# Daylight and Sunlight Report
## for the Proposed Extension at
## 25 Old Gloucester Street, London, WC1N 4AF

| | |
|---|---|
| Prepared for: | Staniforth Architects Ltd |
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| Date: | 9 May 2013 |
| Job Reference: | 1176/JN |

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# 1. Executive Summary

## 1.1 Scope of Service

1.1.1 We have been instructed by Staniforth Architects Ltd to consider the potential impact upon the amenity of the surrounding properties, which may arise from the proposed extension at 25 Gloucester Street, London, WC1N 3AF.

## 1.2 BRE Assessment Criteria

1.2.1 To ensure that this assessment has been appropriately considered, daylight and sunlight assessments have been undertaken in accordance with the Building Research Establishment Report 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' 2011 (the "BRE guide") and also on British Standard 8206 – 2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting', to which the BRE report refers.

1.2.2 The standards and tests applied within this assessment are briefly described in Appendix A.

## 1.3 Daylight and Sunlight

1.3.1 For daylight, the buildings assessed meet the BRE guidelines for daylight. This is because the small number of transgressions noted to the VSC assessments are considered acceptable due to the fact that the rooms, where the transgressions occur, are served by additional windows, which either meet the BRE guidelines, or remain unaffected.

1.3.2 For sunlight, only one of the three windows assessed falls below the BRE criteria during the annual period, and loses a small amount during the winter months. However, the Saint Georges building is non-domestic, located 3.6m to the boundary and still attains half of the equivalent sunlight recommended for a principle room within a dwelling.

## 1.4 Generally

1.4.1 When considering the numerical results, it is important to approach and interpret the BRE guidelines flexibly along with the following material mitigating factors:

- Some properties are located close to the common boundary and so a reduction in natural light may be unavoidable;
- Kitchens and bedrooms are given less weighting than that of a living room;
- Non-domestic buildings are given less weighting than domestic buildings; and
- the BRE guidelines are not intended to be mandatory, or applied in strict calculation terms.

1.4.2 Overall, it is considered that the impact upon the surrounding buildings arising from the proposed extension is acceptable.

# 2. Introduction

## 2.1 Scope of Service

2.1.1 We have been instructed by Staniforth Architects Ltd to consider the potential impact upon the amenity of the surrounding properties, which may arise from the proposed extension at 25 Gloucester Street, London, WC1N 3AF.

## 2.2 Planning Policy

The London Borough of Camden's Plan

2.2.1 The London Borough of Camden's Local Development Framework adopted on 8 November 2010, discusses the need to ensure the consideration of site layout when undertaking development. In particular Development Policy DP26 Managing the impact of development on occupiers and neighbours, states that: -

> *"The Council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity. The factors we will consider include:*
>
> *c) sunlight, daylight and artificial light levels;"*

2.2.2 It goes on to state at paragraphs 26.2 and 26.3: -

> *"Development should avoid harmful effects on the amenity of existing and future occupiers and to nearby properties. When assessing proposals the Council will take account the considerations set out in policy DP26. The Council's Camden Planning Guidance supplementary document contains detailed guidance on the elements of amenity."*
>
> *"**Visual privacy, overlooking, overshadowing, outlook, sunlight and daylight***
>
> *A development's impact on visual privacy, overlooking, overshadowing, outlook, access to daylight and sunlight and disturbance from artificial light can be influenced by its design and layout, the distance between properties, the vertical levels of onlookers or occupiers and the angle of views. These issues will also affect the amenity of the new occupiers. We will expect that these elements are considered at the design stage of a scheme to prevent potential negative impacts of the development on occupiers and neighbours. To assess whether acceptable levels of daylight and sunlight are available to habitable spaces, the Council will take into account the standards recommended in the British Research Establishment Report 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'"*

