Daylight and Sunlight Report in respect of 6 Nutley Terrace, London NW3

On behalf of Omar Shafi

Prepared by

GL Hearn

Property Consultants

20 Soho Square
London
W1D 3QW

Tel: +44 (0)20 7851 4900
Fax: +44 (0)20 7851 4910
www.glhearn.com

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GL HEARN
Property Consultants

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Date	Originator	Approved
19/01/2012	Paul Smith Building Consultancy Director	Ian Smith Building Consultancy Associate Director

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Preface

Client Name:	Omar Shafi
Client Address:	6 Nutley Terrace London NW3

Supervising Director:	Paul Smith
Documents prepared by:	Paul Smith

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Contents **Page**

1. Instructions and Brief

1.1 In accordance with your instructions we have carried out a study to assess the effect of your proposed development on the daylight and sunlight amenity to the neighbouring residential properties and the light levels within your proposed new accommodation.

1.2 We have received the following documents and used them in preparing this report:

1. Anthony Brookes Surveys Limited plans and elevations dated September 2011

2. KSR Architects drawings and 3-D model dated January 2012

1.3 Our study has been undertaken by preparing a three-dimensional computer model of the site and surrounding buildings and analysing the effect of the proposed development on the daylight and sunlight levels received by the neighbouring buildings using our bespoke software. Our assessment is based on a visual inspection, the information detailed above and estimates of relevant distances, dimensions and levels which are as accurate as the circumstances allow.

2. Planning Policy

2.1 The London Borough of Camden's Planning Guidance document *"CPG6 Amenity"* states the following under Section 6: Daylight and Sunlight

"Key Messages:

- *We expect all buildings to receive adequate daylight and sunlight.*
- *Daylight and sunlight reports will be required where there is potential to reduce existing levels of daylight and sunlight.*
- *We will base our considerations on the Average Daylight Factor and Vertical Sky Component."*

"6.1 Access to daylight and sunlight is important for general amenity, health and well-being, for bringing warmth into a property and to save energy from reducing the need for artificial lighting and heating. The Council will carefully assess proposals that have the potential to reduce daylight and sunlight levels for existing and future occupiers"

"6.2 This guidance relates to:

- *Camden Core Strategy policy CS5 – Managing the Impact of Growth and Development;*
- *Core Strategy policy CS14 – Promoting high quality places and conserving our heritage; and*

- *Policy DP26 – Managing the impact of development and occupiers and neighbours of the Camden Development Policies*

DP26 sets out how the Council will protect the quality of life of building occupiers and neighbours by only granting permission for development that does not cause harm to amenity."

"When will a daylight/sunlight report be required?"

"6.3 The Council expects that all developments receive adequate daylight and sunlight to support the activities taking place in that building."

"6.4 A daylight and sunlight report should assess the impact of the development following the methodology set out in the most recent version of Building Research Establishment's (BRE) "Site Layout planning for daylight and sunlight: A guide to good practice". Reports may be required for both minor and major applications depending on whether a proposal has the potential to reduce daylight and sunlight levels. The impact will be affected by the location of the proposed development and its proximity to, and position in relation to, nearby windows."

"6.5 While we strongly support the aims of the BRE methodology for assessing sunlight and daylight we will view the results flexibly and where appropriate we may accept alternative targets to address any special circumstances of a site. For example, to enable new development to respect the existing layout and form in some historic areas. This flexible approach is at the Council's discretion and any exception from the targets will be assessed on a case by case basis.

