REPORT

The Finchley Bell
317 Finchley Road
London NW3 6EP

Daylight and Sunlight Report
to
Neighbouring Buildings
and
Proposed Accommodation

JUNE 2016

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The Finchley Bell, 317 Finchley Road, London NW3 6EP

Daylight & Sunlight

Brooke Vincent + Partners (BVP) are instructed to provide a report on the daylight and sunlight aspects of this Planning Application with regard to neighbouring residential properties and the proposed accommodation.

This report is based upon site inspection, survey information, photographs and a 3D Model, together with daylight and sunlight studies prepared by Brooke Vincent + Partners.

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 analysis of daylight and sunlight to neighbouring residential buildings makes reference to the effect that would be defined by both the Approved Development and the Proposed Development, the latter being the subject of the present application. This process, as more fully detailed in the body of our report, confirms there would be little or no variation in the daylight and sunlight received by neighbouring buildings, arising from the Approved Development or the Proposed Development.

1.3 Together, BVP and the architect have developed the layout of proposed accommodation to ensure that good levels of daylight would be provided to all proposed, habitable, accommodation. The results define the outcome of this partnership, confirming that all daylight values would be above the minimum recommended by BRE and mostly, substantially in excess of the recommended values.

1.4 Sunlight to the proposed accommodation inevitably reflects location and the local urban grain. A review of internal layout confirms that all living rooms are either south facing as recommended by BRE, or are served by winter gardens which include a south facing aspect. Every flat satisfies the recommendation of the *London Plan Housing SPG.* In summary, the availability of sunlight to the proposed accommodation is a significant improvement on the Approved Development.

1.5 In summary, the design is highly considerate of daylight and sunlight availability to neighbouring properties and the results are similar to the previously-approved proposal. Daylight and sunlight to proposed accommodation within the Proposed Development would be superior to the Approved Development and would, to a greater degree, satisfy the relevant policies of Camden Council's Core Strategy and Development Policies.

2.0 PLANNING POLICY

2.1 London Borough of Camden

Core Strategy (2010)

2.2 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."

The London Plan 2015 **(Including Housing Standards minor alterations - March 2016)**

2.3 The London Plan forms part of Camden's Development Plan. The Housing Supplementary Planning Guidance 2012, defined in greater detail the London Plan's Housing requirements and standards. These were replaced by the House Supplementary Planning Guidance 2016 in March of this year.

2.4 Inevitably the proposed development at Finchley Bell site was designed by reference to the 2012 guidance which is detailed below. Thereafter the 2016 guidance is detailed and confirms that the expectations with regard to Daylight and Sunlight within proposed accommodation have remained very similar to the 2012 Guidance. However, the notes that follow the new (2016) standard 32 state "*BRE good practice guidelines methodology can be used to assess the levels of daylight and sunlight achieved within new developments*". This had not been stated in the previous SPG (2012), although the BRE good practice guidelines had in any case, been the basis upon which daylight and sunlight values were considered during the design process. These guidelines and the method of calculation are more fully detailed later.

Housing Supplementary Planning Guidance 2012

2.5 This SPG define baseline standards and good practice standards as further detailed below.

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

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

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

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 45^{o} either side of due north".

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.

Housing Supplementary Planning Guidance – March 2016

2.6 HOUSING QUALITY AND DESIGN POLICY

Policy 3.5 Quality and design of housing developments

Daylight and Sunlight

Standard 32 – All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living area and kitchen/dining spaces should preferable receive direct sunlight.

2.3.45 …"*In addition to the above standards, BRE good practice guidelines and methodology can be used to assess the levels of daylight and sunlight achieved within new developments, taking into account guidance below and in Section 1.3*".

2.3.46 …"*Where direct sunlight cannot be achieved in line with standard 32, developers should demonstrate how the daylight standards proposed within a scheme and individual units would achieve good amenity for residence*".

2.3.47 …"*BRE guidelines on assessing daylight and sunlight should be applied sensitively too high a density development in London, particularly in central and urban settings, recognising the London Plan strategic approach to optimising housing supply and locations with good accessibility for higher density development (Policy 3.3). Quantitative standards on daylight and sunlight should not be applied rigidly without carefully considering the location and context and standards experienced in broadly comparable housing typologies in London*".

3.0 METHOD OF CALCULATION

Building Research Establishment

3.1 BRE Guidelines

3.1.1 The calculations and considerations within this report are based upon the BRE publication 2011: *Site Layout Planning to Daylight and Sunlight. A Guide to Good Practice*. 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, photographs, and 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 buildings in blue and the Proposed Development in magenta.

