



# 42 Bergholt Crescent, N16

## Daylight and Sunlight Assessment for Planning

Job No: 4160  
Issued: January, 2024  
Issue: 1

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## 1.0 Introduction

1.1 This daylight and sunlight assessment has been prepared to support a planning application for the proposed redevelopment of the site at 42 Bergholt Crescent, London N16.

1.2 The report assesses the proposals in respect of daylight, sunlight and overshadowing matters, having regard to industry standard guidance. The report concludes that the proposal is acceptable and in accordance with planning policy requirements in relation to daylight and sunlight.

1.3 There is no existing specific National Planning Policy relating to the prospective impacts of developments on daylight and sunlight on their surrounding environment.

1.4 However, the BRE Report 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' is the established National guidance to aid the developer to prevent and/or minimise the impact of a new development on the availability of daylight and sunlight in the environs of the site. It has been developed in conjunction with daylight and sunlight recommendations in BS 8206: Part 2: 'Lighting for Buildings - Code of Practice for Daylighting'.

1.5 This reference document is accepted as the authoritative work in the field on daylight, sunlight and overshadowing and is specifically referred to in many Local Authorities' planning policy guidance for daylighting. The methodology therein has been used in numerous lighting analyses and the standards of permissible reduction in light are accepted as the industry standards.

## 2.0 Project Summary



Site Location as Existing



- 2.1 The proposal site is at 42 Bergholt Crescent, N16 and is currently occupied by a 3 storey (plus basement end-of-terrace dwelling.
- 2.2 The proposal is for the reconstruction of the dwelling, which is in a poor state of structural repair, with the inclusion of rear extensions and an extension at roof level.
- 2.3 The impacts of the scheme on all residential neighbours potentially affected by the scheme have been considered.
- 2.4 Further details on the location of neighbours and their windows are given in Section 5.0.

## 3.0 Methodology

3.1 For this analysis, we have undertaken the most common calculations for the change in daylight and sunlight to existing buildings, as recommended in BRE Digest 209. These are:

- **Vertical Sky Component (VSC) for daylight impacts**
- **Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (WPSH) (APSH) for sunlight**

3.2 The VSC method measures the general amount of light available on the outside plane of the window as a ratio (%) of the amount of total unobstructed sky viewable following introduction of visible barriers such as buildings. The maximum value is just under 40% for a completely unobstructed vertical wall.

3.3 The VSC is calculated using computer simulation under a CIE overcast sky. This works by simulating the amount of visible sky from the centre point of each window. It is not affected by orientation and so all potentially affected windows are assessed.

3.4 Annual Probable Sunlight Hours (APSH) and Winter Probable Sun light Hours (WPSH) are a measure of the amount of potential direct sunlight that is available to a given surface. APSH covers sunlight over the whole year and WPSH from September 21st to March 21st. The number of total available hours is calculated from a data file in the software, built up over a number of years of actual weather data records.

3.5 Only windows which face within 90° of due south need be assessed for sunlight. In this instance, no windows face within this orientation and so no calculations for sunlight impacts to windows are required.

3.6 APSH can also be used to assess the impact on external spaces such as gardens. This is looked at in Section 8.

## 4.0 Modelling & Data Sources

- 4.1 The first stage of the analysis is to create the analysis model of the existing site condition and the proposal. This allows us to analyse the impact of the proposal when compared to the existing condition.
- 4.2 2D drawings have been provided by the design team. These drawings are used to construct a 3D analysis model which is exported into the specialist daylight software. Calculations are then run, for both existing and proposed scenarios.
- 4.3 Sufficient detail is added to the model for the analysis. In accordance with BRE recommendations, trees and foliage have been omitted from the calculations.
- 4.4 Information on the properties has been provided to us by the design team in the form of drawings and models giving the site as existing and proposed and photographs of the site and surroundings.
- 4.5 Web-based mapping sources and planning records for neighbouring buildings have also been used.

## 5.0 Window Schedules



40 Bergholt Crescent



70-76 Cranwich Road

## 6.0 BRE Guidance Targets

6.1 The reference document for this analysis, BRE Digest 209, gives the methodology for undertaking the calculations. It also provides benchmark figures for the acceptable reduction in the daylight on existing properties which might be affected by development.

6.2 Specifically, the guidance gives figures for the VSC and APSH, as a percentage reduction that is "permissible" for the effect on existing windows.

6.3 It is worth noting the following statement in the Guidance introduction:

- "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. Its aim is to help rather than constrain the developer.
- Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

6.4 The relevant BRE recommendations for daylight and sunlight are:

- The Vertical Sky Component measured at the centre of a window should be no less than 27, or if reduced to below this, no less than 0.8 times the former value.
- The window should receive at least 25% of available annual sunlight hours and more than 5% during the winter months (September 21st to March 21st), or, where this is not the case, 80% of its former value.



