REPORT

Kiln Place
London
NW5 4AP

DAYLIGHT & SUNLIGHT

SEPTEMBER 2014

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Drafted by:

Joe Chavrimootoo BArch
For Brooke Vincent + Partners

email: joe.chavrimootoo@brooke-vincent.co.uk

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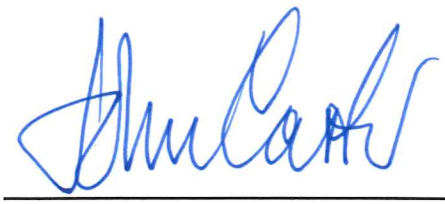

John Carter FRICS
For Brooke Vincent + Partners

email: john.carter@brooke-vincent.co.uk

BVP
BROOKE VINCENT + PARTNERS

CHARTERED BUILDING SURVEYORS, ENTERPRISE HOUSE, THE CREST, LONDON NW4 2HN
www.brooke-vincent.co.uk Tel 020 8202 1013

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Kiln Place

Daylight & Sunlight

We are instructed to report upon the daylight and sunlight aspects of this Planning Application.

Our report is based upon the scheme drawings prepared by Peter Barber Architects, survey information and photographs, plus daylight and sunlight studies.

1.0 SUMMARY

1.1 This report has been drafted by reference to the Building Research Establishment (BRE) publication (2011), *"Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice"* and local planning policy.

1.2 Our studies have confirmed that the daylight and sunlight to neighbouring residential properties would remain almost unchanged and be retained to a level that satisfies BRE criteria.

1.3 Similarly, the levels of daylight within the proposed accommodation as recommended by BRE and the London Plan would be satisfied. Sunlight availability to proposed accommodation would vary in response to aspect and would be better than the BRE's worked example for a block of flats.

1.4 In summary, BRE's recommendations and criteria have been satisfied and therefore this development satisfies the relevant policies of Camden's Development Plan.

2.0 PLANNING POLICY

2.1 London Borough of Camden

Core Strategy (2010)

2.1.1 Camden's *Local Development Framework (LDF), November 2010,* sets out the key elements of the Council's vision for the Borough through its Core Strategy. The relevant policies are listed below.

POLICY CS5 – Managing the impact of growth and development

The second part of this Policy confirms:

"The Council will protect the amenity of Camden's residents and those working in and visiting the Borough by:

(e) Making sure that the impact of developments on their occupiers and neighbours is fully considered."

In the explanatory notes following this Policy item 5.8 confirms: *"We will expect development to avoid harmful effects on the amenity of existing and future occupiers and nearby properties or, where this is not possible, to take appropriate measures to minimise potential negative impacts."*

Development Policies (2010)

POLICY DP26 – Managing the impact of development on occupiers and neighbours

"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."

2.1.2 Camden also makes reference to the good practice guide detailed in item 3, 'Method of Calculation', which is used to compare the compatibility of the application to the stated Policies.

2.2 The London Plan (2011) and Revised Early Minor Alterations to the London Plan (2013)

2.2.1 The London Plan (2011) will form part of the proposed Development Plan. Within the *"Housing Supplementary Planning Guidance, 2012,"* reference is made to the following:

2.2.2 **Baseline Standards** are those endorsed by the Mayor as addressing issues of particular strategic concern.

2.2.3 **Good Practice Standards** are those put forward by the Mayor as representing general good practice.

2.3 The standards that are relevant to daylight and sunlight are detailed below:

2.3.1 **Baseline**

Standard 5.2.1 - developments should avoid single aspect dwellings that are north facing, exposed to noise exposure Categories C or D, or contain three or more bedrooms.

Note: "north facing is usually defined as an orientation less than 45º either side of due north".

2.3.2 **Good Practice**

Standard 5.5.1 - glazing to all habitable rooms should be not less than 20% of the internal floor area of the room.

Standard 5.5.2 - all homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight.

3. METHOD OF CALCULATION

Building Research Establishment

3.1 The calculations and considerations within this report are based upon the Building Research Establishment (BRE) publication 2011 "Site Layout Planning to Daylight and Sunlight. A Guide To Good Practice" as a means of articulating their policy. BRE confirm that the Guide does not contain mandatory requirements and in the **Introduction** provides a full explanation of its purpose:-

"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 be seen as an instrument of planning policy."

"It aims to help rather than constrain the designer."

"Although it gives numerical guidelines these should be interpreted flexibly since 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 levels. For example, in an historic city centre, or in an area with high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."

3.2 Modelling and Results

3.2.1 Our analysis and subsequent results are produced by the application of our specialist software on our three-dimensional model, images of which are included in **Appendix 1**. This is based upon survey information, supplemented by photographs, plus the architect's planning drawings also included in **Appendix 1**.

3.2.2 In this model, the neighbouring buildings are defined in green, the existing site building in blue and the proposed building in magenta. This is further clarified by the architect's

layout plans in **Appendix 1**, which includes room references that can again be cross-referenced to the body of our report and the results sheets.