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^{o} 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 (DD) within neighbouring rooms, once again defining an adverse effect as a result that is less than 0.8 the former value. DD measures the portion of a room that has a sight of the sky from a reference plane set 0.85m above floor level. 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 where the kitchen is served by a local window
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.

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:

(see over)

- 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 Rooms and
  Kitchens: 0.6 (BRE default reading 0.5)
  – Bedroom: 0.5 (BRE default reading)
- Reflectance beneath reference plane – Living Rooms and
  – Kitchens: 0.15 (BRE default reading)
  – Bedroom: 0.15 (BRE default reading)

The revised interior surface reflectance in relation to living rooms and kitchens is based upon the provision of a permanent floor finish, lacquered timber or similar, which will reflect more light than a conventional carpet, as assumed by BRE.

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^{o} 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^{o} to the horizontal measured from the centre of the main living room window, a vertical section perpendicular to the window, then the sun lighting 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 probable 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."

3.4.4 BRE then provides an example of "*careful layout design*" in which *"four out of the five flats shown have a south-facing living room".* This example is provided without having to consider the site constraints that impact upon most urban locations.

4.0 DAYLIGHT ANALYSIS

Neighbouring Buildings

4.1 Generally

4.1.1 The previously Approved Development (2014/5208/P) was supported by a daylight report that was not fully comprehensive. BVP have therefore analysed the Approved Development as a means of comparing the daylight results for the Approved and Proposed Developments. Both sets of results are detailed in Appendix 2 and are referred to in the body of this report.

4.2 North

321 Finchley Road

4.2.1 To the north of the site is 321 Finchley Road. This is set on the north side of the immediately adjacent railway tracks and platforms. It is a fairly modern building, with a small lightwell at the mid-point in its, otherwise imperforate, flank elevation. Some of the windows within this lightwell would have a view of the Proposed Development.

4.2.2 We have been unable to locate layout plans for this building but it is reasonable to assume that the four windows per floor within the lightwell, all serve residential elements, although not necessarily habitable rooms. The spread is likely to be bedrooms, bathrooms and hallways/landings. Each and every room has its potential for daylight significantly reduced by the walls of the lightwell. In this situation, and being sited on the boundary, a mirror-image is suggested by BRE as being the appropriate method of calculating daylight values.

4.2.3 However, the Approved and Proposed Development in place of the existing Finchley Bell are set back from the line of boundary. Were a mirror-image of 321 Finchley Road to be located on the platform boundary, daylight readings would inevitably reduce.

4.2.4 Approved Development:

All VSC readings (daylight at the face of the window) confirmed that loss would occur. In all but one location, VSC would be less than the BRE benchmark value of 27%, in both existing and proposed conditions. BRE guidelines state that an adverse effect would only occur if the proposed reading is not only less than 27% VSC but also less than 0.8 the former (existing) value. This would not occur, and the readings are BRE-compliant.

4.2.5 Proposed Development:

Like the Approved Development, the VSC results are, with only one exception at fourth floor level, below BRE's benchmark figure of 27% VSC, in both existing and proposed conditions. As previously stated, this is a reflection of windows looking into a small lightwell and further justifies our expectation that most, if not all windows, serve non habitable space.

4.2.6 Accepting that we do not know what room uses these windows serve, only six out of the 16 windows would have a value in the proposed condition that was less than 0.8 the existing value. Two each at first, second and third floor levels. A very satisfactory outcome in relation to the inevitably poor daylighting conditions within a lightwell. We have not placed reliance upon the alternate analysis of producing a mirror-image building, rising from the line of platform, in order to prove compliance with BRE values.

4.3 **East**

198, 202 and 204 Finchley Road

4.3.1 To the west of the site and across Finchley Road, are buildings that are partially residential (second floor and upwards in 204 Finchley Road, and first floor and above in 198-202 Finchley Road).

4.3.2 Approved Development:

All residential elements would be in compliance with BRE guidelines.

4.3.3 Proposed Development:

With one minor exception, all residential elements would be in compliance with BRE guidelines. The exception (W4 at second floor level of 204 Finchley Road) has a proposed VSC that is 0.79 the existing and equal to 0.8 (BRE compliant) for all practical purposes. There is also an overhang and where this occurs, BRE recommends a further test. This removes the balcony and the two sets of VSC values are compared. The proposed results in this location confirms the VSC would rise to 0.84 its former value. In other words, the overhang, not the proposed development, is the principal cause of daylight reduction.

