Report for:

Bilal Ustun Ltd

12 Canning Crescent, London

Daylight and Sunlight Assessment

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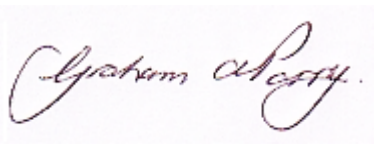
Reviewed and Approved By	 Graham Parry Managing Director
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1. INTRODUCTION

ACCON UK Limited (ACCON) has been commissioned by Aygul Boyraz Architecture & Interior Design Limited on behalf of Bilal Ustun Limited to undertake a daylight and sunlight assessment in respect of the proposed residential development at 12 Canning Crescent, London. The proposed development consists of the demolition of the existing building and the development of nine residential apartments over six floors.

The assessment is required in order to determine if the proposed development will receive adequate light and whether the proposed development will have an impact on the daylight and sunlight received by neighbouring properties.

Appendix 1 provides a site location of the proposed development site with the potentially impacted buildings identified.

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2. THE NATURE AND EFFECT OF DAYLIGHT AND SUNLIGHT

The provision of daylight is as important as ensuring low levels of noise or low levels of odour in maintaining the enjoyment of one's property. Adequate levels of daylight are important not only to light and heat the home, but also for an occupant's emotional well-being. Daylight is widely accepted to have a positive psychological effect on human beings and there is a great deal of evidence to suggest that people who are deprived of daylight are more susceptible to depression and mood swings. This is common in northern countries, such as Norway, Iceland and Canada where daylight in scarce during the winter months.

When assessing the effects of proposed building projects on the potential to cause issues relating to light, it is important to recognise the distinction between daylight and sunlight. Daylight is the combination of all direct and indirect sunlight during the daytime, whereas sunlight (for the purposes of this report) comprises only the direct elements of sunlight. For example, on a cloudy or overcast day diffused daylight still shines through windows, even when sunlight is absent.

Any development within a built-up area has the potential to alter the amount of daylight and direct sun received by nearby residential properties. Care should be taken when designing new buildings in built-up areas, especially when the proposed development is relatively tall or situated to the south of existing buildings, because in the northern hemisphere the majority of the sunlight comes from the south. In the UK (and other northern hemisphere countries) south-facing façades will, in general, receive most sunlight, while north-facing façades will receive sunlight on only a handful of occasions, specifically early-mornings and late evenings during the summer months.

It is therefore important to ensure that buildings to the south of any development do not cause overshadowing to existing dwellings and therefore reduce their capacity to receive sunlight.

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3. ASSESSMENT CRITERIA

3.1. National Policy

The Department for Communities and Local Government (DCLG) sets national planning policy. The document 'The Planning System: General Principles' (2005), published in conjunction with 'Planning Policy Statement 1: Delivering Sustainable Development' (which has now been replaced by the National Planning Policy Framework), discusses the need to protect amenities in the public's interest, of which the need for daylight/sunlight could be considered one such amenity. However, the government does not have an adopted policy on daylight, sunlight and the effects of overshadowing, and does not have targets, criteria or relevant planning guidance in the way it has for other environmental impacts such as noise, landscape or air quality. However, three guidance documents are relevant when considering daylight, sunlight and overshadowing in dwellings:

- **The Building Research Establishment (BRE) report, *"Site layout planning for daylight and sunlight – a guide to good practice – Third Edition 2022" by PJ Littlefair*** (referred to as the BRE Report). Although not Government guidance, this report is commonly referenced as the main guide in the UK in determining the minimum standards of daylight and sunlight and identifies the assessment methodology for the impact trees may have on daylight and sunlight on a building;
- **British Standard BS EN 17037:2018+A1:2021 Daylight in buildings.** BS EN 17037:2018 supersedes the British Standard *BS 8206-2:2008 "Lighting for buildings. Code of practice for daylighting"*. It contains guidance on the minimum recommended levels of interior daylighting and introduces some of the calculation procedures used in the BRE Report;
- **The Code for Sustainable Homes – Technical Guidance.** The Code's Technical Guidance Document determines its target criteria for well-lit homes, building upon the calculation procedures within the BRE Report and BS 8206:2008. Is should ne noted that the daylight element of the Code is not mandatory, suggesting that the targets within the Code are desirable, but not an essential planning constraint.
- **Planning Practice Guidance – Effective use of land – How are daylight and sunlight regulated? –** This section of the PPG summarises the considerations in respect to making effective use of land, including planning for higher density development. Paragraph 006 – "How are daylight and sunlight regulated?" (Reference ID 66-006-20190722) in particular focuses on the levels of daylight and sunlight within proposed developments and how developments affect daylight and sunlight levels on neighbouring occupiers and states:

  "Where a planning application is submitted, local planning authorities will need to consider whether the proposed development would have an unreasonable impact on the daylight and sunlight levels enjoyed by neighbouring occupiers, as well as assessing whether daylight and sunlight within the development itself will provide satisfactory living conditions for future occupants.

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In some cases, properties benefit from a legal 'right to light', which is an easement that gives a landowner the right to receive light through specified openings, and can be used to prevent this from being obstructed without the owner's consent. Such rights are not part of the planning system, but may affect the scope for development on neighbouring sites."

- **Planning Practice Guidance – Effective use of land – What are the wider planning considerations in assessing appropriate levels of sunlight and daylight? –** Paragraph 007 (Reference ID 66-007-220190722) in particular focuses on the context of the light levels of the development such as in city centre locations and states:

  "All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design. For example, in areas of high-density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with general form of their surroundings.

  In such situations good design (such as giving careful consideration to a building's massing and layout of habitable rooms) will be necessary to help make the best use of the site and maintain acceptable living standards."

3.2. The BRE Report

The BRE Report contains guidance on how to design developments, whilst minimising the impacts on existing buildings from overshadowing and reduced levels of daylight and sunlight. As well as advice, the report contains a methodology to assess levels of daylight, sunlight and overshadowing, and contains criteria to determine the potential impacts of a new development on surrounding buildings. However, the BRE report does state that the guidelines are not mandatory but should be considered a guide to help rather than constrain the designer.

The BRE document looks at three separate areas when considering the impacts on lighting:

- **Daylight** – i.e. the impacts of all direct and indirect sunlight during the daytime;
- **Sunlight** – i.e. the impacts of only the direct sunlight; and
- **Overshadowing of gardens and open spaces**.

Appendix 3 details the BRE Report, including the methodologies and full details of the criteria.

Table 3.1 summarises the criteria used to assess the impacts from new development on the daylight and sunlight reaching existing properties.

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Table 3.1: Summary criteria contained within the BRE Report

Parameter	BRE Report Ref.	Criteria	Acceptability Criteria
Daylight	Section 2.2	Angle to sky from horizontal	Maximum 25°
		Vertical Sky Component (VSC)	Greater than 27%
	Appendix C	Internal daylight - Spatial Daylight Autonomy (SDA)	Greater than 100-200 Lux over 50% of assessment grid*
	Appendix D	Percentage of the Working Plane beyond the No-Sky Line (NSL)	*"Significant Part"*+
Sunlight	Section 3.1	Sunlight Hours	Minimum 1.5 hours
	Section 3.2	Annual Probable Sunlight Hours (APSH) (Full Year)	Greater than 25%†
		Annual Probable Sunlight Hours (APSH) (Winter Months)	Greater than 5%†
Overshadowing	Section 3.3	Area of amenity space prevented from receiving any sun at all on the 21st March	Maximum 40%

= Varies depending on room use. See **Appendix 4 for full details.*
+= Whilst the BRE Report describes the methodology for determining the percentage of the Working Plane that is in full sun, it does not give an acceptability criterion, only that supplementary electric lighting will be required if a "significant part" of the working plane lies beyond the no-sky line. However, the Code for Sustainable Homes and BS 8206:2008 suggests that each room requires a minimum of 80%
† = Applies only to main living rooms, not to bedrooms kitchens or other non-habitable rooms.

3.3. Daylight Assessment

The assessment of daylight is required for windows serving rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be assessed. The guidelines also apply to any room that may have a reasonable expectation of daylight, including schools, hospitals, hotels and some offices.

When assessing daylight, the numerical criteria must be viewed flexibly and should be considered against other site layout constraints. In addition, it is important to consider whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and not taking more than its fair share of light.

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The assessment takes on several specific stages:

1) **The Distance Test**: loss of light to windows need not be analysed if the distance from the existing window to the development is three or more times its height above the centre of the existing window;
2) **The 25° Rule:** loss of light to windows need not be analysed if the angle to the horizontal subtended by the new development from the centre of the existing window is less than 25° (as an angle of 25° equates to a VSC of 27%);
3) **Daylight Assessment**: diffuse daylight of an existing building may be adversely affected by a proposed development if either:
    a. the Vertical Sky Component (VSC) measured at the centre of an existing main window is less than 27%, **and** less than 0.8 times its former value; or
    b. the area of the working plane which can receive direct skylight is reduced to less than 0.8 times its former value.

It should be noted that determining the area of the working plant which can receive direct light from the sky (which is often referred to as the No-Sky Line or NSL) is seen as an additional assessment, rather than as an alternative to VSC. However, since plotting the NSL requires knowledge of the room geometry, which is not usually available during an impact assessment, it is not always possible to calculate the NSL since the use of too many assumptions would make the results meaningless and unreliable.

3.4. Sunlight Assessment

The assessment of sunlight is required for rooms in adjoining dwellings where sunlight is required. Generally, all main living rooms and conservatories should have access to direct sunlight. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.

