100 EXMOUTH ROAD,

RUISLIP, HA4 0UQ

ANALYSIS

OF

SITE LAYOUT

FOR

SUNLIGHT AND DAYLIGHT

(Neighbouring Analysis)

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By

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19th November 2024: Paragraphs were added in sections 6 and 7 regarding the source of dimensions.

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Analysis of Site Layout for Daylight & Sunlight

1. Introduction

An application has been submitted to construct a double-storey rear and side extension at 100 Exmouth Road.

The report assesses the proposal in regard to its effects on daylight and sunlight to the neighbouring windows and gardens. The report concludes that the proposal is acceptable and in accordance with the planning policy requirements in relation to daylight and sunlight for the assessed windows.

There is no existing specific National Planning Policy relating to the prospective impacts of developments on daylight and sunlight to their surrounding environment. However, the Building Research Establishment publication 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice 'is the established National guidance to aid the developer to prevent or minimise the impact of a new development on the existing buildings and on the availability of daylight within the new proposals. The BRE guide has been revised and published a third edition in June 2022. It has been developed in conjunction with daylight and sunlight recommendations in the BS EN 17037:2018.

The 2022 document is referred to as the 'BRE Guide' in this report.

2. Description of Proposed Development

The development is situated at 100 Exmouth Road in the area of Ruislip in West London and located within the administrative boundaries of The London Borough of Hillingdon.

The proposal is for the construction of a double-storey rear and side extension to add additional living space to the existing house.

The proposal is shown on the following floor plans by KDA Designs Ltd.

Pre-Existing Plans and Elevations 100ER/P100

Existing Plans and Elevations 100ER/P101

3. Daylight and Sunlight Requirements

3.1. Regional Planning Policy

The Mayor of London Supplementary Planning Guidance Housing (2016) makes recommendations that the BRE Guide should be applied sensitively to higher density development in London, particularly in central and urban areas.

> *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.

The SPG includes Standard 32 regarding direct sunlight

Standard 32 - All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight.

2.3.45 Daylight enhances residents' enjoyment of an interior and reduces the energy needed to provide light for everyday activities, while controlled sunlight can help to meet part of the winter heating requirement. Sunlight is particularly desirable in living areas and kitchen dining spaces. The risk of overheating should be taken into account when designing for sunlight alongside the need to ensure appropriate levels of privacy. In addition to the above standards, BRE good practice guidelines and methodology146 can be used to assess the levels of daylight and sunlight achieved within new developments, taking into account guidance below and in Section 1.3.

2.3.46 Where direct sunlight cannot be achieved in line with Standard 32, developers should demonstrate how the daylight standards proposed within a scheme and individual units will achieve good amenity for residents. They should also demonstrate how the design has sought to optimise the amount of daylight and amenity available to residents, for example, through the design, colour and landscaping of surrounding buildings and spaces within a development.

2.3.47 BRE guidelines on assessing daylight and sunlight should be applied sensitively to higher density development in London, particularly in central and urban settings, recognising the London Plan's strategic approach to optimise housing output (Policy 3.4) and the need to accommodate additional housing supply in locations with good accessibility suitable for higher density development (Policy 3.3). Quantitative standards on daylight and sunlight should not be applied rigidly, without carefully considering the location and context and standards experienced in broadly comparable housing typologies in London.

4. General

4.1. General Effects of New Development on Light to Surrounding Buildings

Appendix B includes an aerial view of the proposed site and the surrounding houses. The proposed development is located to the east of Exmouth Road. The only neighbouring houses that could be impacted by the development are number 98 and number 102 Exmouth Road, which is situated on either side of the site. The report analyses both neighbours' windows and gardens.

5. Criteria for Assessment of Daylight and Sunlight to Neighbouring Windows

5.1. Daylight assessment

The impacts of a development on daylight and sunlight to nearby buildings are considered using the Building Research Establishment (BRE) criteria. The principal measure of the impacts on daylight is the Vertical Sky Component (VSC) test.

The BRE Guide recommends that a room with 27% VSC or at least 80% of the former value will be adequately lit. In cases where rooms are lit by more than one window, the average of their VSC should be taken.

The Building Research Establishment (BRE) also states that if the angle of obstruction caused by a development from a ground-floor window is below 25 degrees, it is unlikely to have a significant impact on the diffuse skylight that the existing building enjoys.