4.3.4 In relation to both the Approved and Proposed Developments, we do not have layout plans for 198-204 Finchley Road but the results confirm that daylight within these buildings will remain good, and daylight distribution is not a significant factor.

4.4 **South**

315 Finchley Road

4.4.1 Immediately to the south is 315 Finchley Road. This has been the subject of a recent planning approval (2014/7780/P) for a rear extension to first, second and third floors.

4.4.2 Approved Development

It is understandable this proposal was not analysed against the Approved Development for The Finchley Bell. By the time this present report has been submitted, the development works at No. 315 will either be substantially or fully complete.

4.4.3 Proposed Development

In the circumstances, it is appropriate to consider the alternative, and more comprehensive, daylight calculation of ADF. This is the calculation designed for new accommodation and is based upon a calculation which considers many more factors than are conventionally known in relation to neighbouring buildings.

4.4.4 The results in Appendix 2 confirm that in all but one location where rooms retain a view of the Proposed Development, ADF would satisfy BRE criteria, in most locations by a

very considerable degree. The ADF value to the exception, a bedroom, would be 0.97%. This is almost equivalent to the BRE recommended figure of 1.0%.

309-313 Finchley Road

4.4.5 309-313 Finchley Road have rear windows with only a peripheral view of the Proposed Development.

4.4.6 Approved and Proposed Developments:
In all locations, VSC readings remain the same as, or only a little different from, the existing values. There would be no adverse effect.

4.4.7 Again, we do not have knowledge of internal layouts but the VSC results confirm that daylight distribution is not a significant factor. Indeed, most of these rooms are going to serve bathrooms, hallways and bedrooms. Bathrooms and hallways are irrelevant to daylight criteria of any sort, while bedrooms are not considered relevant to the analysis of daylight distribution.

307 Finchley Road

4.4.8 307 Finchley Road is an entirely different matter. It is only residential because the owners have decided to take advantage of permitted development rights. This means that there was no requirement to consider daylight within the newly created residential rooms.

4.4.9 Windows and rooms are sited at the end of a narrow passageway, with the end view of the sky blocked by the existing building at 317 Finchley Road. Had the conversion from office to residential been subjected to planning approval, it would have been realised that residential rooms would benefit from only very low levels of daylight. This would certainly have been defined as an adverse effect.

4.4.10 Approved Development:
Once again, these rooms, eight in all, were not considered in relation to the Approved Development. Had they been considered, of a total of 26 windows 20 would have passed and six would have failed BRE compliance.

4.4.11 If rooms, not just windows, had been considered, then by reference to ADF all eight rooms would be inadequately lit in the existing and therefore, inevitably, the proposed condition.

4.4.12 Proposed Development:

With the Proposed Development in situ, the relationship to the 26 windows referred to above barely alters. Instead of 20 being BRE-compliant, this is now 14, with an additional one so close to BRE guidance that it can be defined as equivalent. However this is not a good comparison as most rooms are served by three or four windows and VSC is not the appropriate guide, as reasonable light at alternate windows is often superior to good light at a single window.

4.4.13 When the eight rooms referred to above are considered by reference to ADF, the outcome and values are very similar to the Approved Development.

4.4.14 In summary, there will be no perceptible difference in daylight within these rooms by reference to the Approved and Proposed Developments.

9-15 Lithos Road

4.4.15 Approved and Proposed Developments:

At a further distance but still to the south, are 9-15 Lithos Road. These buildings were not previously considered in relation to the Approved Development. In any case, these residential buildings would have a limited view of the Proposed Development.

4.4.16 In both conditions, nearly all windows would retain a VSC which, when compared to the existing, would be at least 0.95 or better. The few results that would have a lower comparative value would still retain the highest daylight values, with the VSC remaining greatly in excess of 27% VSC in the proposed condition. In no location would there be an adverse effect with either the Approved or Proposed Development. With these values, there is no need to consider daylight distribution. In any case, the results would rely on estimated room sizes.

4.5 **West**

1-17 Petros Gardens

4.5.1 To the west and south west of the development site is the residential development known as 1-17 Petros Gardens. We have now tested 34 window locations. For whatever reason, only one building, 12 Petros Gardens, had previously been tested in relation to the Approved Development.