As with daylight, the numerical criteria for sunlight should be viewed flexibly and should be considered against other site layout constraints. It is important to understand that people like and appreciate sunlight and may resent the loss of sunlight, although it is not an essential requirement of a dwelling, unlike daylight availability or access to a quiet noise environment. Therefore, larger reductions in sunlight may be acceptable, for example if new development is to match the height and proportion of existing buildings nearby.

The assessment of sunlight for existing surrounding buildings takes on several specific stages:

1. **Facing South**: loss of sunlight to windows only needs to be assessed if the window faces within 90° of due south;
2. **The Distance Test**: loss of sunlight to windows need not be analysed if the distance from the existing window to the development is three or more times its height above the centre of the existing window;
3. **The 25° Rule**: loss of sunlight to windows need not be analysed if the angle to the horizontal subtended by the new development from the centre of the existing window is less than 25°;

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4. **Sunlight Assessment**: direct sunlight of existing windows may be adversely effected by a proposed development if at the centre of a window:
    a. It receives less than 25% of Annual Probable Sunlight Hours (APSH), or less than 5% APSH between 21st September and 21st March; **and**
    b. it receives less than 0.8 times its former APSH during either period; **and**
    c. it has a reduction in sunlight over the whole year of greater than 4% APSH.

The assessment for the proposed development takes on several stages to determine whether a dwelling will appear reasonably sunlit:

1. At least one main window wall faces within 90° of due south, and
2. 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.

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4. DAYLIGHT IMPACT ASSESSMENT

This section summarises the daylight impacts of the proposed development on surrounding sensitive properties.

4.1. Identification of Receptors

The windows at existing residential properties have been assessed in accordance with the BRE 2011 guidance document, which states *'the guidelines are intended for use with adjoining dwellings and any existing non-domestic buildings where occupants have a reasonable expectation of daylight; this would include schools, hospitals hotels workshops and offices… For dwellings this would include living rooms, dining rooms and kitchens. Bedrooms should also be analysed but are less important'*.

The assessment considers the following buildings detailed below and identified in **Appendix 1**:

- **Receptor 1:** Janet Court, Canning Crescent (south of the site)
- **Receptor 2:** 9-16 Canning Court, Newnham Road (east of the site)
- **Receptor 3:** 14 Canning Crescent (north of site)
- **Receptor 4:** 16 Canning Crescent (north of site)

The window reference numbers for the receptors are identified in **Appendix 2.**

4.2. Vertical Sky Component (VSC)

The Vertical Sky Component (VSC) has been calculated for the windows on receptors that will be affected by the proposed development.

When undertaking a daylight assessment, the BRE Report suggest a VSC of 27% or more should be achieved if a room is to be adequately daylit. However, this level does not need to be applied to rooms which do not require high levels of natural light such as garages, storage rooms, hallways, etc. The precise use of the windows and room types of the existing buildings are unknown so as a worst-case scenario it has been assumed that they are all habitable unless otherwise identified.

The windows which do not meet one of the BRE Guideline levels are identified in **bold** in **Table 4.1**.

Table 4.1: Vertical Sky Component

Rec. No	Aspect	Floor	Window	VSC		Ratio
				Existing	Proposed	
R1	Northwest	Ground	1	7.65	5.21	**0.68**
R1	Northwest	Ground	2	31.29	30.94	0.99
R1	Northwest	Ground	3	31.78	31.52	0.99
R1	Northwest	Ground	4	30.74	30.74	1.00
R1	Northwest	Ground	5	31.44	31.44	1.00
R1	Northwest	Ground	6	30.81	30.79	1.00
R1	East	Ground	7	18.39	17.20	0.94

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Rec. No	Aspect	Floor	Window	VSC		Ratio
				Existing	Proposed	
R1	Northwest	First	8	14.91	7.33	**0.49**
R1	Northwest	First	9	33.94	33.39	0.98
R1	Northwest	First	10	34.34	34.05	0.99
R1	Northwest	First	11	24.99	24.99	1.00
R1	Northwest	First	12	33.39	33.39	1.00
R1	Northwest	First	13	34.09	34.09	1.00
R1	Northwest	First	14	33.45	33.44	1.00
R1	East	First	15	21.23	19.73	0.93
R1	Northwest	Second	16	26.54	14.32	**0.54**
R1	Northwest	Second	17	36.37	35.71	0.98
R1	Northwest	Second	18	36.64	36.39	0.99
R1	Northwest	Second	19	28.41	28.41	1.00
R1	Northwest	Second	20	36.36	36.32	1.00
R1	Northwest	Second	21	36.60	36.55	1.00
R1	Northwest	Second	22	36.06	36.01	1.00
R1	East	Second	23	27.22	25.60	0.94
R2	North	Ground	24	34.12	34.12	1.00
R2	North	Ground	25	34.59	34.57	1.00
R2	North	Ground	26	28.50	28.23	0.99
R2	North	Ground	27	32.44	32.41	1.00
R2	North	Ground	28	32.79	32.79	1.00
R2	North	Ground	29	28.82	28.82	1.00
R2	North	Ground	30	34.94	34.65	0.99
R2	North	Ground	31	33.40	24.59	**0.74**
R2	West	Ground	32	27.40	6.26	**0.23**
R2	South	Ground	33	26.38	20.41	**0.77**
R2	South	Ground	34	30.92	30.90	1.00
R2	South	Ground	35	24.69	24.69	1.00
R2	South	Ground	36	28.70	28.70	1.00
R2	South	Ground	37	28.10	28.10	1.00
R2	South	Ground	38	23.98	23.98	1.00
R2	South	Ground	39	28.88	28.87	1.00
R2	South	Ground	40	26.12	26.12	1.00
R2	North	First	41	36.75	36.75	1.00
R2	North	First	42	36.87	36.86	1.00
R2	North	First	43	30.01	29.86	1.00
R2	North	First	44	33.84	33.83	1.00
R2	North	First	45	34.11	34.11	1.00
R2	North	First	46	30.33	30.33	1.00
R2	North	First	47	37.08	36.84	0.99
R2	North	First	48	35.77	26.49	**0.74**
R2	West	First	49	32.82	8.03	**0.24**
R2	South	First	50	31.24	23.62	**0.76**
R2	South	First	51	34.28	34.25	1.00
R2	South	First	52	27.79	27.79	1.00
R2	South	First	53	30.47	30.47	1.00

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Rec. No	Aspect	Floor	Window	VSC		Ratio
				Existing	Proposed	
R2	South	First	54	30.32	30.32	1.00
R2	South	First	55	26.71	26.71	1.00
R2	South	First	56	34.67	34.67	1.00
R2	South	First	57	34.45	34.45	1.00
R2	North	Second	58	31.44	31.44	1.00
R2	North	Second	59	35.89	35.89	1.00
R2	North	Second	60	25.01	24.97	1.00
R2	North	Second	61	28.38	28.38	1.00
R2	North	Second	62	28.50	28.50	1.00
R2	North	Second	63	25.29	25.29	1.00
R2	North	Second	64	35.93	35.82	1.00
R2	North	Second	65	30.81	22.27	**0.72**
R2	West	Second	66	36.52	11.72	**0.32**
R2	South	Second	67	28.39	20.24	**0.71**
R2	South	Second	68	33.99	33.98	1.00
R2	South	Second	69	22.53	22.53	1.00
R2	South	Second	70	19.08	19.08	1.00
R2	South	Second	71	19.03	19.03	1.00
R2	South	Second	72	21.99	21.95	1.00
R2	South	Second	73	34.39	34.39	1.00
R2	South	Second	74	32.03	32.03	1.00
R3	South	Ground	75	11.14	11.07	0.99
R3	South	Ground	76	32.66	30.10	0.92
R3	South	Ground	77	12.41	9.73	**0.78**
R3	South	First	78	35.07	32.77	0.93
R3	South	First	79	35.04	32.33	0.92
R4	South	Ground	80	12.71	12.71	1.00
R4	South	Ground	81	32.70	30.61	0.94
R4	South	Ground	82	11.73	9.22	**0.79**
R4	South	First	83	35.10	33.56	0.96
R4	South	First	84	35.09	33.23	0.95

R1 - Janet Court, Canning Crescent

It can be identified from **Table 4.1** that in respect of the daylight impact assessment, the windows at R1 which do not meet the BRE Guideline (Windows 1, 8 and 16) are those which are set further back from the road at Canning Crescent compared to the other windows on the western façade. Those windows did not meet the 27% criteria for VSC with the existing building on the site, however, with the proposed building these levels are further reduced.

R2 - 9-16 Canning Court, Newnham Road

There are three windows on the north façade of R2 that do not meet the BRE Guideline (Windows 31, 48, and 65). These windows let into rooms on the ground, first and second floors respectively, they all have 2 additional windows that do meet the BRE Guideline values and therefore it can be concluded that these rooms will not be adversely impacted.

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There are three windows on the south façade of R2 that do not meet the BRE Guideline (Windows 33, 50 and 67); however, these rooms also have two other windows on each floor that let into the same room, which do meet the BRE criteria and therefore daylight levels in those rooms are considered to be acceptable.

The windows on the west façade of R1 (Windows 32, 49 and 66) look towards the proposed development and are therefore the most significantly impacted with the windows having a ratio of 0.23, 0.24, and 0.33 respectively. These windows however are believed to let into bathrooms, and therefore are not considered habitable rooms and do not need to be considered in the overall assessment of acceptability.

