



EAL CONSULT BUILDING SUSTAINABILITY SINCE 2008

DAYLIGHT, SUNLIGHT & OVERSHADOWING ASSESSMENT

PROPERTY ADDRESS
No 52 Coldharbour Lane,
Hayes,
UB3 3EP

DATE
July 2025

PREPARED BY
EAL Consult

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EXECUTIVE SUMMARY

This daylight, sunlight and overshadowing assessment has been prepared to support the planning application for the proposed re-development at No 52 Coldharbour Lane in Hayes, UB3 3EP. This assessment should be consulted in conjunction with the accompanied up-to-date planning drawings.

The primary purpose of this daylight, sunlight and overshadowing assessment is to determine the likely loss of light to adjacent buildings resulting from the re-development of the proposed site. Therefore, the proposed scheme can be identified as the potential source of impact. In addition, a detailed assessment of daylight quantity and distribution, as well as sunlight availability, has been undertaken for the relevant habitable rooms.

The main objective to carry out this Daylight & Sunlight assessment is to:

- Assess the impact of the proposed flats upon the current levels of sunlight & daylight being enjoyed by the existing surrounding buildings.
- Determine the daylight and sunlight levels in all habitable rooms for the proposed residential units, in order to provide high standards of living to its future occupants.

The methodology set out in this report is in accordance with BRE's 'Site Layout Planning for Daylight and Sunlight' (BR209, 2022), which is accepted as good practice by Planning Authorities. In June 2022 a new version of the Guidelines was published, which changes the criteria and methodology to assess daylight and sunlight within newly proposed schemes. However, the aim of the new guidance is the same as the old one, which is "to help ensure good conditions in the local environment considered broadly, with enough sunlight and daylight on or between the buildings for good interior and exterior conditions", as stated in Paragraph 1.5 of the new guidance.

The following assessment was carried out:

Daylight & Sunlight Assessment

- Existing neighbouring properties
 - a. Vertical Sky Component
 - b. Annual Probability of Sunlight Hours (APSH) annual and winter calculations

Overshadowing Assessment

- Existing Open Space - Gardens
 - a. Sunlight hours (on the 21st of March – Equinox)

Neighbouring properties were identified which may be impacted upon by the scheme. The assessment of daylight, sunlight and overshadowing to the surrounding residential properties and open spaces, indicates that the proposal will not cause a noticeable change in light levels to existing occupants.

The proposed drawings supplied by the architect were used for the purpose of modelling and for the calculations, including location, site plan and proposed floor plans. In most urban areas it is important to recognise that the distribution of daylight within a room may be difficult to achieve, given the built-up nature of the environment.

TERMS AND DEFINITIONS

Daylight Factor (D)

Ratio of total daylight illuminance at a reference point on the working plane within a space to outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky. Thus a 1% D would mean that the indoor illuminance at that point in the space would be one hundredth the outdoor unobstructed horizontal illuminance.

Target Daylight Factor

Daylight factor value equivalent to the target illuminance to be exceeded for more than half of annual daylight hours over a specified fraction of the reference plane within a daylit space.

Minimum Target Daylight Factor

Daylight factor value equivalent to the minimum target illuminance to be exceeded for more than half of annual daylight hours over 95% of the reference plane within spaces with vertical and/or inclined daylight apertures.

CIE standard overcast sky

A completely overcast sky for which the ratio of its luminance L_y at an angle of elevation γ above the horizontal to the luminance L_z at the zenith is given by: $(1 + 2 \sin \gamma) L_y = L_z$ A CIE standard overcast sky is darkest at the horizon and brightest at the zenith (vertically overhead).

Daylight, natural light

Combined skylight and sunlight.

No sky line

The outline on the working plane of the area from which no sky can be seen.

CURRENT POLICIES, REGULATIONS AND BENCHMARKS

People expect good natural lighting in their homes and in a wide range of non-domestic buildings. Daylight makes an interior look more attractive and interesting as well as providing light to work or read by. Access to skylight and sunlight helps make a building energy efficient; effective daylighting will reduce the need for electric light, while winter solar gain can meet some of the heating requirements.

The quality and quantity of natural light in an interior depend on two main factors. The design of the interior environment is important: the size and position of windows, the depth and shape of rooms, and the colours of internal surfaces. But the design of the external environment also plays a major role: e.g. if obstructing buildings are so tall that they make adequate daylighting impossible, or if they block sunlight for much of the year.

Obstructions can limit access to light from the sky. This can be checked at an early design stage by measuring or calculating the angle of visible sky θ , angle of obstruction or vertical sky component (VSC) at the centre of the lowest window where daylight is required. If VSC is:

- at least 27% (θ is greater than 65°, obstruction angle less than 25°) conventional window design will usually give reasonable results.
- between 15% and 27% (θ is between 45° and 65°, obstruction angle between 25° and 45°) special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight.
- between 5% and 15% (θ is between 25° and 45°, obstruction angle between 45° and 65°) it is very difficult to provide adequate daylight unless very large windows are used.
- less than 5% (θ less than 25°, obstruction angle more than 65°) it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.