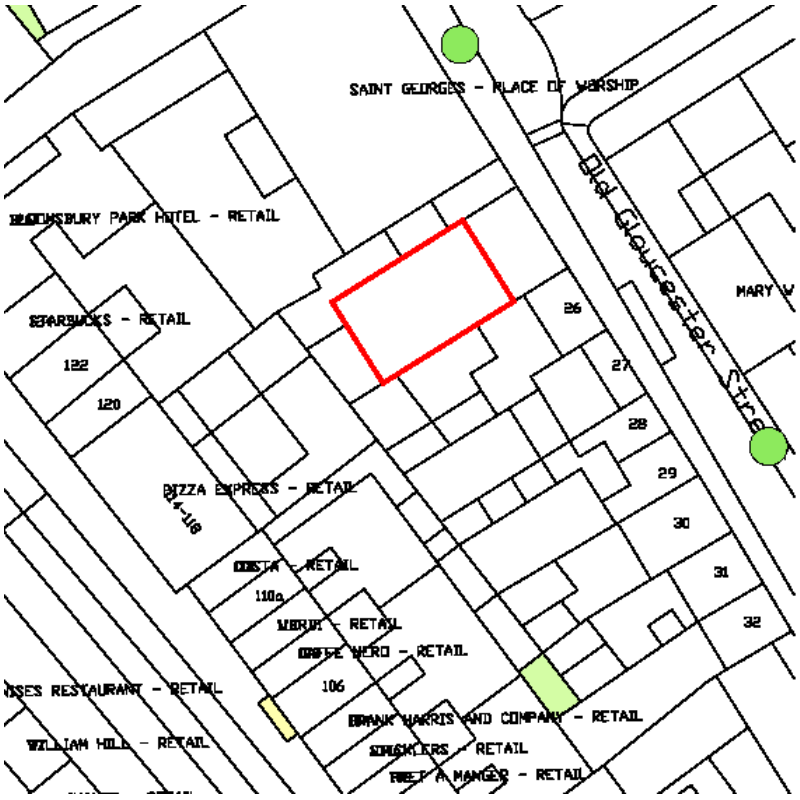
## 2.3 Assessment

2.3.1 To ensure that this assessment has been appropriately considered, daylight and sunlight assessments have been undertaken in accordance with the Building Research Establishment Report 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' 2011 (the "BRE guide") and with the British Standard 8206 – 2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting', to which the BRE report refers.

2.3.2 The standards and tests applied within this assessment are briefly described in Appendix A.

2.3.3 The existing buildings adjacent to the site are shown on the Site Location Plan below.

Site Location Plan




2.3.4 The existing buildings adjacent to the site considered for this report are listed in the following table. Some of these buildings may not require a comprehensive assessment with the reasons for these findings given later in this report under section 3: Results and Consideration.

| Adjacent Building Summary Table | | |
|---|---|---|
| **Name/Address of Building** | **Assumed Use of Building** | **Position in Relation to the Proposed Development** |
| Saint Georges | Community | North |
| Bloomsbury Park Hotel | Commercial | Northwest |
| Russell Square Mansions | Residential | Southwest |
| Ormonde Mansions | Residential | Southwest |
| 26 Old Gloucester Street | Residential | South |
| Rear of 26 Old Gloucester Street | Residential | South |
| Rear of 27 Old Gloucester Street | Residential | South |

## 2.4 Limitations

2.4.1 Our assessment is based on the proposed development drawings by Staniforth Architecture Ltd.

2.4.2 A site inspection was undertaken to record the location of windows of the surrounding properties. Our site inspection included an external inspection of the existing site and surrounding buildings.

2.4.3 Topographical survey information was not provided with relation to the existing buildings on site and ground levels across the site. Accordingly, the locations and heights were derived from photographs taken during the site inspection and oblique aerial photography.

2.4.4 We refer you to the drawings which accompany this report for a list of the third party information relied upon which our 3D computer model and resultant analyses are based.

2.4.5 Evergreen trees, hedges and shrubs have been represented in our 3D model where appropriate, but deciduous trees have not.

# 3. Results and Consideration

## 3.1 Daylight

3.1.1 The table below shows a summary of the results for the buildings tested for daylight availability in accordance with the BRE recommendations. Detailed test results are shown in Appendix C.

| Daylight Assessment Summary Table | | | | | | |
|---|---|---|---|---|---|---|
| Building Reference | Vertical Sky Component Assessment | | | Daylight Distribution Assessment | | |
| | No. of windows assessed | No. that meet the BRE Guidelines | No. that do not meet the BRE Guidelines | No. of rooms assessed | No. that meet the BRE Guidelines | No. that do not meet the BRE Guidelines |
| Saint Georges | 1 | 0 | 1 | - | - | - |
| Bloomsbury Park Hotel | 12 | 8 | 4 | 6 | 6 | 0 |
| Russell Square Mansions | 13 | 13 | 0 | 9 | 9 | 0 |
| Ormonde Mansions | 4 | 4 | 0 | 2 | 2 | 0 |
| 26 Old Gloucester Street | 7 | 7 | 0 | 7 | 7 | 0 |
| Rear of 26 Old Gloucester Street | 9 | 8 | 1 | 3 | 3 | 0 |
| Rear of 27 Old Gloucester Street | 1 | 1 | 0 | 1 | 1 | 0 |
| Total | 47 | 41 | 6 | 28 | 28 | 0 |

Existing Baseline Condition

3.1.2 The existing baseline condition is at present a dilapidated 5-storey period building fronting Old Gloucester Street, with a smaller 3-storey rear projection to the rear, see accompanying drawing no. 1176/DSO/01.

The Proposed Scheme

3.1.3 The proposed extension will comprise an additional storey to the rear projection of the building, some 3.7m higher than the existing flat roof, see accompanying drawing 1176/DSO/01.

Saint Georges

3.1.4 This building is a community (religious) building located immediately north of the Site, see accompanying drawing 1176/DSO/01.

3.1.5 There is one window located to the south elevation of this building, some 3.6m from the boundary, that faces directly over the Site. This window (W1, Ground), serves the rear potion of the nave/sanctuary,

which is also served by several lofty windows to the east and west elevations.

3.1.6 Turning now to the assessment results, regarding VSC, this window did not meet the BRE criteria, losing approximately half of the available light over the Site with the extension in place. The nave/sanctuary, however, as mentioned above, is served by additional windows from the east and west elevations, accordingly, we consider that the nave/sanctuary will remain largely unaffected in terms of BRE daylighting thresholds. It is also for this reason we did not undertake a DD assessment.

Bloomsbury Park Hotel

3.1.7 This buildings is a commercial building located immediately north and northeast of the Site, see accompanying drawing 1176/DSO/01. This building comprises single rooms/suites arranged over several stories. Some windows to the rear elevations face over the Site.