R3 - 14 Canning Crescent

One window on the ground floor of R3 does not meet the BRE Guideline values (Window 77); however, there are two additional windows that let into this room (Windows 75 and 76). Therefore, this room will not be significantly impacted as a result of the proposed development.

R4 - 16 Canning Crescent

One window on the ground floor of R3 does not meet the BRE Guideline values (Window 82); however, there are two additional windows that let into this room (Windows 80 and 81), additionally this window is only marginally below the target ratio. Therefore, this room will not be significantly impacted as a result of the proposed development.

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5. SUNLIGHT IMPACT ASSESSMENT

This section summarises the sunlight impacts of the proposed development on surrounding properties.

5.1. Annual Probable Sunlight Hours

When designing a new development or an extension to an existing building, the impact on the amount of sunlight received in the living areas of residential properties must be assessed, as residents are particularly likely to notice a loss of sunlight entering their homes.

The BRE Report provides guidelines, which can be used flexibly, for when the obstruction to sunlight may become an issue;

- If the proposed development affects a window that faces within 90° of due south; and
- If in the section drawn perpendicular to this existing window wall, the new development subtends an angle greater than 25° to the horizontal measured from a point 2m above the ground.

The sunlight assessment uses the Sunlight Availability Indicators method as detailed within the BRE guidance.

Table 5.1 below details the results of the Annual Probable Sunlight Hours (APSH) calculations for all of the windows affected by the proposed development using the London latitude reference data, as given in the BRE guidance.

Below are the criteria required for a window to fail in respect of sunlight:

a) It receives less than 25% of Annual Probable Sunlight Hours (APSH), or less than 5% APSH between 21st September and 21st March; **and**

b) It receives less than 0.8 times its former APSH during either period; **and**

c) It has a reduction in sunlight over the whole year of greater than 4% APSH.

The windows at each Receptor which do not face within 90° of due south have not been considered and are therefore identified as not applicable (N/A) within **Table 5.1**.

Table 5.1: Annual Probable Sunlight Hours (APSH)

Rec. No	Aspect	Floor	Window	APSH Annual		Ratio	APSH Winter		Ratio
				Existing	Proposed		Existing	Proposed	
R1	Northwest	Ground	1	1	1	N/A	0	0	N/A
R1	Northwest	Ground	2	27	27	N/A	5	5	N/A
R1	Northwest	Ground	3	26	26	N/A	5	5	N/A
R1	Northwest	Ground	4	26	26	N/A	4	4	N/A
R1	Northwest	Ground	5	25	25	N/A	4	4	N/A
R1	Northwest	Ground	6	20	20	N/A	3	3	N/A
R1	East	Ground	7	21	21	1	1	1	1.00
R1	West	First	8	1	1	N/A	0	0	N/A
R1	West	First	9	29	29	N/A	6	6	N/A
R1	West	First	10	30	30	N/A	6	6	N/A

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Rec. No	Aspect	Floor	Window	APSH Annual		Ratio	APSH Winter		Ratio
				Existing	Proposed		Existing	Proposed	
R1	Northwest	First	11	28	28	N/A	5	5	N/A
R1	Northwest	First	12	29	29	N/A	5	5	N/A
R1	Northwest	First	13	28	28	N/A	4	4	N/A
R1	Northwest	First	14	26	26	N/A	3	3	N/A
R1	East	First	15	22	22	1	1	1	1.00
R1	Northwest	Second	16	1	1	N/A	0	0	N/A
R1	Northwest	Second	17	31	31	N/A	7	7	N/A
R1	Northwest	Second	18	33	33	N/A	7	7	N/A
R1	Northwest	Second	19	31	31	N/A	5	5	N/A
R1	Northwest	Second	20	30	30	N/A	5	5	N/A
R1	Northwest	Second	21	31	31	N/A	5	5	N/A
R1	Northwest	Second	22	29	29	N/A	4	4	N/A
R1	East	Second	23	36	36	1	3	3	1.00
R2	North	Ground	24	14	14	N/A	0	0	N/A
R2	North	Ground	25	10	10	N/A	0	0	N/A
R2	North	Ground	26	7	7	N/A	0	0	N/A
R2	North	Ground	27	7	7	N/A	0	0	N/A
R2	North	Ground	28	3	3	N/A	0	0	N/A
R2	North	Ground	29	1	1	N/A	0	0	N/A
R2	North	Ground	30	10	7	N/A	0	0	N/A
R2	North	Ground	31	22	2	N/A	0	0	N/A
R2	West	Ground	32	42	17	**0.40**	11	9	0.82
R2	South	Ground	33	55	50	0.91	16	16	1.00
R2	South	Ground	34	71	71	1.00	16	16	1.00
R2	South	Ground	35	54	54	1.00	15	15	1.00
R2	South	Ground	36	63	63	1.00	19	19	1.00
R2	South	Ground	37	64	64	1.00	21	21	1.00
R2	South	Ground	38	55	55	1.00	17	17	1.00
R2	South	Ground	39	73	73	1.00	17	17	1.00
R2	South	Ground	40	46	46	1.00	11	11	1.00
R2	North	First	41	18	18	N/A	0	0	N/A
R2	North	First	42	12	12	N/A	0	0	N/A
R2	North	First	43	7	7	N/A	0	0	N/A
R2	North	First	44	6	6	N/A	0	0	N/A
R2	North	First	45	3	3	N/A	0	0	N/A
R2	North	First	46	1	1	N/A	0	0	N/A
R2	North	First	47	10	7	N/A	0	0	N/A
R2	North	First	48	28	2	N/A	4	0	N/A
R2	West	First	49	46	15	**0.33**	13	8	0.62
R2	South	First	50	64	55	0.86	20	20	1.00
R2	South	First	51	80	80	1.00	23	23	1.00
R2	South	First	52	57	57	1.00	19	19	1.00
R2	South	First	53	61	61	1.00	24	24	1.00
R2	South	First	54	64	64	1.00	25	25	1.00
R2	South	First	55	61	61	1.00	22	22	1.00

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Rec. No	Aspect	Floor	Window	APSH Annual		Ratio	APSH Winter		Ratio
				Existing	Proposed		Existing	Proposed	
R2	South	First	56	84	84	1.00	26	26	1.00
R2	South	First	57	60	60	1.00	19	19	1.00
R2	North	Second	58	21	21	N/A	2	2	N/A
R2	North	Second	59	9	9	N/A	0	0	N/A
R2	North	Second	60	8	8	N/A	0	0	N/A
R2	North	Second	61	6	6	N/A	0	0	N/A
R2	North	Second	62	3	3	N/A	0	0	N/A
R2	North	Second	63	1	1	N/A	0	0	N/A
R2	North	Second	64	9	9	N/A	0	0	N/A
R2	North	Second	65	28	2	N/A	6	0	N/A
R2	West	Second	66	48	16	**0.33**	14	6	0.43
R2	South	Second	67	56	41	0.73	25	24	0.96
R2	South	Second	68	80	80	1.00	28	28	1.00
R2	South	Second	69	45	45	1.00	21	21	1.00
R2	South	Second	70	28	28	1.00	24	24	1.00
R2	South	Second	71	29	29	1.00	26	26	1.00
R2	South	Second	72	47	47	1.00	27	27	1.00
R2	South	Second	73	82	82	1.00	30	30	1.00
R2	South	Second	74	49	49	1.00	21	21	1.00
R3	South	Ground	75	32	30	0.94	14	12	0.86
R3	South	Ground	76	0	0	1.00	0	0	1.00
R3	South	Ground	77	34	29	0.85	22	17	0.77
R3	South	First	78	84	80	0.95	28	24	0.86
R3	South	First	79	84	79	0.94	28	23	0.82
R4	South	Ground	80	32	32	1.00	10	10	1.00
R4	South	Ground	81	0	0	1.00	0	0	1.00
R4	South	Ground	82	31	26	0.84	18	13	0.72
R4	South	First	83	81	78	0.96	25	22	0.88
R4	South	First	84	83	80	0.96	27	24	0.89

As identified in **Table 5.1,** there are only three windows which do not meet the BRE Guideline values for APSH, these are windows 32, 49 and 66 and are located on the west façade of R2, which looks towards the site. However, these windows are believed to let into bathrooms and therefore are not considered as habitable rooms and do not need to be considered in the overall assessment of acceptability.

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6. SELF TEST

For the proposed development, a self-test has been undertaken to determine whether all the habitable rooms in the new residential property would receive sufficient levels of daylight and sunlight for the future inhabitants.

Table 6.1 identifies the daylight levels for the windows of the proposed development. The windows that do not meet the BRE Guideline levels are identified in **bold**, those results identified in **orange** are only marginally below the target BRE Guideline level.

Table 6.2 identifies the sunlight levels received by each room of the proposed development.

