

# Daylight and Sunlight Report

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## **22 Redington Road**

Hampstead, London NW3

February 2012

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# 1. Introduction and Scope of Report

- 1.1 GVA Schatunowski Brooks has been appointed by Mr. M. Cooper to assess the potential impact of the proposed extension of 22 Redington Road on the Daylight and Sunlight presently received by the existing neighbouring dwelling house at 20 Redington Road in the context of the UDP Policy objectives of the London Borough of Camden.
- 1.2 Within this report, we have modelled and tested the “existing and “proposed” buildings in order to measure the availability of Daylight and Sunlight in accordance with the Scientific measurements set out in the Building Research establishments (BRE) Guidelines “*Site layout planning for daylight and sunlight – a Guide to Good Practice*”, 2011. The BRE Guidelines contain numerical targets for daylight and sunlight, compliance with which will demonstrate that there will be no material impact on the daylight and sunlight amenity enjoyed by existing neighbouring dwellings. The purpose of this report is therefore to measure the impact of the proposed development in accordance with those Guidelines from which it is then possible to provide an objective and empirical assessment as to whether the proposed development will satisfy the Council’s Policy objectives.

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## 2. Sources of Information

- 2.1 The existing buildings have been based on the MDC drawing nos. 6788/1000 – 1001 and 6788/1010 – 1012 dated 4 January 2012.
- 2.2 The proposed extension has been modelled from MDC drawing nos. 6788/2000 – 2002 and 6788/2010 – 2012. No elevation ordnance data and heights were available and a “zero” level has been assumed for the ground level of No. 22. Redington Road, where it meets Redington Road, making the ground floor at a level of 5115 m. With no levels available for no. 20, their ground floor is estimated at 5200 m.
- 2.3 The site was inspected on 15<sup>th</sup> and 16<sup>th</sup> February 2012 where supplementary measurements were taken together with an internal inspection and measurements taken within 20 Redington Road.
- 2.4 The “massing” model produced from the above mentioned drawings represents the same massing as the current application scheme.



### 3. Standards to be Adopted

- 3.1 The Council's Amenity Policy seeks to protect the daylight and sunlight received by existing neighbouring residential dwellings. From our inspection of the site and the surroundings, all of the existing neighbouring buildings appear to be in residential use, although the only existing neighbouring property that could be affected by the proposed development is 20 Redington Road which lies to the south of the Site.
- 3.2 In addition, the application of the tests within the BRE Guidelines is limited to "Habitable" rooms which are defined Kitchens, Living Rooms, and Bedrooms. Bathrooms, Hallways, WC's and Circulation space are excluded.
- 3.3 For assessing the impact on the daylight received by existing neighbouring dwellings, the Guidelines recommend two methods of measurement. First, they require the measurement of Vertical Sky Components, which is then followed by the measurement and plotting of the internal Daylight Distribution received by the room being tested by plotting the "existing" and "proposed" "no skyline contour" within each room.
- 3.4 The VSC is a "spot" measurement of daylight taken at the mid point on the outside face of a window and represents the amount of direct light received by that window over the obstruction caused by existing and proposed buildings. It therefore provides a good indication of the amount of "visible sky" that will continue to be available following the completion of the development. However, as the VSC is a "spot" measurement taken on the outside face of the window, one of its major shortcomings is that it does not take any account of the size of the window or the size or use of the room served by that window. For this reason, the BRE Guidelines recommend that internal Daylight Distribution is measured in conjunction with VSC. By plotting the position of the "no skyline contour", it is possible to measure those parts within the room where there will be direct sky visibility within that room. The position of the "no skyline contour" is usually measured on a horizontal Working Plane taken at worktop level. Therefore, when the VSC and Daylight Distribution results are read in conjunction, it is possible to gauge the likely lighting conditions within each room.
- 3.5 Vertical Sky Component is measured on an "absolute" and "comparative" scale. As the Guidelines were drafted on the basis of a low density suburban housing model, the



absolute target of 27% VSC is appropriate when assessing conventional low density domestic housing. These absolute standards are not however appropriate in a high density suburban environment or when dealing with multi-storey building forms such as blocks of flats or where neighbouring properties comprise multi-storey commercial buildings. To accommodate these alternative circumstances, the VSC value should also be measured on a "comparative" scale where the Guidelines recommend that it will be permissible to reduce existing VSC levels by a factor of 0.2 (20%) before that reduction will be materially noticeable.