3.1.8 With reference to accompanying drawing 1176/DSO/01, taking each window in turn, W1 serves a bedroom. W2 and W3 serve what appears to be a main living room area. Moving eastwards, W4 and W5 serve either dual aspect living quarters, or auxiliary rooms and are located some 2m from the Site boundary; for the avoidance of doubt we have considered these rooms as habitable. And finally, W6 serves what appears to be a toilet or bathroom area. In accordance with the BRE guidelines, circulation space, hallways, storerooms, toilets and bathrooms, need not be assessed. We have, therefore, only assessed the habitable windows and rooms of this building that are most likely to be affected by the proposed development.

3.1.9 Regarding VSC, W5 to the first and second floors fall only just below the BRE criteria. However, the room it serves is dual aspect, and because W4 meets the BRE guidelines at both floor levels, it may be concluded that these rooms meet the BRE guidelines.

3.1.10 Regarding DD, all rooms assessed meet the BRE guidelines.

Russell Square Mansions

3.1.11 This property is located southeast of the Site and fronts Southampton Way. There are a number of windows to the rear elevation of this building. At first floor level there appears to be a mix of commercial (W2) and residential units (W1, and W4 to W7). At second floor and above all windows serve what appear to be residential units. Windows W4 to W6 at each level, are frosted, which would suggest toilets and bathrooms etc. Nonetheless, and for the avoidance of doubt we have included all of the aforementioned windows in our assessments.

3.1.12 Regarding VSC all windows assessed meet the BRE guidelines. Regarding DD, all rooms assessed meet the BRE guidelines.

Ormonde Mansions

3.1.13 This property, also fronting Southampton Way, is located southeast of the Site adjacent to Russell Square Mansions. With reference to Appendix B, there are a number of windows to rear elevation 1, rear elevation 2 and the return elevation of this building. Again, we have assessed those windows and rooms

most likely to be affected by the proposed extension. Namely, those windows serving kitchens to rear elevation1 that abut the dividing wall with Russell Square Mansions. The windows to the return elevation face perpendicular to the extension and due to the oblique angle we consider they will not be materially affected. We also consider that the windows to rear elevation 2 will not be materially affected. We say this because we have assessed buildings closer to the proposed extension, namely the "rear of 26 Gloucester Street", which remain BRE compliant. It naturally follows, therefore, that these windows will remain BRE compliant.

3.1.14 Regarding those windows to rear elevation 1, all windows assessed meet the BRE guidelines for VSC. Regarding DD, all rooms assessed meet the BRE guidelines.

The 26 Old Gloucester Street Buildings

3.1.15 This property, located immediately south of the Site, comprises two buildings. One building fronts Gloucester Street and the other is a small separate building situated to the rear portion of this property. For clarity, and with reference to the accompanying drawings in Appendix B, the building fronting Old Gloucester Street is referred to in this report as "26 Old Gloucester Street" and the building to the rear portion of this property is referred to as "the rear of 26 Old Gloucester Street". We deal with each in turn below.

26 Old Gloucester Street

3.1.16 We have been advised by the London Borough of Camden that the windows to the rear elevation of 26 Old Gloucester Street serve habitable rooms. We have assessed the windows and rooms, closest to the proposed extension.

3.1.17 Regarding VSC all windows assessed meet the BRE guidelines. Regarding DD, all rooms assessed meet the BRE guidelines.

The Rear of 26 Gloucester Street

3.1.18 This building is an assumed residential property, located immediately south west of the Site at the rear of 26 Gloucester Street, see accompanying drawing 1176/DSO/01.

3.1.19 Regarding VSC, only one window to the second floor level falls fractionally below the BRE guidelines. However, similarly to 3.1.10 above, the second floor room is served by 2 additional windows both of which meet the guidelines. In accordance with the BRE guide the higher of the values may be used. Regarding DD, all rooms assessed meet the BRE guidelines.

3.1.20 We have been requested by the Camden Council to provide Average Daylight Assessments (ADF) assessments for this building. Although it is well established that ADF assessments are not the appropriate assessments for surrounding buildings within the BRE guidelines, we report as follows.

3.1.21 We have assumed that the ground floor room is a kitchen, the first floor room is a living room, and the top floor is a bedroom. The results in the accompanying spread sheet show that the minimum ADF values are not attained in either the existing or proposed situations. Nonetheless, the items in parentheses relate to the permissible reductions as outlined in the BRE for VSC (see the BRE Guide

2011, at page 54). To put it another way, given that VSC is a component of an ADF, and *if* this ADF assessment is to be considered for a surrounding building, then it necessarily follows that a reduction in ADF is also permissible. This statement is supported by paragraph C8, page 54 of the BRE Guide 2011. Accordingly, a reduction of between 6% and 9% ADF meets the BRE criteria.

3.1.22 It may, therefore, be concluded that this building meets the BRE guidelines.

The Rear of 27 Gloucester Street

3.1.23 This building is a commercial property, located immediately south of the Site adjacent to 26 Gloucester Street, see accompanying drawing 1176/DSO/01.

3.1.24 There are five windows facing towards the development site to its north elevation. To the right hand side, at first floor level, there are three small windows. We consider these to serve a toilet areas due to the pipework on the external façade, therefore, they need not be assessed. Similarly, a large window situated to the central portion of this building (W2) is considered to serve a stairwell. Finally, there is a small office window (W1) to the left portion of the building, which will just meet the BRE criteria for daylight. Further, this office space is lighted by a rooflight. It is considered, therefore, it will not be adversely affected by the development.

