NW3 7DJ. The proposals involve complete redevelopment of the building to provide additional accommodation within.
- 6.1.2 Below is an extract of the site location.



7 Assessment results

7.1.1 Full results of the daylight and sunlight assessments are attached within Appendix 1.

7.2 Daylight and sunlight within the proposal

7.2.1 The daylight and sunlight amenity provided within the proposed residential accommodation has been assessed using the ADF and APSH tests following the methodology of the BRE guidance and British Standard document BS8206 pt2.

7.2.2 Full results of the daylight and sunlight assessments within the proposed apartments, along with drawings to show the layout of rooms and windows, are attached within Appendix 1.

Daylight

Room Type	ADF Target	Total No. of Rooms	Rooms That Meet ADF Target
Bedroom	1%	1	1 (100%)
Total		1	1 (100%)

Table 2 - Summary ADF results for proposed accommodation

7.2.3 The results of the ADF assessment have shown that the bedroom considered on the lower ground floor fully complies with ADF targets.

Sunlight

7.2.4 The new bedroom accommodation sits within 90 degrees of due north and therefore a sunlight assessment is not required.

8 Conclusions

- 8.1.1 This practice has undertaken a detailed assessment of the potential daylight and sunlight effects of the proposed development to the new bedroom within the lower ground floor only.

8.2 Daylight and sunlight within the proposed residential units

- 8.2.1 The assessment of daylight within the proposed apartments has shown that the room fully complies with ADT target values and it therefore acceptable in daylighting terms.

Appendix 1: Proposed results

Floor	Room ID	Window ID	Room Use	VSC	Win. Trans.	Glazing Area	Theta	Room Area	Room	Split Calc Multiplier	ADF	TOTAL ADF	PASS/FAIL
Proposed Scheme													
Lower Ground	R1	W1	Bedroom	6.15	0.68	1.28	27.25	94.85	0.75	1.00	0.6		
		W2	Bedroom	6.57	0.68	1.28	28.22	94.85	0.75	1.00	0.6	1.1	PASS