- 3.6 This permissible factor of reduction of 20% also applies to any loss in internal daylight distribution. These recommendations have been applied in this report.
- 3.7 For sunlight, the recommendations in the Guidelines only apply to windows that face within 90 degrees of due south.
- 3.8 The internationally recognised test date for measuring sunlight is the spring equinox. The spring equinox lies at the mid point between the summer and winter solstices and therefore represents the time of year where "mean" conditions exist. That is, on that date, the period of day time is equal to the period of night time with 12 hours of daylight and 12 hours of darkness with sunlight above 10 degrees being available from approximately 08:30am to 05:30 pm.
- 3.9 Although the BRE sunlight criteria can be applied to window serving any habitable use, their use should be focused on the principal living room in each dwelling, with greater flexibility applied to windows serving bedrooms and kitchens, where morning sunlight is more desirable. It should also be noted that whereas a window that faces due south will have access to sunlight throughout the day, windows that face east or west are only capable of receiving half of the total available sunlight and it is therefore necessary for the actual orientation of the window to be taken into account when applying the general numerical targets in the sunlight recommendations.
- 3.11 The recommendations within the Guidelines is that a window serving a habitable room, but in particular, the principal living room, should be capable of receiving one quarter (25%) of Annual Probable Sunlight Hours (APSH) and 5% of those APSH should be available in the winter months between 21 September – 21 March. It should also be noted that winter sunlight is only available at relatively low angles of altitude and that although 5% APSH is not an unreasonable target in a low density suburban

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environment, it is far harder to expect to achieve this winter sunlight target in an inner city built-up urban environment where the height of most buildings is generally in excess of two storeys and where the pattern of development is generally historically more dense. Greater flexibility should therefore applied in respect of sunlight in general, but in particular, winter sunlight.



## 4. Scheme Assessment

- 4.1 The extent of the proposed development is limited to an extension of the rear of the premises so as to increase the overall depth of the existing building but replicating the existing roof profile with two additional small dormer window projections.
- 4.2 We have tested all of the windows within 20 Redington which have a direct or oblique outlook onto the proposed extension including those windows that do not serve habitable rooms. From our internal inspection of 20 Redington Road, there is in fact only one window /room that is in “*Habitable*” use and that is a 1<sup>st</sup> floor bedroom. That room is however, a dual-aspect room in that it has the benefit of a rear (north east) facing window and a front (south west) facing window serving the same room. That principal front (south west) facing window will not be affected at all by the proposed extension.
- 4.3 Annexed at Appendix 1 is our drawing no. RE46/02 /BRE04, which illustrates the image of the “existing” and “proposed” 3D model showing the extent of the proposed extension and its relationship with the windows in 20 Redington Road. That drawing is followed in Appendix 2 by the numerical results of our Daylight Analysis which sets out the results of the VSC, Daylight Distribution and Average Daylight Factor (ADF) tests. They in turn are followed in Appendix 3 by the results of the Sunlight Analysis.
- 4.4 The final appendix (Appendix 4) contains our drawing no. RE46/02/BRE/03 which is the Daylight Distribution Plan, which also acts as the location plan for the room and window references adopted in our tables. The internal uses and layouts illustrated on that plan are the actual layouts derived from our site inspection.

### Daylight

- 4.5 The only window serving a habitable room that could be affected by the proposed extension is Window W2/11 serving the 1<sup>st</sup> floor bedroom that we have labelled Room R1/11. The location of that window and room is illustrated on drawing no. RE46/02/BRE/03 annexed at Appendix 4. Although this is the only habitable room that could be affected, we have also run the Daylight (and Sunlight) tests for the ground floor rear room which we have labelled Room R4/10 on drawing no. RE46/02/BRE/03 at