Mitigating Factors

3.1.25 As with all development sites, it would be helpful at this stage to outline material mitigating factors. The BRE guidelines recognises that buildings located close to the site boundary, as is the case here, may be considered as "bad" neighbours, taking more than their fair share of light. Accordingly, a greater reduction in daylight or sunlight may be unavoidable and so the local authority may wish to apply different target values. Further, kitchens and bedrooms are generally given less weighting than that of a principle room such as a living room, and non-domestic buildings are given less weighting than domestic buildings.

Summary

3.1.26 In summary, the transgressions noted are considered acceptable due to the fact that they are served by additional windows, which either meet the BRE guidelines, or remain unaffected.

## 3.2 Sunlight

3.2.1 In accordance with the BRE report, the buildings outlined below have been assessed for annual probable sunlight hours (APSH), where the windows face within 90 degrees of due south. Detailed test results are shown in Appendix D.

| Sunlight (APSH) Assessment Summary Table | | | | | | |
|---|---|---|---|---|---|---|
| Building Reference | Annual APSH | | | Winter APSH | | |
| | No. of windows assessed | No. that meet the BRE Guidelines | No. that do not meet the BRE Guidelines | No. of windows assessed | No. that meet the BRE Guidelines | No. that do not meet the BRE Guidelines |
| Bloomsbury Park Hotel | 2 | 2 | 0 | 2 | 2 | 0 |
| Saint Georges | 1 | 0 | 1 | 1 | 0 | 1 |
| Total | 3 | 2 | 1 | 3 | 2 | 1 |

Bloomsbury Park Hotel

3.2.2 Only one window (W4) serving habitable rooms to the first and second floor levels face within 90 degrees of due south. They both meet the BRE guidelines over both the annual period and during the winter months.

Saint Georges

3.2.3 One window, which serves the nave/sanctuary, faces within 90 degrees of due south.

3.2.4 Although, it would be reasonable to say that this building has a particular requirement for sunlight, it would be unreasonable, in our view, to treat this building as a dwelling for the purposes of our assessments. Notwithstanding the fact that it falls below the BRE criteria during the annual period, and loses a small amount during the winter months, it still attains approximately half of the BRE criteria for sunlight for a principle room within a dwelling. Given that this is a community building i.e. a non-domestic building, located some 3.6m from the boundary, the residual sunlight is considered reasonable.

Summary

3.2.5 In summary, only one of the three windows assessed falls below the BRE criteria during the annual period, and loses a small amount during the winter months. However, this building is non-domestic, located 3.6m to the boundary and still attains half of the equivalent sunlight recommended for a principle room within a dwelling. On balance, therefore, the effect of the proposed scheme is considered acceptable.

# 4. Conclusion

## 4.1 Daylight and Sunlight

4.1.1 For daylight, the buildings assessed meet the BRE guidelines for daylight. This is because the small number of transgressions noted to the VSC assessments are considered acceptable due to the fact that the rooms, where the transgressions occur, are served by additional windows, which either meet the BRE guidelines, or remain unaffected.

4.1.2 For sunlight, only one of the three windows assessed falls below the BRE criteria during the annual period, and loses a small amount during the winter months. However, the Saint Georges building is non-domestic, located 3.6m to the boundary and still attains half of the equivalent sunlight recommended for a principle room within a dwelling.

## 4.2 Generally

4.2.1 When considering the numerical results, it is important to approach and interpret the BRE guidelines flexibly along with the following material mitigating factors:

- Some properties are located close to the common boundary and so a reduction in natural light may be unavoidable;
- Kitchens and bedrooms are given less weighting than that of a living room;
- Non-domestic buildings are given less weighting than domestic buildings; and
- the BRE guidelines are not intended to be mandatory, or applied in strict calculation terms.

4.2.2 Overall, it is considered that the impact upon the surrounding buildings arising from the proposed extension is acceptable.

# Appendix A

BRE Assessments

# BRE Assessments

## Introduction

The Building Research Establishment Report "Site Layout Planning for Daylight and Sunlight – a guide to good practice 1991" ("the BRE Guidelines") provides advice to building designers on site layout planning in order to achieve good daylight and sunlight amenity, not only to the proposed development and the open spaces between the proposed blocks, but also to the existing surrounding properties.

As part of this advice, the Building Research Establishment (BRE) have developed a series of assessments along with numerical guidelines so that the potential for good daylight and sunlight amenity can be achieved.

In general, the application of the BRE Guidelines are more appropriate for low density suburban development sites where there is a greater flexibility for site layout planning. In dense urban areas, however, development sites are usually constrained to a greater degree, often by immediately adjacent buildings etc. Accordingly, when dealing with dense urban areas the guidelines should be applied flexibly. This point is expressly recognised by the BRE Guidelines, which states in the introduction at page 1:

> *'The Guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not been 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… … In special circumstances the developer or Planning Authority may wish to use different target values. For example, in a historic city centre a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings…..'*

## Daylight

The criteria for assessing daylight to existing surrounding buildings are outlined at pages 4 to 8 of the BRE Guidelines. Generally, daylight assessments should be undertaken to habitable rooms within dwellings and to principal rooms in non-domestic buildings such as schools, hospitals and offices where the occupants have a reasonable expectation of daylight.