6.1.1. Daylight assessment

It should be noted that the VSC levels should be relied upon in the assessment in a flexible way in line with the overall BRE guidance. The results of the Daylight assessment can be identified in **Table 6.1.**

Table 6.1: Self-Test – Vertical Sky Component and Annual Probable Sunlight Hours

Floor	Window	Aspect	VSC (%)	Room Type
Basement	85	North	**13.35**	Bedroom
Basement	86	North	**14.28**	LKD
Basement	87	North	**17.62**	
Basement	88	West	27.01	
Basement	89	West	**25.82**	Bedroom
Basement	90	South	**14.56**	Bedroom
Ground	91	North	**19.18**	Bedroom
Ground	92	North	**19.51**	LKD
Ground	93	North	**22.47**	
Ground	94	Northwest	31.83	
Ground	95	Northwest	31.65	Bedroom
Ground	96	South	**22.82**	Bedroom
First	97	North	**24.82**	KLD
First	98	North	**24.12**	Bedroom
First	99	North	**24.93**	Bedroom
First	100	West	34.23	
First	101	West	34.05	KLD
First	102	South	27.89	Bedroom
Second	103	North	**26.59**	KLD
Second	104	North	**25.88**	Bedroom
Second	105	North	**26.62**	Bedroom
Second	106	West	36.31	
Second	107	West	36.20	KLD
Second	108	South	34.95	Bedroom
Third	109	North	39.24	KLD
Third	110	North	39.15	Bedroom

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Floor	Window	Aspect	VSC (%)	Room Type
Third	111	North	39.09	Bedroom
Third	112	West	38.01	
Third	113	West	37.99	KLD
Third	114	South	38.81	Bedroom
Fourth	115	North	39.40	KLD, window 118 lets into the same room
Fourth	116	North	39.37	Bedroom
Fourth	117	West	39.22	Bedroom
Fourth	118	South	39.30	KLD, window 115 lets into the same room

It can be identified within **Table 6.1** that 15 of the 34 windows that let into habitable rooms do not meet the BRE Guideline levels with respect to daylight.

Of the 15 rooms that fail, 9 of these let into bedrooms, whilst bedrooms are important, they are not as important as KLD and therefore the results of these rooms should be considered more flexibly. Additionally, two of these bedrooms have multiple windows that let into the same room (Windows 99, 100 and 105, 106). It can be identified that the additional windows that let into these bedrooms meet the BRE Guideline levels and therefore the daylight level within these rooms will be acceptable.

It can be identified that 6 windows letting into KLD do not meet the BRE guideline levels. Windows 86 and 86 and Windows 92 and 93 let into 2 separate KLD and there is a third window that lets into each of these KLD that does meet the BRE target values and therefore these rooms will receive acceptable daylight levels. Window 103 is only marginally below the BRE Guideline level of 27% and there is a balcony located directly above this window therefore the daylight levels will invariably be reduced. Window 97 does not meet the BRE Guideline level for daylight and this is most likely due to the design of the building as there is a balcony directly above the window that will be influencing the daylight levels, therefore additional artificial lighting may be required within this room.

6.1.2. Sunlight Provision

When designing a new development or an extension to an existing building, the impact on the amount of sunlight received in the living areas of residential properties must be assessed.

The BRE Report provides guidelines for when the obstruction to sunlight may become an issue;

- 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.

The BRE guideline states that "*The BS EN 17037 criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met.*", this should be noted when assessing the sunlight hours. Although the BRE report has provided

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guideline values, *"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. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."*.

The results of the sunlight provisions assessment can be identified in **Table 6.2**, and the room references can be identified in **Appendix 3**.

Table 6.2: Proposed Building Sunlight Provision

Floor Ref	Room Ref	Window Ref	Room Use	Proposed Sunlight (Hours)	Meets Target Value
Basement	R1	86	LKD	0	Yes
		87		0	
		88		3.1	
		Total Sunlight Provision		3.1	
Basement	R2	89	Bedroom	2.1	Yes
		Total Sunlight Provision		2.1	
Basement	R3	90	Bedroom	2.6	Yes
		Total Sunlight Provision		2.6	
Basement	R4	85	Bedroom	0.0	NO
		Total Sunlight Provision		0.0	
Ground	R5	94	LKD	0.0	Yes
		93		0.0	
		92		3.6	
		Total Sunlight Provision		3.6	
Ground	R6	95	Bedroom	3.7	Yes
		Total Sunlight Provision		3.7	
Ground	R7	96	Bedroom	4.7	Yes
		Total Sunlight Provision		4.7	
Ground	R8	91	Bedroom	0.0	NO
		Total Sunlight Provision		0.0	
First	R9	97	LKD	0.0	NO
		Total Sunlight Provision		0.0	
First	R10	102	Bedroom	6.4	Yes
		Total Sunlight Provision		6.4	
First	R11	101	LKD	3.9	Yes
		Total Sunlight Provision		3.9	
First	R12	100	Bedroom	3.8	Yes
		99		0.0	
		Total Sunlight Provision		3.8	
First	R13	98	Bedroom	0.0	NO

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Floor Ref	Room Ref	Window Ref	Room Use	Proposed Sunlight (Hours)	Meets Target Value
		Total Sunlight Provision		0.0	
Second	R14	103	LKD	0.0	NO
		Total Sunlight Provision		0.0	
Second	R15	108	Bedroom	9.3	Yes
		Total Sunlight Provision		9.3	
Second	R16	107	LKD	3.9	Yes
		Total Sunlight Provision		3.9	
Second	R17	106	Bedroom	3.6	Yes
		105		0.0	
		Total Sunlight Provision		3.6	
Second	R18	104	Bedroom	0.0	NO
		Total Sunlight Provision		0.0	
Third	R19	109	LKD	0.0	NO
		Total Sunlight Provision		0.0	
Third	R20	114	Bedroom	9.3	Yes
		Total Sunlight Provision		9.3	
Third	R21	113	LKD	3.9	Yes
		Total Sunlight Provision		3.9	
Third	R22	112	Bedroom	3.9	Yes
		111		0.0	
		Total Sunlight Provision		3.9	
Third	R23	110	Bedroom	0.0	NO
		Total Sunlight Provision		0.0	
Fourth	R24	115	LKD	0.0	Yes
		118		9.4	
		Total Sunlight Provision		9.4	
Fourth	R25	117	Bedroom	3.9	Yes
		Total Sunlight Provision		3.9	
Fourth	R26	116	Bedroom	0.0	NO
		Total Sunlight Provision		0.0	

It can be identified in **Table 6.2** that 9 of the 26 rooms assessed do not meet the BRE Guideline levels with respect to sunlight.

Of the 9 rooms that do not meet the BRE Guideline level, 6 of these rooms are bedrooms and although sunlight is considered important within a bedroom it is not as important as in an LKD. It can be noted that all of these rooms are north facing and therefore it would be unrealistic for them to achieve good levels of sunlight, additionally, the windows that let into rooms 23 and 26 meet the BRE Guideline levels for VSC, therefore it is considered that these rooms will receive good light levels.

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3 LKD rooms do not meet the BRE Guideline levels for sunlight provision, these rooms are all north-facing and therefore it would be unrealistic for these rooms to meet the BRE Guideline level; however, the window that lets into room 19 does meet the BRE Guideline levels for VSC and therefor it can be considered that this room will receive acceptable levels of natural light.

Overall, it can be concluded that all of the rooms that do not meet the BRE Guideline levels with respect to sunlight hours are north-facing and therefore it is unrealistic for these rooms to meet the BRE Guideline levels. Rooms 9 and 19 will be most adversely affected by the development as they are LKD and do not meet the BRE Guideline levels for daylight or sunlight, therefore additional artificial lighting may be required within these rooms.

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7. CONCLUSIONS

Calculations were conducted in accordance with the BRE Guidance publication to determine if the proposed development at 12 Canning Crescent, London, would impact the surrounding properties, as well as determining if the proposed development would receive acceptable levels of daylight and sunlight.

The current proposed building envelope will result in an impact at the windows on the west façade of Receptor 2 (9-16 Canning Court, Newnham Road) for both daylight and sunlight. It is believed that these windows let into bathrooms which are considered as non-habitable rooms and therefore any impacts are not significant.

All of the other windows assessed will receive adequate light levels or have more than one window letting into the same room and therefore the proposed development should not have a significant impact in respect of daylight and sunlight at the surrounding properties.

The Self-Test identified that 15 of the windows at the proposed development do not meet the guidelines with respect of VSC, it should be noted that these guidelines should be used flexibly, and the location and nature of the proposed development should be taken into consideration. Additionally, 4 of the windows that fail let into rooms with multiple windows that do pass therefore these rooms will receive good daylight.

It can be concluded from the sunlight hours test that 9 rooms did not meet the BRE Guideline levels; however it can be noted that all of these rooms are north facing and therefore it is unrealistic for these rooms to meet the BRE target values as identified within the guidance document *"The BS EN 17037 criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met*", therefore it can be concluded that overall the proposed development will receive good sunlight provision.