3.3 Daylight

3.3.1 Daylight is not specific to a particular direction, as it is received from the dome of the sky.

3.3.2 Reference is made in the BRE report to various methods of assessing the effect a development will have on diffused daylight.

3.3.3 The simplest methods are not appropriate in an urban environment, where the built form is invariably complex. Vertical Sky Component (VSC) is the calculation most readily adopted, as the principles of calculation can be established by relating the location of any particular window to the existing and proposed, built environment.

3.3.4 The BRE Guide states *"If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffused daylighting of the existing building may be adversely affected.*

This will be the case if the Vertical Sky Component measured at the centre of an existing main window is less than 27% and less than 0.8 times its former value".

3.3.5 Where the VSC calculation has been used, BRE also seeks to consider daylight distribution within neighbouring rooms, once again defining an adverse effect as a result that is less than 0.8 the former value. Access is rarely available and we have therefore taken a reasoned approach.

3.3.6 The method of calculation for proposed accommodation is known as Average Daylight Factor (ADF). This is the most comprehensive of daylight calculations defined by BRE and is appropriate to proposed accommodation, because all relevant information is available.

3.3.7 The initial calculation is Vertical Sky Component which measures the value of daylight received at the centre of the window face. The area of glazing through which the light

is transmitted and the transmission value of the glazing is then considered. Within the room the total surface area is calculated and a degree of reflection applied. The outcome is then compared to the values recommended by BRE. Assuming that the rooms are used in conjunction with artificial lighting the minimum recommended ADF levels are:-

2%	Kitchen or combined kitchen and living space
1.5%	Living room and study
1%	Bedroom

Where kitchens have been sited at the rear of the room these are to be served by task lighting in the modern mode.

3.3.8 Where a room is served by more than one window, ADF calculations are made in relation to each window and the individual results added together to provide the true ADF for that room. It should also be noted that full height glazing requires individual ADF calculations for those parts above and below the reference plane of 850mm above floor level. Hence the designation 'L' and 'U' against the result shown for a Living room; the lower reading being reduced in accordance with BRE guidance to satisfy the reduced effect this portion of daylight has on daylight received at the reference plane.

3.3.9 With regard to the ADF calculations for proposed accommodation daylight, the following assumptions have been made with regard to the various elements that together are computed to produce the ADF value;

- Glazing transmittance – 0.68 for the double glazing (BRE default reading);
- Net glazed area of the window – 0.8 (BRE default reading)
- Interior surface reflectance – Living Room – 0.6 (BRE default 0.5)
  – Bedroom 0.6 (BRE default 0.5)
- Reflectance beneath reference plane – 0.15 (BRE default reading)

The variation in Living Room and Bedroom surface reflectance would be produced by the permanent floor finish of light coloured timber with lacquered finish. BRE have

assumed a carpeted finish, which has a lower reflectance value than the permanent floor finish.

3.4 Sunlight

3.4.1 The BRE *Guide to Good Practice* confirms:

(i) Sunlight is only relevant to neighbouring residential windows which have a view of the proposed development and face within 90° of south, i.e. south of the east-west axis.

(ii) If any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the main living room window, a vertical section perpendicular to the window, then the sunlighting in the existing dwelling may be adversely affected.

(iii) Similarly, the sunlight availability to an existing dwelling may be adversely affected if the APSH, when measured at the centre of the window is reduced by more than 4%.

(iv) Should the loss be greater than 4%, then sunlight availability may be adversely affected if the centre of the window receives less than 25% of the annual probable sunlight hours, of which 5% of the annual total should be received between 21 September and 21 March (winter) and less than 0.8 times its former sunlight hours during either period.

(v) Kitchens and bedrooms are less important, although care should be taken not to block too much sun.

3.4.2 Proposed accommodation "*will appear reasonably sunlit provided*":-

- *at least one main window wall faces within 90° of due south; and*
- *the centre of at least one window to a main living room can receive 25% of annual probably sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21 September and 21 March.*
- *In housing, the main requirement for the sunlight is living rooms... It is viewed as less important in bedrooms and in kitchens.*

3.4.3 BRE acknowledges that a simple layout strategy can be an issue for flats:-

"Sensitive layout design of flats will attempt to ensure that each individual dwelling has at least one main living room which can receive a reasonable amount of sunlight. In both flats and houses, a sensible approach is to try to match internal room layout with window/wall orientation. Where possible, living rooms should face the southern or western parts of the sky and kitchens towards the north or east.

The overall sunlighting potential of a large residential development may be initially assessed by counting how many dwellings have a window to a main living room facing south, east or west. The aim should be to minimise the number of dwellings whose living rooms face solely north, north east or north west, unless there is some compensating factor such as an appealing view to the north."

4.0 DAYLIGHT RESULTS

Neighbouring Residential Buildings

4.1 117 – 164 Kiln Place

4.1.1 For the purpose of this report we have analysed the residential windows closest to the proposed site, any other residential windows are too far removed to be affected by the new proposal.