In general a dwelling, or non-domestic building that has a particular requirement for sunlight, will appear reasonably sunlit provided:

- at least one main window wall faces within 90° of due south and
- a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. This is assessed at the inside centre of the window(s); sunlight received by different windows can be added provided they occur at different times and sunlight hours are not double counted.

Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the above recommendations.

If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sun lighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

receives less than 25% of annual probable sunlight hours and less than 0.80 times its former annual value; or less than 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.80 times its former value during that period;

- and also has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

The British Standard “Daylight in buildings” (BS EN 17037) contains advice and guidance on interior daylighting. The guidance contained in this publication (BR 209) is intended to be used with BS EN 17037 and its UK National Annex[C1]. Other European countries have their own versions of EN17037, which do not include the UK National Annex.

BS EN 17037 supersedes BS 8206 Part 2 “Code of practice for daylighting”[C2], which contained a method of assessment based on Average Daylight Factor, which is now no longer recommended. For daylight provision in buildings, BS EN 17037 provides two methodologies. One is based on target illuminances from daylight to be achieved over specified fractions of the reference plane (a plane at table top height covering the room) for at least half of the daylight hours in a typical year. The other, alternative, method is based on calculating the daylight factors achieved over specified fractions of the reference plane.

BS EN 17037 gives three levels of recommendation for daylight provision in interior spaces: minimum, medium and high. For compliance with the standard, a daylit space should achieve the minimum level of recommendation.

Daylight factor method

The daylight factor is the illuminance at a point on the reference plane in a space, divided by the illuminance on an unobstructed horizontal surface outdoors. The CIE standard overcast sky[C3] is used, and the ratio is usually expressed as a percentage.

Table C2 gives the daylight factor targets for side lit rooms in London.

Table C2 – Target daylight factors (D) for London

Level of recommendation	Target daylight factor D for half of assessment grid	Target daylight factor D for 95% of assessment grid
Minimum	2.1%	0.7%
Medium	3.5%	2.1%
High	5.3%	3.5%

METHODOLOGY

Surface reflectance

Internal and exterior surfaces and obstructions need to be modelled including appropriate surface reflectances.

Surface reflectances should represent real conditions. Where reflectance values have not been measured or specified, default values to be used in the calculation are given in Table C4.

Table C4 – Recommended default surface reflectances

Surface	Default reflectance
Interior walls	0.5
Ceilings	0.7
Floors	0.2
Exterior walls and obstructions	0.2
Exterior ground	0.2

Where surface finishes have been specified or measured on site, they can be used in the calculations with appropriate factors for maintenance and furniture. To allow for these factors, maximum reflectances for white painted surfaces in the calculations should not exceed 0.8 indoors, and 0.6 outdoors. Maximum reflectances for light pastel walls should not exceed 0.7 in the calculations, and maximum reflectances for light wood floors should not exceed 0.4. Surface reflectances used should be presented in the assessment, along with a specification of the materials if non-default reflectances are used.

Glazing transmission

Glazing transmission factors, including maintenance factors, need to be included in the simulation along with account for, or modelling of, window framing. Where window frames are not specifically included in the model, frame factors should be applied based on the ratio of glass to overall window aperture area for the type of window to be used; this will generally vary with window size and whether the windows have opening lights. Where window types have not been specified, results for the overall window aperture should be multiplied by a default framing factor as given in Table C5.

Table C5 – Recommended default framing factors

Window type	Default framing factor
Windows with small panes	0.5
Normal windows with opening lights	0.6
Patio doors	0.7

SITE

The proposed site is located in a predominantly residential area with commercial units on ground floor level and therefore, a daylight, sunlight and overshadowing assessment was undertaken to determine the potential impact of the proposed development on these neighbouring areas.

The proposal includes the re-development of the existing 2 storey building - at No 52 Coldharbour Lane to provide two additional floors to accommodate 9 residential units.

Thus, this assessment considers all neighbouring properties near the proposed site, that could possibly be affected from the development.



Figure 1 – Site Location

Possibly affected properties:

1. No 84 Coldharbour Lane – 14 windows were identified facing the proposed site
2. No 86 Coldharbour Lane – 13 windows were identified facing the proposed site
3. No 1 Fairdale Gardens – 10 windows were identified facing the proposed site
4. No 50 Coldharbour Lane – 11 windows were identified facing the proposed site. Please note windows located at ground level belong to commercial units, and thus artificial lighting is used throughout the day.
5. No 45, 47, 49, 51 Coldharbour Lane – 24 windows were identified facing the proposed site. However, windows located at ground floor level belong to commercial units, and thus, artificial lighting is used throughout the day.