- Appendix 4, even though that room is presently used as an additional Utility Room and for general storage. It has been included as it is reasonably foreseeable that the room could be put to some alternative habitable use.
- 4.6 The results of the Vertical Sky Component Analysis demonstrate that all of the existing windows will comfortably satisfy the BRE VSC recommendations. The amount of daylight received by the windows will not therefore be materially reduced so as to be noticeable.
- 4.7 The Daylight Distribution Analysis illustrated on drawing no. RE46/02/BRE/03 at Appendix 4 demonstrates that there will be no loss in internal Daylight Distribution within the 1<sup>st</sup> floor Bedroom (Room R1/11) and that although there will be a small measurable loss within the rear ground floor Utility Room, that loss will be 2.45% of the existing value, and over 80% of the Working Plane will continue to receive direct light from the sky. The performance of this room will therefore be comfortably within the BRE recommendations for Daylight Distribution.
- 4.8 As a "check" measurement, the results of the Average Daylight Factor Analysis demonstrates that both rooms will continue to receive in excess of 2% *df* and therefore achieve internal lighting conditions in excess of the minimum requirements for all types of habitable use and not just the basic bedroom standard of 1% *df*.

## Sunlight

- 4.9 The results of the Sunlight Analysis are annexed at Appendix 3.
- 4.10 The BRE Sunlight Criteria only applies to windows that face within 90° of due south. Only two windows fall within the BRE Sunlight Criteria, and they are windows W5/10 serving the ground floor utility room and window W1/11 serving the 1<sup>st</sup> floor bedroom. Neither of these windows will have a direct outlook onto the proposed extension and unsurprisingly, they would therefore experience no loss of Annual or Winter sunlight at all, as demonstrated by the results in the Sunlight Analysis table.
- 4.11 The rear of 20 Redington Road does not have a designated garden or amenity area as the main garden is located at the front of the house. The proposed extension lies to the north west of 20 Redington Road in any event and the hardstanding/passage area

adjacent to the proposed extension is not a garden or amenity space.  
Overshadowing is therefore not an issue.

## 5. Summary and Conclusion

- 5.1 The results of the detailed technical analysis, demonstrate that the proposed development will fully satisfy the recommendations in the BRE Guidelines in respect of Daylight and Sunlight. That is, no windows serving a habitable room shall experience a loss in VSC in excess of 20%, and all of those habitable rooms will continue to receive well in excess of 0.8 times their present amount of internal Daylight Distribution.
- 5.2 As the proposed development will comfortably satisfy the BRE Guidelines, it follows that there will be no material impact on the Daylight and Sunlight amenity presently enjoyed by the existing neighbouring residents and that the Council's Policy Objectives have therefore been satisfied.