3. BRE Report 209 *"Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice"* Second Edition (2011) ('The Report')

3.1 Principles

3.1.1 The Second Edition of the Report replaces the 1991 document of the same name with effect from October 2011.

3.1.2 It is important to note that the introduction to the report stresses that the document is provided for guidance purposes only and it is not intended to be interpreted as a strict set of rules. It also suggests that it may be appropriate to adopt a flexible approach and alternative target values in dealing with *"special circumstances"* 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."* This is amplified by the following extracts from the introduction (P1, para. 6) and Section 2.2:

"The advice given here is not mandatory and this document 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 because natural lighting is only one of many factors in site layout design…" (P1, para. 1.6)
"In special circumstances the Developer or Planning Authority may wish to use different target values." (P1, para. 1.6)

"Note that numerical values given here are purely advisory. Different criteria may be used, based upon the requirements for daylighting in an area viewed against other site layout constraints. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light". (P7 para. 2.2.3)

3.1.3 The examples given in the Report can be applied to any part of the country: suburban, urban and rural areas. The inflexible application of the target values given in the Report may make reaching the BRE criteria difficult in a tight, urban environment where there is unlikely to be the same expectation of daylight and sunlight amenity as in a suburban or rural environment.

3.2 Daylight

3.2.1 In summary, the BRE Report states that:

"If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building from the centre of the lowest window, subtends an angle of more than 25 degrees to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:

- *the vertical sky component ['VSC'] measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value; or*

- *the area of the working plane (0.85m above floor level in residential properties) in a room which can receive direct skylight is reduced to less than 0.8 times it former value.*

The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, store rooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include, schools, hospitals, hotels and hostels, small workshops and some offices."

3.2.2 Further guidance has been provided in the Second Edition of the report in relation to existing windows with balconies:

"Existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction may result in a large relative impact on the VSC, and on the area receiving direct skylight. One way to demonstrate this would be to carry out an additional calculation of the VSC and area receiving direct skylight, for both the existing and proposed situations, without the balcony in place. For example, if the proposed VSC with the balcony was under 0.8 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of light." (2.2.11)

A larger relative reduction in VSC may also be unavoidable if the existing window has projecting wings on one or both sides of it, or is recessed into the building so that it is obstructed on both sides as well as above." (2.2.12)

3.2.3 Appendix F

3.2.3.1 This appendix gives guidelines on setting alternative target values for skylight and sunlight access. This allows a developer to set alternative targets for vertical sky component levels which can be generated from the layout dimensions of existing development or derived from the internal layouts and direct daylighting needs of the proposed development itself. The Report uses the example of a mews in an historic city centre, where a typical obstruction angle from the ground floor window level might be closer to 40 degrees, which would correspond to a VSC of 18%. This can then be used as a target value for development in that street if new development is to match the existing layout.

3.2.3.2 A similar approach may also be adopted in cases where an existing building has windows that are close to the site boundary and take more than their fair share of light. To ensure that new development matches the height and proportions of existing buildings, the Report suggests that the VSC and Annual Probable Sunlight Hours ('APSH') target for these windows could be set to those for a 'mirror-image' building of the same height and size and equal distance away on the other side of boundary.

3.2.3.3 Useful guidance is provided on the types of tests to be applied when considering the loss of light to an existing building. F6 states the following:

"In assessing the loss of light to an existing building, the VSC is generally recommended as the appropriate parameter to use. This is because the VSC depends only on obstruction, and is therefore a measure of the daylit environment as a whole. The average daylight factor (ADF) (Appendix C) also depends on the room and window dimensions, the reflectance of interior surfaces and the type of glass, as well as the obstruction outside. It is an appropriate measure to use in new buildings because most of these factors are within the developer's control."

"Use of the ADF for loss of light to existing buildings is not generally recommended. The use of the ADF as a criterion tends to penalise well-daylit existing buildings, because they can take a much bigger and closer obstruction and still remain above the minimum ADFs recommended in BS 8206-2. Because BS 8206-2 quotes a number of recommended ADF values for different qualities of daylight provision, such a reduction in light would still constitute a loss of amenity to the rooms. Conversely if the ADF in an existing building were only just over the recommended minimum, even a tiny reduction in light from a new development would cause it to go below the minimum, restricting what could be built nearby." (F6 and F7)

3.2.3.4 This appendix also clarifies the situations when meeting a set ADF target value with a new development in place could be appropriate as a criterion for loss of light. These are:

