Daylight and Sunlight Assessment (Neighbouring Properties)

6 Firs Walk

For Gavacan Homes

March 2024

ecolytik

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Contents

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1 Executive Summary

Daylight and Sunlight analysis was carried out for the proposed development at 6 Firs Walk, Northwood, within the London Borough of Hillingdon. This report outlines the results of the analysis for the planning application, assessing potential daylight and sunlight impacts on surrounding properties.

The methodology set out in this report is in accordance with BRE's "Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice" by PJ Littlefair (2022) which is accepted as good practice by Planning Authorities. The numerical criteria recommended within the BRE guidelines have been applied to the assessment and it is important to note that these guidelines are advisory and often need to be applied flexibly according to the specific context of a site.

To carry out the analysis, a 3D computer model has been prepared in specialist software of the existing site, the key surrounding properties and the proposed scheme. The daylight and sunlight levels in both the existing proposed conditions for the relevant neighbouring buildings were evaluated.

The analysis has been carried out on the closest neighbouring buildings to the application site.

The assessment results show that all windows, rooms and amenity spaces of neighbouring properties will receive satisfactory levels of daylight and sunlight in line with BRE guidelines.

The proposed development is therefore not anticipated to have any notable daylight and sunlight impacts to neighbouring properties.

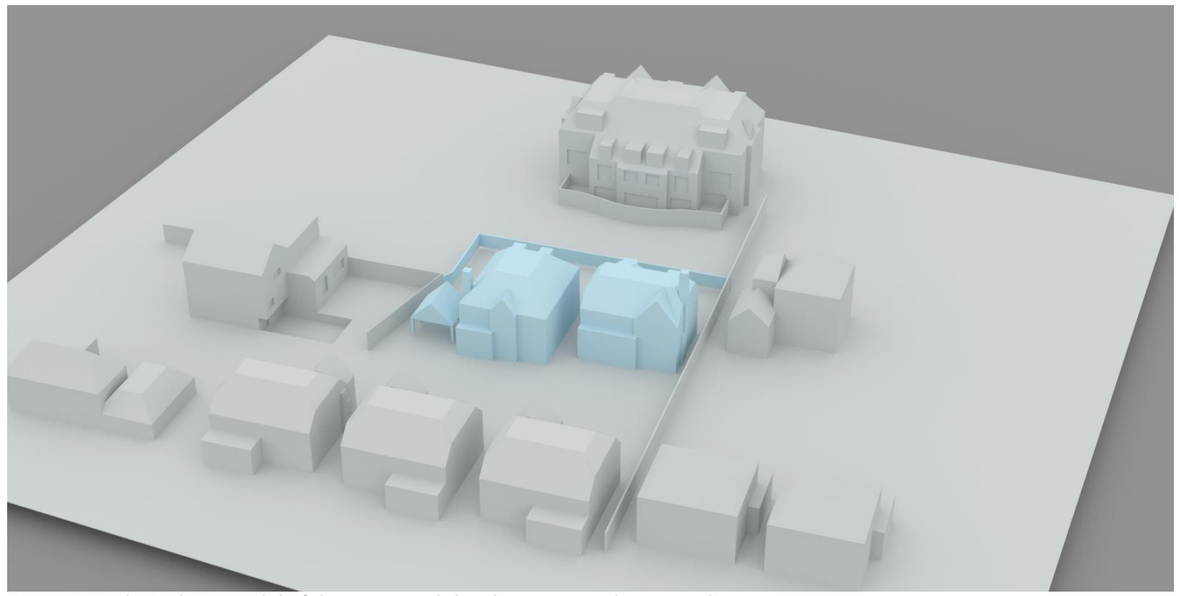


Figure 1: Technical 3D model of the proposed development and surrounding context.

Table 1. Summary of daylight and sunlight results

Daylight and sunlight to buildings	
Number of neighbouring windows that do not pass the 25-degree plane test	7
Number of neighbouring windows (and associated rooms) meeting the VSC and DD tests	7
Neighbouring windows that do not comply with the BRE daylight and sunlight criteria	0
Sunlight to amenity spaces	
Neighbouring amenity spaces assessed	3
Neighbouring amenity spaces with no notable reduction in sunlight levels on 21 March	3
Neighbouring amenity spaces that do not comply with BRE's sunlight criteria	0

2 Introduction

Ecolytik have been instructed to assess the effect of the proposed development at 6 Firs Walk on neighbouring properties in terms of daylight and sunlight access. The assessment considers the latest proposal for the site, dated March 2024.

2.1 Site

The application site is located at the end of Firs Walk, a residential street in Northwood that is characterised by detached properties on generous plots. The site area covers approximately 0.08 hectares and currently comprises a substantially sized detached dwelling. The proposed development entails the demolition of the existing house and the erection of two-family sized homes at the site.

The site location is presented in Figure 2.

2.2 Planning policies

Local, regional and national planning policies relating to daylight and sunlight have been considered in the assessment. Planning policy advises that new development should only be permitted where it is shown not to cause unacceptable loss of daylight or sunlight amenity to neighbouring properties. Consideration often needs to be given to the development's context.

A full summary of the relevant policy landscape is presented in Appendix C.

Figure 2. Approximate site location plan of 6 Firs Walk

2.3 Application of BRE's guidance

The BRE guidelines advise that, when assessing any potential effects on surrounding properties, only those windows and rooms where daylight and sunlight is required need to be considered. These rooms have therefore been tested in the assessment, with the omission of non-habitable spaces such as staircases, hallways, bathrooms, toilets, stores etc, as per BRE guidance.

In addition, it is worth highlighting the following excerpts from the guidance:

"The guide is intended for building designers and their clients, consultants, and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is 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 values.

Note that numerical values given here are purely advisory. Different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light"

It is therefore important to carefully consider the context of a potential development site and in certain circumstances apply the BRE guidelines more flexibly. The numerical values of the BRE guide theoretically apply to any built environment. However, in more dense city environments or constrained sites, achieving the standard BRE criteria can be challenging and often conflicts with other beneficial factors of site layout design.

With the above in mind, rigid adherence to the BRE in certain situations could easily result in an inappropriate form of development. In such circumstances, local authorities and applicants may agree to adopt lower target values which would be more relevant to the location concerned.

Further details on the BRE guidelines including the standard numerical criteria as well as suggested approaches on how to set alternative targets, where this is deemed appropriate, are presented in Appendix D of this report.

3 Technical model

3.1 Sources of information and assumptions

Architectural drawings and site photography have been used to create a 3D computer model of the proposed development in the context of the existing site and surrounding buildings.

Where survey or planning information was unavailable, the positions of windows and buildings have been estimated based upon publicly available satellite imagery and/or brick counts. Window positions and dimensions used directly affect the results of all assessment methods. Access to the surrounding properties has not been sought.