## 7.0 Daylight Impact Results

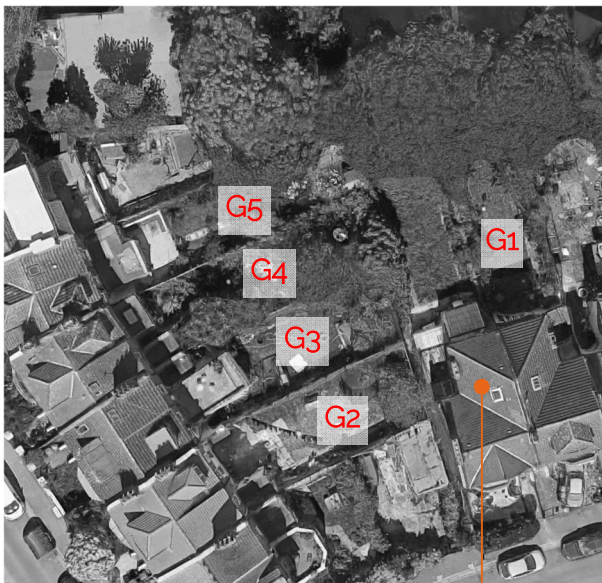
- 7.1 The Vertical Sky Component has been calculated for each of the 20 assessed windows for both the existing and proposed conditions.
- 7.2 As can be seen in the results below, all windows retain 80% of their current values.
- 7.3 The scheme is therefore compliant with BRE recommendations in relation to daylight impacts.
- 7.4 None of the assessed windows face within this 90° of south and so no calculations for sunlight impacts to windows are required.

## 7.0 Daylight Impact Results

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
1	33.051	28.417	85.98%	Yes
2	36.520	36.112	98.88%	Yes
3	36.347	31.408	86.41%	Yes
4	33.050	31.788	96.18%	Yes
5	30.947	29.751	96.14%	Yes
6	36.499	35.883	98.31%	Yes
7	33.227	31.769	95.61%	Yes
8	36.385	35.681	98.07%	Yes
9	37.777	37.310	98.76%	Yes
10	34.897	34.160	97.89%	Yes
11	35.415	34.970	98.74%	Yes
12	23.718	23.015	97.04%	Yes
13	34.664	33.786	97.47%	Yes
14	35.875	35.367	98.59%	Yes
15	34.803	33.950	97.55%	Yes
16	36.249	35.825	98.83%	Yes
17	26.733	25.843	96.67%	Yes
18	36.405	35.994	98.87%	Yes
19	33.549	32.472	96.79%	Yes
20	36.812	36.515	99.20%	Yes

## 8.0 Sunlight to Neighbouring Gardens

- 8.1 Residential gardens are generally assessed using the sunlight hours test, but only on March 21st. The guidance describes a well-lit space as being one which receives at least 2 hours of direct sunlight on this date over 50% of its area.
- 8.2 BRE guidance also uses the "80%" rule for this test, whereby the effects are considered acceptable if the remaining sunlight is in excess of 80% of the existing level. This clause applies if the space is reduced to less than 50% of the area well sunlit.
- 8.3 The gardens of the nearest neighbouring dwellings to the site, as identified to the left, were assessed using this method.
- 8.4 As can be seen, the neighbouring gardens retain in excess of 80% of current sunlight levels and so the scheme is compliant with BRE recommendations.



Site Location

Amenity Sunlight Hours				
Garden	Existing Area Receiving 2 Hours	Proposed Area Receiving 2 Hours	% Retained	Meets BRE Guidance?
G1	66.05%	57.44%	86.98%	Yes
G2	63.91%	63.91%	100.00%	Yes
G3	62.87%	62.86%	99.99%	Yes
G4	63.69%	63.69%	99.99%	Yes
G5	70.66%	70.52%	99.80%	Yes

## 9.0 Conclusions

9.1 Using industry standard methodology, we have made numerical analyses to ascertain the effects of the proposal at 42 Bergholt Crescent and the levels of change in daylight and sunlight for the windows and gardens of the neighbouring properties.

9.2 The main criteria used in this analysis to show compliance are the Vertical Sky Component for daylight impacts and Annual and Winter Probable Sunlight Hours for sunlight impacts.

9.3 As has been shown, the effect on VSC is within the 80% guidance value in all cases.

9.4 There will therefore be no adverse impact on neighbouring residents in terms of daylight.

9.5 In terms of sunlight, all assessed windows face outside of 90° of due south and so no impacts calculations are required for sunlight.

9.6 The neighbouring gardens retain in excess of 80% of area receiving 2 hours or more of sunlight on March 21<sup>st</sup>.

9.7 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.

9.8 From a planning perspective therefore, it is the conclusion of this report that the proposed development is entirely acceptable for planning, in daylight and sunlight terms.



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