

# **Client: The Diocese of London**

Daylight and Sunlight Assessment for the Development at St Peter's Vicarage, Belsize Square, Belsize Park

**April 2016** 

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# Contents Amendment Record

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# 1 Background and Scope of Appraisal

Herrington Consulting has been commissioned by The Diocese of London to assess the potential impact of the proposed development at St Peter's Vicarage, Belsize Square, Belsize Park NW3 4HY in relation to daylight, sunlight and overshadowing on the neighbouring buildings. The key objectives of the assessment are to:

- assess the baseline conditions at the site;
- analyse the potential impacts of the development on the daylight and sunlight currently received by the neighbouring buildings, and;
- assess these impacts in line with any relevant planning policies and best practice guidance.



# 2 The Site and Development Proposals

#### 2.1 Site Location

The site is located within the London Borough of Camden. The location of the site is shown in Figure 2.1 and the site plan included in Appendix A.1 of this report gives a more detailed reference to the site location and layout.

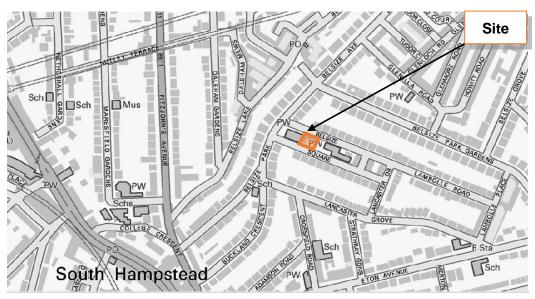


Figure 2.1 – Location map (Contains Ordnance Survey data © Crown copyright and database right 2011)

#### 2.2 The Development

The proposals for development are demolish the existing Vicarage to create 2 flats and two houses over three storeys. Drawings of the proposed scheme are included in Appendix A.1 of this report.



### 3 Policy and Guidance

### 3.1 National Planning Policy

#### National Planning Policy Framework (2012)

The National Planning Policy Framework adopted on the 27<sup>th</sup> March 2012, replacing the Planning Policy Statements and Planning Policy Guidance, stipulates that "...planning policies and decisions should always seek to secure a good standard of amenity for existing and future occupants of land and buildings."

#### National Planning Practice Guidance (2014)

The National Planning Practice Guidance was launched in 2014, creating an online resource for planning practitioners. The guidance does not provide any further detail in terms of amenity beyond that stated above.

#### 3.2 Regional Planning Policy

#### The London Plan – Spatial Development Strategy for Greater London (2011)

Policy 7.6: 'Architecture' of the adopted London Plan, includes the following statements: "Buildings and structures should not cause unacceptable harm to the amenity of surrounding land and buildings... particularly residential buildings in relation to... overshadowing".

#### Minor Alterations to the London Plan (2012)

On the 11<sup>th</sup> May 2015 the Mayor of London published for six weeks public consultation two sets of Minor Alterations to the London Plan – on Housing Standards and on Parking Standards. A number of minor alterations have been proposed to the London Plan; however, these changes do not alter the policies above.

#### Further Alterations to the London Plan (March 2015)

In March 2015, the Mayor published further updates to the London Plan in the Further Alteration to the London Plan document. This document proposes a number of further changes to the London Plan; however, these changes will not alter the policies listed above.

#### 3.3 Local Planning Policy

#### Camden Development Policies (2010 - 2025)

Policy DP26 states that the council will only grant planning permission for development that does not cause harm to the amenity of existing and future occupiers and to nearby properties. To assess this impact, the council will consider; 'visual privacy and overlooking'; 'overshadowing and outlook', and 'sunlight, daylight and artificial light levels'. To assess whether a proposed development will have acceptable levels of daylight and sunlight provision, the council will follow



the standard recommendations of the British Research Establishment's Site Layout Planning for Daylight and Sunlight- A Guide to Good Practice.

#### Camden Supplementary Planning Guidance – CPG1 Design (2015)

The CPG1 document states in section 4 that, 'Alterations should always take into account the character and design of the property and its surroundings'. The guidance also states that any development should be of 'high quality design' which 'respects and enhances the character and appearance of a property and its surroundings, and also covers matters such as outlook, privacy and overlooking.'

#### 3.4 Best Practice Guidance

In the absence of official national planning guidance / legislation on daylight and sunlight, the most recognised guidance document is published by the Building Research Establishment and entitled 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', Second Edition, 2011; herein referred to as the 'BRE Guidelines'.

The BRE Guidelines are not mandatory and themselves state that they should not be used as an instrument of planning policy, however in practice they are heavily relied upon as they provide a good guide to approach, methodology and evaluation of daylight and sunlight impacts.

In conjunction with the BRE Guidelines further guidance is given within the British Standard (BS) 8206-2:2008: 'Lighting for buildings - Part 2: Code of practice for daylighting'.

In this assessment the BRE Guidelines have been used to establish the extent to which the Proposed Development meets current best practice guidelines. In cases where the Development is likely to reduce light to key windows the study has compared results against the BRE criteria.

Whilst the BRE Guidelines provide numerical guidance for daylight, sunlight and overshadowing, these criteria should not be seen as absolute targets since, as the document states, the intention of the guide is to help rather than constrain the designer. The Guide is not an instrument of planning policy, therefore whilst the methods given are technically robust, it is acknowledged that some level of flexibility should be applied where appropriate.

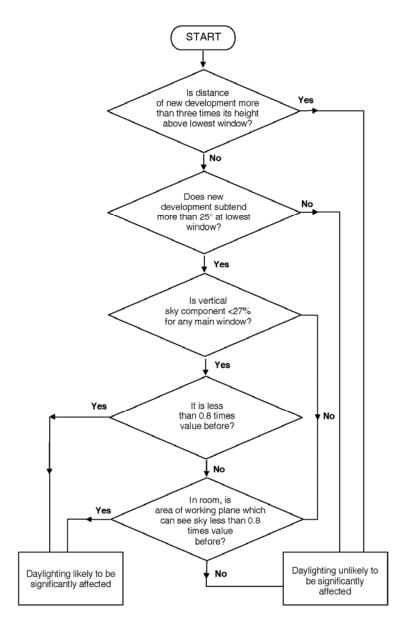


### 4 Assessment Techniques

#### 4.1 Background

Natural light refers to both daylight and sunlight. However, a distinction between these two concepts is required for the purpose of analysis and quantification of natural light in buildings. In this assessment, the term 'Daylight' is used for natural light where the source is the sky in overcast conditions, whilst 'Sunlight' refers specifically to the light coming directly from the sun.

The primary objective of this assessment is to quantify the impacts of the proposed development on the adjacent building[s] and therefore the methods employed by this study are focussed on this objective. These methodologies are described in the following sections of this report and follow the hierarchical approach set out by the BRE Guidelines. The 'decision chart' outlining this process (Figure 20 of the Guidelines) has been reproduced below.





The BRE guidelines are intended for use for rooms in adjoining dwellings. They may also be applied to any existing non-domestic buildings where the occupants have a reasonable expectation of daylight, which could include schools, hospitals, hotels and offices. For dwellings it states that living rooms, dining rooms and kitchens should be assessed. Bedrooms should also be checked, although it states that they are less important. Other rooms, such as bathrooms, toilets, storerooms, circulation areas and garages need not be assessed.

#### 4.2 Vertical Sky Component (VSC)

The Vertical Sky Component (VSC) calculation is the ratio of the direct sky illuminance falling on the outside of a window, to the simultaneous horizontal illuminance under an unobstructed sky. The standard CIE (Commission Internationale d'Éclairage) Overcast Sky is used and the ratio is expressed as a percentage. For example, a window that has an unobstructed view over open fields would benefit from the maximum VSC, which would be close to 40%. For a window to be considered as having a reasonable amount of skylight reaching it, the BRE Guidelines suggests that a minimum VSC value of 27% should be achieved. When assessing the impact of a new development on an existing building the BRE Guidelines sets out the following specific requirement:

If the VSC with the new development in place is both less than 27% and less than 0.8 times its former value, then the reduction in light to the window is likely to be noticeable.

This means that a reduction in the VSC value of up to 20% its former value would be acceptable and thus the impact would be considered negligible. It is important to note that the VSC is a simple geometrical calculation, which provides an early indication of the potential for daylight entering the space. It does not, however, assess or quantify the actual daylight levels inside the rooms.

#### 4.3 No Sky Line

The No Sky Line, or sometimes referred to as No Sky View method, describes the distribution of daylight within rooms by calculating the area of the 'working plane', which can receive a direct view of the sky and hence 'skylight'. The working plane height is generally set at 850mm above floor level within a residential property and 700mm within a commercial property.

The BRE Guidelines state that if following the construction of a new development the No Sky Line moves such that the area of existing room that does not receive direct skylight is reduced to less than 0.8 times its former value, the impact will be noticeable to the occupants. This is also true if the No Sky Line encroaches onto key areas like kitchen sinks and worktops.

One benefit of the daylight distribution test is that the resulting contour plans show where the light falls within a room, both in the existing and proposed conditions, and a judgment may be made as to whether the room will retain light to a reasonable depth.

This method can only be accurately used to examine the impact of new development on the daylight distribution within existing buildings when the internal room layout is known. However, in



circumstances where the internal layout and dimensions of the affected room are not known, best estimates are used.

#### 4.4 Overshadowing

The BRE Guidance suggests that where new development may affect one or more amenity areas, then analysis can be undertaken to quantify the loss of sunlight resulting from overshadowing. Typical examples of areas that could be considered as open spaces or amenity areas are main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views, such as a group of monuments or fountains.

#### Sun Hours on Ground

The BRE Guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least 50% of an amenity area should receive at least 2 hours of sunlight on 21<sup>st</sup> March. The BRE Guidelines also suggest that if, as a result of a new development, an existing garden or amenity area does not meet these guidelines, and the area which can receive some sun on the 21<sup>st</sup> March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable.

When undertaking this analysis, sunlight from an altitude of 10° or less has been ignored as this is likely to be obscured by planting and undulations in the surrounding topography. Driveways and hard standing for cars is also usually left out of the area used for this calculation. Fences or walls less than 1.5 metres high are also ignored. Front gardens which are relatively small and visible from public footpaths are omitted with only main back gardens needing to be analysed.

The Guidelines also state that "normally, trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than a deep shadow of a building". This is especially the case for deciduous trees, which provide welcome shade in the summer whilst allowing sunlight to penetrate during the winter months.

#### **Transient Overshadowing**

The BRE Guidelines suggest that where large buildings are proposed, which may affect a number of open spaces or amenity areas, it is useful and illustrative to plot a shadow plan to show the location of shadows at different times of the day and at key times during the year. Typically the 21<sup>st</sup> March, 21<sup>st</sup> June and 21<sup>st</sup> December are used to represent the annual variance of sun position, noting that the position of the sun in the sky during the spring equinox (21<sup>st</sup> March) is equivalent to that of the autumn equinox.

The BRE Guidelines provide no criteria for the significance of transitory overshadowing other than to suggest that by establishing the different times of day and year when shadow would be cast over surrounding areas, provides an indication as to the significance of the likely effect of a new development. The assessment of transient overshadowing effects is therefore based upon expert



judgment, taking into consideration the likely effects of the various baseline conditions and comparing them with the likely significant transient overshadowing effects of the redevelopment proposals.

#### 4.5 Annual Probable Sunlight Hours

It is also possible to quantify the amount of sunlight available to a new development and the recognised methodology for undertaking this analysis is the Annual Probable Sunlight Hours (APSH) method.

In the case of sunlight, the assessment is equally applied to adjoining dwellings and any existing non-domestic buildings where there is a particular requirement for sunlight. The BRE Guidelines set out a hierarchy of tests to determine whether the proposed development will have a significant impact. These are set out in order of complexity below:

Test 1 - Assess whether the windows to main living rooms and conservatories of the buildings surrounding the site are situated within 90° of due south. Obstruction to sunlight may become an issue if some part of the new development is situated within 90° of due south of a main window wall of an existing building.

Test 2 - Draw a section perpendicular from the centre of the window in any window walls identified by Test 1. If the angle subtended between the horizontal line drawn from the centre of the lowest window of the existing building and the proposed development is less than 25°, then the proposed development is unlikely to have a substantial effect on the direct sunlight enjoyed by the existing window.

Test 3 – If the window wall faces within 20° of due south and the reference point has a VSC of 27% or more, then the room is considered to receive sufficient sunlight.

Test 4 – If all of the above tests have been failed, then a more detailed analysis is required to determine the obstruction level to the existing building. In such cases, the BRE Guidance recommends the use of the Annual Probable Sunlight Hours (APSH) test to assess the impact on the availability of sunlight. To pass this test the centre point of the window will need to receive more than one quarter of APSH, including at least 5% APSH in the winter months between 21st September and the 21st March. The BRE Guidelines state that if 'post-development' the available sunlight hours are both less than the amount above and less than 0.8 times their 'predevelopment' value, either over the whole year or just within the winter months, then the occupants of the existing building will notice the loss of sunlight. In addition, if the overall annual loss is greater than 4% of APSH, the room may appear colder and less pleasant.

#### 4.6 Average Daylight Factor

The Average Daylight Factor (ADF) method calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and



considers the physical nature of the room behind the window, including; window transmittance, and surface reflectivity.

This method of quantifying the availability of daylight within a room does, however, require the internal layout to be known and is generally only used for establishing daylight provision in new rooms. The BRE Guide sets out the following guidelines for the assessment of the ADF:

If a predominantly daylit appearance is required, then the ADF should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. In dwellings, the following minimum average daylight factors should be achieved: 1% in bedrooms, 1.5% in living rooms and 2% in kitchens.