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APPENDICES

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Appendix 1

Development Site Plan with Relevant Receptor

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Figure 1: Site Location and Relevant Receptors

LEGEND

Receptors

Approximate Site Location

R1 - Janet Court, Canning Crescent
R2 - 9-16 Canning Court, Newnham Road
R3 - Canning Crescent
R4 - 16 Canning Crescent

N
W E
S

Client: Bilal Ustun Ltd		Description: Site Plan with Existing Receptors		Design	HR	27.11.2024	ACCON UK ENVIRONMENTAL CONSULTANTS
				Drawn	HR	27.11.2024	
Rev: A	Description: FINAL	Project: 12 Canning Crescent, London		Checked	GP	27.11.2024	*Appendix One*
				Approved	GP	27.11.2024	Scale: Not to Scale

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Appendix 2
Window Locations

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Figure 2: Proposed Development North Façade Window Locations

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Figure 3: Proposed Development West Façade Window Locations

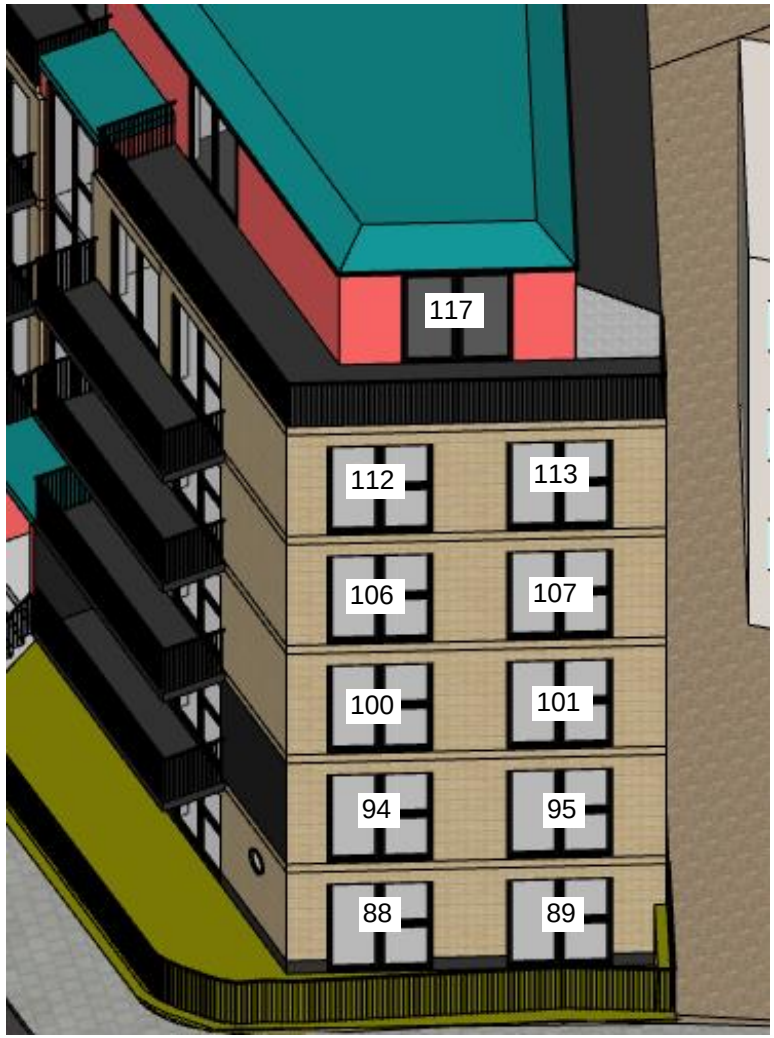

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Figure 4: Proposed Development South Façade Window Locations

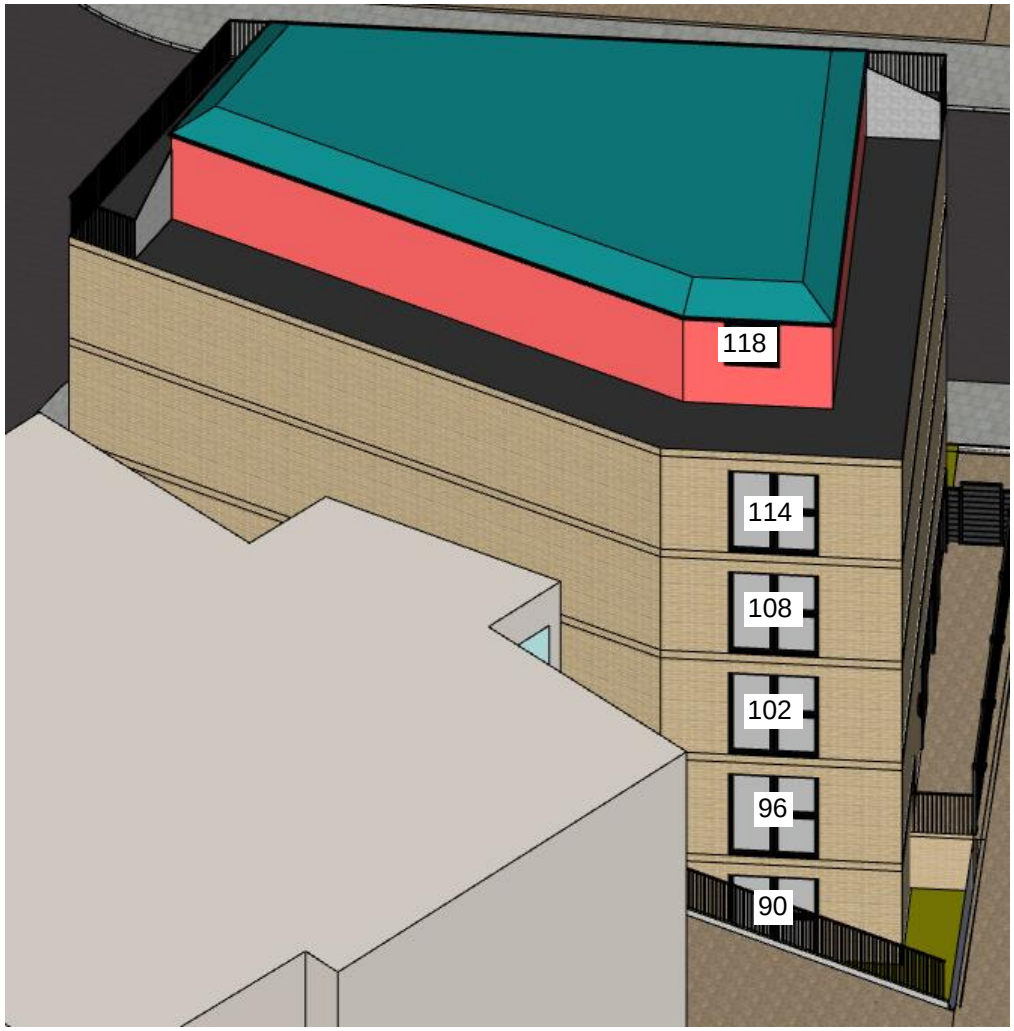

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Figure 5: Receptor 1 West Façade Window Locations

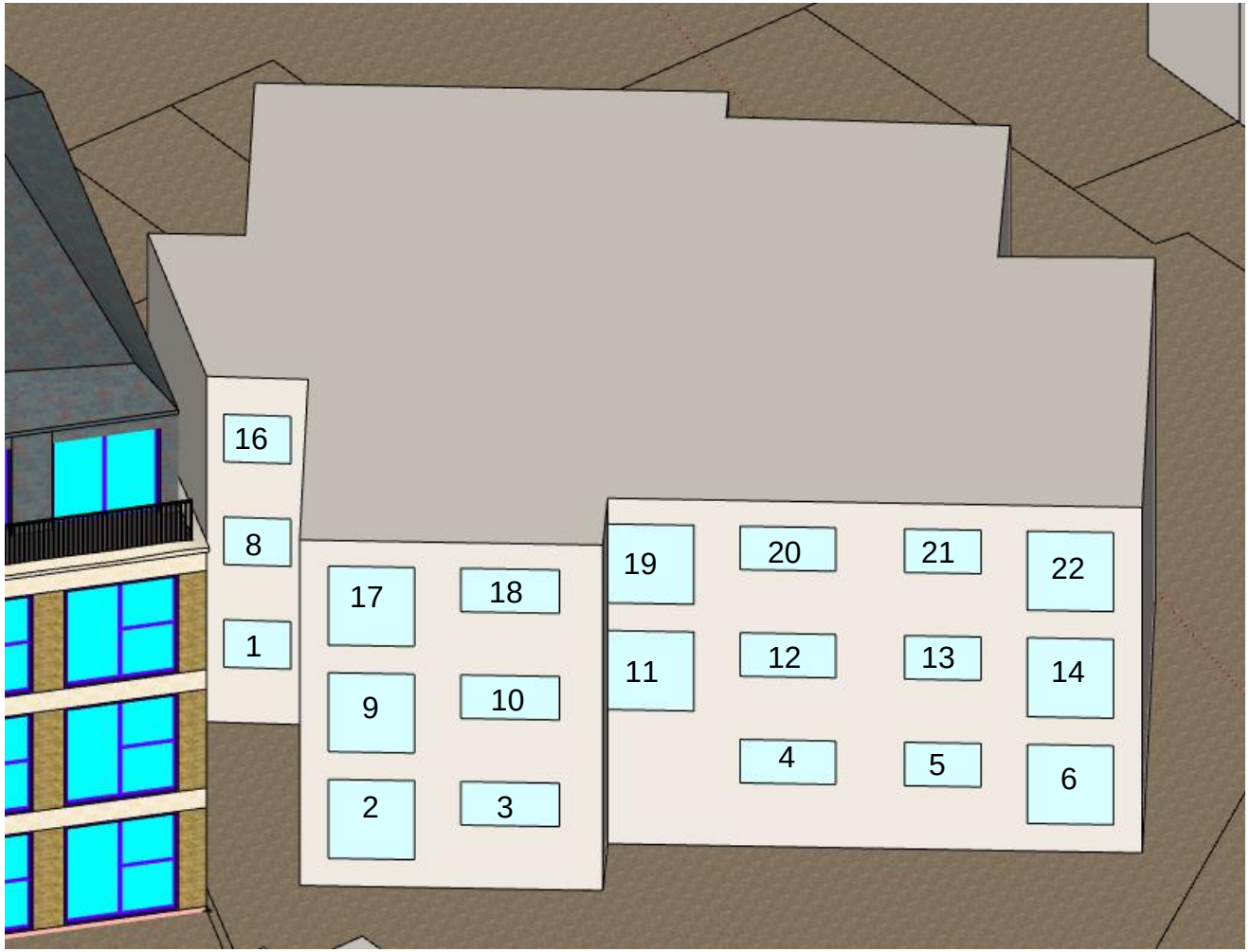

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Figure 6: Receptor 2 East Façade Window Locations