"(i) where the existing building is one of a series of new buildings that are being built one after another, and each building has been designed as part of the larger group

(ii) as a special case of (i), where the existing building is proposed but not built. A typical situation might be where the neighbouring building has received planning permission but not yet been constructed

(iii) where the developer of the new building also owns the existing nearby building and proposes to carry out improvements to the existing building (e.g. by increasing window sizes) to compensate for the loss of light. However, where there is a long-term occupier of the existing building it would be appropriate for there to be no reduction in ADF, or at worst only a small reduction. BS 8206-2 states that a reduction in VSC to 0.8 times its former value corresponds to a reduction in the ADF in the rooms served by the window to between 0.85 times and 0.92 times its former value when the original VSC was more than >27% or 5% respectively

(iv) where the developer of the new building also owns the existing nearby buildings and the affected rooms are either unoccupied or would be occupied by different people following construction of the new building" (F8)

3.2.4 The Report also states that:

"Where room layouts are known, the impact on the daylighting distribution in the existing building can be found by plotting the 'no-sky line' in each of the main rooms. For houses this would include living rooms, dining rooms and kitchens; bedrooms should also be analysed, although they are less important. In non-domestic buildings each main room where daylight is expected should be investigated."

…Windows to bathrooms, toilets, store rooms, circulation areas and garages need not be analysed."

3.2.5 Appendix C of the Report provides details of BS8206: Part 2 British Standard for Daylighting and the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual: Windows Design which provide advice and guidance on interior daylighting. The BRE Report is intended to be used in conjunction with these documents, and its guidance is intended to fit-in with their recommendations. The British Standard and the CIBSE manual put forward three main criteria for interior daylighting, one of which is the use of the Average Daylight Factor (*df*) calculation. Essentially, the documents recommend that, if a supplementary electric lighting is provided, a *df* value of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms should be attained.

3.2.6 The British Standard also suggests, that if a predominately daylit appearance is required, then *df* should be 5% or more if there is no supplementary electric lighting. However, in all modern living accommodation supplementary electric lighting is provided and, as such, *df* values detailed above are used as target values.

3.3 Sunlight

3.3.1 The BRE Report advises that new development should take care to safeguard access to sunlight for existing buildings and any non-domestic buildings where there is a particular requirement for sunlight. In summary, the report states:

"If a living room of an existing dwelling has a main window facing within 90 degrees of due south, and any part of a new development subtends an angle of more than 25 degrees to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

- *receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and*
- *receives less than 0.8 times its former sunlight hours during either period and*
- *has a reduction in sunlight over the whole year greater than 4% of annual probable sunlight hours"*

3.3.2 The report also states that:

"…It is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within ninety-degrees of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun. In non-domestic buildings any spaces which are deemed to have a special requirement for sunlight should be checked; they will normally face within ninety-degrees of due south anyway." (3.2.3)

3.3.3 The Second Edition also gives valuable guidance on assessing the effect of balconies and overhangs to existing buildings;

"Balconies and overhangs above an existing window tend to block sunlight, especially in summer. Even a modest obstruction may result in a large relative impact on the sunlight received. One way to demonstrate this would be to carry out an additional calculation of the APSH, for both the existing and proposed situations, without the balcony in place. For example, if the proposed APSH with the balcony was under 0.8 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of sunlight." (3.2.9)

3.3.4 Section 3.3 of the Report gives guidelines for protecting the sunlight to open spaces where it will be required. This would normally include:

- Gardens, usually the main back garden of a house and allotments
- Parks and playing fields
- Children's playground
- Outdoor swimming pools and paddling pools
- Sitting out areas such as those between non-domestic buildings and in public squares
- Focal points for views such as a group of monuments or fountains

3.3.5 In summary, the Report states that:

"It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least 2 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 which can receive 2 hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least 2 hours of sunlight on 21 March."