For offices, the British Council for Offices (BCO) Guide to Lighting provides guidance on how to specify good office lighting. The main message is to use daylight effectively and use artificial lighting only where and when it's is needed. The new guide recognises that maximising natural daylight within offices can bring about tangible benefits for employee wellbeing and suggests that a well daylit office space is one that achieves an average daylight factor of between 2% and 5%.



### 5 Assessment Methodology

#### 5.1 Method of Baseline Data Collation

The following data and information has been used to inform this study:

- OS Mastermap mapping
- Measured survey data (Jasplan Services March 2014)
- Scheme drawings in AutoCAD format
- Photographic information collected during a site visit carried out on 8<sup>th</sup> January 2016
- Aerial photography (Google Maps and Bing)

#### 5.2 Identification of Key Sensitive Receptors

The BRE Guidelines are intended for use for rooms and adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms circulation areas and garages are not deemed as requiring daylight and therefore are not identified as sensitive receptors. The BRE document also states that the guidelines may also be applied to any non-domestic building where the occupants have a reasonable expectation of daylight. This would normally include schools, hospitals, hotels, hostels, small workshops and some offices.

The first step in this process is to determine the key sensitive receptors, i.e. which windows may be affected by the proposed development. Key receptors are those windows that face, or are located broadly perpendicular to the proposed development.

If a window falls into this category, the second step is to measure the obstruction angle. This is the angle at the level of the centre of the lowest window between the horizontal plane and the line joining the highest point of nearest obstruction formed from any part of the proposed development. If this angle is less than 25° then it is unlikely to have a substantial effect on the diffuse daylight enjoyed by the existing window and the window is not deemed to be a sensitive receptor. A graphical representation of the 25° rule is illustrated in Figure 5.1 below.



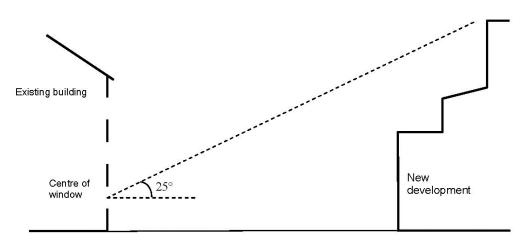


Figure 5.1 – Graphical representation of the 25° Rule (indicative buildings used for illustration purposes only)

As part of this assessment a digital three dimensional model of the study area has been created for both the 'pre' and 'post' development scenarios. Images of these models are shown by the drawings appended to this report.

Using the 3D model it is possible to identify all windows having an obstruction angle greater than 25°. Impacts to these windows are therefore deemed to be negligible in line with the criteria set out within the BRE Guidelines.

There are, however, circumstances where the 25° degree rule is not wholly appropriate, for example where the development facing the window does not create a uniform obstruction along the skyline, or where the proposals are not directly adjacent to the receptor window. In these situations professional judgement is used to differentiate between windows that require more detailed analysis and those that will clearly not be impacted. Where any level of uncertainty exists, the window is taken forward for detailed analysis.

Windows serving non-habitable spaces are not included within the assessment as these are not identified by planning policy or by the BRE Guidelines to be sensitive to changes in daylight and sunlight. Therefore, as part of the identification of sensitive receptor process, the use of each room is, where possible, established and windows serving non-habitable spaces such as toilets, store rooms, stairwells and circulation spaces are identified.

Windows serving rooms within commercial premises are assumed to be non-habitable and in accordance with the BRE Guidelines are not identified as sensitive receptors. However, there are special cases where it can be assumed that some non-domestic uses could be deemed to have a reasonable expectation of daylight and therefore could be taken forward for more detailed analysis. Typically these could be school classrooms, hospital wards, art studios etc, but professional judgement is generally relied upon to determine this and where considered appropriate, windows serving commercial premises are included.



Drawings showing the location of all sensitive receptors that have been assessed as part of this study is included in Appendix A.2 of this report.

In summary, habitable rooms in the following residential buildings have been identified as potential sensitive receptors and have therefore been tested.

- Belsize Square Synagogue
- 3 Belsize Square
- 4 Belsize Square
- 5 Belsize Square
- 6 Belsize Square
- 46 Belsize Square
- 47 Belsize Square
- 48 Belsize Square
- 49 Belsize Square
- 50 Belsize Square

#### 5.3 Numerical Modelling

The numerical analysis used in this assessment has been undertaken using the Waldrum Tools (Version 2) software package.

#### 5.4 Calculation Assumptions

The following assumptions have been made when undertaking the analysis:

- When assessing the VSC the calculation is based on the centre point of the window position
- When assessing the ADF for internal rooms and in the absence of specific information, the following parameters are assumed:
  - Glazing type is assumed to be double glazing (Pilkington K Glass 4/16/4 Argon filled) with a light transmittance value of 0.75 (value for double glazed unit not per pane)
  - Correction factor for frames and glazing bars = 0.8
  - Where information from the designer is not available, the following values are used to derive the Maintenance Factor applied to the transmittance values.



| Location / setting | Building type (Residential – good maintenance) | Exposure (normal) | Special exposure | Maintenance<br>Factor |
|--------------------|--|-------------------|------------------|-----------------------|
| Urban              | 8%   | x 1.0             | x 1.0            | 0.94                  |
| Rural / suburban   | 4%   | x 1.0             | x 1.0            | 0.97                  |

Table 5.1 – Parameters used for deriving Maintenance Factor (refer to BS 8206-2:2008 Tables A3, A4 and A5

The reflectance values used in the ADF analysis are as shown in Table 5.3 unless specified otherwise by the designer.

| Surface                                | Value |
|--|-------|
| Grass                                  | 10%   |
| Pavement                               | 20%   |
| External brickwork                     | 30%   |
| External walls (concrete)              | 40%   |
| External rendered wall (painted white) | 60%   |
| Internal walls (painted pale cream)    | 81%   |
| Internal ceiling (painted white)       | 85%   |
| Internal flooring                      | 30%   |

Table 5.2 – Reflectance values used in ADF analysis

- Where information on internal room layouts of adjacent properties is not known, best estimates as to room layout and size have been made in order to undertake ADF and/or No Skyline analysis
- Where the internal arrangements and room uses have been estimated, it should be noted that this has no bearing upon the tests for VSC or APSH because the reference point is at the centre of the window being tested and windows have been accurately drawn from the survey information. It is relevant to the daylight distribution assessment, but in the absence of suitable plans, estimation is a conventional approach.
- In areas where survey data has not been provided or needs to be supplemented with additional information, photographs, OS mapping and brick counts have been used in the process of building the 3D model of the surrounding and existing buildings.
- When analysing the effect of the new building on the existing buildings, the shading effect of the existing trees has been ignored. This is the recommended practice where



deciduous trees that do not form a dense belt or tree line are present (BRE Guidelines – Appendix H). This is because daylight is at its scarcest and most valuable in the winter when most trees will not be in leaf.

In situations where windows are deeply set-back beneath balconies or other overhanging features, it is common for these rooms to have low VSC values as a result of the obstruction caused by the balcony. It widely accepted and acknowledged within the BRE Guidelines that the presence of balconies can mask the impact of a proposed development when using the VSC test and therefore the Guidelines suggest that the window should be tested both 'with' and 'without' the balcony in place. If the ratio of change with the development in place, but with the balconies removed, remains above 0.8, then it can be concluded that it is the presence of the balcony rather than the introduction of a new building that is the main factor in the relative loss of light.

#### 5.5 Assessment criteria

The numerical assessment criteria specified within the BRE Guidelines is designed to identify the threshold at which point a change in daylight or sunlight would become 'noticeable' to the occupants. Consequently, where the results of the daylight/sunlight analysis demonstrate compliance with the BRE criteria it can be concluded that the impact will be negligible.

However, a point that should be stressed here is that 'noticeable' does not necessarily equate to 'unacceptable' and the BRE's standard target values should not always be considered as pass/fail criteria. Whilst the BRE Guidelines provide numerical guidance for daylight, sunlight and overshadowing, these criteria should not be seen as absolute targets since, as the document states, the intention of the guide is to help rather than constrain the designer. The Guide is not an instrument of planning policy, therefore whilst the methods given are technically robust, it is acknowledged that some level of flexibility should be applied where appropriate.

Consequently, based on the numerical assessment criteria set out with the BRE Guidelines and the use of professional judgment, the following assessment criteria have been established and are used in describing the impacts of the proposed development.



| Significance        | Description  | Typical<br>Change<br>Ratio |
|---------------------|--|----------------------------|
| Negligible          | No alteration or a small alteration from the existing scenario. Results demonstrate full compliance with the BRE assessment criteria and therefore occupants are unlikely to notice any change.  | 1.0 to 0.8                 |
| Minor<br>adverse    | An alteration from the existing scenario which may be marginally noticeable to the occupant. This may include a marginal infringement of the numerical levels suggested in the BRE Guidelines, which should be viewed in context. A typical change ratio for this level of significance would be 0.7 | 0.7 to 0.8                 |
| Moderate<br>adverse | An alteration from the existing scenario which may cause a moderate noticeable change to the occupant. This may consist of a moderate infringement of the numerical BRE assessment criteria with   | 0.6 to 0.7                 |
| Major<br>adverse    | An alteration from the existing scenario which may cause a major noticeable change to the occupant. This may consist of a significant infringement of the numerical BRE assessment criteria.   | Less than 0.6              |

Table 5.3 - Daylight & Sunlight Impact Descriptors



### 6 Daylight Analysis

#### 6.1 Vertical Sky Component Assessment

Using the analytical techniques discussed in Section 4, the VSC for the key receptors has been calculated for the 'pre' and 'post' development conditions. The detailed outputs from the numerical analysis are included in Appendix A.3.

#### 6.2 No Sky Line Assessment

In order to pass the No Sky Line Assessment, the BRE Guidelines state that the area of the working plane within the room that has a view of the sky should not be reduced to less than 0.8 times its former value as a result of new development. One benefit of the daylight distribution test is that the resulting contour plans show where the light falls within a room, both in the existing and proposed conditions, and a judgement may be made as to whether the room will retain light to a reasonable depth.

In this case the dimensions and exact layout of the rooms within the existing buildings are not known. However, in order to gain an understanding of the impact of the proposed development on the daylight distribution within the potentially affected rooms an estimate of the room dimension and layout has been made.

Detailed outputs of the analysis are included in the Appendix A.3 to this report.

#### 6.3 Discussion of Daylighting Impacts

Based on the results of the numerical analysis summarised in the above tables it is possible to draw conclusions as to the impacts that the proposed development will have on the neighbouring buildings. These are discussed as follows:

#### **Vertical Sky Component**

The BRE Guidelines operate on the general principle where the retained VSC is 27% or greater, or where the VSC is below 27% and is not reduced to less than 0.8 times its former value, then the reduction in daylight is unlikely to be noticeable to the building's occupants and thus the impact can be deemed negligible.

Based on the results of the analysis included in Appendix A.3 it can be seen that all of the windows either retain a VSC value greater than 27% post development, or have a ratio of change that is 0.8 or above and therefore are fully compliant. Consequently, in line with the assessment criteria set out within the BRE Guidelines it is possible to conclude that the impact will be **negligible**.

#### No Sky Line

The BRE Guidelines state that, if following the construction of a new development, the no sky line moves such that the area of the room that does receive direct skylight is reduced to less than 0.8



times its former value, this will be noticeable to the occupants, and more of the room will appear poorly lit.

From these results, it can be seen that as a result of the proposed development the area of the working plane within the assessed rooms that receives direct light from the sky will not be reduced to an extent such that the ratio of change is significantly less than the 0.8 recommended value.

Consequently, from this analysis it can be concluded that there will be no alteration or a small alteration from the existing scenario. The results demonstrate full compliance with the BRE assessment criteria and therefore occupants are unlikely to notice any change and the impact can be concluded as being **negligible**.



### 7 Sunlight and Overshadowing Analysis

#### 7.1 Annual Probable Sunlight Hours Assessment

Whilst the application of the four-stage assessment outlined in Section 4.5 allows the use of the more simplistic tests (Tests 1 to 3) to be used where applicable, when using a computational numerical model, it is a more robust and efficient approach to test all windows using the most detailed methodology. Consequently, for all windows that do not face within 90 degrees of due north, the APSH values have been calculated.

To pass this test the centre point of the window will need to receive more than one quarter of APSH, including at least 5% APSH in the winter months between 21st September and the 21st March. The BRE Guidelines state that if 'post-development' the available sunlight hours are both less than the amount above and less than 0.8 times their 'pre-development' value, either over the whole year or just within the winter months, then the occupants of the existing building will notice the loss of sunlight.

The APSH test has been carried out and the detailed results of the analysis and model outputs are included in Appendix A.3.

The assessment requirements set out in the BRE Guidelines have been reiterated below. For the assessment to conclude that the sunlighting of the existing dwelling could be adversely affected, <u>all three</u> of the following tests need to have been failed:

- a) Does the window receive less than 25% of the APSH, or less than 5% the APSH between 21st September and 21st March?
- b) Does the assessed window receive less than 0.8 times its former sunlight hours during either the 'whole year' or 'winter' period?
- c) Is the reduction in sunlight received over the whole of the year greater than 4% of the APSH?