DAYLIGHT & SUNLIGHT ASSESSMENT

Vertical Sky Component (VSC)

VSC analysis of each window was carried out. The results are listed in the following pages.

If the VSC is greater than 27%, then enough skylight should still be reaching the window and the levels of daylight experienced in the space should not be seriously affected.

The tables below also demonstrate if a window is in a habitable or non-habitable room. Please note that exact layouts for each neighbouring dwelling assessed is unknown, however, from the type of window and the available information best possible assumptions were made.

Vertical Sky Component Assessment

Table 1 – Vertical Sky Component for the existing properties, Pre & Post Development

Vertical Sky Component		Pre development	Post development	VSC after Proposal	Difference	Comments
Assessed neighbouring property:	Window no.	BRE VSC %	BRE VSC %	>27		
No 84 Coldharbour Lane	Ground Floor					Overall negligible impact. However, a noticeable change in daylight levels will occur for one window.
	Win01(rear elevation)	25.4%	25.0%	No	0.4	
	1st Floor					
	Win02(front elevation)	26.2%	25.9%	No	0.3	
	Win03(front elevation)	26.3%	25.8%	No	0.5	
	Win04(front elevation)	26.4%	25.7%	No	0.7	
	Win05(side elevation)	25.8%	15.1%	No	10.7	
	Win06(rear elevation)	27.5%	27.0%	Yes	0.5	
	Win07(rear elevation)	27.7%	27.2%	Yes	0.5	
	Win08(rear elevation)	28.0%	27.6%	Yes	0.4	
	Top Floor					
	Win09(front elevation)	27.6%	27.4%	Yes	0.2	
	Win10(front elevation)	27.6%	27.1%	Yes	0.5	
	Win11(front elevation)	27.5%	27.0%	Yes	0.5	
	Win12(rear elevation)	28.2%	27.8%	Yes	0.4	
	Win13(rear	28.4%	28.0%	Yes	0.4	

	elevation)					
	Win14(rear elevation)	28.5%	28.4%	Yes	0.1	
No 86 Coldharbour Lane	Ground Floor					
	Win01(rear elevation)	19.8%	18.5%	No	1.3	Minor (for 2 windows) to negligible impact
	Win02(rear elevation)	20.0%	18.8%	No	1.2	
	Win03(rear elevation)	26.7%	26.0%	No	0.7	
	1st Floor					
	Win04(front elevation)	27.9%	27.9%	Yes	0	
	Win05(front elevation)	27.8%	27.8%	Yes	0	
	Win06(rear elevation)	27.8%	27.5%	Yes	0.3	
	Win07(rear elevation)	29.2%	29.1%	Yes	0.1	
	Win08(rear elevation)	29.4%	29.3%	Yes	0.1	
	Win09(rear elevation)	29.5%	29.5%	Yes	0	
	Top Floor					
	Win10(front elevation)	30.0%	30.0%	Yes	0	
	Win11(front elevation)	30.3%	30.3%	Yes	0	
	Win12(rear elevation)	31.0%	31.0%	Yes	0	
	Win13(rear elevation)	31.3%	31.3%	Yes	0	
No 1 Fairdale Gardens	Ground Floor					
	Win01(front elevation)	28.2%	28.0%	Yes	0.2	Negligible impact
	Win02(front elevation)	28.0%	28.0%	Yes	0	
	Win03(side elevation)	17.2%	16.2%	No	1.0	
	Win04(rear elevation)	27.4%	27.4%	Yes	0	
	Win05(rear elevation)	27.6%	27.6%	Yes	0	
	1st Floor					
	Win06(front elevation)	28.5%	28.5%	Yes	0	
	Win07(front elevation)	28.8%	28.8%	Yes	0	

	Win08(side elevation)	26.2%	25.7%	No	0.5	
	Win09(rear elevation)	29.0%	29.0%	Yes	0	
	Win10(rear elevation)	29.5%	29.5%	Yes	0	
No 50 Coldharbour Lane	Ground Floor					Negligible impact
	Win01(front elevation)	25.7%	25.5%	No	0.2	
	Win02(front elevation)	25.7%	25.5%	No	0.2	
	Win03(front elevation)	26.0%	25.8%	No	0.2	
	1st Floor					
	Win04(front elevation)	27.7%	27.6%	Yes	0.1	
	Win05(front elevation)	27.9%	27.8%	Yes	0.1	
	Win06(side elevation)	25.0%	24.9%	Yes	0.1	
	Win07(rear elevation)	27.8%	27.8%	Yes	0	
	Win08(front elevation)	27.7%	27.6%	Yes	0.1	
	Win09(rear elevation)	28.2%	28.2%	Yes	0	
	Win10(rear elevation)	28.3%	28.3%	Yes	0	
No 45, 47, 49, 51 Coldharbour Lane	Ground Floor					Negligible impact
	Win01(front elevation)	27.2%	27.0%	Yes	0.2	
	Win02(front elevation)	27.4%	27.0%	Yes	0.4	
	Win03(front elevation)	27.4%	27.1%	Yes	0.3	
	Win04(front elevation)	27.5%	27.2%	Yes	0.3	
	1st Floor					
	Win05(front elevation)	27.8%	27.5%	Yes	0.3	
	Win06(front elevation)	27.8%	27.5%	Yes	0.3	
	Win07(front elevation)	27.8%	27.6%	Yes	0.2	
	Win08(front elevation)	27.9%	27.8%	Yes	0.1	
	Win09(front elevation)	27.9%	27.8%	Yes	0.1	