> *2.2.5 If the proposed development is taller or closer than this, a modified form of the procedure adopted for new buildings can be used to find out whether an existing building still receives enough skylight. First, draw a section in a plane perpendicular to each affected main window wall of the existing building (Figure 14). Measure the angle to the horizontal subtended by the new development at the level of the centre of the lowest window. If this angle is less than 25° for the whole of the development then it is unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing building. If, for any part of the new development, this angle is more than 25°, a more detailed check is needed to find the loss of skylight to the existing building. Both the total amount of skylight and its distribution within the building are important.*
>
> *"2.2.6 Any reduction in the total amount of skylight can be calculated by finding the VSC at the centre of each main window. In the case of a floor-to-ceiling window such as a patio door, a point 1.6 m above ground 15 (or balcony level for an upper storey) on the centre line of the window may be used. For a bay window, the centre window facing directly outwards can be taken as the main window. If a room has two or more windows of equal size, the mean of their VSCs may be taken. The reference point is in the external plane of the window wall. Windows to bathrooms, toilets, storerooms, circulation areas, and garages need not be analysed. The VSC can be found by using the skylight indicator (Figure A1 in Appendix A) or Waldram Diagram (Figure B1 in Appendix B), or appropriate computer software.*
>
> *2.2.7 If this VSC is greater than 27% then enough skylight should still be reaching the window of the existing building. This value of VSC typically supplies enough daylight to a standard room when combined with a window of normal dimensions, with glass area around 10% or more of the floor area. Any reduction below this level should be kept to a minimum. If the VSC, with the new development in place, is both less than 27% and less than 0.80 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear gloomier, and electric lighting will be needed more of the time. In presenting results, ratios of VSC should be given to at least two decimal places (for example 0.79 or 0.81) or as the equivalent percentage loss (for example 21% or 19%).*
>
> *2.2.8 If there would be a significant loss of light to the main window but the room also has one or more smaller windows, an overall VSC may be derived by weighting each VSC element in accordance with the proportion of the total glazing area represented by its window. For example, a room has a main window of area 2 m2 whose VSC would drop from 24% to 18%, 0.75 times the value before. However, it also has a smaller window, area 1 m2, for which the VSC would be unchanged at 30%. The area weighted VSC 'before' would be (24x2+30)/3 = 26%. 'After' it would be (18x2+30)/3 = 22%, 0.85 times the value 'before'. Thus, loss of VSC to the room as a whole would meet the guideline. This method would only be appropriate in situations*

where the windows light the same areas of the room. It should not be used in situations such as a through lounge more than 5m from window to window, where, for example, a loss of light to the front windows and front portion of the room may not be mitigated by daylight from the rear windows."

5.2. Sunlight assessment

The acceptable level of sunlight to adjoining properties is evaluated using BRE Guide Annual Probable Sunlight Hours (APSH) test. The acceptability criteria are greater than 25% for the whole year or more than 5% between 21st September and 21st March. Where a development causes a reduction below these values, the reduction should not be greater than 20% of its former value.

"3.2.6 If a room can receive more than one quarter of annual probable sunlight hours (APSH), including at least 5% of APSH in the winter months between 21 September and 21 March, then it should still receive enough sunlight. Also, if the overall annual loss of APSH is 4% or less, the loss of sunlight is small. The sunlight availability indicators (Figures A2, A3 and A4) in Appendix A can be used to check this.

3.2.7 Any reduction in sunlight access below these levels should be kept to a minimum. If the available sunlight hours are both less than the amount above and less than 0.80 times their former value, either over the whole year or just in the winter months (21 September to 21 March), and the overall annual loss is greater than 4% of APSH, then the occupants of the existing building will notice the loss of sunlight; the room may appear colder and less cheerful and pleasant. In presenting results, ratios of sunlight hours should be given to at least two decimal places (for example 0.79 or 0.81) or as the equivalent percentage loss (for example 21% or 19%).

3.2.8 Care needs to be taken in applying this guideline to rooms with multiple windows. Except where the windows are in opposite walls, the annual probable sunlight hours cannot simply be added together. If the calculation method used does not avoid double counting of sunlight through multiple windows, the annual probable sunlight hours for the best sunlit window should be taken. "

5.3. Sunlight to Gardens

The BRE Guide recommends for a garden to appear adequately sunlit throughout the year, at least half of a garden or amenity area 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 that can receive two hours of sun on 21 March is less than 0.80 times its former value, then the loss of sunlight is likely to be noticeable.

"3.3.7 As a check, it is recommended that at least half of the amenity areas listed above should receive at least two hours of sunlight on 21 March. It is instructive to draw the 'two hours sun contour' that marks this area on plan, because the use of specific parts of a site can be planned with sunlight in mind. This could include reserving the sunniest parts of the site for gardens and sitting out, while using the shadier areas for car parking (in summer, shade is often valued in car parks). (Figure 30). If a detailed calculation cannot be carried out, and the area is a simple shape, it is suggested that the centre of the area should receive at least two hours of sunlight on 21 March.

3.3.8 Locations that can and cannot receive two or more hours of sunlight on 21 March may be found using specialist software. The space is divided into a grid of points with a recommended spacing of 0.3 m or less, and the proportion of these points that can receive two hours of sunlight on March 21 is computed. It is possible to carry out a check for the centre of an area by using the sun path indicator, which has a line for

21 March (see Appendix A). Sunlight at an altitude of 10° or less does not count, because it is likely to be blocked by low-level planting anyway. In working out the total area to be considered, driveways and hard standing for cars should be left out. Around housing, front gardens that are relatively small and visible from public footpaths should be omitted; only the main back garden should be analysed. Each individual garden for each dwelling in a block should be considered separately.