When the results of the APSH analysis included in Appendix A.3 are inspected, it can be seen that in all cases the 'all year' sunlight hours with the development in place remain above the 25% threshold and the winter value is well above 5%

However, when examining the ratio of change between the existing and proposed scenarios it can be seen that whilst in all cases there is very little change over the whole year, there is a reduction during the winter months that reduces the ratio to less than 0.8. This is not unusual for any development in an urban environment because the sun is low in the sky during the winter months and therefore surrounding windows are sensitive to any change to the surrounding skyline.



Notwithstanding this, for the proposed development to be considered to have an adverse effect on the available sunlight, all three tests would need to have been failed. Given that in all of the above cases at least one test is passed then the BRE assessment criteria are met. Consequently, it can be concluded that the impact of the proposed development will be **negligible**.



### 8 Conclusions

The detailed analysis undertaken as part of this assessment has examined the impact of the proposed development on the amount of daylight enjoyed by the neighbouring buildings. In line with the assessment criteria prescribed by the BRE Guideline, it has been shown that the reduction in daylighting to the windows of the neighbouring buildings is less than the value that is considered to represent a notable impact.

The assessment of the impact of the proposed development on the sunlight enjoyed by the neighbouring buildings has also shown that whilst there will be a reduction in the number of probable sunlight hours enjoyed by these windows, this reduction is again within the limits prescribed by the BRE Guidelines as being acceptable.

In summary, the development proposals have been appraised in line with the guidelines set out in the BRE document. When assessed against the criteria for establishing whether the proposed development will have a significant impact, it has been possible to conclude that the development will not result in a notable reduction in the amount of either daylight or sunlight enjoyed by the neighbouring buildings.



# A Appendices

- A.1 Appendix A.1 Scheme Drawings
- A.2 Appendix A.2 Graphical Model Outputs
- A.3 Appendix A.3 Tabulated Results for Daylight & Sunlight Calculations



# Appendix A.1 – Scheme Drawings

Ground Floor

scale 1:200 @ A3

Rev Date By Note X00 XX.XX.XX XX XXXXXXXXXXX

| Client The Diocese of London | Title Drawing Proposed Plan Ground Floor |          |
|------------------------------|--|----------|
| Project                      | Scale                                    | Revision |

BELSIZE SQUARE

1:200 @ A3 10-16 St Peter's **Date** 16.12.2015 **Belsize Square** Drawn Checked



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First Floor scale 1:200 @ A3

| Rev | Date     | Ву | Note         |
|-----|----------|----|--------------|
| X00 | XX.XX.XX | XX | XXXXXXXXXXXX |

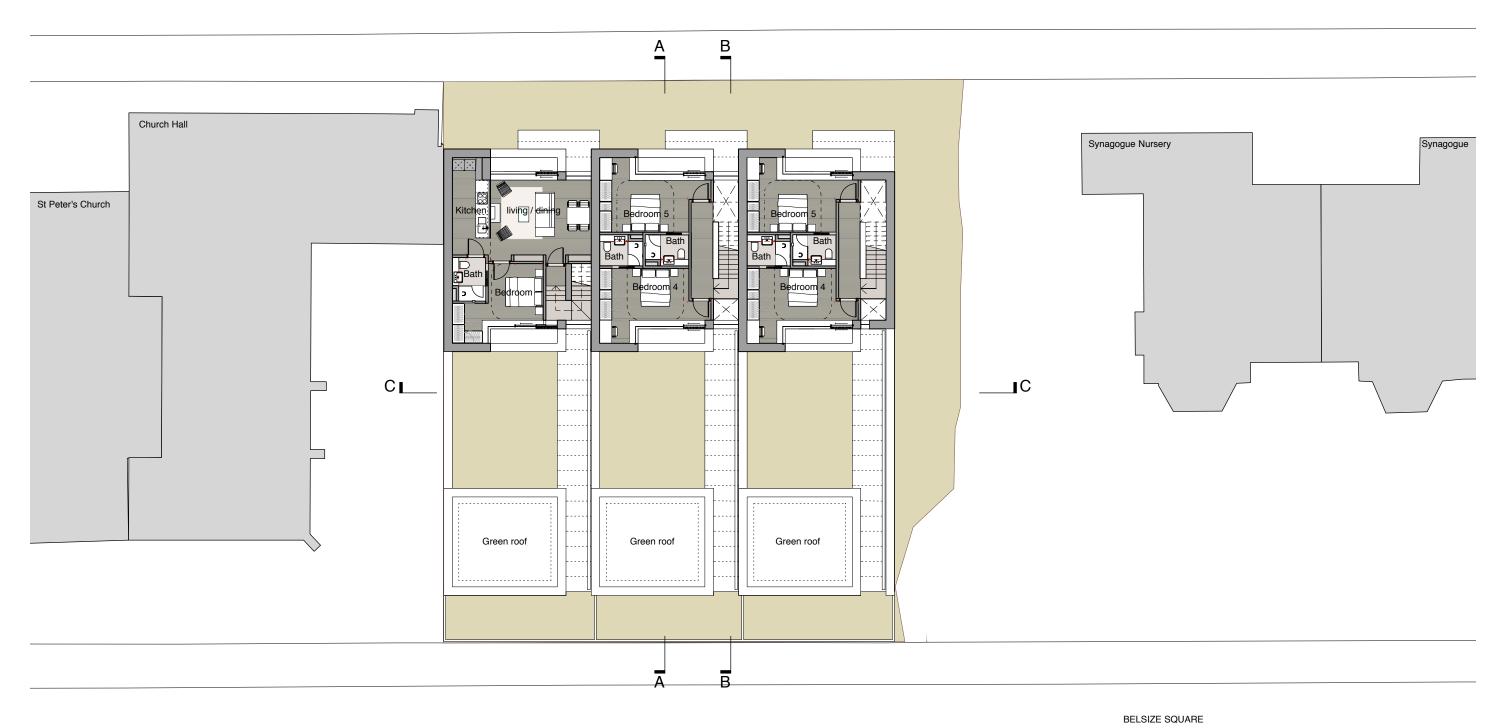
| Client The Diocese of London | Title Drawing Proposed First Floor |              |          |
|------------------------------|------------------------------------|--------------|----------|
| Project                      | <b>Scale</b>                       |              | Revision |
| 10-16 St Peter's             | 1:200 @ A3                         |              | -        |
| Belsize Square               | Date                               | <b>Drawn</b> | Checked  |
|                              | 16.12.2015                         | JG           | GM       |

BELSIZE SQUARE



Drawing Status Drawing No **Planning** 1984-01-DRG-101 NAYLOR

JOHN<u>S</u>ON



Second Floor scale 1:200 @ A3

By Note X00 XX.XX.XX XX XXXXXXXXXXX

Title Drawing
Proposed Plan Client
The Diocese of London Second Floor

**Scale** 1:200 @ A3 Revision 10-16 St Peter's Belsize Square **Date** 16.12.2015 **Drawn** JG **Checked** GM JOHN<u>S</u>ON NAYLOR

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Drawing Status **Planning** 

Drawing No 1984-01-DRG-102



Roof Plan

scale 1:200 @ A3

| Rev | Date     | Ву | Note          |
|-----|----------|----|---------------|
| X00 | XX.XX.XX | XX | XXXXXXXXXXXXX |

| <b>Scale</b><br>1:200 @ A3 |            | Revision               |
|----------------------------|------------|------------------------|
| Date                       | Drawn      | Checked                |
| _                          | 1:200 @ A3 | 1:200 @ A3  Date Drawn |



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NAYLOR

JOHN<u>S</u>ON

# 01 North Elevation

Proposed scale 1:100 @ A3

 Client
The Diocese of London

Title Drawing
North Elevation
Proposed

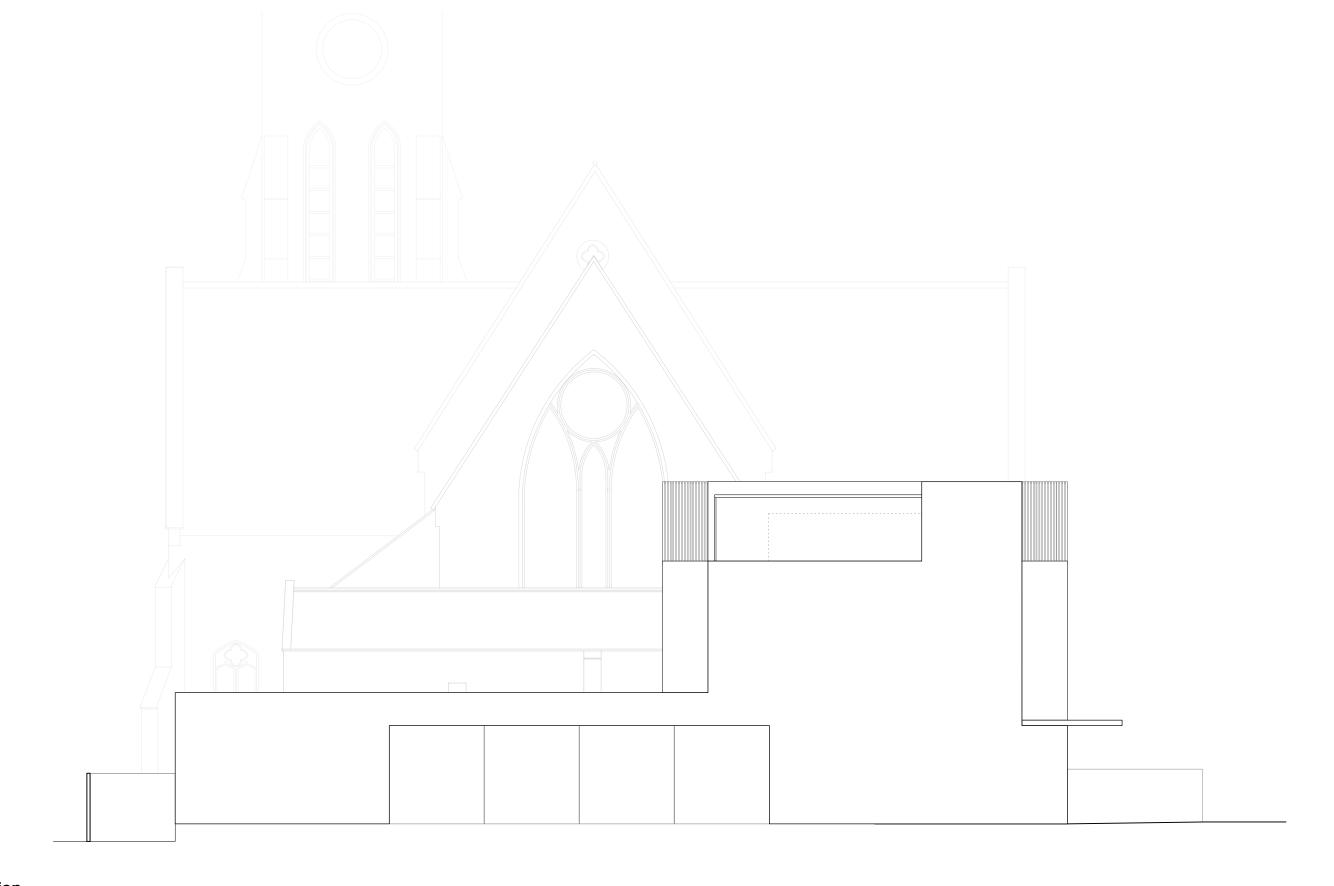
 
 Project
 Scale 1:100 @ A3
 Revision

 10-16 St Peter's

 Belsize Square
 Date Drawn 16.12.2015
 Drawn GM
 Checked GM
 JOHN<u>S</u>ON NAYLOR

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# 01 East Elevation

Proposed scale 1:100 @ A3

| nt     |             |                     |
|--------|-------------|---------------------|
| Dioces | e of London |                     |
|        |             |                     |
|        |             |                     |
|        |             | e Diocese of London |

# Title Drawing East Elevation Proposed

| Scale      |       | Revision |
|------------|-------|----------|
| 1:100 @ A3 |       | -        |
| Date       | Drawn | Checked  |
| 16.12.2015 |       |          |



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10-16 St Peter's

Belsize Square

# 01 South Elevation

Proposed scale 1:100 @ A3

By Note X00 XX.XX.XX XX XXXXXXXXXXX Client
The Diocese of London

Project

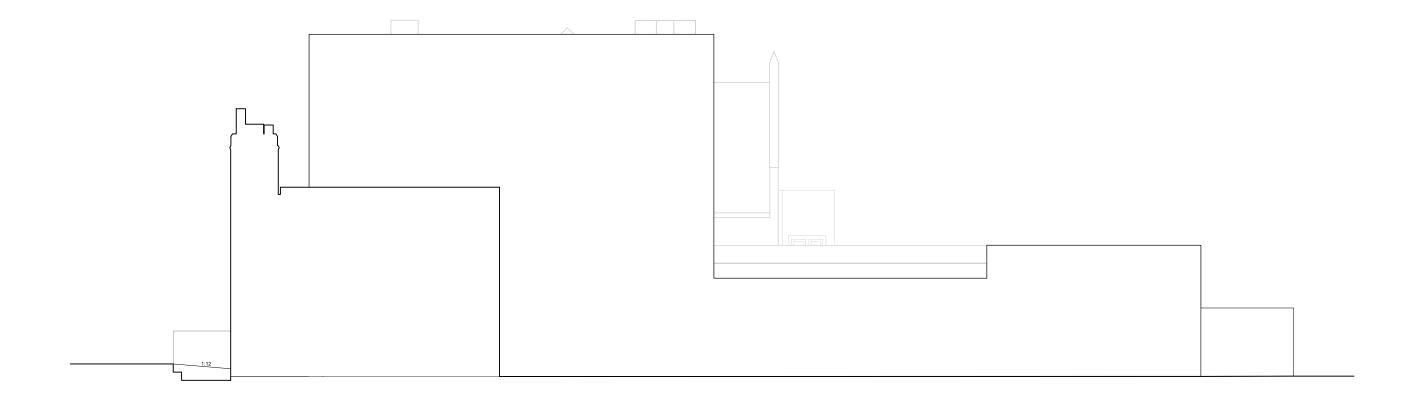
Title Drawing
South Elevation Proposed

Drawing No 1984-01-DRG-202

Scale 1:100 @ A3 Revision 10-16 St Peter's Belsize Square **Date** 16.12.2015 **Drawn** JG **Checked** GM JOHN<u>S</u>ON NAYLOR