	Win10(front elevation)	28.0%	27.9%	Yes	0.1	
	Win11(front elevation)	28.1%	28.0%	Yes	0.1	
	Win12(front elevation)	28.1%	28.0%	Yes	0.1	
	Win13(front elevation)	28.4%	28.3%	Yes	0.1	
	Win14(front elevation)	28.4%	28.3%	Yes	0.1	
	2nd Floor					
	Win15(front elevation)	28.8%	28.7%	Yes	0.1	
	Win16(front elevation)	28.8%	28.7%	Yes	0.1	
	Win17(front elevation)	29.0%	28.9%	Yes	0.1	
	Win18(front elevation)	29.0%	28.9%	Yes	0.1	
	Win19(front elevation)	29.0%	28.9%	Yes	0.1	
	Win20(front elevation)	29.2%	29.1%	Yes	0.1	
	Win21(front elevation)	29.3%	29.2%	Yes	0.1	
	Win22(front elevation)	29.5%	29.5%	Yes	0	
	Win23(front elevation)	29.5%	29.5%	Yes	0	
	Win24(front elevation)	29.9%	29.9%	Yes	0	

Results demonstrate the difference of the Vertical Sky Component, at pre- and post- construction phase, has been kept to none or minimum where possible. One first floor side window at No 84 Coldharbour Lane may experience a noticeable reduction in daylight levels. However, it is important to note that the VSC (vertical sky component) values for these windows were already below the Building Research Establishment's (BRE) recommended threshold of 27% during the pre-construction phase. In addition, this window may not belong to a habitable room and thus, the proposed design can still be considered acceptable for the specific site.

Sunlight Assessment – Annual Probable Sunlight Hours

Annual probable sunlight hours (APSH) is a measure of sunlight that a given window may expect over a year period. The BRE guidance recognises that sunlight is less important than daylight in the amenity of a room and is heavily influenced by orientation. North facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will only receive sunlight for some of the day. Therefore, BRE guidance states that only windows with an orientation within 90 degrees of south need be assessed.

For sunlight studies the APSH (annual probable hours) test calculates the percentage of statistically probable hours of sunlight received by each window in both the summer and winter months. From March 21st to September 21st – Summer period and from the 21st September to 21st of March – Winter period.

Sunlight is measured using a sun indicator which contains 100 spots, each representing 1% of APSH. Therefore, where no obstruction exists the total annual probable sunlight hours would amount to 1486 and therefore each spot equates to 14.86 hours of the total annual sunlight hours.

Following are the recommended Sunlight hours for London. Total recommended sunlight hours:

$$\begin{aligned} &= 25\% \text{ of APSH} \\ &= 25\% \text{ of } 1486\text{hrs} \\ &= (25/100) \times 1486 \\ &= 371.5\text{hrs/yr} \end{aligned}$$

Recommended sunlight hours for winter

$$\begin{aligned} &= 5\% \text{ of APSH} \\ &= 5\% \text{ of } 1486\text{hrs} \\ &= (5/100) \times 1486 \\ &= 74.3\text{hrs/yr} \end{aligned}$$

Table 2 – Annual Probable Sunlight Hours for existing properties, after the proposed development