3.3.11 The above guidance applies both to new gardens and amenity areas and to existing ones that are affected by new developments. If an existing garden or outdoor space is already heavily obstructed then any further loss of sunlight should be kept to a minimum. In this poorly sunlit case, if as a result of new development the area that can receive two hours of direct sunlight on 21 March is reduced to less than 0.80 times its former size, then this further loss of sunlight is significant. The garden or amenity area will tend to look more heavily overshadowed."

6. Daylight and Sunlight to Neighbouring Windows

Figure 4 shows the neighbouring windows that face the proposed development. The windows are numbered for reference.

The BRE Guide recommends that daylight is satisfactory provided the sky component is greater than 27% or 80% of its former value. The vertical sky component (VSC) for windows is evaluated by the method described in Appendix B of the BRE Guide using the Waldram Sky availability indicator diagram.

For Sunlight the Guide recommends using the Annual Probable Sunlight Hours (APSH). The acceptability criteria are greater than 25% for the whole year or more than 5% between 21st September and 21st March. Where a development causes a reduction below these values, the reduction should not be greater than 20% of its former value. The BRE Guide states that north-facing windows are analysed for daylight only. All neighbouring windows are north-facing except for W1 at 102 Exmouth Road, which is analysed in the table below.

The vertical sky component and the annual probable sunlight hours have been evaluated using the computer program MBS survey software. Dimensions of the existing, proposed and neighbouring properties have been taken from the survey dimensions provided by the architect KDA Designs Ltd.

Below are two tables demonstrating the existing, proposed daylight and sunlight values as well as the percentage of their former values.

Daylight

Building Name	Vertical Sky Component				
	Window Name	VSC Existing	VSC Proposed	Pr/Ex	Meets BRE Criteria
98 Exmouth Rd	W1	39.62	38.99	98%	YES
98 Exmouth Rd	W2	39.62	39.41	99%	YES
102 Exmouth Rd	W1	34.57	27.78	80%	YES
102 Exmouth Rd	W2	38.07	34	89%	YES
102 Exmouth Rd	W3	38.62	37.87	98%	YES

102 Exmouth Rd	W4	39.44	38.01	96%	YES
102 Exmouth Rd	W5	39.54	38.94	98%	YES
102 Exmouth Rd	W6	34.32	34.32	100%	YES

Sunlight

Building Name	Annual Probable Sunlight Hours									
	Window Name	**Window Orientation**	**Annual Ex**	**Annual Pr**	**Pr/Ex**	**Meets BRE Criteria**	**Winter Ex**	**Winter Pr**	**Pr/Ex**	**Meets BRE Criteria**
102 Exmouth Rd	W1	153°	76	66	87%	YES	22	16	73%	YES

As indicated in the tables above, the reduction of daylight and sunlight to all neighbouring windows exceeds the BRE Guide recommendations. All values remain either above 80% of their previous levels or above the minimum standards.

7. Sunlight to Neighbouring Gardens

The BRE Guide recommends that nearby gardens should continue to receive at least 2 hours of sunlight over 50% of the area on March 21st or at least 80% of the former amount.

The sunlight has been evaluated using the computer program MBS survey software. dimensions of the existing proposed and neighbouring properties have been taken from the survey dimensions provided by the architect KDA Designs Ltd.

Below is a table showing the percentage of sunlight that reaches the neighbouring gardens 98 and 102 Exmouth Road, as well as the percentage of its previous value.

Building Name	Sunlight to Gardens						
	Amenity Area	**Lit Area Ex**	**Lit Area Pr**	**Existing %**	**Proposed %**	**Pr/Ex**	**Meets BRE Criteria**
98 Exmouth Rd	61.39	38.78	38.78	63%	63%	100%	YES
102 Exmouth Rd	152.26	125.40	115.47	82%	76%	92%	YES

As shown in the table above, the neighbouring gardens will maintain over 80% of their original sunlight value and will continue to receive 2 hours of sunlight over more than 50% of the garden area on March 21st. Therefore, complies with the BRE recommendations.

8. Conclusion

The proposal for the a double-storey rear and side extension at 100 Exmouth Road results in a slight reduction of daylight and sunlight to the neighbouring windows and gardens.

In all cases, the reduction is not significant and remains far better than the minimum recommendations of the BRE Guide.

The report's analysis of daylight and sunlight indicates that the reduction of light reaching the neighbouring windows and gardens meets the recommendations outlined in the 2022 Building Research Establishment publication 'Site Layout and Planning for Daylight and Sunlight, A Guide to Good Practice' as well as standard planning requirements.

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Appendix A:

Figure 1:Site Plan

Figure 2:Proposed Plans & Elevations

Appendix B:

Figure 3:Aerial View of Neigbouring Buildings

Figure 4:Rear View of 98 & 102 Exmouth Road