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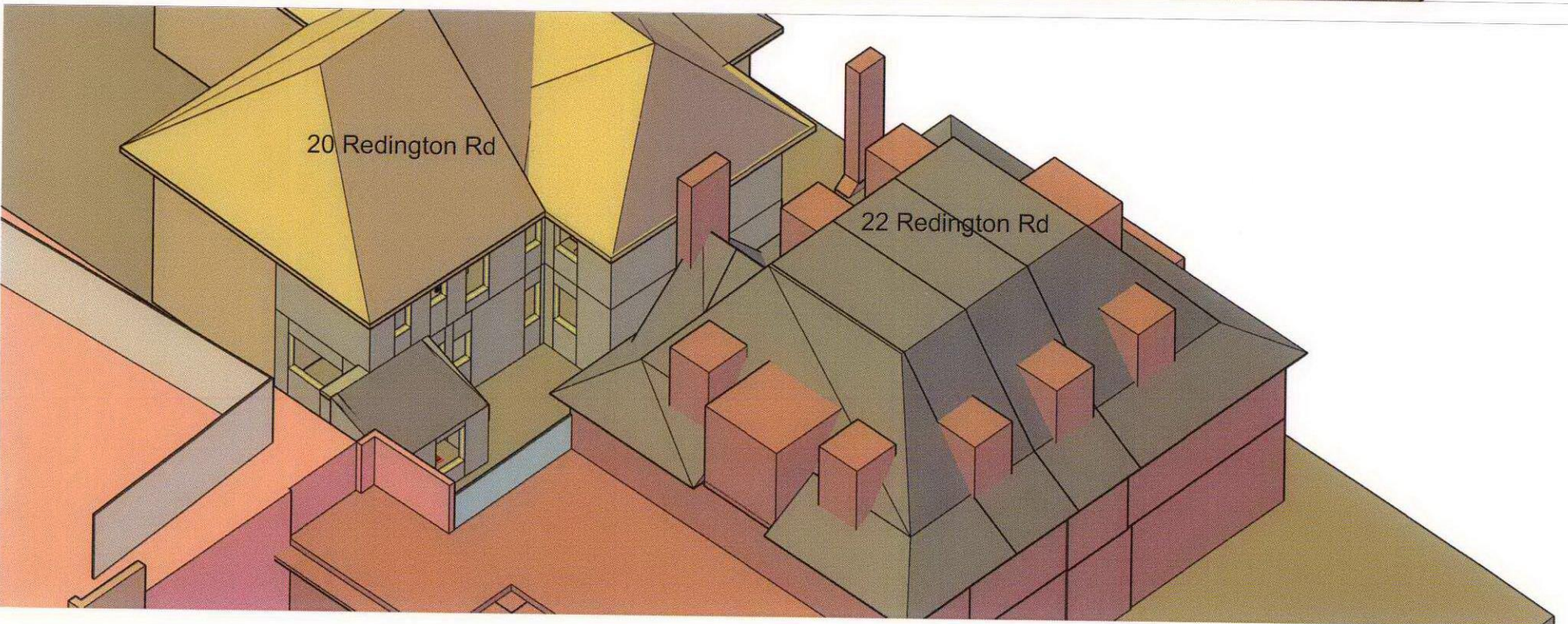
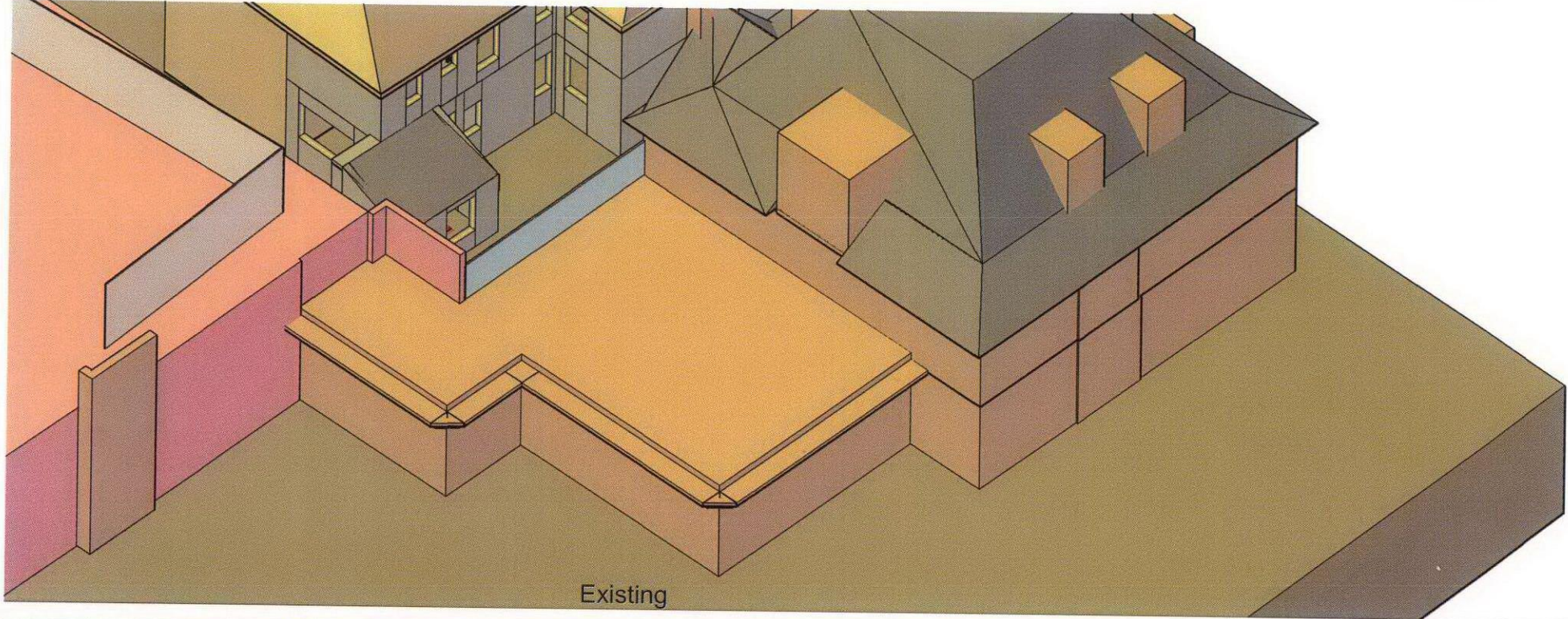
**Appendices**