Annual Probable Sunlight Hours		Post development	Comments
Assessed neighbouring property:	Window no.	>371.5hrs	
No 84 Coldharbour Lane	Ground Floor		Pass for most windows
	Win01(rear elevation)	Yes	
	1st Floor		
	Win02(front elevation)	Yes	
	Win03(front elevation)	Yes	
	Win04(front elevation)	Yes	
	Win05(side elevation)	No (305hrs)	
	Win06(rear elevation)	Yes	
	Win07(rear elevation)	Yes	
	Win08(rear elevation)	Yes	
	Top Floor		
	Win09(front elevation)	Yes	
	Win10(front elevation)	Yes	
	Win11(front elevation)	Yes	
No 86 Coldharbour Lane	Win12(rear elevation)	Yes	
	Win13(rear elevation)	Yes	
	Win14(rear elevation)	Yes	
	Ground Floor		Pass
	Win01(rear elevation)	Yes	
	Win02(rear elevation)	Yes	
	Win03(rear elevation)	Yes	
	1st Floor		
	Win04(front elevation)	Yes	
	Win05(front elevation)	Yes	
	Win06(rear elevation)	Yes	
	Win07(rear elevation)	Yes	
	Win08(rear elevation)	Yes	
	Win09(rear elevation)	Yes	
	Top Floor		
No 1 Fairdale Gardens	Win10(front elevation)	Yes	
	Win11(front elevation)	Yes	
	Win12(rear elevation)	Yes	
	Win13(rear elevation)	Yes	
	Ground Floor		Pass
	Win01(front elevation)	Yes	
	Win02(front elevation)	Yes	
	Win03(side elevation)	Yes	
	Win04(rear elevation)	Yes	
	Win05(rear elevation)	Yes	
	1st Floor		
	Win06(front elevation)	Yes	
	Win07(front elevation)	Yes	

	Win08(side elevation)	Yes	
	Win09(rear elevation)	Yes	
	Win10(rear elevation)	Yes	
No 50 Coldharbour Lane	Ground Floor		Pass
	Win01(front elevation)	Yes	
	Win02(front elevation)	Yes	
	Win03(front elevation)	Yes	
	1st Floor		
	Win04(front elevation)	Yes	
	Win05(front elevation)	Yes	
	Win06(side elevation)	Yes	
	Win07(rear elevation)	Yes	
	Win08(front elevation)	Yes	
No 45, 47, 49, 51 Coldharbour Lane	Win09(rear elevation)	Yes	Pass
	Win10(rear elevation)	Yes	
	Ground Floor		
	Win01(front elevation)	Yes	
	Win02(front elevation)	Yes	
	Win03(front elevation)	Yes	
	Win04(front elevation)	Yes	
	1st Floor		
	Win05(front elevation)	Yes	
	Win06(front elevation)	Yes	
	Win07(front elevation)	Yes	
	Win08(front elevation)	Yes	
	Win09(front elevation)	Yes	
	Win10(front elevation)	Yes	
	Win11(front elevation)	Yes	
	Win12(front elevation)	Yes	
	Win13(front elevation)	Yes	
	Win14(front elevation)	Yes	
	2nd Floor		
	Win15(front elevation)	Yes	
	Win16(front elevation)	Yes	
	Win17(front elevation)	Yes	
	Win18(front elevation)	Yes	
	Win19(front elevation)	Yes	
	Win20(front elevation)	Yes	
	Win21(front elevation)	Yes	
	Win22(front elevation)	Yes	
	Win23(front elevation)	Yes	
	Win24(front elevation)	Yes	

Results show that most assessed neighbouring windows, will receive adequate sunlight hours during the year.

Table 3 – Winter Probable Sunlight Hours for existing properties, after the proposed development

Winter Probable Sunlight Hours		Post development	Comments
Assessed neighbouring property:	Window no.	>74.3hrs	
No 84 Coldharbour Lane	Ground Floor		Pass for most windows
	Win01(rear elevation)	Yes	
	1st Floor		
	Win02(front elevation)	Yes	
	Win03(front elevation)	Yes	
	Win04(front elevation)	Yes	
	Win05(side elevation)	No (65hrs)	
	Win06(rear elevation)	Yes	
	Win07(rear elevation)	Yes	
	Win08(rear elevation)	Yes	
	Top Floor		
	Win09(front elevation)	Yes	
	Win10(front elevation)	Yes	
	Win11(front elevation)	Yes	
No 86 Coldharbour Lane	Win12(rear elevation)	Yes	
	Win13(rear elevation)	Yes	
	Win14(rear elevation)	Yes	
	Ground Floor		Pass
	Win01(rear elevation)	Yes	
	Win02(rear elevation)	Yes	
	Win03(rear elevation)	Yes	
	1st Floor		
	Win04(front elevation)	Yes	
	Win05(front elevation)	Yes	
	Win06(rear elevation)	Yes	
	Win07(rear elevation)	Yes	
	Win08(rear elevation)	Yes	
	Win09(rear elevation)	Yes	
	Top Floor		
No 1 Fairdale Gardens	Win10(front elevation)	Yes	
	Win11(front elevation)	Yes	
	Win12(rear elevation)	Yes	
	Win13(rear elevation)	Yes	
	Ground Floor		Pass
	Win01(front elevation)	Yes	
	Win02(front elevation)	Yes	
	Win03(side elevation)	Yes	
	Win04(rear elevation)	Yes	
	Win05(rear elevation)	Yes	
	1st Floor		
	Win06(front elevation)	Yes	
	Win07(front elevation)	Yes	