4.1.2 To the north of the site is a block of flats which can be seen in **Appendix 1**. Along the rear of these flats, the majority of all windows analysed retain a level of daylight above 27%. Where this is not the case BRE advises in such circumstances, the proposed VSC value should not be less than 0.8 times its former value, as stated in **3.3.4.** By reference to the results in **Appendix 2** it can be seen that the majority of proposed values do not fall below 0.8 the former value and except for the windows referred to below there would be no adverse effect.

4.1.3 Window W5 at first floor serves a hallway, a non-habitable room which does not require daylight analysis. Window W4 at first floor serves a Living room which achieves a good daylight value of 23.72% and is not far from achieving the recommended value of 27% VSC.

Although the VSC calculation is an accurate way of determining daylight on the face of the window it does not consider the window size or room size which it serves. For window W4 on the first floor, an ADF calculation is taken for the room which is served by this large window. The result, the last page in **Appendix 2** for this room confirms, daylight would exceed the required value of 1.5% ADF. BRE criteria is satisfied and there would be no adverse effect.

4.2 97-116 Kiln Place

4.2.2 Centrally west of the site, a row of windows located at ground floor level which sit behind a proposed 1-bed flat have been analysed. The results are in **Appendix 2.**

4.2.3 In all but one location, VSC would be above 27%. As stated above in item **3.3.4**, BRE advises the proposed VSC should not be less than 0.8 times the existing value. As a result, window W2 achieves BRE criteria and there would be no adverse effect.

4.3 73-96 Kiln Place

4.3.1 At the centre of the site located opposite 117-164 Kiln Place is another block of flats which sits behind proposed Unit 2.2. The majority of windows retain a VSC value above 27%. Windows located at ground floor level are the most effected but still meet BRE criteria. All windows would achieve 0.8 of existing daylight values. BRE criteria would be satisfied and there would be no adverse effect.

4.4 1-64 Kiln Place

4.4.1 Furthest south is the largest block of flats on site. Only existing windows which are likely to be affected by the proposal have been calculated shown in **Appendix 2**. VSC has been taken from windows sited along the ground floor which are sited opposite to proposed units 5.1 - 5.3. Towards the end of 1-64 Kiln Place, proposed unit 4 slots into an existing gap where only two existing windows may be affected. These windows are located at third floor level to the rear of proposed unit 4.

4.4.2 All daylight readings taken at ground floor have existing VSC values below 27%. Despite this, all proposed VSC values would be above 0.8 times the existing value. The two readings at third floor achieve 27% VSC. In all locations there would be no adverse effect. BRE criteria would be fully satisfied.

4.5 Proposed Accommodation

4.5.1 For the purpose of this report we have analysed all habitable rooms for all proposed sites which are located in **Appendix 3**.

4.5.2 All ADF results for proposed rooms achieve the BRE recommended values and in many cases the values are much higher than the requirement. A very good set of daylight figures have been achieved in a dense site.

4.6 Daylight Summary

4.6.1 The results for neighbouring residential buildings confirm that, BRE criteria would be satisfied and there would be no adverse effect.

4.6.2 The proposed accommodation has been subject to design development in those locations where there may have been a cause for concern. As a result, daylight in all locations would now satisfy BRE's recommended values and there would be no adverse effect.

5.0 SUNLIGHT RESULTS

5.1 Neighbouring Residential Buildings

5.1.1 The sunlight results are defined by the two right hand columns in Appendix 2 and adjacent to VSC results.

5.1.2 Windows which face within 90 degrees of north are noted as "*North Facing" on the last column of the results sheet. In **Appendix 2**. BRE do not require such windows to be analysed.

5.1.3 All windows that face within 90 degrees of south and have a view of the proposed buildings would maintain sunlight availability that satisfies BRE requirements. There would be no adverse effect.

5.2 Proposed Accommodation

5.2.1 The Living rooms have been located to gain the benefit of a south west aspect. By Reference to item **2.3** of this report, the London Plan, Baseline Standard recommends no single aspect dwelling is to face within 45 degrees of north.

5.2.2 By reference to item **3.4.3** of this report, BRE suggest a residential development may initially be assessed by counting how many dwellings have a window to a main living room facing south, east or west. All living rooms within the development and sunlight would benefit from an aspect which is south of the east – west axis and sunlight availability criteria would be satisfied.

5.3 Sunlight Summary

5.3.1 Aspect has dictated that the proposed development would not be the cause of an adverse effect on sunlight availability to neighbouring residential buildings.

5.3.2 The proposed accommodation has a layout which has been well considered in order to provide each living room with sufficient sunlight availability and meet the requirements set out within the London Plan and BRE guidelines.

6.0 CONCLUSION

6.1.1 Overall, the proposed scheme has been designed in accordance with the London Plan and BRE criteria, which has been fully satisfied.

6.1.2 Daylight and Sunlight to neighbouring properties would be retained at a level that satisfies BRE criteria and there would be no adverse effect.

APPENDIX 1

LOCATION PLAN

CAD MODEL

ARCHITECT'S DRAWINGS

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

NEIGHBOURING PROPERTIES

APPENDIX 3

DAYLIGHT AND SUNLGHT RESULTS

PROPOSED ACCOMODATION