Report

Appendix 1









# Report

## Appendix 2



**20 REDINGTON ROAD**  
**BRE DAYLIGHT ANALYSIS**  
**FEBRUARY 2012**

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
20 Redington Road - BRE03										
Ground floor										
R4/10	UNKNOWN	W4/10	13.21	11.59	12.26%	2.63	2.56	2.81%	80.48%	2.45%
		W5/10	5.88	5.70	3.06%					
		W6/10	13.67	12.39	9.36%					
		W7/10	14.64	14.64	0.00%					
First floor										
R1/11	BEDROOM	W1/11	27.24	27.24	>27	2.32	2.31	0.73%	82.09%	0.00%
		W2/11	16.00	15.26	4.63%					



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Appendix 3





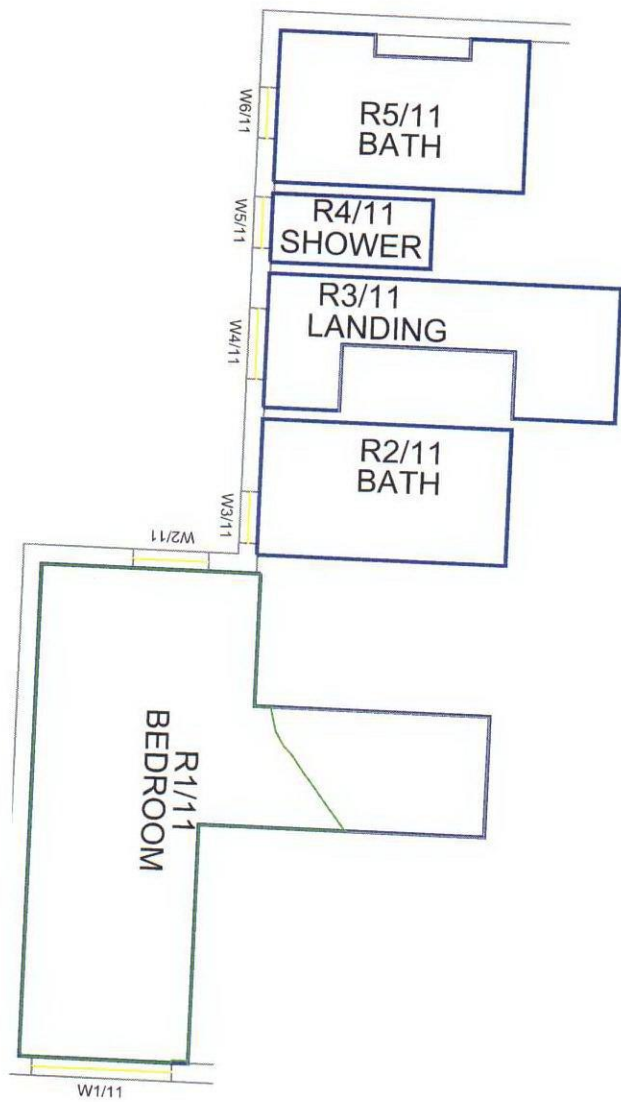
**20 REDINGTON ROAD**  
**BRE DAYLIGHT ANALYSIS**  
**FEBRUARY 2012**

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
20 Redington Road - BRE03										
Ground floor										
R4/10	UNKNOWN	W4/10	13.21	11.59	12.26%	2.63	2.56	2.81%	80.48%	2.45%
		W5/10	5.88	5.70	3.06%					
		W6/10	13.67	12.39	9.36%					
		W7/10	14.64	14.64	0.00%					
First floor										
R1/11	BEDROOM	W1/11	27.24	27.24	>27	2.32	2.31	0.73%	82.09%	0.00%
		W2/11	16.00	15.26	4.63%					



# Report

## Appendix 4



Ground floor