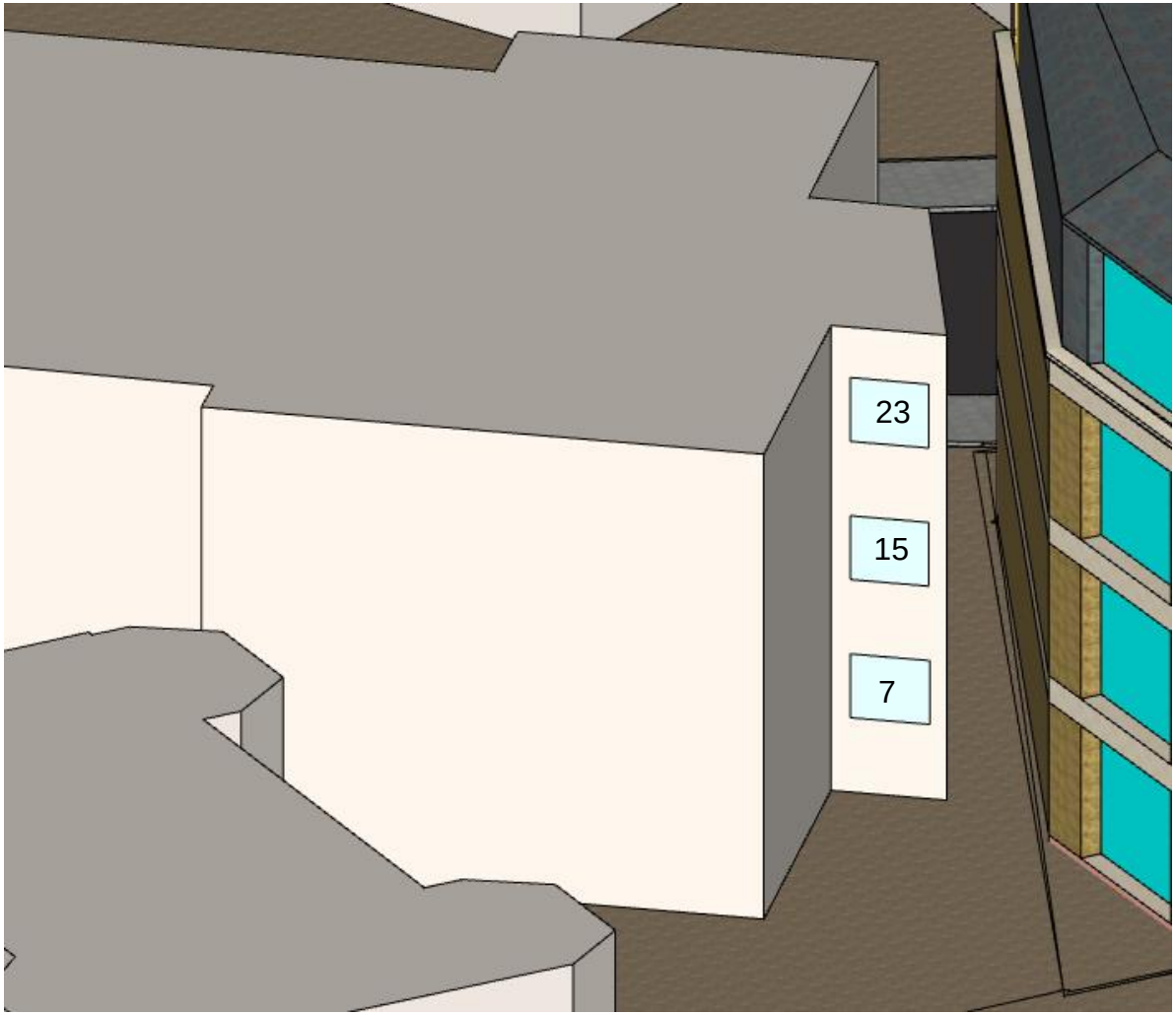

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Figure 7: Receptor 2 North Façade Window Locations

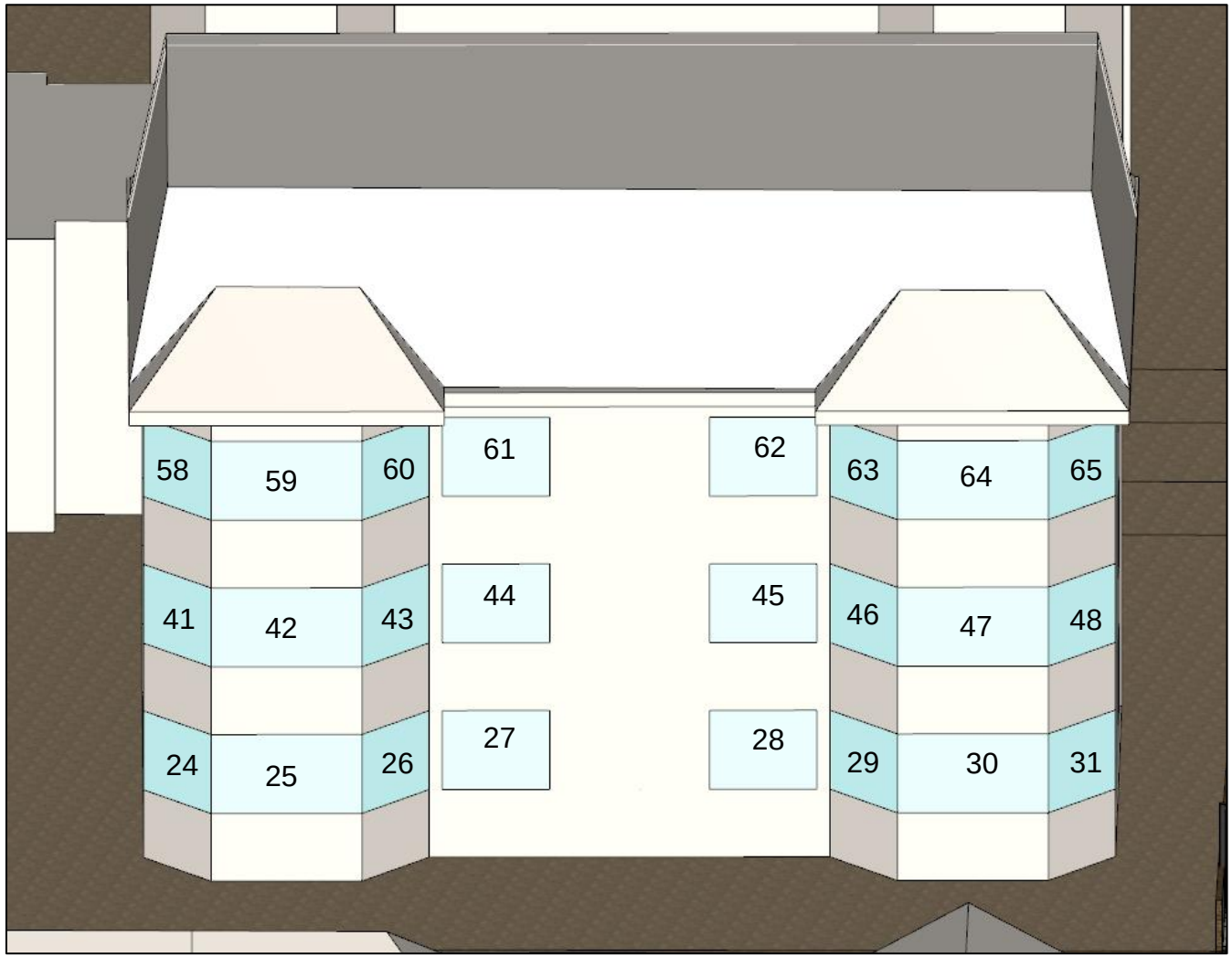

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Figure 8: Receptor 2 West Façade Window Locations