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# 01 West Elevation

Proposed scale 1:100 @ A3

| Client The Dio | ese of I  | ondon    |  |
|----------------|-----------|----------|--|
| THE DIO        | ,030 01 1 | -0114011 |  |
| Project        |           |          |  |

10-16 St Peter's

Belsize Square

Title Drawing
West Elevation
Proposed

Scale
1:100 @ A3

Date
Drawn
16.12.2015

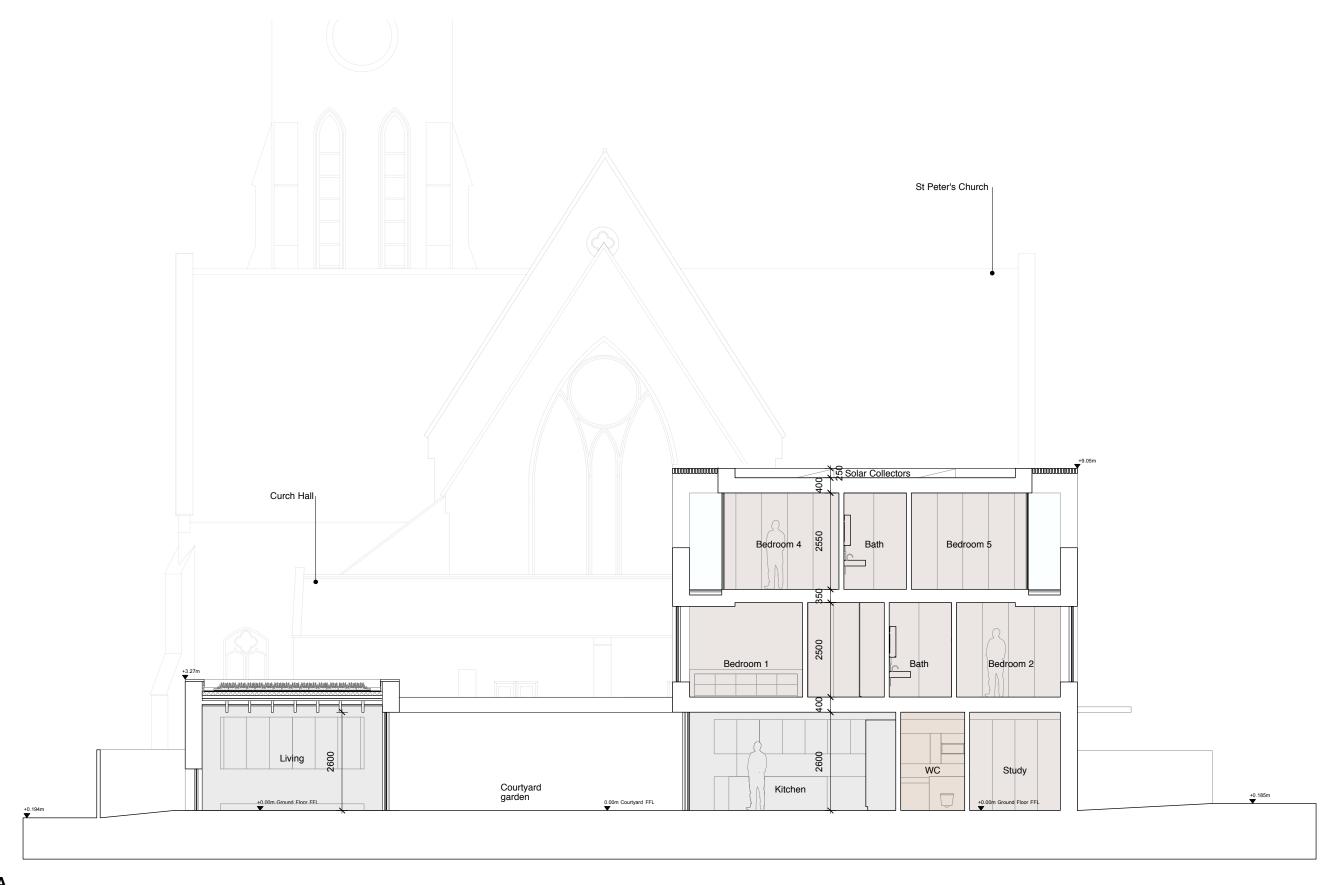
DG
GM



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Drawing Status Drawing No
Planning 1984-01-DRG-203



#### 01 Section AA

Proposed scale 1:100 @ A3

| Client The Diocese of London | Title Drawing Section AA Proposed |          |
|------------------------------|-----------------------------------|----------|
| Project                      | Scale                             | Revision |
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**Date** 16.12.2015

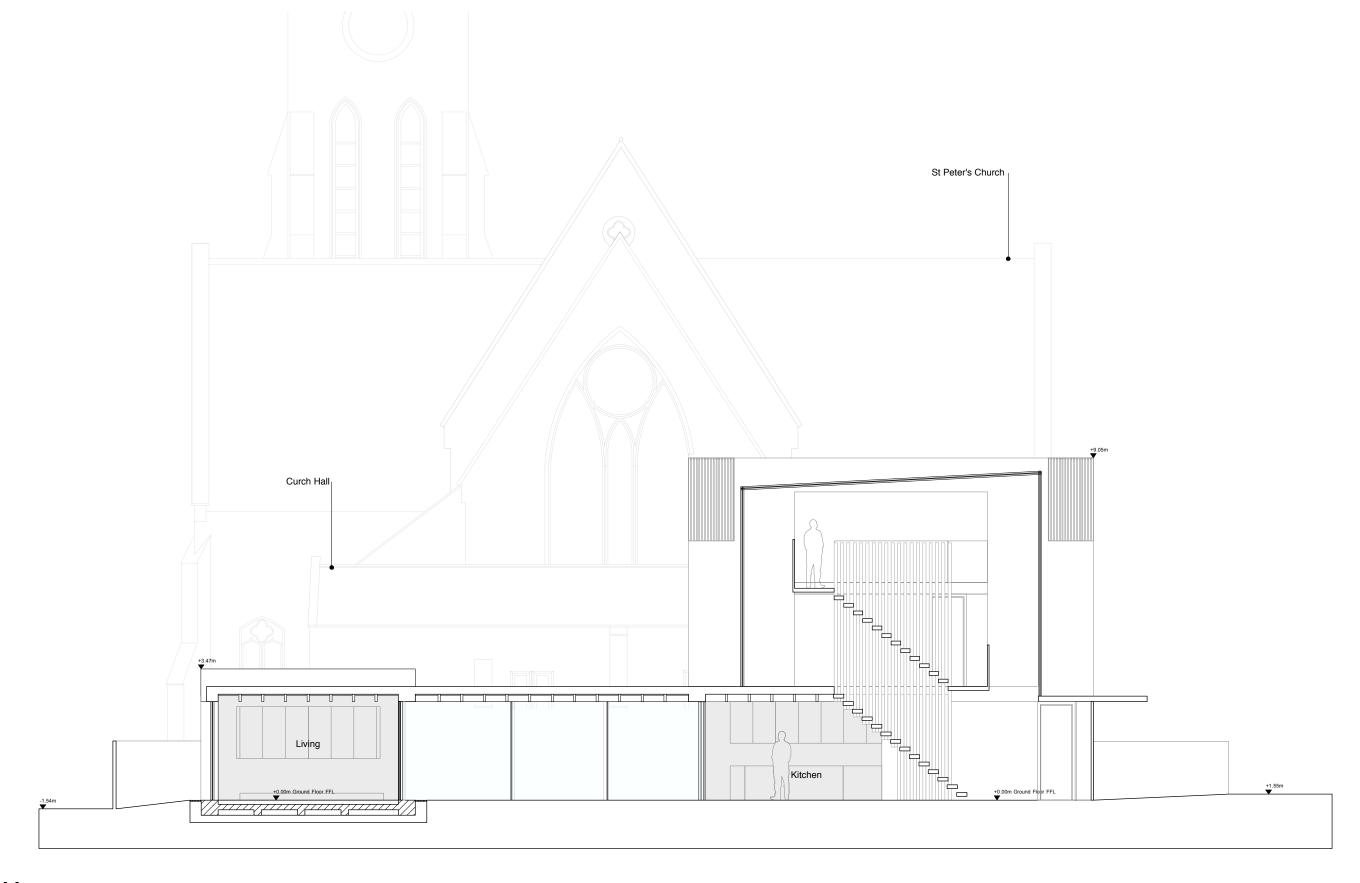
**Drawn** JG **Checked** GM



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Belsize Square



### 01 Section AA

Proposed scale 1:100 @ A3

| Client The Diocese of London | Title Drawing Section BB Proposed |      |
|------------------------------|-----------------------------------|------|
| Project                      | Scale                             | Revi |
| 10-16 St Peter's             | 1:100 @ A3                        | -    |