3.3.6 The Report also recommends the following:

"*Where there are existing buildings as well as the proposed one, 'before' and 'after' shadow plots showing the difference that the proposed building makes may be helpful. In interpreting the impact of such differences, it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing of a space is to be expected."* (3.3.13)

"As an additional option, plots for summertime (e.g. 21 June) may be helpful as they will show the reduced overshadowing then, although it should be borne in mind that 21 June represents the best case of minimum shadow, and that shadows for the rest of the year will be longer. Conversely if winter shadows (e.g. 21 December) are plotted, even low buildings will cast long shadows. In a built-up area, it is common for large areas of the ground to be in shadow in December." (3.3.15)

"If a particular space is only used at certain times of day or year (e.g. a café, outdoor performance area or school playground) it is instructive to plot shadows for those specific times." (3.3.16)

4. Assessment

4.1 We have analysed the effect of the proposed development on the daylight and sunlight amenity to the properties detailed below. These properties are the only buildings that could be affected by the proposed development as all other adjacent buildings will pass the preliminary 25-degree line test recommended by the BRE Report.

4.2 The location of the tested properties and window references are shown on the drawings appended to this report; the results are also included in the appendices in the relevant spreadsheets.

4.3 We set-out below our assessment of the daylight and sunlight amenity issues for each property:

4.4 <u>44 Fitzjohn's Avenue</u>

4.4.1 This residential property is located to the west of 6 Nutley Terrace. All of the assessed windows would comfortably meet the vertical sky component assessment; none of the assessed windows face within 90-degrees of due south and, as such, sunlight has not been assessed to these windows as it will be unaffected.

4.5 <u>48 Fitzjohn's Avenue</u>

4.5.1 This block of residential apartments is situated on the opposite side of Nutley Terrace. All of the tested windows would comfortably meet the vertical sky component assessment. All of the windows tested would comfortably meet the annual probable sunlight hours assessment.

4.6 <u>3 Nutley Terrace</u>

4.6.1 This property is located on the opposite side of Nutley Terrace from No.6.

4.6.2 Our assessment shows that all of the windows tested would comfortably meet the vertical sky component test and annual probable sunlight hours assessment.

4.7 4 Nutley Terrace

4.7.1 This property is located next-door to 6 Nutley Terrace to the east. We have obtained Planning drawings of the property to verify the internal layouts.

4.7.2 All of the windows tested to habitable rooms would meet the daylight and sunlight criteria.

4.8 Nutley Cottage

4.8.1 This property is situated next-door to No. 6 to the west.

4.8.2 Our analysis shows that all of the tested windows would comfortably meet the vertical sky component assessment with the exception of one of the ground floor windows, R1. This window would still achieve 0.79 of the existing value and this marginal transgression would be imperceptible to the occupants. Sunlight would be acceptable to the windows facing the development which face within 90-degrees of due south.

4.9 Overshadowing

4.9.1 By reference to the appended drawings, it can be see that all of the adjacent residential properties would meet the BRE criteria for overshadowing.

5. Light Levels within Proposed New Accommodation

5.1 We have analysed the light levels within the proposed accommodation using the average daylight factor (ADF) assessment. British Standard 8206 recommends an ADF of 1% in bedrooms, 1.5% in living rooms and 2% in kitchens.

5.2 Our analysis shows that all the rooms assessed would meet the British Standard target values.

6. Conclusion

6.1 Our analysis demonstrates that the proposed development of 6 Nutley Terrace would have an imperceptible impact on the daylight and sunlight amenity received to the adjoining residential properties when assessed in accordance with the guidelines given in The London Borough of Camden's Planning Guidance, and more specifically, with the guidelines set-out in BRE Report 209.

6.2 In my opinion, the proposed development would not materially affect the adjoining properties' daylight and sunlight amenity.

6.3 The internal accommodation within the proposed development would meet the British Standard for daylighting. As such, it is my opinion that the property would retain good levels of natural light.

APPENDIX A

Drawings J026352 01-14, 18 and 19