	Win08(side elevation)	Yes	
	Win09(rear elevation)	Yes	
	Win10(rear elevation)	Yes	
No 50 Coldharbour Lane	Ground Floor		Pass
	Win01(front elevation)	Yes	
	Win02(front elevation)	Yes	
	Win03(front elevation)	Yes	
	1st Floor		
	Win04(front elevation)	Yes	
	Win05(front elevation)	Yes	
	Win06(side elevation)	Yes	
	Win07(rear elevation)	Yes	
	Win08(front elevation)	Yes	
No 45, 47, 49, 51 Coldharbour Lane	Win09(rear elevation)	Yes	Pass
	Win10(rear elevation)	Yes	
	Ground Floor		
	Win01(front elevation)	Yes	
	Win02(front elevation)	Yes	
	Win03(front elevation)	Yes	
	Win04(front elevation)	Yes	
	1st Floor		
	Win05(front elevation)	Yes	
	Win06(front elevation)	Yes	
	Win07(front elevation)	Yes	
	Win08(front elevation)	Yes	
	Win09(front elevation)	Yes	
	Win10(front elevation)	Yes	
	Win11(front elevation)	Yes	
	Win12(front elevation)	Yes	
	Win13(front elevation)	Yes	
	Win14(front elevation)	Yes	
	2nd Floor		
	Win15(front elevation)	Yes	
	Win16(front elevation)	Yes	
	Win17(front elevation)	Yes	
	Win18(front elevation)	Yes	
	Win19(front elevation)	Yes	
	Win20(front elevation)	Yes	
	Win21(front elevation)	Yes	
	Win22(front elevation)	Yes	
	Win23(front elevation)	Yes	
	Win24(front elevation)	Yes	

Results show that most windows will achieve the recommended 74.3hours of sunlight during the winter period.

OVERSHADOWING ASSESSMENT

Sunlight to Amenity Spaces

An assessment of the sunlight levels of the neighbouring open spaces was undertaken.

BRE guidance states that the test should be run on 21 March which is the midpoint between the summer and winter solstices (equinox). According to BRE, the sunlight hours on this day should be no less than 2 hours.

The proposed residential development has been designed with specific attention to safeguard the natural light of all the neighbouring gardens.

Detailed model study in Ecotect Analysis demonstrates that more than 50% of the neighbouring rear garden will receive the minimum of 2 hours of sunlight on the 21st March.

Specifically:

- No 84 Coldharbour Lane – Approximately 2.60hrs of sunlight
- No 1 Fairdale Gardens – Approximately 6.70hrs of sunlight



Figure 2 – Open spaces

DAYLIGHT & SUNLIGHT ASSESSMENT: PROPOSED FLATS

Daylight factor

The daylight factor is the illuminance at a point on the reference plane in a space, divided by the illuminance on an unobstructed horizontal surface outdoors. The CIE standard overcast sky[C3] is used, and the ratio is usually expressed as a percentage. The recommendations for side lit rooms are met if both target daylight factors (the median daylight factor over 50% of the reference plane, and the minimum daylight factor over 95% of the reference plane) are achieved.

The table below shows the minimum requirements that each habitable space needs to achieve.

Table C2 – Target daylight factors (D) for London

Level of recommendation	Target daylight factor D for half of assessment grid	Target daylight factor D for 95% of assessment grid
Minimum	2.1%	0.7%
Medium	3.5%	2.1%
High	5.3%	3.5%

Sunlight: Annual and Winter Probable hours

BRE states: “in housing, the main requirement **for sunlight is in living rooms**, where it is valued at any time of the day, but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens where people prefer it in the morning rather than the afternoon.”

The BRE guide considers the critical aspects of orientation and overshadowing in determining the availability of sunlight at a proposed development site.

The guide proposes minimizing the number of dwellings whose living room face solely north unless there is some compensating factor. At the same time it acknowledges that the site's existing urban environment may impose orientation or overshadowing constraints which may not be possible to overcome.

“In general, a dwelling or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided that:

- At least one main window faces within 90 degrees 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 paragraph 3.1.11 the BRE guidance suggests that if a room faces significantly North of due East or West it is unlikely to meet the recommended levels proposed by the BS 8206-2. As such, it is clear that only windows facing within 90 degrees of due South can be assessed using this methodology.