**Date** 16.12.2015

**Drawn** JG **Checked** GM



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Belsize Square

Drawing Status Drawing No
Planning 1984-01-DRG-301

#### 01 Section CC

Proposed scale 1:100 @ A3

 Client
The Diocese of London

Title Drawing
Section CC
Proposed

 Scale
 Revision

 1:100 @ A3

 Date
 Drawn
 Checked

 16.12.2015
 JG
 GM

JOHN<u>S</u>ON NAYLOR

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Drawing Status
Planning

10-16 St Peter's

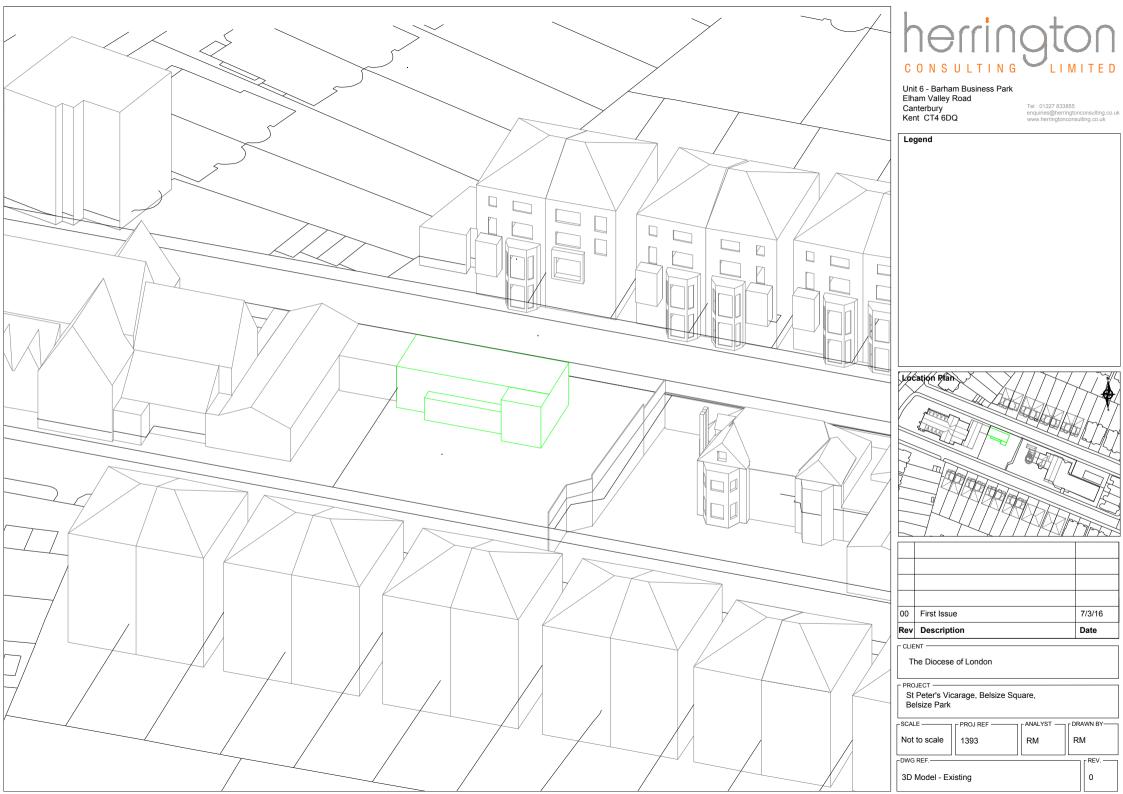
Belsize Square

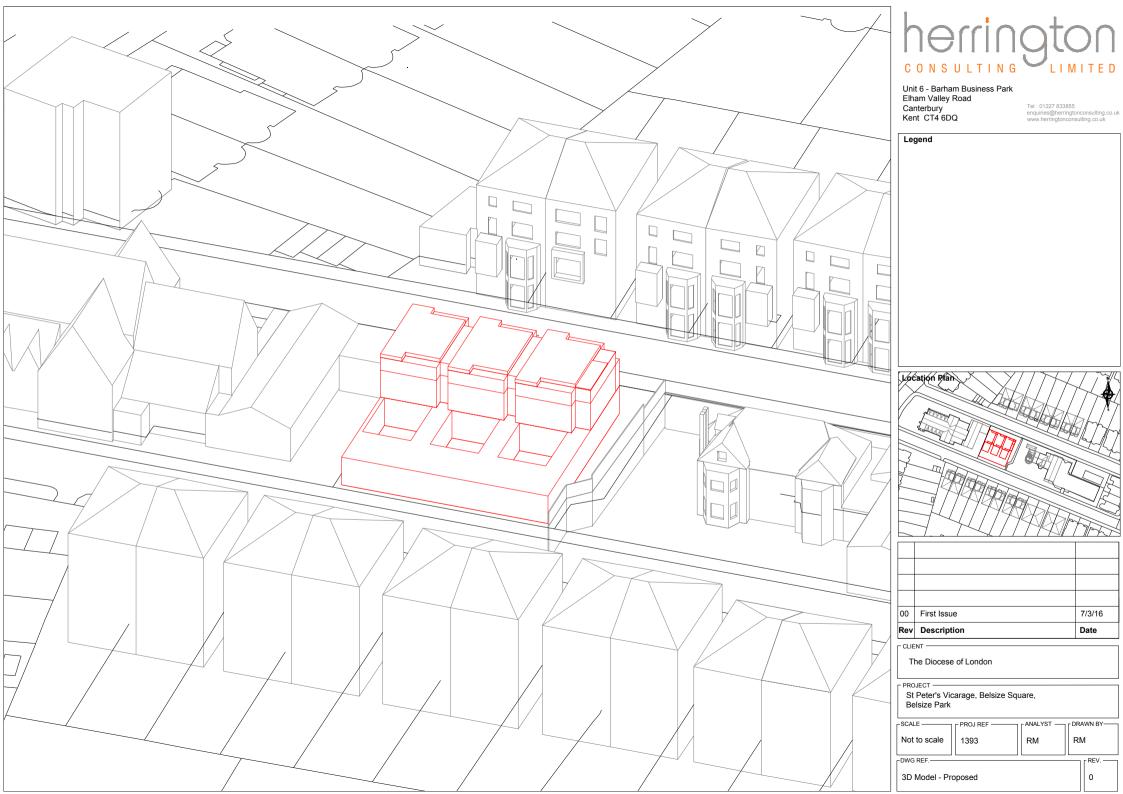
Project

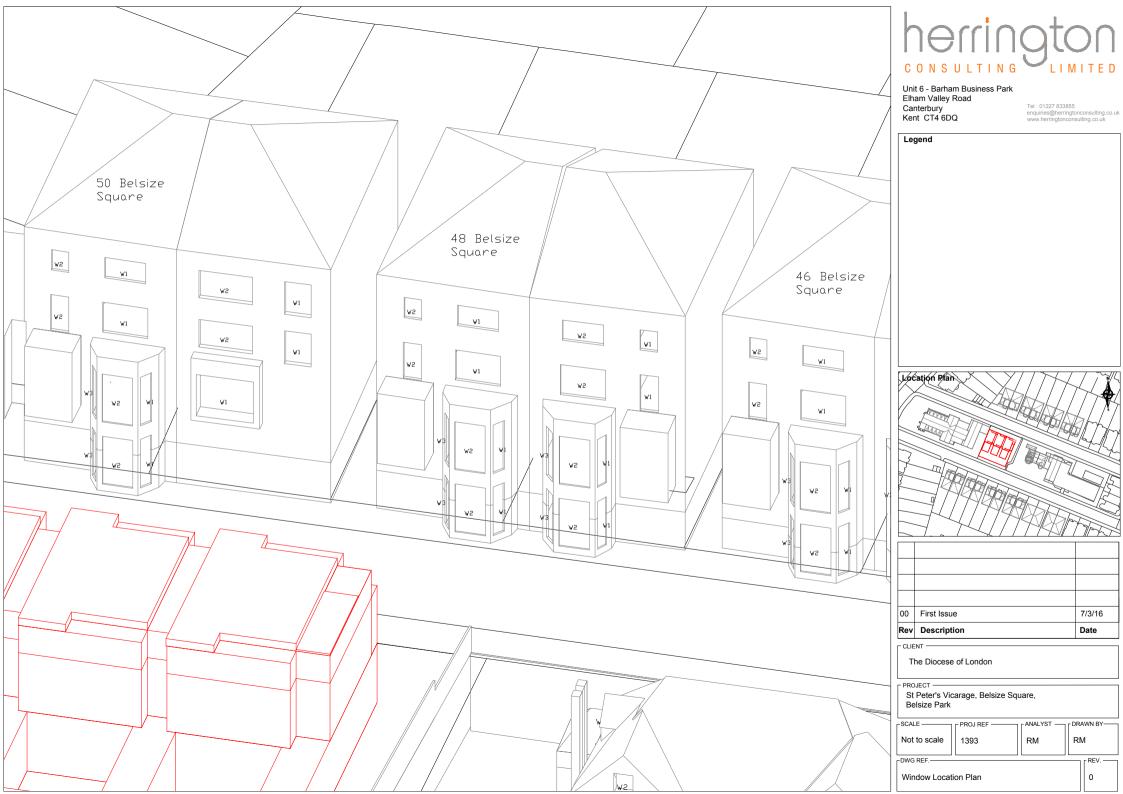
Copyright Johnson Naylor. All dimensions to be Checked on Site by Contractor. DO NOT SCALE.



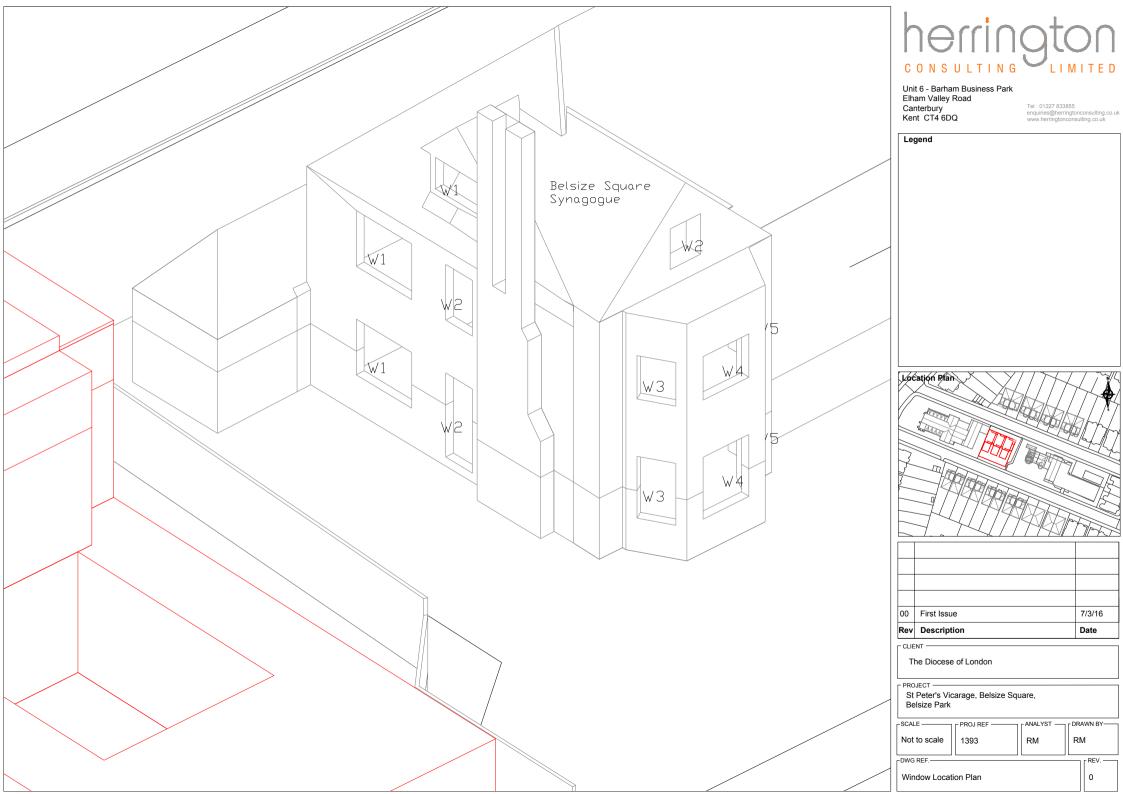
## **Appendix A.2 – Graphical Model Outputs**