The full list of sources of information used in this assessment is as follows:

- Site location plan: 23-J4295-LP01 (Location Plan)
- Site plan: 23-J4295-100 (Proposed Site Information Plan)
- Floors plans and elevations for Plot 1: 23-J4295-LP01 (Location Plan)
- Floor plans and elevations for Plot 2: 23-J4295-102 (Proposed Plot 2)
- Plan and elevation for car port: 23-J4295-105 (Proposed Carport)
- Topographical survey: K 04 17 - T Site Survey
- From Hillingdon's Planning Portal:
  - Plans, elevations, sections and site plan for approved apartment block at 25 Dene Road to the north (Ref: 46479/APP/2021)
  - Plans, elevations and site plan for 3no. approved houses at 5 Firs Walk (Ref: 30837/APP/2021/2577)
- From Zoopla website: Floor plan and photographs for 7 Firs Walk (https://www.rightmove.co.uk/house-prices/details/england-113143145-92642820?s=e0ff580a176fd11289340a3503164ff88bd1907e7931204626c0b7d2417e697a#/, accessed 21 March 2024)

3.2 Scope of Assessment

The images to the right show the technical 3D models developed for the analysis.

The assessment is focused on the following properties that are in closest proximity to the proposed development:

- Apartment building of 25 Dene Road to the north (currently in construction).
- Detached house of 8 Firs Walk to the east.
- 3no. detached houses of 5 Firs Walk to the south (currently in construction)
- Detached House of 7 Firs Walk to the west.

The findings and review of potential impacts for these properties are discussed in the next section of this report.

Trees were omitted from the technical model such that the potential impact of the proposed building massing can be fully assessed.

The ground topography has been modelled in a more simplified way for it to factored in the analysis.

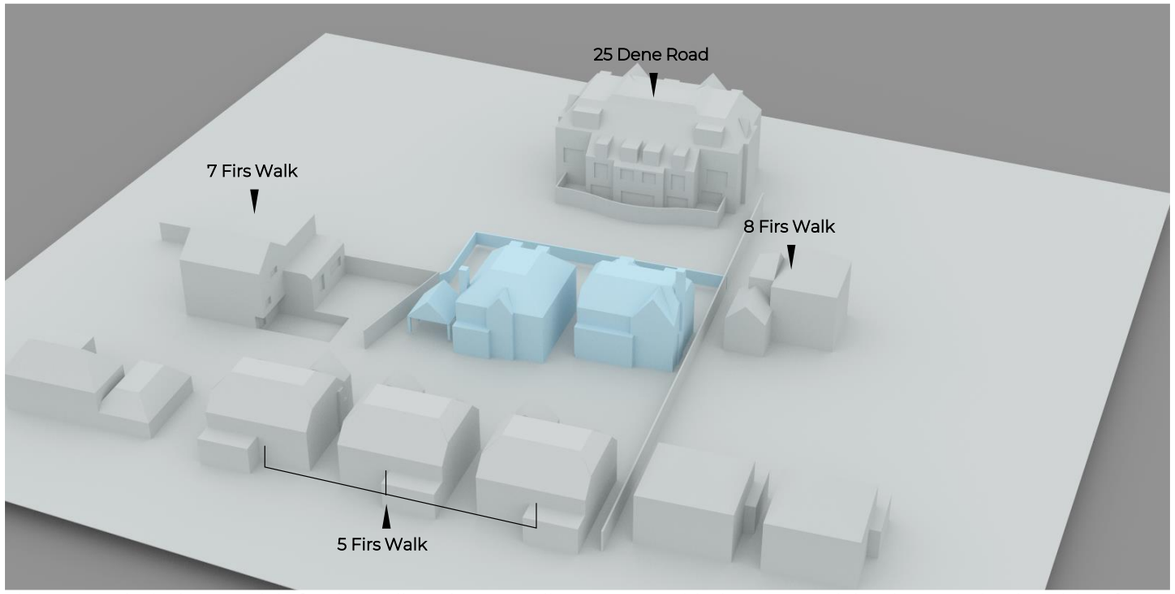


Figure 3: Technical 3D model of 6 Firs Walk and surrounding context, with the proposed development in place (view from southeast).

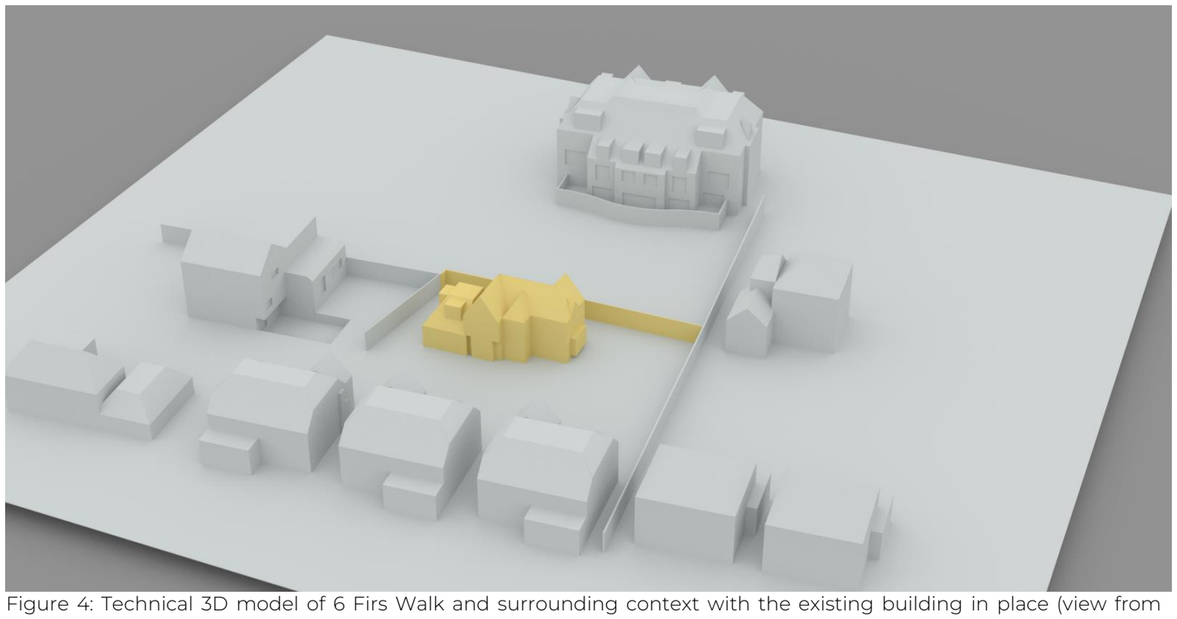


Figure 4: Technical 3D model of 6 Firs Walk and surrounding context with the existing building in place (view from southeast)

4 Assessment results

4.1 Daylight and Sunlight to Buildings

4.1.1 25-degree plane test

Initial 25-degree plane tests were carried out to assess all neighbouring properties and determine whether detailed daylight and sunlight analysis were required, in line with BRE methodology.