4.5.2 Approved Development:
VSC and DD would be BRE compliant in all locations. The opportunity was taken to analyse ADF as this is a more complete analysis of daylight conditions and all but one room complied with BRE recommended values. This is a bedroom (1st floor, R9) and the reduced daylight is due to an overhang.

4.5.3 Proposed Development:
In the proposed condition the VSC and DD values would become more marginal with or without reference to overhangs.

4.5.4 To give a more complete understanding of daylight conditions, ADF was applied in all locations and like the Approved Development, BRE recommended values would be available in all locations but for the same, single exception. Because ADF is the most comprehensive form of daylight calculation, we conclude that daylight to these neighbouring properties would be appropriate for both Approved and Proposed Developments.

Proposed Accommodation

4.6 **317 Finchley Road**

4.6.1 A great deal of design development has gone into the internal arrangement of this building in order to ensure that daylight values are fully satisfied.

4.6.2 This has proved to be an entirely successful exercise and no purpose is served by comparing this to the Approved Development. The results in Appendix 3 confirm that

all the habitable rooms would benefit from daylight that would not only be in accordance with BRE's recommended values but a significant improvement upon those values.

4.7 Daylight Summary

4.7.1 A full analysis of the Approved Development has shown that there would be a small degree of non compliance with BRE guidelines. This is due to the design of neighbouring buildings, (lightwell at 321 Finchley Road) or Permitted Development Rights (307 Finchley Road) and a single overhang (Petros Gardens). The same would apply to the Proposed Development with the addition of a window in 204 Finchley Road (due to overhang) and a bedroom at 315 Finchley Road (where the reading is in imperceptibly different to the recommended value). This confirms that it will have a similar small and limited effect as the Approved Development.

4.7.2 Within the proposed development, BVP and Amin Taha Architects have worked together to ensure good daylight would be provided to all habitable accommodation. This has been achieved, with all locations satisfying the BRE Guidelines and providing daylight values well above the guidelines in most locations.

5.0 SUNLIGHT AVAILABILITY

Neighbouring Residential Buildings

5.1 Approved and Proposed Developments:

We have previously commented on many windows to neighbouring properties that had not been considered in relation to the Approved Development. These have now been included in the analysis of sunlight availability for both Approved and Proposed Developments.

5.2 A great many of the windows which would have a view of either the Approved or Proposed Development do not face within 90° of south and, for the purposes of analysis, are considered to be north-facing. The remainder that do face within 90° of south would all retain BRE recommended values of sunlight availability, by reference to both annual values and winter values, except three locations in the lightwell of 321 Finchley Road.

5.3 Not only is this understandable due to the constraints created by the lightwell, but the windows are, as previously stated, likely to serve bathrooms, hallways and bedrooms. All these spaces are specifically excluded from BRE sunlight criteria and there would be no adverse effect.

5.4 Whilst, therefore, we can now confirm the Approved Development would have been BRE-compliant in relation to neighbouring buildings, we can also confirm this is equally true of the Proposed Development.

Proposed Accommodation

Generally

5.5 BRE recognises that within proposed accommodation it is not always possible to provide living rooms with a southerly aspect. Their own example only achieves an 80% success rate, with no site constraints.

5.6 Approved Development:

Residential accommodation would be provided over five floors, a total of nine flats. Site constraints, together with the manner of layout, has meant that only one flat would have had a living room with a south facing window, as recommended by BRE. The single flat, the penthouse was only provided with a small and secondary south facing window.

5.7 The main living room windows do not face within 45° of north and at first sight appear to satisfy the previous London Plan Housing SPG. However, with the exception of the penthouse they are set behind large balcony features. This means the windows would have been very heavily shaded.

5.8 Proposed Development:

Despite similar site constraints being imposed on the Proposed Development, 18 (66.6%) of 24 living rooms would have a southerly aspect. The remaining six all benefit from a winter garden which includes a southerly aspect.

5.9 The *London Plan Housing* SPG, as previously referred to, takes the acknowledgement of site constraints one stage further and defines north facing as being within 45° of north. None of the proposed flats would face within 45° of north, and each flat would receive sunlight in a living room or kitchen, in accordance with the *London Plan Housing SPG's* stated preference.

5.10 **Sunlight Summary**

5.10.1 Sunlight availability to neighbouring buildings would be BRE-compliant. This would have been the case with the Approved Development and is now equally true of the Proposed Development.

5.10.2 Sunlight availability within the Proposed Development would be a significant improvement over the Approved Development. This improvement is the direct result of the co-operation throughout the design process for the Proposed Development between the architect and BVP.