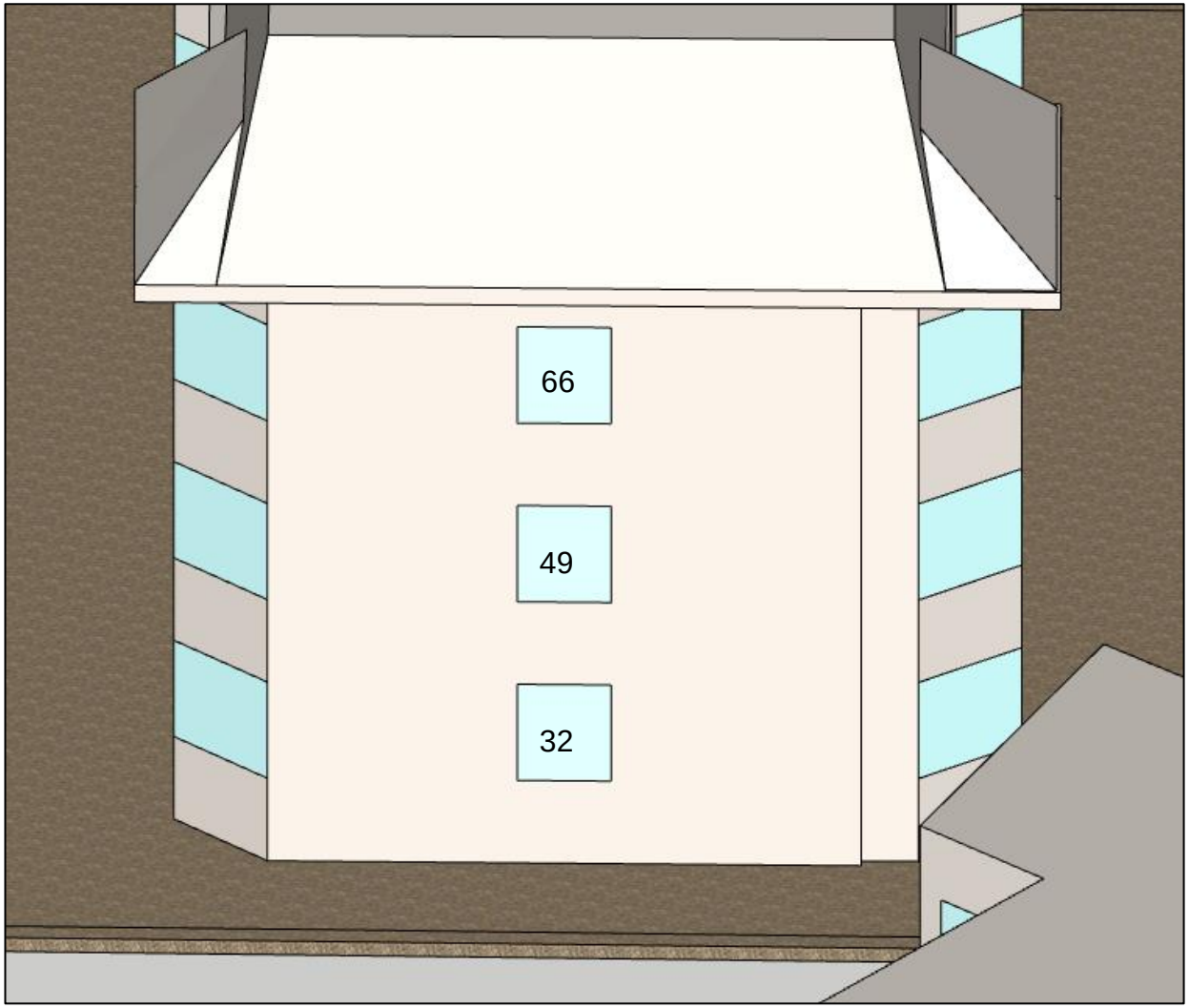

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Figure 9: Receptor 2 South Façade Window Locations

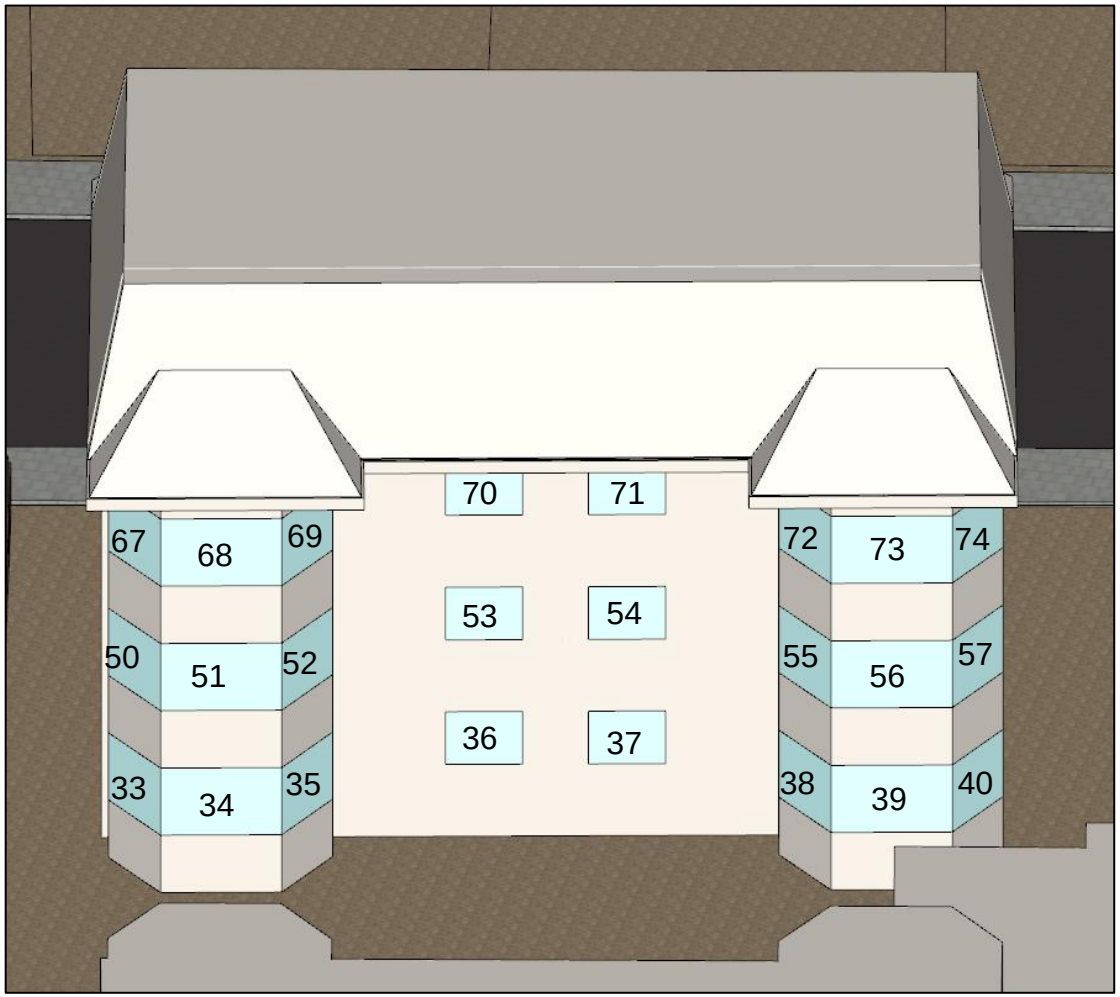

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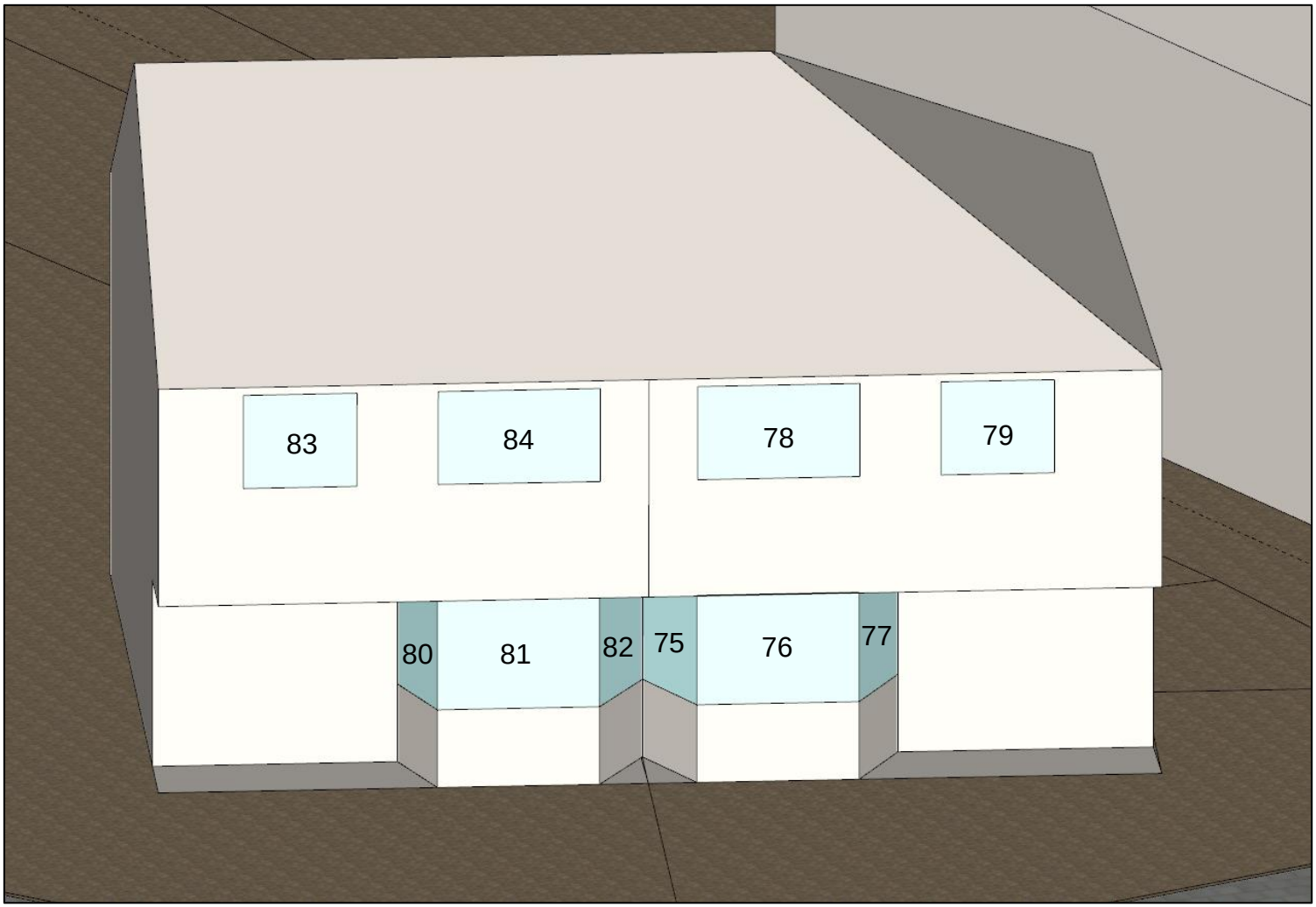
Figure 10: Receptors 3 and 4 South Façade Window Locations



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Appendix 3
Room Numbers

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Figure 11:Site Plan and Room Numbers

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Appendix 4
The BRE Report

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Appendix 3: The BRE Report

When considering daylight and sunlight assessments, reference is often made to the Building Research Establishment (BRE) Report, "Site layout planning for daylight and sunlight - a guide to good practice" by PJ Littlefair.