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Table 4 - Daylight & Sunlight Assessment

Unit	Room Type	TDF for half of the assessment grid(%) ¹	TDF for 95% of the assessment grid(%) ²	Pass	Sunlight Assessment (probable sunlight hours)	
					Annual %	Winter %
First Floor						
Flat 1	Kitchen/Dining/Living	3.6	2.1	Yes	27%	6%
	Bedroom 1	3.1	2.2	Yes	N/A	N/A
Flat 2	Kitchen/Dining/Living	4.2	2.8	Yes	28%	7%
	Bedroom 1	4.4	3.2	Yes	N/A	N/A
	Bedroom 2	3.5	2.8	Yes	N/A	N/A
Flat 3	Kitchen/Dining/Living	4.5	3.5	Yes	28%	7%
	Bedroom 1	5.1	4.3	Yes	N/A	N/A
Flat 4	Kitchen/Dining/Living	3.5	2.9	Yes	27%	6%
	Bedroom 1	2.9	2.3	Yes	N/A	N/A
Second Floor						
Flat 5	Kitchen/Dining/Living	3.7	2.2	Yes	27%	7%
	Bedroom 1	3.8	2.8	Yes	N/A	N/A
	Bedroom 2	4.1	3.4	Yes	N/A	N/A
Flat 6	Kitchen/Dining/Living	2.8	2.1	Yes	27%	6%
	Bedroom 1	6.1	5.2	Yes	N/A	N/A
	Bedroom 2	6.3	5.2	Yes	N/A	N/A
	Bedroom 3	2.8	2.2	Yes	N/A	N/A
Flat 7	Kitchen/Dining/Living	3.8	2.9	Yes	27%	7%
	Bedroom 1	3.3	2.8	Yes	N/A	N/A
Third Floor						
Flat 8	Kitchen/Dining/Living	2.8	2.1	Yes	27%	8%
	Bedroom 1	2.9	2.3	Yes	N/A	N/A
	Bedroom 2	2.9	2.3	Yes	N/A	N/A
Flat 9	Kitchen/Dining/Living	2.8	2.1	Yes	27%	8%
	Bedroom 1	2.9	2.3	Yes	N/A	N/A

Results:

A total of 23 rooms were assessed at No 52 Coldharbour Lane. Results demonstrate that ALL habitable spaces will meet the required minimum Target Daylight Factor.

The proposed flats have been designed with care, achieving as much daylight levels where possible.

¹ Target Daylight Factor

² Target Daylight Factor

CONCLUSION

The proposed development consisting of 9 residential units, has been designed with care so that it has minimum visual impact on its surroundings, achieving as much sunlight hours as possible despite un-avoidable site constraints and limitations.

Calculations confirm that existing neighbouring properties will still receive adequate annual probable sunlight hours and adequate sunlight hours during the winter period.

Calculations demonstrate that the Vertical Sky Component for most neighbouring windows focuses on the minimum or none difference between pre- and post-construction. Further results show that the some existing windows already receive lower daylight levels from the recommended values set by BRE.

Open spaces were identified around the proposed site and therefore an overshadowing assessment was carried out. Results demonstrate that more than 50% of each open space will receive minimum 2hrs of sunlight on the 21st March. The proposed amenity areas also achieve more than 2hrs of sunlight.

The assessment of daylight, sunlight and overshadowing to the surrounding properties indicates that the proposed scheme will not cause a change in light levels to occupants located near the proposed site.

Daylight Assessment to Proposed Habitable rooms:

The proposed flats have been designed with care, achieving as much daylight levels where possible.

The Target Daylight Factors (TDFs) were calculated for kitchen, living room and bedrooms.

The results show that:

- a. ALL proposed habitable rooms – kitchen, living room and bedrooms - achieve the minimum target daylight levels. (23 out of 23 assessed rooms). Thus, the proposed scheme passes in relation to internal daylight distribution.

It is worth noting that the daylight standards are for guidance and their purpose is to encourage good daylight levels within a dwelling as a whole. In this development the daylight & sunlight levels have achieve a satisfactory result.

APPENDIX A

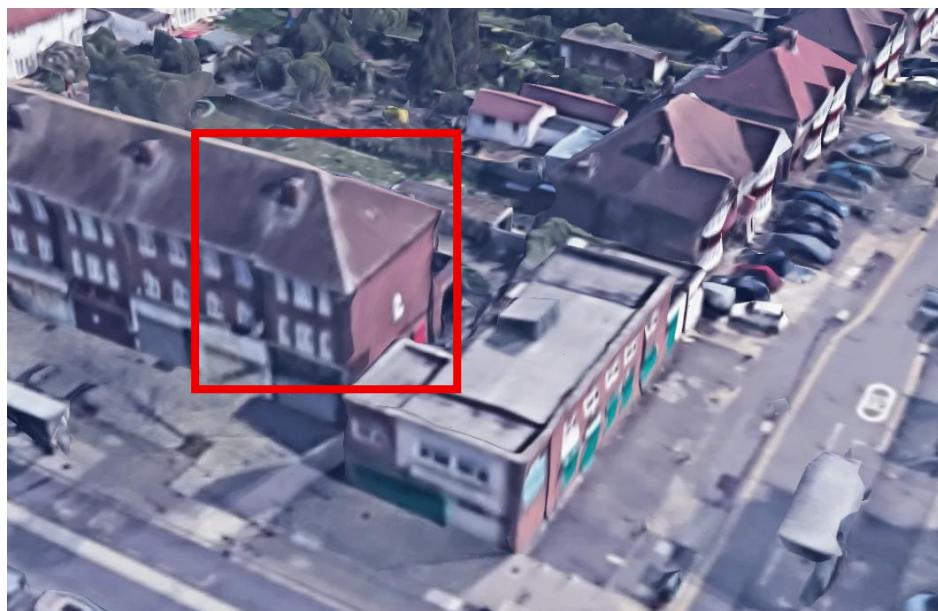


Figure 3 – Neighbouring windows at No 84 & 86 Coldharbour Lane (Numbering from left to right)