The initial tests showed that the 25-degree plane tests were met for the following properties (Figures 5-7), and as such no further tests were deemed required for these properties:

- Lower ground floor windows of 25 Dene Road to the north.
- Lower ground and ground floor windows of 7 Firs Walk to the west.

For all other assessed properties/windows, detailed daylight and sunlight analyses were carried out as presented in the following sections.

Window and room references, and internal layouts or elevations referenced in the technical model are presented in Appendix A. Detailed results are presented in Appendix B.

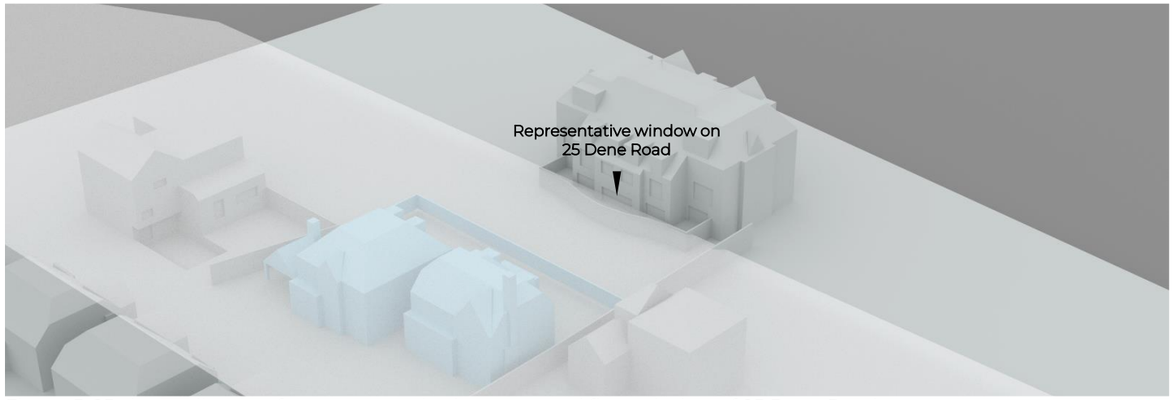


Figure 5: 25-degree line test for representative lower ground floor window of 25 Dene Road.

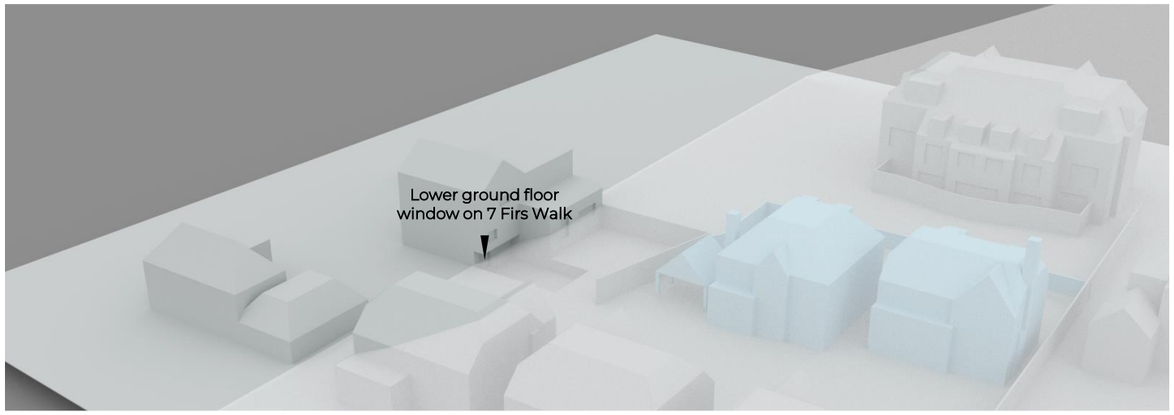


Figure 6: 25-degree line test for lower ground floor window of 7 Firs Walk.

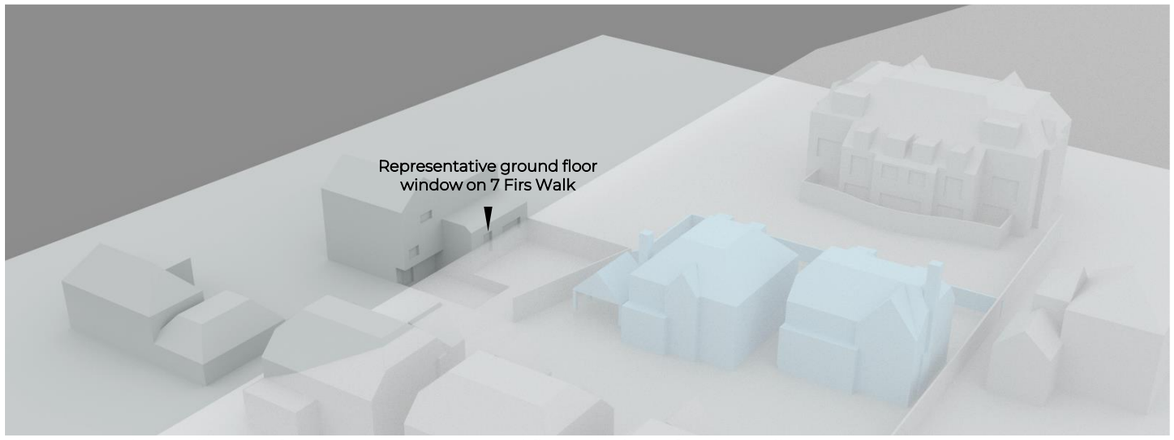


Figure 7: 25-degree line test for representative ground floor window of 7 Firs Walk.

4.1.2 5 Firs Walk

These 3no. detached homes are located to the south of the application site and are currently under construction.

Site plan, elevations and internal layouts of these building are available on Hillingdon's planning portal and were used to inform the technical model.

The analysis results shows that all ground floor windows and rooms facing the proposed development will meet BRE's daylight targets. The first-floor windows will meet the 25-degree plane test (Figure 8) and do not need to be assessed in detail.

All windows on these properties facing the application site are oriented north (not within 90 degrees due south), and therefore assessment of sunlight levels to these windows are not deemed relevant.