Whilst the BRE Guidelines contain a number of rules of thumb that inform site layout design some relate to specific situations, such as domestic extensions to the rear of a property, which although useful may not be considered appropriate for general site layout design.

The principal assessments used to assess daylight to existing surrounding buildings are outlined in more detail below along with a further daylight assessment, usually applied to proposed dwellings, which is admissible provided it is agreed with the local authority, or there are past precedents.

<u>25° section line assessment</u>

The first assessment is known as the [modified] 25° section line test. It is a simple rule of thumb that determines whether an existing building should still receive adequate daylight with the proposed development in place.

The BRE guide states at page 11:

> "*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 a lowest window, subtends an angle of more than 25°to the horizontal may be affected.*"

This assessment is most appropriate for well spaced, low-density or low-rise, uniform proposed developments. It is not an appropriate assessment for dense urban environments, where the existing building on the development site already subtends at an angle greater than 25° to the horizontal from the subject window. It is for this reason this 25° assessment is generally dispensed with and the more detailed assessments outlined below are entered into at the outset.

The Vertical Sky Component ("VSC") Assessment

The Vertical Sky Component ("VSC") assessment represents the amount of available daylight received directly from the sky at a particular window. The reference point for this assessment is the centre of the window, on the plane of the outer window wall.

A VSC is expressed as a percentage, being a ratio of that part of illuminance on a vertical plane (a window) that is received from a Standard Overcast Sky (CIE Sky), to the illuminance received on a horizontal plane on an unobstructed hemisphere of Standard Overcast Sky. To put it another way it is simply the amount of direct sky visibility a window receives, howsoever obstructed, expressed as a percentage of the amount of direct sky a horizontal unobstructed roof-light would receive.

The maximum percentage of direct skylight a vertical window can receive from a Standard Overcast Sky is 39.62%, or 40% when rounded. The BRE have determined that where a VSC value of 27% is achieved, then enough skylight (direct daylight) should reach the window of an existing building. This value is roughly equivalent to a uniform obstruction of 25°, with reference to the above assessment. The Guidelines go on to state:

> "*If the vertical sky component, with the new development in place, is both less than 27% and less than 0.8 times its former value, (a 20% reduction), then the occupants of the existing building will notice the difference.*"

Consequently, the daylight to an existing building, as a result of a proposed development, may be reduced by 20% before that loss becomes noticeable.

The Daylight Distribution ("DD") Assessment

The Daylight Distribution Assessment is undertaken at working plane level from within a subject room and represents the change in skyline when viewed through a subject window. The working plane level is set at 0.85m above floor level in dwellings and 0.70m in offices, however, in practice this distinction in height is not normally made, and so the working plane is generally set at 0.85m.

If significant areas beyond the no-sky line i.e. the point beyond the line where no sky can be seen at working plane level, the room will usually appear gloomy and supplementary electric lighting will be required. The BRE Guidance states:

> "*If, following construction of a new development, the no-sky line moves so that the area of the existing room which does not receive direct skylight is reduced to less than 0.8 times its former value, (a 20% reduction), then this will be noticeable to the occupants, and more of the room will be poorly lit.*"

Consequently, the daylight to an existing building, as a result of a proposed development, may be reduced by 20% before that loss becomes noticeable.

The VSC and DD are the 2 principal assessments that are required to be undertaken in order to assess daylight to existing surrounding buildings.

The Average Daylight Factor ("ADF") Assessment

A further daylight assessment, which may be undertaken, provided it is accepted by the local authority, is known as the Average Daylight Factor (ADF). Strictly speaking ADF assessments are used to determine the daylight availability to units within a proposed development, however, in more recent times the ADF assessment has been accepted by local authorities as a valid assessment for existing surrounding buildings.

An ADF assessment takes into account the amount of direct sky visibility incident on a window serving a subject room, the transmittance of the light through the glass, and the reflectance of that resultant light from the entire surface area of the room, which is then expressed as a percentage.

The ADF values recommended in the British Standard BS8206 Part 2 to which the BRE refers are: 2% for kitchens or open plan living areas, 1.5% for living rooms and 1% for bedrooms, if supplementary electric lighting is provided.

Nb. The guidelines outlined in the latest edition of BS8206 Part 2: 2008 are now applied.

## Sunlight

Sunlight is valued in both residential and commercial buildings. It is seen as providing warmth and cheerfulness to a room, whilst also giving the occupants a therapeutic effect and a sense of wellbeing.

In residential properties the main requirement for sunlight is in the living room or conservatories, which should be assessed if they have a main window facing within 90° of due south. Sunlight is considered less important in kitchens and bedroom, although care should be taken not to block out too much.

In commercial or non-domestic buildings, the requirement for sunlight varies according to the use of the building. The BRE recommends that for a commercial building any space that has a particular or special requirement for sunlight should be assessed.

Annual Probable Sunlight Hours (APSH) Assessment

The APSH assessment is undertaken to the main window of residential and commercial buildings, where the window faces within 90° of due south. "Probable Sunlight Hours" may be defined as the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness.