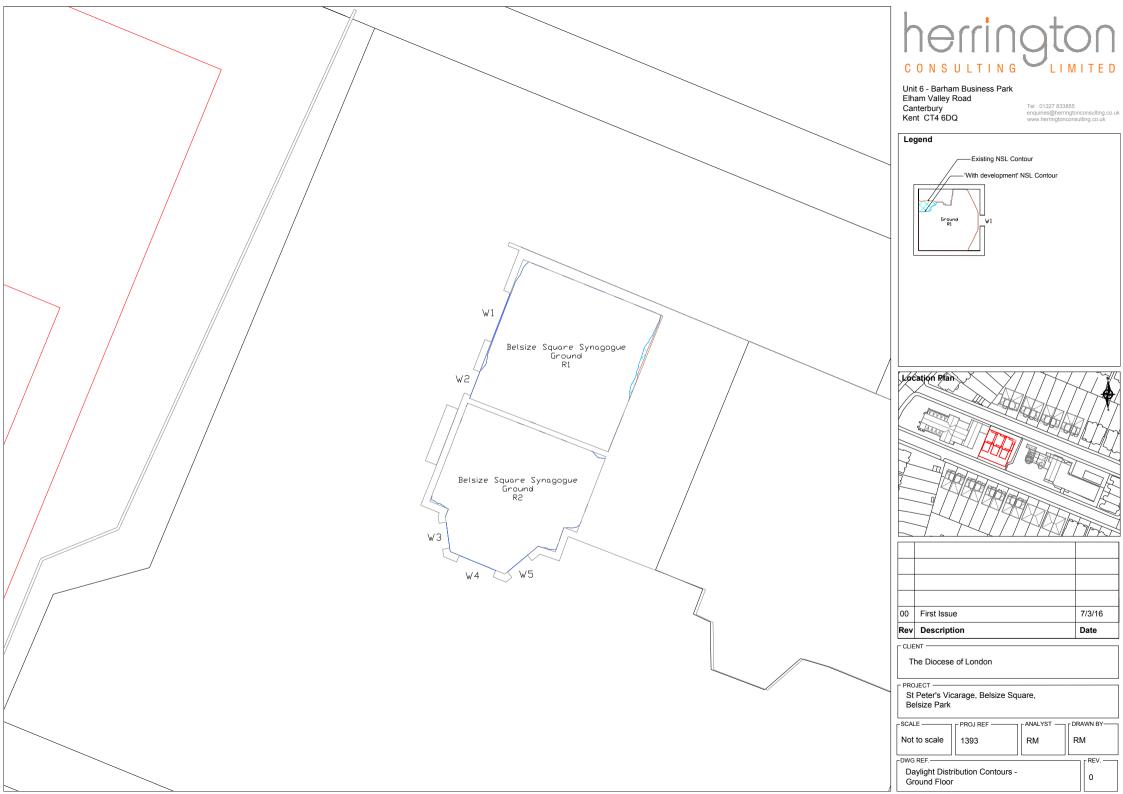


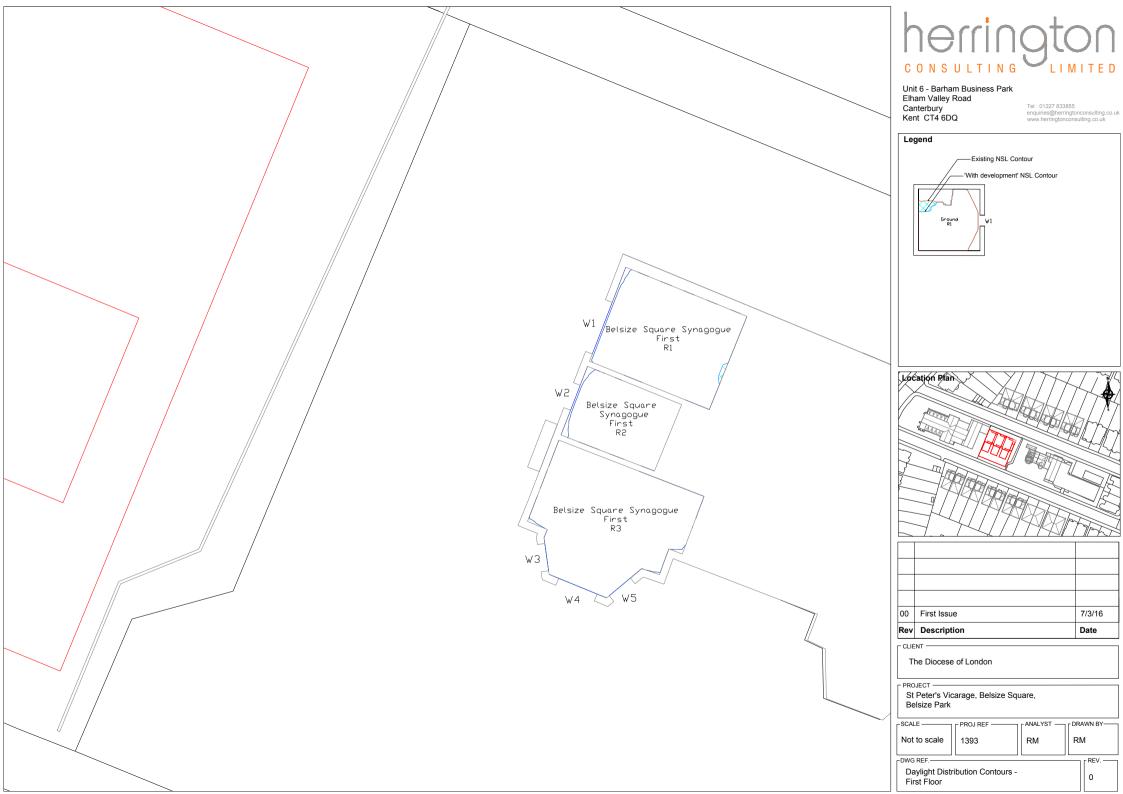




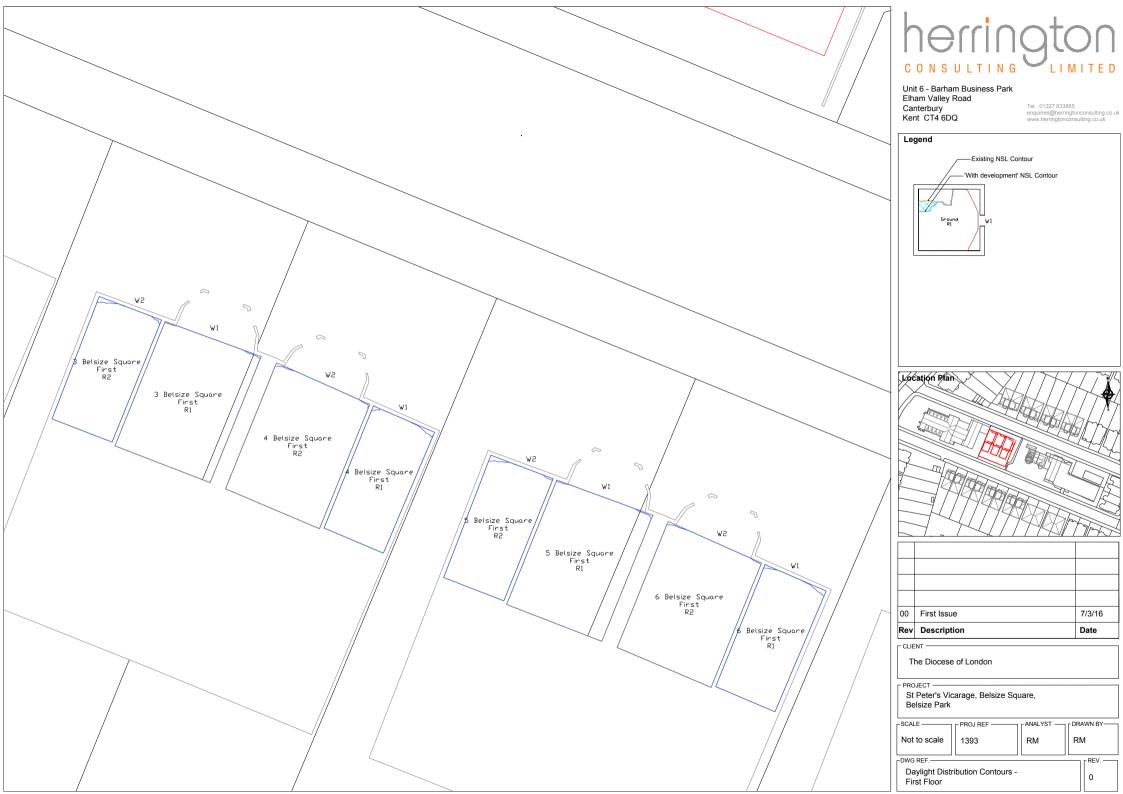


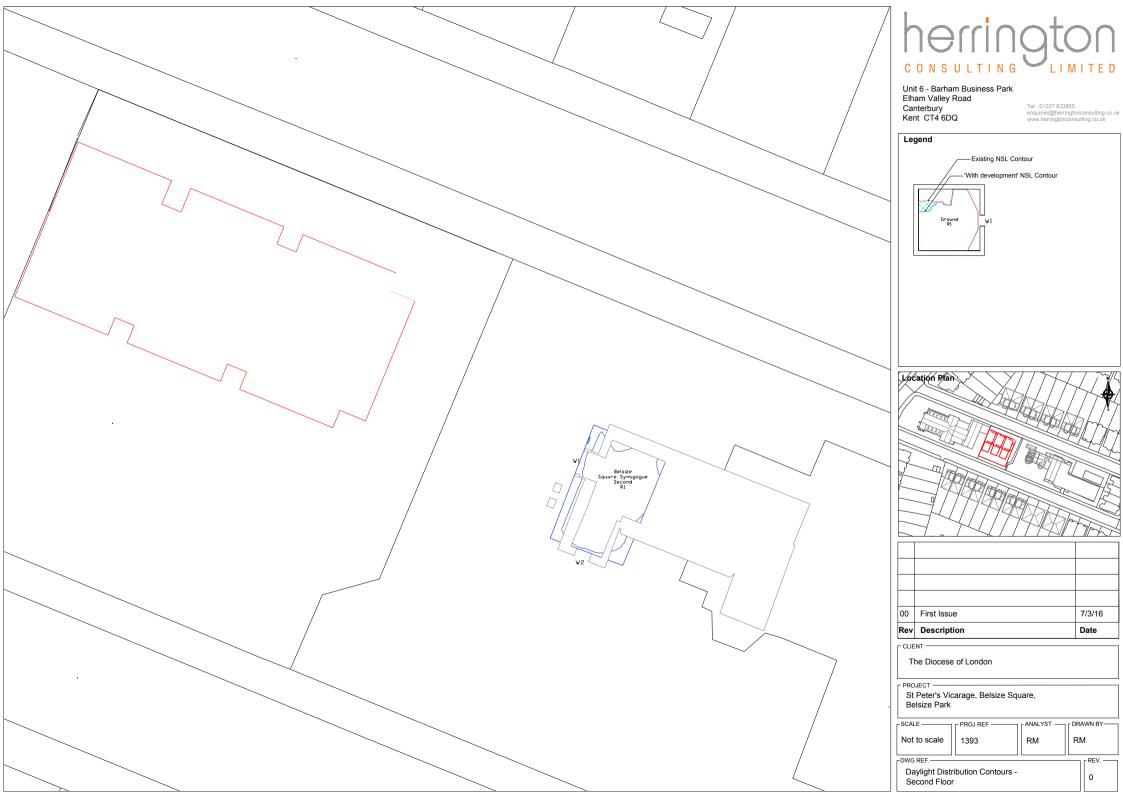














# Appendix A.3 – Tabulated Results for Daylight and Sunlight Calculations

Project Name: St Peter's Vicarage, Belsize Square, Belsize Park
Project No: 1393
Report Title: Daylight & Sunlight Assessment for the Proposed Development at St Peter's Vicarage, Belsize Square, Belsize Park
Architect: Johnson Naylor
Scheme Iteration No: n/a
Iteration Description: n/a
Date of Analysis: 07/03/2016
Key drawings: n/a

| Floor       | Doom | Doom                | Doom Hoo          | Mindow         | Cooperio             | VICC               | Difference | Dage / Fail | Aveilable       | Cumbinabil | launa  | _        | _       | _      | D               | oom      |
|-------------|------|---------------------|-------------------|----------------|----------------------|--------------------|------------|-------------|-----------------|------------|--------|----------|---------|--------|-----------------|----------|
|             |      | Room<br>Description |                   | Window<br>Ref. |                      |                    | Difference |             | Available       |            | Pass / | Winter   |         | Pass / |                 | oom      |
|             |      |                     |                   |                |                      |                    |            |             | %               | Diff       | Fail   | %        | Diff    | Fail   | Annual %        | Winter   |
|             |      |                     |                   |                | Belsi                | ze Squar           | e Synagogu | e           |                 |            |        |          |         |        |                 |          |
| round       | R1   | Flat1               | Class Room        | W1             | Existing             | 26.77              | 0.00       | DACC        |                 | **!!-*     |        |          | ****    |        |                 |          |
| round       | R1   | Flat1               | Class Room        | W2             | Proposed<br>Existing | 23.69<br>25.41     | 0.88       | PASS        |                 | *North*    |        |          | *North* |        | 22              | 2        |
| round       | R2   | Flat1               | Class Room        | W3             | Proposed<br>Existing | 22.67<br>27.3      | 0.89       | PASS        | 40              | *North*    |        | 9        | *North* |        | 22              | 2        |
|             |      |                     |                   |                | Proposed             | 25.98              | 0.95       | PASS        | 40              | 1.00       | PASS   | 9        | 1.00    | PASS   |                 |          |
| round       | R2   | Flat1               | Class Room        | W4             | Existing<br>Proposed | 29.73<br>29.69     | 1.00       | PASS        | <b>70</b><br>70 | 1.00       | PASS   | 18<br>18 | 1.00    | PASS   |                 |          |
| round       | R2   | Flat1               | Class Room        | W5             | Existing<br>Proposed | 24.96<br>24.96     | 1.00       | PASS        | <b>55</b><br>55 | 1.00       | PASS   | 18<br>18 | 1.00    | PASS   | <b>72</b><br>72 | 18<br>18 |
| irst        | R1   | Flat1               | Class Room        | W1             | Existing<br>Proposed | 34.38<br>30.4      | 0.88       | PASS        |                 | *North*    |        |          | *North* |        | 30<br>24        | 4        |
| irst        | R2   | Flat1               | Class Room        | W2             | Existing             | 33.42              |            |             |                 |            |        |          |         |        | 24              | 3        |
| irst        | R3   | Flat1               | Class Room        | W3             | Proposed<br>Existing | 29.61<br>32.4      | 0.89       | PASS        | 47              | *North*    |        | 12       | *North* |        | 22              | 3        |
| irst        | R3   | Flat1               | Class Room        | W4             | Proposed<br>Existing | 30.78<br>32.78     | 0.95       | PASS        | 47<br><b>79</b> | 1.00       | PASS   | 12<br>24 | 1.00    | PASS   |                 |          |
| irst        | R3   | Flat1               | Class Room        | W5             | Proposed<br>Existing | <b>32.74</b> 30.69 | 1.00       | PASS        | 79<br><b>67</b> | 1.00       | PASS   | 24<br>24 | 1.00    | PASS   | 86              | 25       |
|             |      |                     |                   |                | Proposed             | 30.69              | 1.00       | PASS        | 67              | 1.00       | PASS   | 24       | 1.00    | PASS   | 86              | 25       |
| econd       | R1   | Flat1               | Staff Common Room | W1             | Existing<br>Proposed | 34.77<br>33.06     | 0.95       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| econd       | R1   | Flat1               | Staff Common Room | W2             | Existing<br>Proposed | 35.29<br>35.29     | 1.00       | PASS        | <b>82</b><br>82 | 1.00       | PASS   | 27<br>27 | 1.00    | PASS   | <b>83</b><br>82 | 27<br>27 |
|             |      |                     |                   |                |                      | 3 Belsize          |            |             |                 |            |        |          |         |        |                 |          |
| -1          | D4   | Fl-14               |                   | 14/4           |                      |                    | Square     |             |                 |            |        |          |         |        |                 |          |
| elow Ground | R1   | Flat1               | LD                | W1             | Existing<br>Proposed | 27.31<br>26.22     | 0.96       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| elow Ground | R1   | Flat1               | LD                | W2             | Existing<br>Proposed | 33.28<br>31.86     | 0.96       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| elow Ground | R1   | Flat1               | LD                | W3             | Existing<br>Proposed | 25.36<br>24.97     | 0.98       | PASS        |                 | *North*    |        |          | *North* |        | 14<br>14        | 0        |
| round       | R1   | Flat1               | LD                | W1             | Existing             | 30.09              |            |             |                 |            |        |          |         |        | 14              | 0        |
| round       | R1   | Flat1               | LD                | W2             | Proposed<br>Existing | 29.65<br>35.4      | 0.99       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| round       | R1   | Flat1               | LD                | W3             | Proposed<br>Existing | 34.81<br>27.92     | 0.98       | PASS        |                 | *North*    |        |          | *North* |        | 14              | 0        |
| irst        | R1   | Flat1               | LKD               | W1             | Proposed<br>Existing | 27.75<br>37.23     | 0.99       | PASS        |                 | *North*    |        |          | *North* |        | 14<br>14        | 0        |
|             |      |                     |                   |                | Proposed             | 37.16              | 1.00       | PASS        |                 | *North*    |        |          | *North* |        | 14              | 0        |
| rst         | R2   | Flat1               | Bedroom           | W2             | Existing<br>Proposed | 36.92<br>36.9      | 1.00       | PASS        |                 | *North*    |        |          | *North* |        | 14<br>14        | 0        |
|             |      |                     |                   |                |                      | 4 Belsize          | Square     |             |                 |            |        |          |         |        |                 |          |
| elow Ground | R1   | Flat1               | LD                | W1             | Existing             | 27.66              |            |             |                 |            |        |          |         |        |                 |          |
| elow Ground | R1   | Flat1               | LD                | W2             | Proposed<br>Existing | 26.86<br>33.77     | 0.97       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
|             |      |                     |                   |                | Proposed             | 32.03              | 0.95       | PASS        |                 | *North*    |        |          | *North* |        | 4.5             |          |
| elow Ground | R1   | Flat1               | LD                | W3             | Existing<br>Proposed | 25.53<br>24.55     | 0.96       | PASS        |                 | *North*    |        |          | *North* |        | 16<br>16        | 0        |
| round       | R1   | Flat1               | LD                | W1             | Existing<br>Proposed | 30.01<br>29.65     | 0.99       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| round       | R1   | Flat1               | LD                | W2             | Existing<br>Proposed | 35.85<br>35.05     | 0.98       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| round       | R1   | Flat1               | LD                | W3             | Existing             | 28.51              |            |             |                 |            |        |          |         |        | 17              | 1        |
| rst         | R1   | Flat1               | Bedroom           | W1             | Proposed<br>Existing | 28.06<br>37.54     | 0.98       | PASS        |                 | *North*    |        |          | *North* |        | 17<br>14        | 1<br>0   |
| rst         | R2   | Flat1               | LKD               | W2             | Proposed<br>Existing | 37.34<br>37.53     | 0.99       | PASS        |                 | *North*    |        |          | *North* |        | 14<br><b>17</b> | 0        |
|             |      | 11012               |                   |                | Proposed             | 37.37              | 1.00       | PASS        |                 | *North*    |        |          | *North* |        | 17              | 0        |
|             |      |                     |                   |                |                      | 5 Belsize          | Square     |             |                 |            |        |          |         |        |                 |          |
| elow Ground | R1   | Flat1               | LD                | W1             | Existing             | 27.09              |            | B.4.6.6     |                 | *** **     |        |          | *** **  |        | 1               |          |
| elow Ground | R1   | Flat1               | LD                | W2             | Proposed<br>Existing | 26.55<br>34.04     | 0.98       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| elow Ground | R1   | Flat1               | LD                | W3             | Proposed<br>Existing | 32.45<br>26.42     | 0.95       | PASS        |                 | *North*    |        |          | *North* |        | 14              | 0        |
| round       | R1   | Flat1               | LD                | W1             | Proposed<br>Existing | 25.23<br>30.11     | 0.95       | PASS        |                 | *North*    |        |          | *North* |        | 14              | 0        |
|             |      |                     |                   |                | Proposed             | 29.79              | 0.99       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| round       | R1   | Flat1               | LD                | W2             | Existing<br>Proposed | 36.09<br>35.11     | 0.97       | PASS        |                 | *North*    |        |          | *North* |        |                 |          |
| round       | R1   | Flat1               | LD                | W3             | Existing<br>Proposed | 28.62<br>27.89     | 0.97       | PASS        |                 | *North*    |        |          | *North* |        | 14<br>14        | 0        |
| rst         | R1   | Flat1               | LKD               | W1             | Existing             | 37.66              |            |             |                 |            |        |          |         |        | 14              | 0        |
| rst         | R2   | Flat1               | Bedroom           | W2             | Proposed<br>Existing | 37.34<br>37.54     | 0.99       | PASS        |                 | *North*    |        |          | *North* |        | 14<br>14        | 0        |
|             |      |                     |                   |                | Proposed             | 37.2               | 0.99       | PASS        |                 | *North*    |        |          | *North* |        | 14              | 0        |