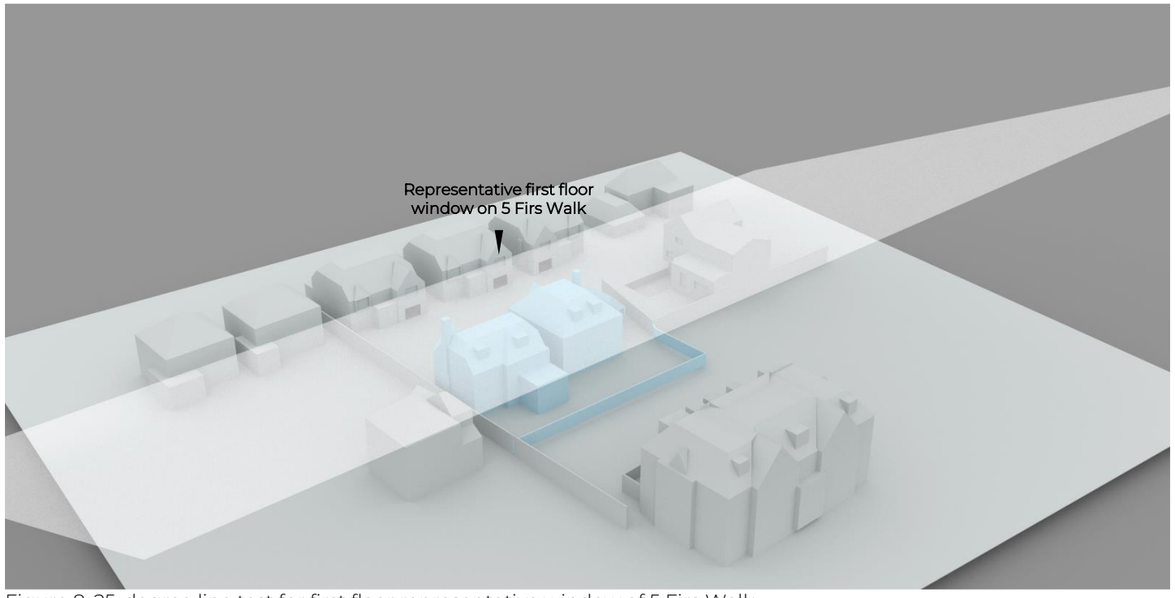


Figure 8: 25-degree line test for first floor representative window of 5 Firs Walk.

4.1.3 8 Firs Walk

This property is located to the east of the application site and comprises a two-storey detached dwelling. Internal layout and elevational information were not available for this property and therefore assumptions have been made in the technical model.

The windows located on the flank wall of this property facing the proposed development and their connecting rooms have been included in the detailed assessment.

The daylight assessment results show that all windows and rooms will meet the Vertical Sky Components (VSCs) and Daylight Distribution (DD) targets set out by the BRE. The Annual and Winter Probable Sunlight Hours (APSH and WPSH) to the assessed windows and rooms will also meet BRE guidelines.

4.2 Sunlight to Amenity Spaces

A review of satellite images shows that there are 3no. designated amenity spaces due north, east and west of the proposed development and may be affected from a sunlight access perspective. These include gardens of:

- 25 Dene Road
- 7 Firs Walk
- 8 Firs Walk

Sunlight assessments show that all assessed amenity spaces will meet the BRE criteria with over 50% of their respective areas receiving over 2 hours of sunlight on 21 March (Figure 9). Detailed results are presented in Appendix B.

Figure 9: Sunlight to amenity result for 21 March.

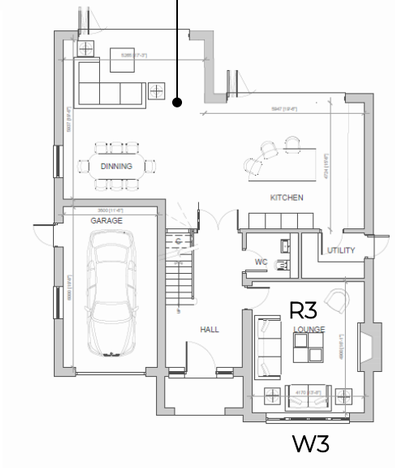
5 Conclusions

The Daylight and Sunlight Assessment results show that the proposed development at 6 Firs Walk has been designed in a way that it will result in no significant and noticeable impact on daylight and sunlight access to neighbouring properties.

Appendix A – Window and Room References

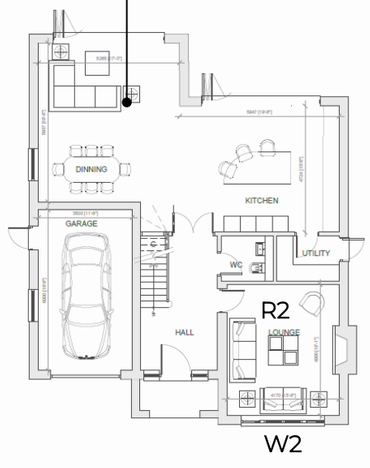
5 Firs Walk (assessed in detail) – Hillingdon Planning Portal ref: 30837/APP/2021/2577

PROPOSED STREET SCENE (1:200)