At page 17 of the BRE guidelines the criteria for the APSH assessment are as follows: -

> *'If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° 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 effected. This will be the case if a point at the centre of the window, in the plane of the inner window wall, received in the year less than one quarter (25%) of annual probable sunlight hours including at least 5% of annual probable sunlight hours between 21 September and 21 March, and less than 0.8 times its former sunlight hours during either period.'*

Consequently, the sunlight to an existing building, as a result of a proposed development, may be reduced by 20% in either the annual or winter periods before that loss becomes noticeable.

## Overshadowing

The BRE guidance also offers advice on how to preserve sunlight to both existing and proposed open amenity spaces. Areas such as main back gardens of dwellings, parks, playing fields, playgrounds, waterways and public spaces such should be assessed. Small front gardens to dwellings and parking areas need not be assessed.

### The permanent overshadowing assessment

The permanent overshadowing assessment is undertaken on 21 March, the spring equinox. This assessment shows areas of a subject amenity area where no sunlight will be available during the winter period, however, the subject area may still receive some sunlight during the summer.

The BRE states at page 20:

> "*for it to appear adequately sunlight 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 these guidelines, and the area which can receive 2 hours of sun on 21 March is less than 0.8 times its former value (a 20% reduction), then the loss of sunlight is likely to be noticeable".*

Consequently, if an open amenity area, is more than 50% in shade for more than 2 hours in either existing or proposed situations, and is reduced by more than 20% of its existing value as a result of new development, then that loss is likely to be noticeable.

### The transient overshadowing assessment

A further overshadowing assessment, sometimes requested by the local authority for larger schemes, is the temporary, or transient overshadowing assessment. This assessment usually comprises hourly overshadowing images of the existing and proposed situations undertaken on key dates during the year such as 21 March, the spring equinox; 21 June, the summer solstice; and 21 December, the winter solstice.

The BRE guidance offers no express numerical values for this type of assessment, consequently it is purely subjective.

# Appendix B

Context Drawings

# Appendix C

Daylight Results

| Building/Floor/ Reference | Window Reference | Existing v. Proposed | VSC Values % | % of Existing | Does it meet the BRE Guidelines? |
|---|---|---|---|---|---|
| **Saint Georges** | | | | | |
| **Ground** | W1 | Existing | 10.97 | **48%** | **x** |
| | | Proposed | 5.21 | | |
| **26 Old Gloucester Street** | | | | | |
| **Ground** | W5 | Existing | 9.55 | **89%** | ✓ |
| | | Proposed | 8.50 | | |
| **Ground** | W6 | Existing | 10.47 | **87%** | ✓ |
| | | Proposed | 9.13 | | |
| **First** | W5 | Existing | 13.80 | **85%** | ✓ |
| | | Proposed | 11.76 | | |
| **First** | W6 | Existing | 14.45 | **82%** | ✓ |
| | | Proposed | 11.81 | | |
| **Second** | W5 | Existing | 19.96 | **80%** | ✓ |
| | | Proposed | 15.91 | | |
| **Second** | W6 | Existing | 17.84 | **88%** | ✓ |
| | | Proposed | 15.71 | | |
| **Third** | W5 | Existing | 26.60 | **84%** | ✓ |
| | | Proposed | 22.32 | | |
| **Rear of 26 Old Gloucester Street** | | | | | |
| **Ground** | W1 | Existing | 7.44 | **85%** | ✓ |
| | | Proposed | 6.30 | | |
| **Ground** | W2 | Existing | 7.21 | **85%** | ✓ |
| | | Proposed | 6.16 | | |
| **Ground** | W3 | Existing | 6.34 | **89%** | ✓ |
| | | Proposed | 5.62 | | |
| **First** | W1 | Existing | 11.35 | **84%** | ✓ |
| | | Proposed | 9.50 | | |
| **First** | W2 | Existing | 10.81 | **83%** | ✓ |
| | | Proposed | 8.92 | | |
| **First** | W3 | Existing | 9.40 | **84%** | ✓ |
| | | Proposed | 7.92 | | |
| **Second** | W1 | Existing | 17.04 | **84%** | ✓ |
| | | Proposed | 14.31 | | |
| **Second** | W2 | Existing | 16.94 | **80%** | ✓ |
| | | Proposed | 13.52 | | |
| **Second** | W3 | Existing | 15.33 | **78%** | **x** |
| | | Proposed | 11.92 | | |
| **Rear of 27 Old Gloucester Street** | | | | | |
| **First** | W1 | Existing | 12.82 | **80%** | ✓ |
| | | Proposed | 10.20 | | |