The BRE Report contains guidance in how to design developments, whilst minimizing the impacts on existing buildings from overshadowing and reduced levels of daylight and sunlight. As well as advice, the report contains a methodology to assess levels of daylight/sunlight and contains criteria to determine the potential impact of a new development on surrounding buildings. However, the report does state that the guidelines are not mandatory but should be considered a guide to help rather than constrain the designer.

A2.1 Daylight

Contained within the three relevant documents, there are three criteria and calculation procedures to determine levels of daylight. Each one has its limitations and is used in different circumstances. The criteria are:

- The 25° Rule and the Vertical Sky Component
- Average Daylight Factor
- No-Skyline and the Working Plane

A2.1.1 The 25° Rule and Vertical Sky Component

The BRE Report contains guidance on how to design developments, whilst minimising the impacts of existing buildings from overshadowing and reduced levels of daylight and sunlight, as well as ensuring developments are adequately daylit. The report suggests that in general, a building will have the potential for good interior diffuse daylighting providing that:

a) No obstruction, measured in a vertical section perpendicular to the main face, from a point 2m from the ground level, subtends an angle of more than 25° to the horizontal;

or

b) If a) is not satisfied, then all points on the main face on a line 2m above ground level are within 4m (measured sideways) of a point which has a Vertical Sky Component (VSC) of 27% or more.

The report contains a methodology for calculating the VSC, but also indicates that the methodology for calculating the levels of interior daylighting in BS8206-2 should also be used where appropriate.

The report highlights a simplified procedure that can be used to screen new developments to determine whether a more detailed assessment is required. This screening method considers the extent to which the angle of view of the sky from the centre of the lowest window of the existing properties will be constrained by the proposed new buildings. If the new development subtends and angle of less than 25° to the horizontal from the lowest window of the existing property, then it I unlikely that the development will cause any substantive effects of the lighting of existing buildings; greater than 25° and further analysis will be

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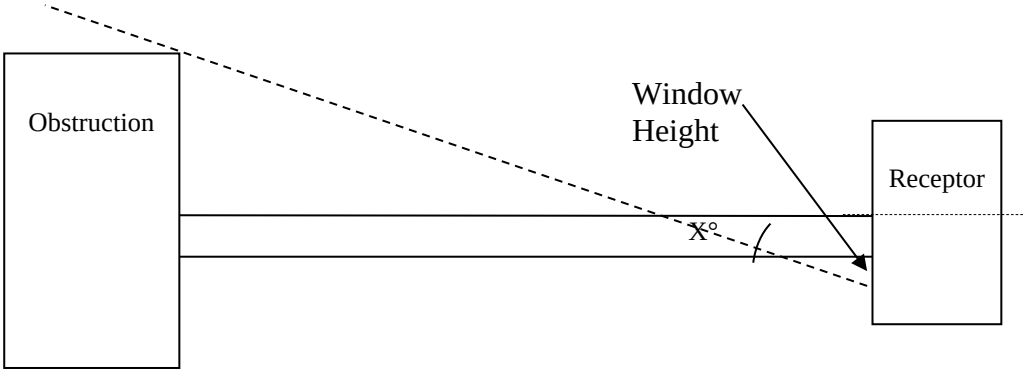
required to determine the extent to which there will be a loss of daylight to the existing building. A schematic example of this calculation can be seen in **Figure A2.1**.

Figure A2.1: Schematic Example of Daylight Calculations



If the screening method determined that there may be an obstruction, the exact level of light can be calculated by determining the Vertical Sky Component (VSC). The BRE Report highlights a number of ways to calculate the VSC, including the skylight indicator method and the Waldram Diagrams.

When undertaking a daylight assessment, the BRE Report suggests a VSC of 27% or more should be achieved if a room is to be adequately day lit. It also suggests that when existing levels of daylight are below 27% VSC, a reduction of more than 20% form the existing level will be noticeable to the inhabitants, i.e., an impact will occur.

With regard to the surrounding properties, greater protection should be afforded to windows that serve habitable dwellings and, in particular, those serving living rooms and family kitchens. The tests can also be applied to non-domestic uses such as offices and workplaces where such uses will ordinarily have a reasonable expectation of daylight or sunlight. However, retail outlets such as shops and high street banks are not generally considered to have a reasonable expectation of daylight or sunlight. It is considered that retail outlets and point-of-sale displays do not rely on daylight or sunlight but on electric lighting. Assessment for daylight and sunlight is not therefore considered necessary in those instances.

The use of the VSC does have a number of limitations. For example, the calculation procedure only calculated the amount of light falling on the wall on question, it does not take into account the size of the windows or the size of the room that it is intending to light. Consequently, it is possible to design a room that would be adequately daylit through sensible room and window design (e.g., shallow rooms and large widows, or the use of roof lights), but the VSC will still show a low level of light falling on the wall. The VSC calculations do not take into account how designers may maximise the available light within a dwelling.

A2.1.2 Interior Daylight Recommendations

The VSC only determined whether a room has the potential for good interior daylighting. The actual interior daylighting of the building can be checked by using the illuminance methodology introduced in BS EN 17037.

BS EN 17037 supersedes BS 8206 Part 2 “Code of practice for daylighting”, which contained a method of assessment based on Average Daylight Factor, which is now no longer recommended.

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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, method is based on calculating the daylight factors achieved over specified fractions of the reference plane.

BS EN 17037 provides 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.

The recommendations for side-lit rooms are met if both target illuminance (the median daylight factor over 50% of the reference plane, and the minimum illuminance over 95% of the reference plane) are achieved.

Table A2.1: Target illuminance from daylight over at least half of the daylight hours

Level of Recommendation	Target illuminance ET (lx) for half of assessment grid	Target illuminance ET (lx) for 95% of assessment grid
Minimum	300	100
Medium	500	300
High	750	500

A2.1.3 No-Skyline and the Working Plane

Whilst the ADF and VSC determine the amount of daylight in a room, the no-skyline determines how well the daylight is distributed in the room. Areas beyond the no-skyline will generally look gloomy.

The working plane is a notional surface, typically at about desk or table height, at which the daylight factor or the 'no-skyline- is calculated or plotted. For calculations in dwellings, it is taken to be at a position 0.85m above the floor.

The no-skyline divides those areas of the working place which can receive direct skylight, from those which cannot. If the external obstructions already exist, it is possible to measure directly the position of the no-skyline in a room.

The assessment criteria for the working plane are detailed in the Communities & Local Government published report *Code for Suitable Homes – Technical Guidance (2008).* The minimum requirement stated by the guidance is 80% of the working place in each kitchen, living room, dining room and study must receive direct light from the sky.

As an approximation, obstructions that are parallel to the window can be considered infinite. The no-skyline will then be parallel to the window at a distance 'd' from the window wall. **Figure A2.2** illustrates how the no-skyline can be calculated. If 'd' is greater than the room depth, then no part of the room lies beyond this no-skyline.

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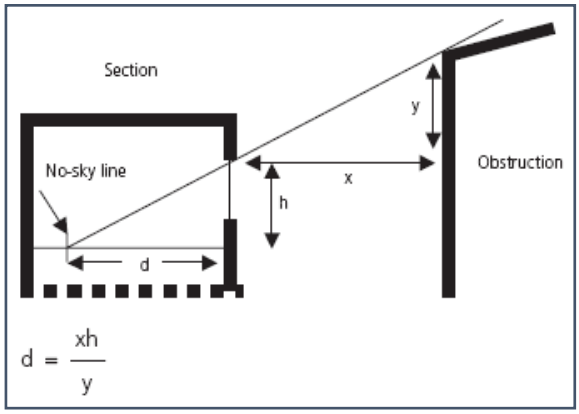
Figure A2.2: Pictorial calculation of the No-Skyline



Where:

h = height of the window head above the working plane

y = height of the obstruction above the window head

x = distance from the window to the obstruction

A2.2 Sunlight

Whilst daylight is an essential element of all dwellings, sunlight is considered to be desirable rather than essential. The BRE Report suggests that not all windows need to have access to direct sunlight and that direct sunlight is most desirable in living rooms and kitchens and less important in bedrooms.

When designing a new development or an extension to an existing building, the impact on the amount of sunlight received in the living areas of residential properties muse be assessed, as residents are particularly likely to notice a loss of sunlight entering their homes.

Sunlight availability can be measured in Annual Probable Sunlit Hours (APSH). The APSH assessment determined the amount of probable sunlight that will shine on the window in a typical year.

The BRE Report suggests that to ensure that a dwelling will appear reasonably sunlit, at least one main window wall should face within 90° of due south and that the window received at least 25% of the total APSH available during a given year, and at least 5% of the total APSH during the winter months. Consequently, not every window in a dwelling need to achieve the minimum levels of sunlight, nor does every room in a dwelling.

When assessing the impact on sunlight from a new development on an existing development if the levels with eh development proposals include an APSH less than 0.8 times their former value, then the existing occupants will notice the loss in sunlight.

For new buildings a habitable room, preferably a main living room, should 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.

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