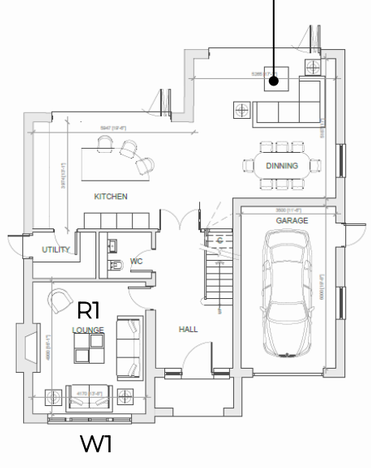
W3

GROUND FLOOR PLAN



W2

GROUND FLOOR PLAN



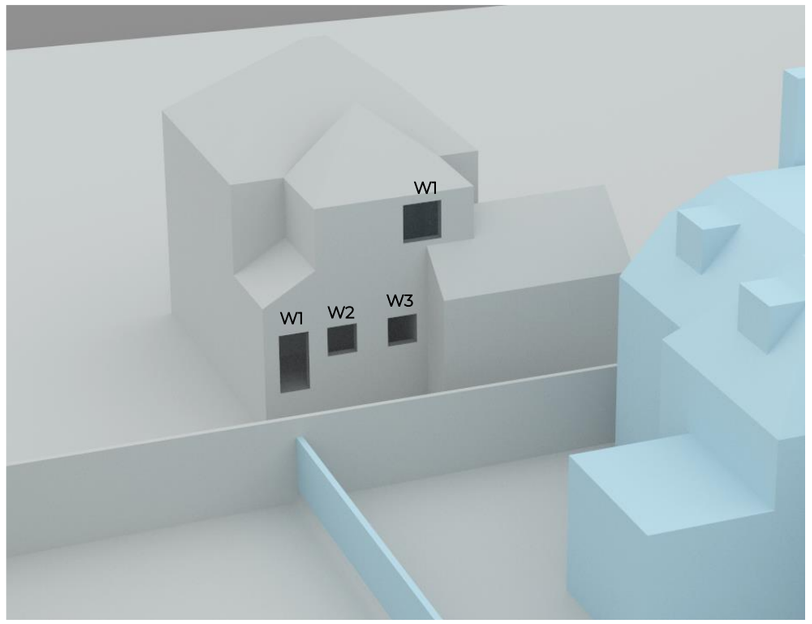
W1

GROUND FLOOR PLAN

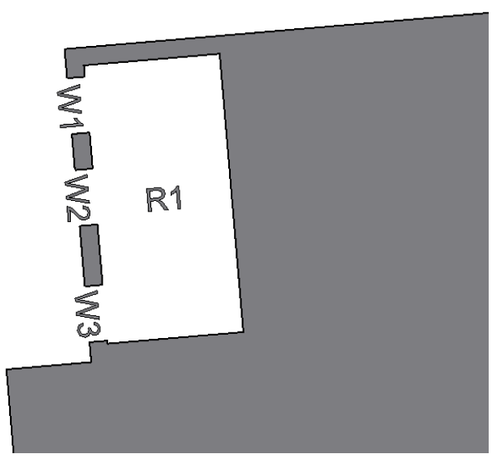
8 Firs Walk (assessed in detail) – Assumed layouts and window positions

Satellite image from Google Maps (view from west)

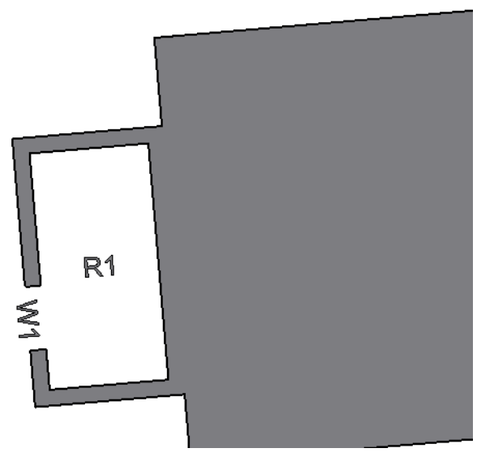
Image from technical model (view from west)



Ground floor plan from technical model

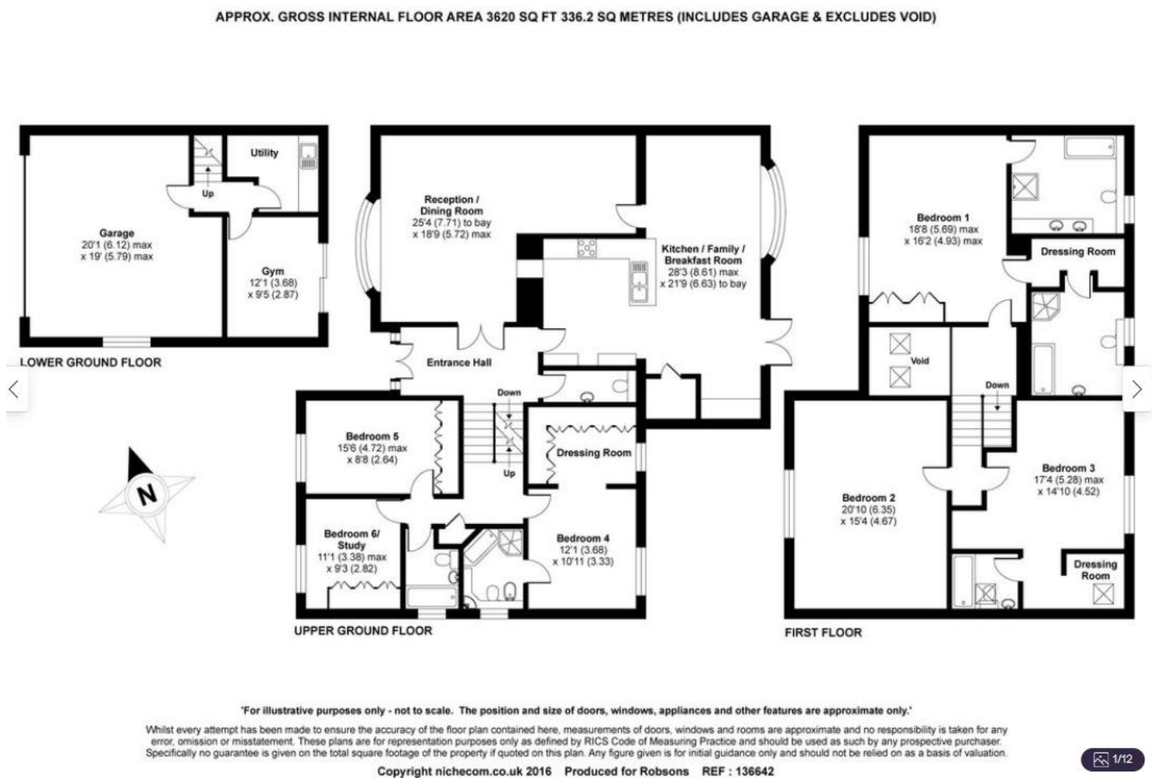


First floor plan from technical model



7 Firs Walk (meets 25-degree plane test) – Zoopla website (https://www.rightmove.co.uk/house-prices/details/england-113143145-92642820?s=e0ff580a176fd11289340a3503164ff88bd1907e7931204626c0b7d2417e697a#/ , accessed 21 March 2024)