|              |    |       |             |      |                      | 6 Belsize S             | Square |      |              |        |          |         |          |                 |          |
|--------------|----|-------|-------------|------|----------------------|-------------------------|--------|------|--------------|--------|----------|---------|----------|-----------------|----------|
| Below Ground | R1 | Flat1 | LD          | W1   | Existing             | 27.42                   |        |      |              |        |          |         |          |                 |          |
| Below Ground | R1 | Flat1 | LD          | W2   | Proposed<br>Existing | 27.27<br>34.06          | 0.99   | PASS | *Nor         | th*    |          | *North* |          |                 |          |
|              |    |       |             |      | Proposed             | 32.83                   | 0.96   | PASS | *Nor         | th*    |          | *North* |          | 4.6             |          |
| Below Ground | R1 | Flat1 | LD          | W3   | Existing<br>Proposed | 26.37<br>25.11          | 0.95   | PASS | *Nor         | th*    |          | *North* |          | 16<br>16        | 0        |
| Ground       | R1 | Flat1 | LD          | W1   | Existing<br>Proposed | 30.06<br>29.98          | 1.00   | PASS | *Nor         | th*    |          | *North* |          |                 |          |
| Ground       | R1 | Flat1 | LD          | W2   | Existing<br>Proposed | 36.25<br>35.39          | 0.98   | PASS | *Nor         | +h*    |          | *North* |          |                 |          |
| Ground       | R1 | Flat1 | LD          | W3   | Existing             | 29.08                   |        |      |              |        |          |         |          | 18              | 1        |
| First        | R1 | Flat1 | Bedroom     | W1   | Proposed<br>Existing | 28.22<br>37.78          | 0.97   | PASS | *Nor         | th*    |          | *North* |          | 18<br><b>14</b> | 1<br>0   |
| First        | R2 | Flat1 | LKD         | W2   | Proposed<br>Existing | 37.48<br>37.79          | 0.99   | PASS | *Nor         | th*    |          | *North* |          | 14<br><b>17</b> | 0        |
|              |    |       |             |      | Proposed             | 37.49                   | 0.99   | PASS | *Nor         | th*    |          | *North* |          | 17              | 0        |
|              |    |       |             |      | 4                    | 16 Belsize              | Square |      |              |        |          |         |          |                 |          |
| Below Ground | R1 | Flat1 | LD          | W1   | Existing             | 26.97                   |        |      | 59           |        | 21       |         |          |                 |          |
| Below Ground | R1 | Flat1 | LD          | W2   | Proposed<br>Existing | 26.94<br>33.28          | 1.00   | PASS | 59 1.0<br>78 | 0 PASS | 21<br>24 | 1.00    | PASS     |                 |          |
| Below Ground | R1 | Flat1 | LD          | W3   | Proposed<br>Existing | 32.35<br>26.63          | 0.97   | PASS | 77 0.9<br>45 | 9 PASS | 23<br>11 | 0.96    | PASS     | 78              | 24       |
|              |    |       |             |      | Proposed             | 25.34                   | 0.95   | PASS | 44 0.9       | 8 PASS | 10       | 0.91    | PASS     | 77              | 23       |
| Ground       | R1 | Flat1 | LD          | W1   | Existing<br>Proposed | 30.37<br>30.36          | 1.00   | PASS | 63<br>63 1.0 | 0 PASS | 25<br>25 | 1.00    | PASS     |                 |          |
| Ground       | R1 | Flat1 | LD          | W2   | Existing<br>Proposed | 36.17<br>35.52          | 0.98   | PASS | 84<br>83 0.9 | 9 PASS | 29<br>28 | 0.97    | PASS     |                 |          |
| Ground       | R1 | Flat1 | LD          | W3   | Existing<br>Proposed | 29.31<br>28.39          | 0.97   | PASS | 51<br>50 0.9 | 8 PASS | 16<br>15 | 0.94    | PASS     | <b>84</b><br>83 | 29<br>28 |
| First        | R1 | Flat1 | LKD         | W1   | Existing             | 38                      |        |      | 84           |        | 30       |         |          | 84              | 30       |
| First        | R2 | Flat1 | Bedroom     | W2   | Proposed<br>Existing | 37.81<br>37.87          | 1.00   | PASS | 84 1.0<br>84 | 0 PASS | 30<br>30 | 1.00    | PASS     | 84<br><b>84</b> | 30<br>30 |
|              |    |       |             |      | Proposed             | 37.63                   | 0.99   | PASS | 84 1.0       | 0 PASS | 30       | 1.00    | PASS     | 84              | 30       |
|              |    |       |             |      | 4                    | 17 Belsize              | Square |      |              |        |          |         |          |                 |          |
| Below Ground | R1 | Flat1 | LD          | W1   | Existing<br>Proposed | 26.86<br>26.64          | 0.99   | PASS | 60<br>58 0.9 | 7 PASS | 23<br>21 | 0.91    | PASS     |                 |          |
| Below Ground | R1 | Flat1 | LD          | W2   | Existing             | 32.98                   |        |      | 77           |        | 23       |         |          |                 |          |
| Below Ground | R1 | Flat1 | LD          | W3   | Proposed<br>Existing | 30.83<br>25.62          | 0.93   | PASS | 74 0.9<br>52 | 6 PASS | 20<br>16 | 0.87    | PASS     | 80              | 24       |
| Ground       | R1 | Flat1 | LD          | W1   | Proposed<br>Existing | 23.34<br>29.66          | 0.91   | PASS | 49 0.9<br>65 | 4 PASS | 13<br>26 | 0.81    | PASS     | 77              | 21       |
| Ground       | R1 | Flat1 | LD          | W2   | Proposed<br>Existing | 29.54<br>35.74          | 1.00   | PASS | 64 0.9<br>83 | 8 PASS | 25<br>28 | 0.96    | PASS     |                 |          |
|              |    |       |             |      | Proposed             | 34.22                   | 0.96   | PASS | 80 0.9       | 6 PASS | 25       | 0.89    | PASS     |                 |          |
| Ground       | R1 | Flat1 | LD          | W3   | Existing<br>Proposed | 28.85<br>27.14          | 0.94   | PASS | 55<br>53 0.9 | 6 PASS | 19<br>17 | 0.89    | PASS     | <b>86</b><br>84 | 29<br>27 |
| First        | R1 | Flat1 | Bedroom     | W1   | Existing<br>Proposed | 37.68<br>37.31          | 0.99   | PASS | 81<br>80 0.9 | 9 PASS | 28<br>27 | 0.96    | PASS     | <b>81</b><br>80 | 28<br>27 |
| First        | R2 | Flat1 | LKD         | W2   | Existing<br>Proposed | 37.71<br>37.3           | 0.99   | PASS | 81<br>81 1.0 |        | 27<br>27 | 1.00    | PASS     | <b>81</b><br>81 | 27<br>27 |
|              |    |       |             |      |                      |                         |        | PASS | 61 1.0       | U PA33 | 21       | 1.00    | PASS     | 01              | 21       |
|              |    |       |             |      |                      | l8 Belsize              | Square |      |              |        |          |         |          |                 |          |
| Below Ground | R1 | Flat1 | LD          | W1   | Existing<br>Proposed | 26.32<br>25.45          | 0.97   | PASS | 62<br>60 0.9 | 7 PASS | 23<br>21 | 0.91    | PASS     |                 |          |
| Below Ground | R1 | Flat1 | LD          | W2   | Existing<br>Proposed | 32.87<br>30.03          | 0.91   | PASS | 80<br>76 0.9 | 5 PASS | 25<br>21 | 0.84    | PASS     |                 |          |
| Below Ground | R1 | Flat1 | LD          | W3   | Existing             | 26.45                   |        |      | 48           |        | 13       |         |          | 81              | 26       |
| Ground       | R1 | Flat1 | LD          | W1   | Proposed<br>Existing | 24.18<br>29.6           | 0.91   | PASS | 45 0.9<br>64 | 4 PASS | 10<br>26 | 0.77    | PASS     | 78              | 23       |
| Ground       | R1 | Flat1 | LD          | W2   | Proposed<br>Existing | 29.07<br>35.66          | 0.98   | PASS | 62 0.9<br>83 | 7 PASS | 24<br>28 | 0.92    | PASS     |                 |          |
| Ground       | R1 | Flat1 | LD          | W3   | Proposed<br>Existing | 33.59<br>29.01          | 0.94   | PASS | 80 0.9<br>50 | 6 PASS | 25<br>15 | 0.89    | PASS     | 83              | 28       |
|              |    |       |             |      | Proposed             | 27.23                   | 0.94   | PASS | 49 0.9       | 8 PASS | 14       | 0.93    | PASS     | 82              | 27       |
| First        | R1 | Flat1 | LKD         | W1   | Existing<br>Proposed | 37.51<br>36.96          | 0.99   | PASS | 81<br>80 0.9 | 9 PASS | 27<br>26 | 0.96    | PASS     | <b>81</b><br>80 | 27<br>26 |
| First        | R2 | Flat1 | Bedroom     | W2   | Existing<br>Proposed | 37.37<br>36.7           | 0.98   | PASS | 82<br>81 0.9 | 9 PASS | 28<br>27 | 0.96    | PASS     | <b>82</b><br>81 | 28<br>27 |
|              |    |       |             |      |                      | 19 Belsize              |        |      |              | -      |          |         | <u> </u> |                 |          |
| Ground       | R1 | Flat1 | Dining Poom | W1   | Existing             | 35.16                   | 4      |      | 80           |        | 27       |         | 1        | 80              | 27       |
|              | ĽΤ | IIdli | Dining Room | AA T |                      |                         | 0.00   | DACC | 77 0.9       | 6 PASS | 24       | 0.89    | PASS     | 80<br>77        | 24       |
|              |    |       |             |      | Proposed             | 32.86                   | 0.93   | PASS |              | 0 1733 |          | 0.83    | PASS     |                 |          |
| First        | R1 | Flat1 | Bedroom     | W1   | Existing<br>Proposed | 32.86<br>37.12<br>36.34 | 0.93   | PASS | 80<br>79 0.9 |        | 27<br>26 | 0.96    | PASS     |                 |          |