Figure 4 – Neighbouring windows at No 84 & 86 Coldharbour Lane (Numbering from left to right)



Figure 5 – Neighbouring Windows at No 1 Fairdale Gardens (Numbering from left to right)



Figure 6 – Neighbouring Windows at No 1 Fairdale Gardens (Numbering from left to right)



Figure 7 – Neighbouring Windows at No 50 Coldharbour Lane (Numbering from left to right)



Figure 8 – Neighbouring Windows at No 45, 47, 49, 51 Coldharbour Lane (Numbering from left to right)

APPENDIX B



Figure 6 – Proposed habitable rooms at first floor

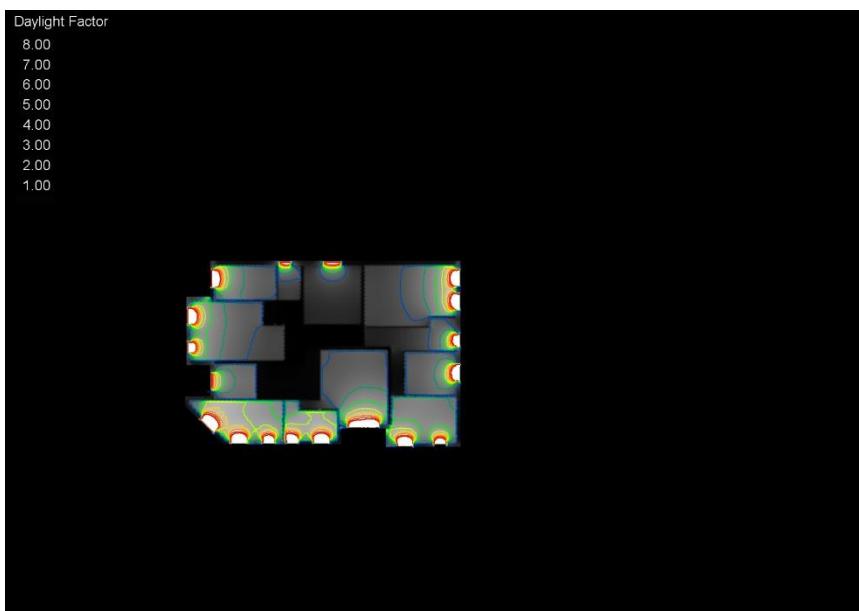


Figure 7 – Proposed habitable rooms at second floor

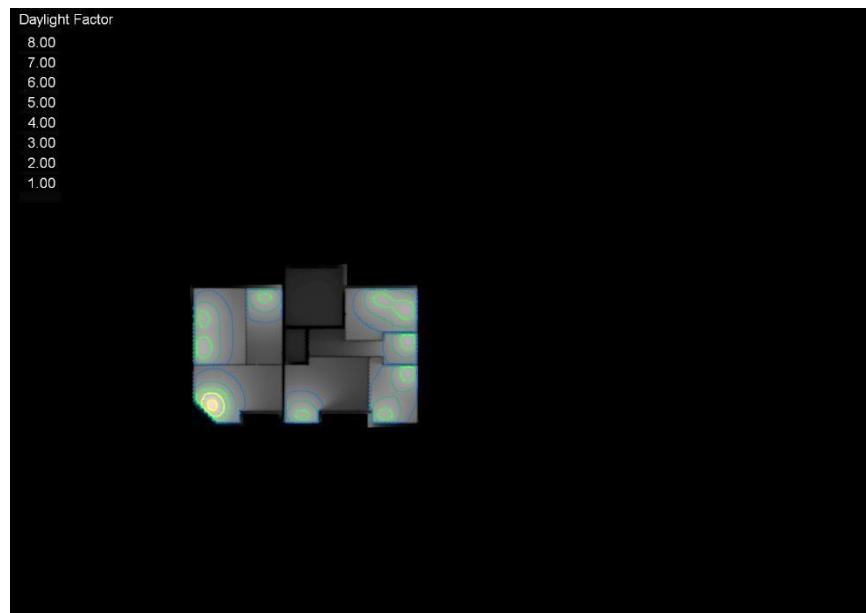


Figure 3 - Proposed habitable rooms at top floor