Floor plans



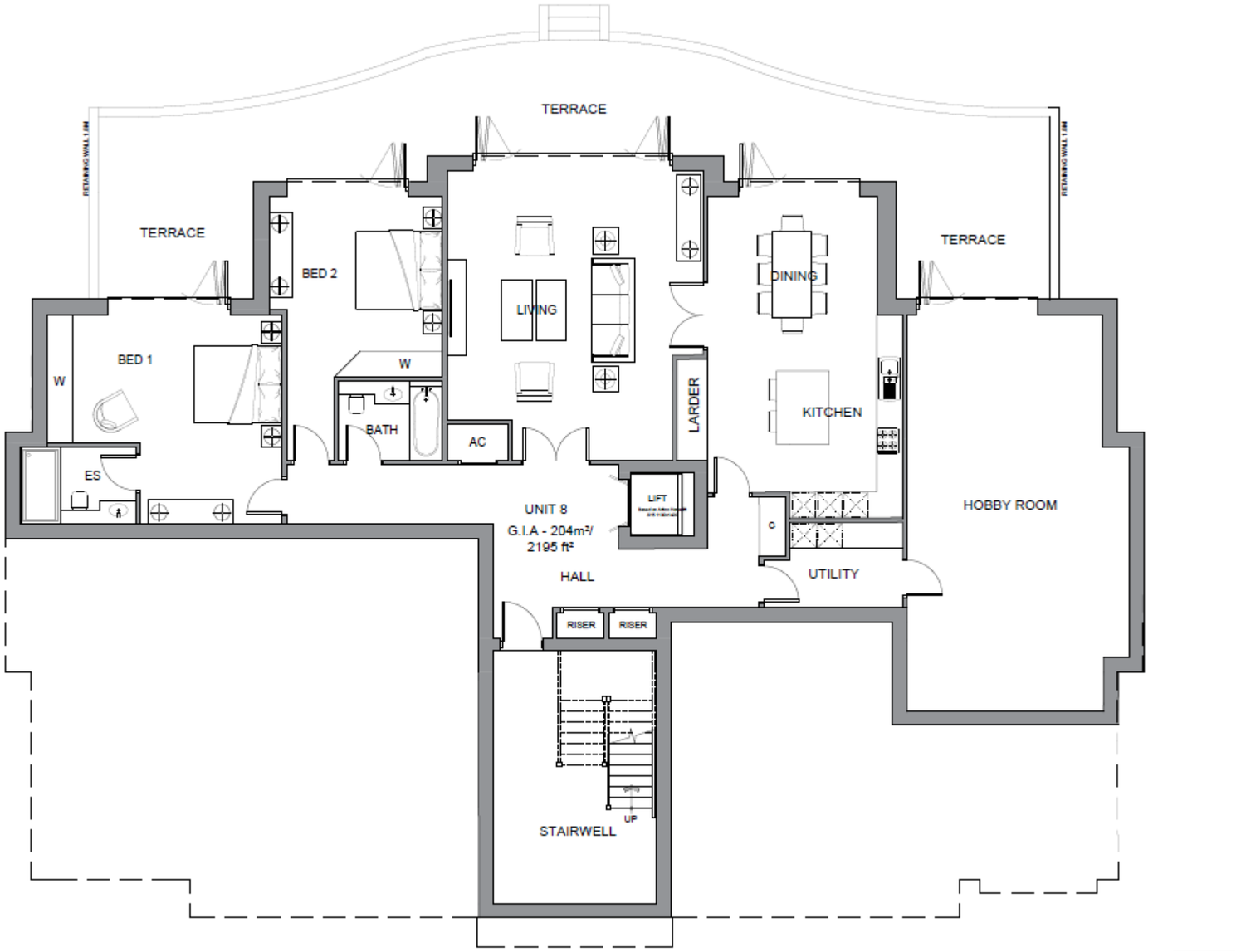
Photos of façade facing application site and garden

25 Dene Road (meets 25-degree plane test) – Hillingdon Planning Portal ref: 46479/APP/2021

Rear (south elevation)

REAR ELEVATION

Lower ground floor plan



Appendix B – Detailed Results

Table 2. Daylight and Sunlight to Buildings – Vertical sky component and sunlight probably hours results to all assessed windows and rooms.

Floor Ref.	Room Ref.	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Room VSC	Pr/Ex	Meets BRE Criteria	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
8 Firs Walk																							
Ground	R1	Unknown	W1	Existing	34.21	0.92	YES	265°				46.00	0.91	YES	12.00	0.67	YES						
				Proposed	31.46							42.00			8.00								
			W2	Existing	34.77	0.92	YES	265°				42.00	0.93	YES	7.00	0.57	YES						
				Proposed	31.87							39.00			4.00								
			W3	Existing	27.98	0.96	YES	265°				18.00	0.94	YES	1.00	0.00	YES						
				Proposed	26.81							17.00			0.00								
									32.79	0.93	YES							47.00			12.00		
									30.40									43.00	0.91	YES	8.00	0.67	YES
First	R1	Unknown	W1	Existing	37.97	0.95	YES	265°				51.00	0.92	YES	16.00	0.75	YES						
				Proposed	35.91							47.00			12.00								
									37.97	0.95	YES							51.00			16.00		
									35.91									47.00	0.92	YES	12.00	0.75	YES
5 Firs Walk																							
Ground	R1	Lounge	W1	Existing	33.40	0.99	YES	355°N					*North	*North		*North	*North						
				Proposed	33.01																		
									33.40	0.99	YES												
									33.01										*North	*North		*North	*North
	R2	Lounge	W2	Existing	32.39	0.98	YES	355°N					*North	*North		*North	*North						
				Proposed	31.74																		
									32.39	0.98	YES												
									31.74										*North	*North		*North	*North
	R3	Lounge	W3	Existing	33.08	0.94	YES	355°N					*North	*North		*North	*North						
				Proposed	30.94																		
									33.08	0.94	YES												
									30.94										*North	*North		*North	*North
6 Firs Walk																							

Table 3. Daylight to Buildings – Daylight distribution results to assessed rooms.

Floor Ref.	Room Ref	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
8 Firs Walk								
Ground	R1	Unknown	Area m2	11.8891	11.7602	11.76016		
			% of room		0.98915	0.989152	1	YES
First	R1	Unknown	Area m2	11.5208	10.6204	10.62042		
			% of room		0.92185	0.921846	1	YES
5 Firs Walk								
Ground	R1	Lounge	Area m2	20.4	20.3436	20.34362		
			% of room		0.99724	0.997239	1	YES
	R2	Lounge	Area m2	20.1397	19.9748	19.60784		
			% of room		0.99181	0.973591	0.98	YES
	R3	Lounge	Area m2	20.1397	20.0729	20.07276		
			% of room		0.99668	0.996676	1	YES

Table 4. Sunlight to amenity spaces on 21 March

Amenity Ref		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
A1	Area m2	174.96	173.71	173.71	1.00	YES
	Percentage		99%	99%		
A2	Area m2	405.93	405.93	339.30	0.84	YES
	Percentage		100%	84%		
A3	Area m2	170.82	153.38	153.38	1.00	YES
	Percentage		90%	90%		

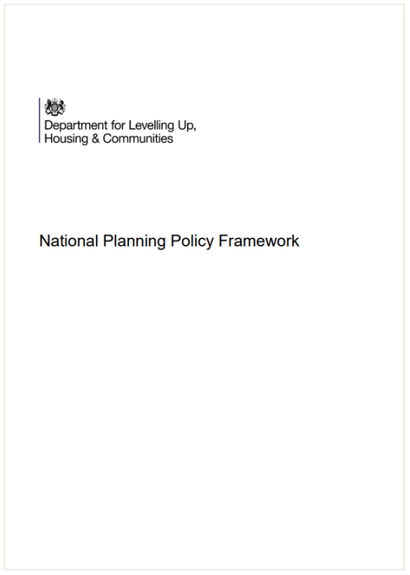
6 Firs Walk

Appendix C– Planning Policies

National Planning Policy Framework (2023)