|              |    |       |         |    | 5        | 0 Belsize | Square |      |    |      |      |    |      |      |    |    |
|--------------|----|-------|---------|----|----------|-----------|--------|------|----|------|------|----|------|------|----|----|
| Below Ground | R1 | Flat1 | LD      | W1 | Existing | 28.53     |        |      | 66 |      |      | 24 |      |      |    |    |
|              |    |       |         |    | Proposed | 26        | 0.91   | PASS | 61 | 0.92 | PASS | 19 | 0.79 | PASS |    | ļ  |
| Below Ground | R1 | Flat1 | LD      | W2 | Existing | 31.53     |        |      | 76 |      |      | 23 |      |      |    |    |
|              |    |       |         |    | Proposed | 28.41     | 0.90   | PASS | 70 | 0.92 | PASS | 17 | 0.74 | PASS |    |    |
| Below Ground | R1 | Flat1 | LD      | W3 | Existing | 24.49     |        |      | 45 |      |      | 12 |      |      | 78 | 24 |
|              |    |       |         |    | Proposed | 23.67     | 0.97   | PASS | 41 | 0.91 | PASS | 8  | 0.67 | PASS | 73 | 19 |
| Ground       | R1 | Flat1 | LD      | W1 | Existing | 31.44     |        |      | 71 |      |      | 28 |      |      |    |    |
|              |    |       |         |    | Proposed | 29.57     | 0.94   | PASS | 68 | 0.96 | PASS | 25 | 0.89 | PASS |    |    |
| Ground       | R1 | Flat1 | LD      | W2 | Existing | 34.89     |        |      | 81 |      |      | 27 |      |      |    |    |
|              |    |       |         |    | Proposed | 32.44     | 0.93   | PASS | 77 | 0.95 | PASS | 23 | 0.85 | PASS |    |    |
| Ground       | R1 | Flat1 | LD      | W3 | Existing | 28.06     |        |      | 48 |      |      | 14 |      |      | 84 | 28 |
|              |    |       |         |    | Proposed | 27.4      | 0.98   | PASS | 46 | 0.96 | PASS | 12 | 0.86 | PASS | 82 | 26 |
| First        | R1 | Flat1 | LKD     | W1 | Existing | 36.84     |        |      | 83 |      |      | 29 |      |      | 83 | 29 |
|              |    |       |         |    | Proposed | 36.32     | 0.99   | PASS | 83 | 1.00 | PASS | 29 | 1.00 | PASS | 83 | 29 |
| First        | R2 | Flat1 | Bedroom | W2 | Existing | 36.56     |        |      | 82 |      |      | 28 |      |      | 82 | 28 |
|              |    |       |         |    | Proposed | 36.03     | 0.99   | PASS | 82 | 1.00 | PASS | 28 | 1.00 | PASS | 82 | 28 |

Project Name: St Peter's Vicarage, Belsize Square, Belsize Park
Project No: 1393
Report Title: Daylight & Sunlight Assessment for the Proposed Development at St Peter's Vicarage, Belsize Square, Belsize Park
Architect: Johnson Naylor

Scheme Iteration No: n/a
Iteration Description: n/a
Date of Analysis: 07/03/2016
Key drawings: n/a

| Floor        | Room            | Room Description | Room Use.          | Window               | Room<br>Area | Lit Area<br>Existing | Lit Area<br>Proposed | Difference | Pass<br>/ Fail |
|--------------|-----------------|------------------|--------------------|----------------------|--------------|----------------------|----------------------|------------|----------------|
|              |                 |                  | Belsize Square Syr | nagogue              |              |                      |                      |            |                |
| Ground       | R1              | Flat1            | Class Room         | Area m2              | 31.95        | 31.58                | 31.30                |            |                |
|              |                 |                  |                    | % of room            |              | 98.84%               | 97.96%               | 0.99       | PASS           |
| iround       | R2              | Flat1            | Class Room         | Area m2              | 26.86        | 26.70                | 26.70                | 1.00       | DACC           |
| irst         | R1              | Flat1            | Class Room         | % of room<br>Area m2 | 17.12        | 99.42%<br>16.85      | 99.42%<br>16.75      | 1.00       | PASS           |
| list         | KI              | riati            | Class Room         | % of room            | 17.12        | 98.39%               | 97.83%               | 0.99       | PASS           |
| irst         | R2              | Flat1            | Class Room         | Area m2              | 9.6          | 9.30                 | 9.30                 | 0.55       | 1 733          |
|              |                 |                  |                    | % of room            |              | 96.92%               | 96.92%               | 1.00       | PASS           |
| irst         | R3              | Flat1            | Class Room         | Area m2              | 22.05        | 21.94                | 21.94                |            |                |
|              |                 |                  |                    | % of room            |              | 99.50%               | 99.50%               | 1.00       | PASS           |
| econd        | R1              | Flat1            | Staff Common Room  | Area m2              | 39.01        | 30.14                | 30.14                |            |                |
|              |                 |                  |                    | % of room            |              | 77.25%               | 77.25%               | 1.00       | PASS           |
|              |                 |                  | 3 Belsize Squ      | are                  |              |                      |                      |            |                |
| alaw Craund  | D1              | Fla+1            | LD                 | Aron m?              | 31.3         | 21.25                | 21.25                |            |                |
| Below Ground | R1              | Flat1            | נט                 | Area m2<br>% of room | 51.5         | 31.25<br>99.83%      | 31.25<br>99.83%      | 1.00       | PASS           |
| Ground       | R1              | Flat1            | LD                 | Area m2              | 31.3         | 31.25                | 31.25                | 1.00       | r ASS          |
| arounu       | N2              | Tidti            | LD                 | % of room            | 31.3         | 99.83%               | 99.83%               | 1.00       | PASS           |
| irst         | R1              | Flat1            | LKD                | Area m2              | 25.87        | 25.81                | 25.81                | 1.00       | 173            |
|              |                 | 11002            | 2.1.5              | % of room            | 25.07        | 99.75%               | 99.75%               | 1.00       | PASS           |
| First        | R2              | Flat1            | Bedroom            | Area m2              | 16.14        | 15.98                | 15.98                |            |                |
|              |                 |                  |                    | % of room            |              | 99.01%               | 99.01%               | 1.00       | PASS           |
|              |                 |                  | 4 Belsize Squ      | are                  |              |                      |                      |            |                |
| Below Ground | R1              | Flat1            | LD                 | Area m2              | 31.3         | 31.25                | 31.25                |            |                |
| Selow Ground | N.I             | Hatı             | LD                 | % of room            | 31.3         | 99.84%               | 99.84%               | 1.00       | PASS           |
| Ground       | R1              | Flat1            | LD                 | Area m2              | 31.3         | 31.25                | 31.25                | 1.00       | 1 //35         |
|              |                 | 11002            |                    | % of room            | 52.5         | 99.84%               | 99.84%               | 1.00       | PASS           |
| irst         | R1              | Flat1            | Bedroom            | Area m2              | 16.14        | 15.99                | 15.99                |            |                |
|              |                 |                  |                    | % of room            |              | 99.07%               | 99.07%               | 1.00       | PASS           |
| irst         | R2              | Flat1            | LKD                | Area m2              | 25.87        | 25.79                | 25.79                |            |                |
|              |                 |                  |                    | % of room            |              | 99.70%               | 99.70%               | 1.00       | PASS           |
|              |                 |                  | 5 Belsize Squ      | are                  |              |                      |                      |            |                |
| Below Ground | R1              | Flat1            | LD                 | Area m2              | 31.3         | 31.24                | 31.24                |            |                |
| C.OW GIOGIIG | VI              | Hati             | 10                 | % of room            | 51.5         | 99.82%               | 99.82%               | 1.00       | PASS           |
| Ground       | R1              | Flat1            | LD                 | Area m2              | 31.3         | 31.25                | 31.25                | 1.00       | . ,,,,,,,      |
|              |                 |                  |                    | % of room            | 32.3         | 99.83%               | 99.83%               | 1.00       | PASS           |
| irst         | R1              | Flat1            | LKD                | Area m2              | 25.87        | 25.80                | 25.80                |            | -              |
|              |                 |                  |                    | % of room            |              | 99.74%               | 99.74%               | 1.00       | PASS           |
| irst         | R2              | Flat1            | Bedroom            | Area m2              | 16.14        | 15.99                | 15.99                |            |                |
|              |                 |                  |                    | % of room            |              | 99.08%               | 99.08%               | 1.00       | PASS           |
|              |                 |                  | 6 Belsize Squ      | are                  |              |                      |                      |            |                |
| elow Ground  | R1              | Flat1            | LD                 | Area m2              | 31.3         | 31.25                | 31.25                |            |                |
| .c.ow Ground | W.T.            | Hatt             | LD                 | % of room            | 31.3         | 99.84%               | 99.84%               | 1.00       | PASS           |
| Ground       | R1              | Flat1            | LD                 | Area m2              | 31.3         | 31.25                | 31.25                | 1.00       | 1 733          |
| 4114         | 11.1            | 11011            | 25                 | % of room            | 31.3         | 99.84%               | 99.84%               | 1.00       | PASS           |
| irst         | R1              | Flat1            | Bedroom            | Area m2              | 16.14        | 15.98                | 15.98                |            |                |
|              | ·- <del>-</del> |                  |                    | % of room            |              | 99.02%               | 99.02%               | 1.00       | PASS           |
| irst         | R2              | Flat1            | LKD                | Area m2              | 25.87        | 25.80                | 25.80                |            |                |
|              |                 |                  |                    | % of room            |              | 99.72%               | 99.72%               | 1.00       | PASS           |

|              |      |       | 46 Belsize S     | iquare               |       |                 |                 |      |       |
|--------------|------|-------|------------------|----------------------|-------|-----------------|-----------------|------|-------|
| Below Ground | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.25           | 31.25           |      |       |
|              |      |       |                  | % of room            |       | 99.84%          | 99.84%          | 1.00 | PASS  |
| Ground       | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.25           | 31.25           |      |       |
|              |      |       |                  | % of room            |       | 99.85%          | 99.85%          | 1.00 | PASS  |
| First        | R1   | Flat1 | LKD              | Area m2              | 25.87 | 25.79           | 25.79           |      |       |
|              |      |       |                  | % of room            |       | 99.70%          | 99.70%          | 1.00 | PASS  |
| First        | R2   | Flat1 | Bedroom          | Area m2              | 16.14 | 15.99           | 15.99           |      |       |
|              |      |       |                  | % of room            |       | 99.04%          | 99.04%          | 1.00 | PASS  |
|              |      |       | 47 Belsize S     | quare                |       |                 |                 |      |       |
| Below Ground | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.24           | 31.23           |      |       |
|              |      |       |                  | % of room            |       | 99.80%          | 99.79%          | 1.00 | PASS  |
| Ground       | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.23           | 31.23           |      |       |
|              |      |       |                  | % of room            |       | 99.79%          | 99.79%          | 1.00 | PASS  |
| First        | R1   | Flat1 | Bedroom          | Area m2              | 16.14 | 15.99           | 15.99           |      |       |
|              |      |       |                  | % of room            |       | 99.07%          | 99.07%          | 1.00 | PASS  |
| First        | R2   | Flat1 | LKD              | Area m2              | 25.87 | 25.80           | 25.80           |      |       |
|              |      |       |                  | % of room            |       | 99.74%          | 99.74%          | 1.00 | PASS  |
|              |      |       | 48 Belsize S     | quare                |       |                 |                 |      |       |
| Below Ground | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.25           | 30.57           |      |       |
| Delow Ground | 11.2 | riati | LD               | % of room            | 31.3  | 99.84%          | 97.67%          | 0.98 | PASS  |
| Ground       | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.26           | 31.26           | 0.50 | 1 733 |
| Giodila      | 11.2 | riuti | LD               | % of room            | 31.3  | 99.86%          | 99.86%          | 1.00 | PASS  |
| First        | R1   | Flat1 | LKD              | Area m2              | 25.87 | 25.80           | 25.80           | 1.00 | 1 733 |
| 11130        | 11.2 | riuti | LIND             | % of room            | 25.07 | 99.72%          | 99.72%          | 1.00 | PASS  |
| First        | R2   | Flat1 | Bedroom          | Area m2              | 16.14 | 15.99           | 15.99           | 1.00 | FA33  |
| riist        | KZ   | riati | Bedroom          | % of room            | 10.14 | 99.05%          | 99.05%          | 1.00 | PASS  |
|              |      |       | 49 Belsize S     | quare                |       |                 |                 |      |       |
| Ground       | R1   | Flat1 | Dining Room      | Area m2              | 27.68 | 27.49           | 27.49           |      |       |
| Gioulia      | ĽΙ   | LIGIT | ווווחמע אוווווות | % of room            | 27.08 | 99.30%          | 99.30%          | 1.00 | PASS  |
| Firet        | R1   | Flo+1 | Doduces          |                      | 44.25 |                 |                 | 1.00 | PA33  |
| First        | KI   | Flat1 | Bedroom          | Area m2<br>% of room | 44.35 | 44.14<br>99.52% | 44.14<br>99.52% | 1.00 | PASS  |
|              |      |       |                  |                      |       | 33.3270         | 33.32,0         | 2.00 |       |
|              |      |       | 50 Belsize S     | iquare               |       |                 |                 |      |       |
| Below Ground | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.25           | 28.62           |      |       |
|              |      |       |                  | % of room            |       | 99.84%          | 91.43%          | 0.92 | PASS  |
| Ground       | R1   | Flat1 | LD               | Area m2              | 31.3  | 31.26           | 31.26           |      |       |
|              |      |       |                  | % of room            |       | 99.86%          | 99.86%          | 1.00 | PASS  |
| First        | R1   | Flat1 | LKD              | Area m2              | 25.87 | 25.80           | 25.80           |      |       |
|              |      |       |                  | % of room            |       | 99.72%          | 99.72%          | 1.00 | PASS  |
| First        | R2   | Flat1 | Bedroom          | Area m2              | 16.14 | 15.44           | 15.44           |      |       |
|              |      |       |                  | % of room            |       | 95.66%          | 95.66%          | 1.00 | PASS  |