| Building/Floor/ Reference | Window Reference | Existing v. Proposed | VSC Values % | % of Existing | Does it meet the BRE Guidelines? |
|---|---|---|---|---|---|
| **Bloomsbury Park Hotel** | | | | | |
| **First** | W1 | Existing | 13.66 | **88%** | ✓ |
| | | Proposed | 12.01 | | |
| **First** | W2 | Existing | 10.90 | **94%** | ✓ |
| | | Proposed | 10.21 | | |
| **First** | W3 | Existing | 9.05 | **96%** | ✓ |
| | | Proposed | 8.73 | | |
| **First** | W4 | Existing | 23.38 | **86%** | ✓ |
| | | Proposed | 20.17 | | |
| **First** | W5 | Existing | 12.06 | **73%** | x |
| | | Proposed | 8.84 | | |
| **First** | W6 | Existing | 15.45 | **73%** | x |
| | | Proposed | 11.29 | | |
| **Second** | W1 | Existing | 19.36 | **95%** | ✓ |
| | | Proposed | 18.49 | | |
| **Second** | W2 | Existing | 15.95 | **97%** | ✓ |
| | | Proposed | 15.44 | | |
| **Second** | W3 | Existing | 13.08 | **97%** | ✓ |
| | | Proposed | 12.75 | | |
| **Second** | W4 | Existing | 31.33 | **83%** | ✓ |
| | | Proposed | 26.12 | | |
| **Second** | W5 | Existing | 21.31 | **73%** | x |
| | | Proposed | 15.52 | | |
| **Second** | W6 | Existing | 25.86 | **69%** | x |
| | | Proposed | 17.93 | | |
| **Russell Square Mansions** | | | | | |
| **First** | W1 | Existing | 14.57 | **94%** | ✓ |
| | | Proposed | 13.71 | | |
| **First** | W2 | Existing | 21.29 | **88%** | ✓ |
| | | Proposed | 18.78 | | |
| **First** | W4 | Existing | 17.07 | **94%** | ✓ |
| | | Proposed | 16.06 | | |
| **First** | W5 | Existing | 16.86 | **94%** | ✓ |
| | | Proposed | 15.83 | | |
| **First** | W6 | Existing | 16.30 | **94%** | ✓ |
| | | Proposed | 15.33 | | |
| **First** | W7 | Existing | 14.43 | **94%** | ✓ |
| | | Proposed | 13.54 | | |
| **Second** | W1 | Existing | 19.17 | **93%** | ✓ |
| | | Proposed | 17.84 | | |
| **Second** | W2 | Existing | 22.40 | **93%** | ✓ |
| | | Proposed | 20.79 | | |
| **Second** | W3 | Existing | 24.00 | **93%** | ✓ |
| | | Proposed | 22.35 | | |
| **Second** | W4 | Existing | 20.02 | **96%** | ✓ |
| | | Proposed | 19.29 | | |
| **Second** | W5 | Existing | 19.61 | **96%** | ✓ |
| | | Proposed | 18.88 | | |

| Building/Floor/ Reference | Window Reference | Existing v. Proposed | VSC Values % | % of Existing | Does it meet the BRE Guidelines? |
|---|---|---|---|---|---|
| **Second** | W6 | Existing | 18.79 | **96%** | ✓ |
| | | Proposed | 18.12 | | |
| **Second** | W7 | Existing | 16.30 | **96%** | ✓ |
| | | Proposed | 15.71 | | |

**Ormande Mansions**

| | | | | | |
|---|---|---|---|---|---|
| **First** | W1 | Existing | 2.51 | **92%** | ✓ |
| | | Proposed | 2.32 | | |
| **First** | W2 | Existing | 1.91 | **85%** | ✓ |
| | | Proposed | 1.61 | | |
| **Second** | W1 | Existing | 3.84 | **95%** | ✓ |
| | | Proposed | 3.67 | | |
| **Second** | W2 | Existing | 3.30 | **86%** | ✓ |
| | | Proposed | 2.82 | | |

| Building/Floor/ Reference | Room Reference | Whole Room sq m | Existing Area sq m | Proposed Area sq m | % of Existing Area | Does it meet the BRE Guidelines? |
|---|---|---|---|---|---|---|
| **26 Old Gloucester Street** | | | | | | |
| **Ground** | R2 | 12.35 | 6.68<br>54% | 6.68<br>54% | **1.00** | ✓ |
| **Ground** | R3 | 8.93 | 6.34<br>71% | 6.34<br>71% | **1.00** | ✓ |
| **First** | R2 | 12.35 | 10.18<br>82% | 10.14<br>82% | **1.00** | ✓ |
| **First** | R3 | 8.93 | 8.23<br>92% | 8.23<br>92% | **1.00** | ✓ |
| **Second** | R2 | 12.35 | 12.01<br>97% | 12.00<br>97% | **1.00** | ✓ |
| **Second** | R3 | 8.93 | 8.61<br>96% | 8.61<br>96% | **1.00** | ✓ |
| **Third** | R2 | 12.35 | 12.25<br>99% | 12.25<br>99% | **1.00** | ✓ |
| **Rear of 26 Old Gloucester Street** | | | | | | |
| **Ground** | R1 | 31.66 | 6.16<br>19% | 5.97<br>19% | **0.97** | ✓ |
| **First** | R1 | 31.66 | 8.09<br>26% | 7.46<br>24% | **0.92** | ✓ |
| **Second** | R1 | 28.85 | 8.57<br>30% | 7.62<br>26% | **0.89** | ✓ |
| **Rear of 27 Old Gloucester Street** | | | | | | |
| **First** | R1 | 11.42 | 3.16<br>28% | 2.74<br>24% | **0.87** | ✓ |
| **Bloomsbury Park Hotel** | | | | | | |
| **First** | R1 | 16.55 | 7.87<br>48% | 6.63<br>40% | **0.84** | ✓ |
| **First** | R2 | 20.04 | 10.19<br>51% | 8.50<br>42% | **0.83** | ✓ |
| **First** | R3 | 12.72 | 12.61<br>99% | 12.47<br>98% | **0.99** | ✓ |
| **First** | R4 | 10.53 | 10.02<br>95% | 9.24<br>88% | **0.92** | ✓ |
| **Second** | R1 | 16.55 | 12.69<br>77% | 12.69<br>77% | **1.00** | ✓ |
| **Second** | R2 | 20.04 | 16.06<br>80% | 16.04<br>80% | **1.00** | ✓ |
| **Second** | R3 | 12.72 | 12.71<br>100% | 12.71<br>100% | **1.00** | ✓ |
| **Second** | R4 | 10.53 | 10.49<br>100% | 10.30<br>98% | **0.98** | ✓ |