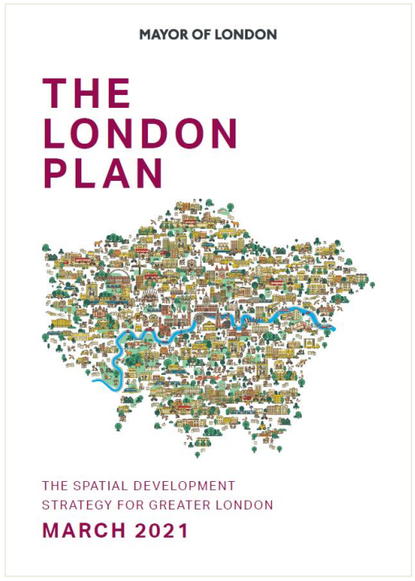
This document provides a framework within which locally prepared plans for housing and other development can be produced.

For example, it sets out how the planning system could achieve sustainable development, effective use of land, well-designed places, protecting the green belt, meeting the challenge of climate change, among several other aspects which precipitate with more specificity into local planning policies.



London Plan (March 2021)

The London Plan is part of the statutory development plan for London and sets out a framework for how for how the city will develop sustainably over the next 20-25 years. Policies which are directly or indirectly linked to daylight / sunlight amenity are summarised below.



Policy GG2 Making the best use of land

- enable the development of brownfield land, particularly in Opportunity Areas, on surplus public sector land, and sites within and on the edge of town centres, as well as utilising small sites.
- proactively explore the potential to intensify the use of land, promoting higher density development.

Policy D9 Tall Buildings

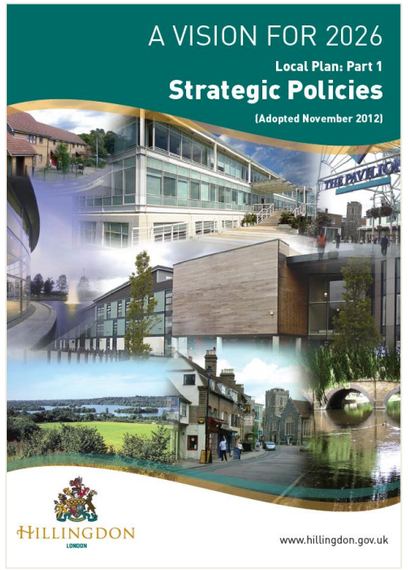
- wind, daylight, sunlight penetration and temperature conditions around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open spaces, including water spaces, around the building.

Housing SPG (March 2016)

The need to protect the amenity of neighbours is reflected within publications from the Mayor of London. These documents highlight that current guidance needs to be used flexibly where developments are in urban areas with higher densities and suggest that the nationally applicable criteria given within the BRE guidance needs to be applied carefully.

- Policy 7.6Bd requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to privacy and overshadowing and where tall buildings are proposed. An appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new development on surrounding properties.

London Borough of Hillingdon's Local Plan Part 1 Strategic Policies (2012)



The Hillingdon Local Plan: Part 1- Strategic Policies is the key strategic planning document for Hillingdon and will support the delivery of the spatial elements of the Sustainable Community Strategy. It sets out the long-term vision and objectives for the Borough.

Page 195 in Appendix 5 of the Local Plan states:

"BE 20 daylight and sunlight considerations are retained from the Hillingdon local plan. BE19 and BE20 state the following:

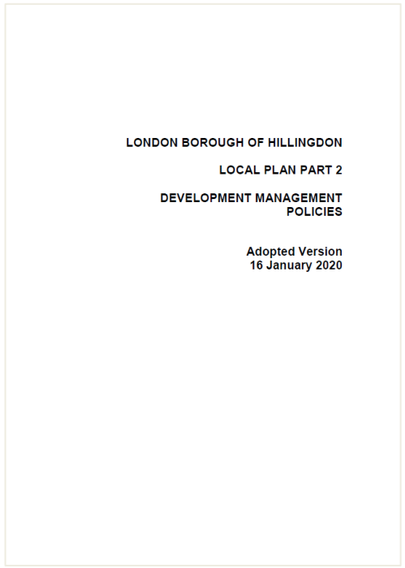
Policy BE19: *'The local planning authority will seek to ensure that new developments within residential areas compliment or improve the amenity and character of the area.'*

Paragraph 5.23: *'Ensuring adequate daylight and sunlight reaches both habitable rooms (including kitchens) and external private community space as an important principal of housing design which affects the enjoyment of occupants' living conditions. Local planning authority will pay full regard to the effect of a proposal, whether it be for a new building or extensions to an existing one, on the*

sunlight and daylight reaching neighbouring properties, and will allow full regard to the recommendations of 'site layout planning for daylight and sunlight' (Building Research Establishment 1991). Some proposals of substantial width, height and depth, particularly when built close to a party boundary, may not cause loss of amenity by reason of daylight and sunlight but may be over-dominant in relation to the adjoining property and/or its private amenity space. This can result in a depressing outlook, detracting from residential amenity.'

Policy BE20: *'Buildings should be laid out so that adequate daylight and sunlight can penetrate into and between them and the amenities of existing houses are safeguarded.'*

London Borough of Hillingdon's Local Plan Part 2 Development Management Policies (Adopted 2020)



This Development Management Policies document forms part of Hillingdon's Local Plan Part 2. Its purpose is to provide detailed policies that will form the basis of the Council's decisions on individual planning applications.

Policy relevant to daylight and sunlight impact from new developments to neighbouring properties are as follows:

Policy DMHB 11: Design of New Development

B) Development proposals should not adversely impact on the amenity, daylight and sunlight of adjacent properties and open space.

Para 5.41 also states: The Council will aim to minimise the impact of the loss of daylight and sunlight and unacceptable overshadowing caused by new development on habitable rooms, amenity space and public open space. The Council will also seek to ensure that the design of new development optimises the levels of daylight and sunlight. The Council will expect the impact of the development to be assessed following the methodology set out in the most recent version of the Building Research Establishments (BRE) "Site layout planning for daylight and sunlight: A guide to good practice".

Appendix D – BRE Guidance

Daylight

A series of tests are recommended by BRE's guide (2022) to evaluate whether daylight levels on existing surrounding properties would be noticeably reduced when new development comes forward.

Window proximity

If a neighbouring window is more than 3 times the development height away from the scheme, then it does not need to be assessed for daylight or sunlight impacts.

25-degree plane

For windows directly facing towards the proposed development, a 25-degree plane is drawn to review whether the proposed scheme intersects it. If it does, daylight levels may be reduced and further analysis is required, detailed below.

45-degree plane

For windows that are not directly facing the development, which is often more applicable for rear extensions to buildings, two different 45-degree planes are drawn as shown in the images below (Figure 10) which are taken directly from the BRE guide. If the development intersects one of those planes, then further analysis is required for daylight, as discussed below. These planes can often be used to evaluate windows of buildings which are adjacent to a development but not directly facing it.

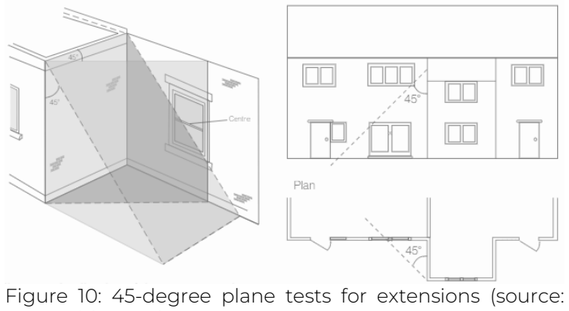


Figure 10: 45-degree plane tests for extensions (source: BRE guide 2022)

Vertical sky component (VSC)

VSC is the first detailed test carried out for windows that do not meet the aforementioned initial tests. It is a measure of the illuminance on the window compared to an unobstructed horizontal plane. If the VSC of an existing window is 27% or higher, then it is not considered to be affected by the proposed development. If not, and its VSC is more than 0.8 of its former pre-development value, then the BRE guide suggests that the daylight reduction to this window would not be noticeable by the occupants.

No sky line (NSL) and Daylight Distribution (DD)

NSL is the area of the working plane of the room, usually taken at 850mm from finished floor level, that can have a direct view of the sky. It is often referred to as the Daylight Distribution (DD) test. The BRE guide suggests that daylight levels to a neighbouring room would not be noticeable if the area of the working plane that receives direct skylight is more than 0.8 of its former pre-development value. The guide notes that this assessment can be carried out when neighbouring property layouts are available (e.g. from the planning portal).

Alternative daylight criteria

The above numerical criteria are the standard tests used to evaluate impacts on neighbouring properties. In certain circumstances, the BRE guide recommends the use of alternative targets, taking into account the specific site context.

One method is establishing the obstruction angle of the context to derive the target VSC which should be met by neighbouring windows with the development in place. Figure 11 illustrates the example of a mews. When the obstruction angle of the context is 40 degrees, then a VSC target of 18%, rather than 27% could be considered applicable. Alternative sunlight criteria could also be derived using this approach.

In other situations, such as when neighbouring windows are close to the site boundary and are taking more than their 'fair share of light' over the application site, the BRE guide recommends the use of the mirror image approach. The existing building is mirrored into the application site and a simulation is run to derive target daylight and sunlight values (Figure 12).

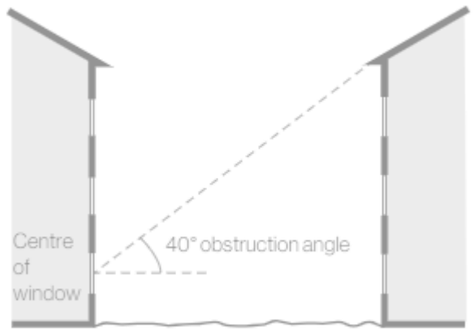


Figure 11: Use of obstruction angle and Appendix F to establish target values for daylight and sunlight (source: BRE guide 2022)

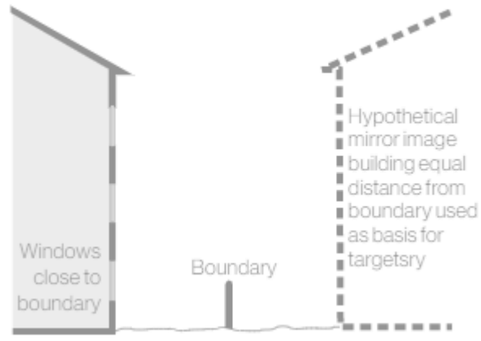


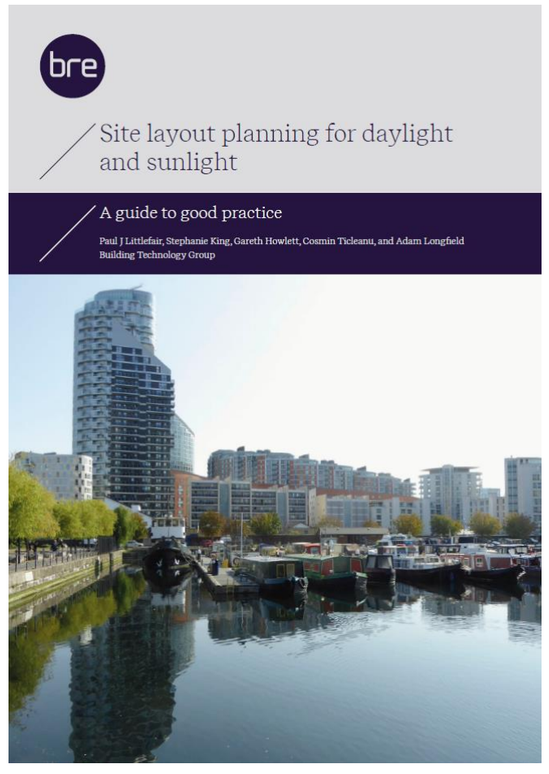
Figure 12: Mirror image methodology (source BRE guide 2022)

Sunlight

Sunlight access should be safeguarded for existing dwellings and non-residential buildings with a particular expectation for sunlight. The BRE guide suggests that main living rooms and conservatories should be checked if they have a window within 90° south. If such windows do not meet the initial 25/45-degree plane test, then the Annual (APSH) and Winter (WPSH) Probable Sunlight Hours should be calculated. Sunlight access may be adversely affected if the window achieves less than 25% APSH and less than 0.8 times its former annual value; or less than 5% of WPSH and less than 0.8 its former value; and also has a reduction of more than 4% in APSH over the whole year.

Overshadowing

Sunlight access to existing surrounding amenity spaces may potentially be affected by a proposed development situated to the south of the amenity space. The BRE guide suggests that the amenity space would be reasonably sunlit throughout the year if it receives at least 2 hours of sunlight over at lest 50% of its area during the 21 of March. If that's not satisfied, the reduction in sunlight access would not be noticeable if the open space attains 2 hours of sunlight to at least 0.8 time the area of its former pre-development value.



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