| Building/Floor/ Reference | Room Reference | Whole Room sq m | Existing Area sq m | Proposed Area sq m | % of Existing Area | Does it meet the BRE Guidelines? |
|---|---|---|---|---|---|---|
| **Russel Square Mansions** | | | | | | |
| **First** | R1 | 10.74 | 10.60<br>99% | 10.53<br>98% | **0.99** | ✓ |
| **First** | R2 | 49.62 | 27.44<br>55% | 26.65<br>54% | **0.97** | ✓ |
| **First** | R4 | 30.80 | 20.10<br>65% | 19.97<br>65% | **0.99** | ✓ |
| **First** | R5 | 14.57 | 13.09<br>90% | 13.03<br>89% | **1.00** | ✓ |
| **Second** | R1 | 10.74 | 10.65<br>99% | 10.65<br>99% | **1.00** | ✓ |
| **Second** | R2 | 6.36 | 6.36<br>100% | 6.36<br>100% | **1.00** | ✓ |
| **Second** | R3 | 10.15 | 10.14<br>100% | 10.14<br>100% | **1.00** | ✓ |
| **Second** | R4 | 30.80 | 23.30<br>76% | 23.30<br>76% | **1.00** | ✓ |
| **Second** | R5 | 14.57 | 14.04<br>96% | 14.02<br>96% | **1.00** | ✓ |
| **Ormande Mansions** | | | | | | |
| **First** | R1 | 13.95 | 8.63<br>62% | 8.16<br>59% | **0.95** | ✓ |
| **Second** | R1 | 13.95 | 9.40<br>67% | 9.36<br>67% | **1.00** | ✓ |

| Floor Ref. | Room Ref. | Assumed Room Use | Window Ref. | Glass Transmittance | Glazed Area | Clear Sky Angle Existing | Clear Sky Angle Proposed | Room Surface Area | Average Surface Reflectance | ADF Existing | ADF Proposed | Req'd Value | % of Existing | Does it meet the BRE Guidelines |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rear of 26 Gloucester Street** | | | | | | | | | | | | | | |
| Ground | R1 | Kitchen | W1 | 0.65 | 0.96 | 29.03 | 27.62 | 119.77 | 0.60 | 0.24 | 0.22 | | | |
| | | | W2 | 0.65 | 0.96 | 29.55 | 27.96 | 119.77 | 0.60 | 0.24 | 0.23 | | | x (✓) |
| | | | W3 | 0.65 | 0.96 | 27.52 | 25.25 | 119.77 | 0.60 | 0.22 | 0.21 | | | |
| | | | | | | | | | | 0.70 | 0.66 | 2.0 | 93.9% | |
| First | R1 | Living room | W1 | 0.65 | 0.96 | 37.29 | 34.88 | 119.77 | 0.60 | 0.30 | 0.28 | | | |
| | | | W2 | 0.65 | 0.96 | 36.31 | 32.03 | 119.77 | 0.60 | 0.30 | 0.26 | | | x (✓) |
| | | | W3 | 0.65 | 0.96 | 33.03 | 30.03 | 119.77 | 0.60 | 0.27 | 0.24 | | | |
| | | | | | | | | | | 0.87 | 0.79 | 1.5 | 90.9% | |
| Second | R1 | Bedroom | W1 | 0.65 | 0.96 | 47.32 | 43.94 | 111.74 | 0.60 | 0.41 | 0.38 | | | |
| | | | W2 | 0.65 | 0.96 | 47.49 | 41.33 | 111.74 | 0.60 | 0.41 | 0.36 | | | ✓ (✓) |
| | | | W3 | 0.65 | 0.96 | 44.23 | 38.23 | 111.74 | 0.60 | 0.39 | 0.33 | | | |
| | | | | | | | | | | 1.21 | 1.08 | 1.0 | 88.8% | |

**Figure in paraentheses indicate that upon request by the LA that ADF values be provided for an existing surrounding property, and due to the reduction permissible as outlined in the BRE for VSC, it naturally follows that a reduction to the ADF values is also permissible. Accordingly, a reduction of between 6% and 9% will meet the BRE guidelines.**

# Appendix D

Sunlight Results

| Building/Floor/ Room Reference | Window Reference | ANNUAL | | | | Does it meet the BRE Guidelines? | WINTER | | | | Does it meet the BRE Guidelines? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Existing | Proposed | Reduction | Reduction % | | Existing | Proposed | Reduction | % of exsiting | |
| **Saint Georges** | | | | | | | | | | | |
| Ground | W1 | 28 | 14 | 14 | 50.00% | x | 3 | 2 | 1 | 66.67% | x |
| **Bloomsbury Park Hotel** | | | | | | | | | | | |
| First | W4 | 54 | 51 | 3 | 94.44% | ✓ | 17 | 17 | 0 | 100.00% | ✓ |
| Second | W4 | 74 | 60 | 14 | 81.08% | ✓ | 24 | 23 | 1 | 95.83% | ✓ |