

Report for:

Sleep Design Studio

Maryland Road, Haringey

Daylight and Sunlight Assessment

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1. INTRODUCTION

ACCON UK Ltd has been commissioned by Sleep Design Studio to undertake a daylight, sunlight and overshadowing assessment in respect of the proposed development at Maryland Road, Haringey.

The proposed development is for the construction of 1 x 3-bed flats, 3 x 2-bed flats and 2 x 1-bed flats Including communal amenity space and cycle storage. 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 as well as overshadowing of amenity spaces.

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

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 is 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 facades will, in general, receive most sunlight, while north facing facades 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.

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 for determining the impact of a development;
- **British Standard BS EN 17037:2018+A1:2021 Daylight in buildings.** BS EN 17037:2018+A1:2021 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;
- **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 levels 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.

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 66-007-20190722) 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 daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the 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 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 4 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.

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	Daylight Factor (DF)	Greater than 0.7%-2.1%*
	Appendix D	Percentage of the Working Plane beyond the No-Sky Line (NSL)	20% or more of the room lies beyond the no sky line ⁺
Sunlight	Section 3.1	Sunlight Provision	Greater than 1.5 hours
	Section 3.2	Annual Probable Sunlight Hours (APSH) (Full Year)	Greater than 25% [†]

Parameter	BRE Report Ref.	Criteria	Acceptability Criteria
		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 21 st 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 can receive direct skylight, it does not give an acceptability criterion, only that supplementary electric lighting will be required if "20% or more of the room lies beyond the no sky line".

† = 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.

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 plane 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 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°;
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.

3.5. Overshadowing of Gardens and Open Spaces

The effects of overshadowing and the loss of sunlight on open spaces and gardens is another important element of any sunlight or daylight assessment. Assessments should not restrict themselves to looking at just the effects on providing good natural lighting within buildings as sunlight in the spaces between buildings has an important impact on the overall appearance and ambience of a development.

The Third Edition of the BRE Report, published in 2022, has significantly revised the assessment procedure for the overshadowing of gardens and outdoor amenity space. The new guidance changes the emphasis from ensuring that as much area as possible receive direct sunlight to ensuring that the garden receives significant amounts of sunlight, albeit over a smaller area. The 2022 BRE Guidance requires at least 50% of the garden must receive at least two hours of direct sunlight on the 21st March. If this cannot be achieved, providing that

the area overshadowed was not less than 0.8 times its former value, no significant impact would have occurred.

4. DAYLIGHT IMPACT ASSESSMENT

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

4.1. Identification of Receptors

The windows at existing residential properties have been assessed in accordance with the BRE 2022 guidance document, which states *“The guidelines given here are intended for use for 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 analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops, and some offices”*.

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

- **Receptor 1:** 332 High Road; and
- **Receptor 2:** 1A Maryland Road

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 at 332 High Road and the west façade of 1A Maryland Road.

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 daylight. However, this level need not be applied to rooms which do not require high levels of natural light such as garages, storage rooms, hallways etc. Commercial receptors are less sensitive to daylight impacts due to the typical use of electric lighting.

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

Table 4.1: Vertical Sky Component – Existing Residential Properties

Rec. No	Aspect	Floor	Window	VSC (%)		Ratio	Meets BRE
				Existing	Proposed		
R1	West	Ground	1	32.47	31.93	0.98	Yes
R1	West	Ground	2	30.01	29.43	0.98	Yes
R1	East	Ground	3	34.41	34.41	1.00	Yes
R1	East	Ground	4	35.12	35.12	1.00	Yes
R1	West	First	5	35.02	34.90	1.00	Yes
R1	West	First	6	35.85	35.06	0.98	Yes

Rec. No	Aspect	Floor	Window	VSC (%)		Ratio	Meets BRE
				Existing	Proposed		
R1	West	First	7	34.20	32.77	0.96	Yes
R1	South	First	8	21.10	4.50	0.21	No
R1	South	First	9	29.78	5.06	0.17	No
R1	East	First	10	36.51	36.51	1.00	Yes
R1	West	Second	11	38.33	37.27	0.97	Yes
R1	South	Second	12	66.20	57.22	0.86	Yes
R1	East	Second	13	39.11	38.78	0.99	Yes
R1	East	Second	14	39.15	39.10	1.00	Yes
R2	West	Ground	15	13.17	13.17	1.00	Yes
R2	West	Ground	16	21.79	20.10	0.92	Yes
R2	West	First	17	27.16	25.71	0.95	Yes

It can be identified from **Table 4.1** that all of the windows at the surrounding properties except for two meet the BRE target values in respect of the VSC. Windows 8 and 9 will be most significantly impacted by the development, these windows are located on the south façade of 332 High Road and face directly towards the proposed development. The room use that these windows let into is unknown; however, it can be assumed that these windows let into bathrooms as it has been identified that they have obscured glazing and therefore it is highly unlikely that they are habitable rooms.

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 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 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:

- It receives less than 25% of Annual Probable Sunlight Hours (APSH), or less than 5% APSH between 21st September and 21st March; **and**
- It receives less than 0.8 times its former APSH during either period; **and**
- 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 north have not been considered. The results can be identified in **Table 5.1**.

Table 5.1: Annual Probable Sunlight Hours (APSH) – Existing Residential Properties

Rec. No	Aspect	Floor	Window	APSH Annual		Ratio	APSH Winter		Ratio
				Existing	Proposed		Existing	Proposed	
B1	West	Ground	1	34	31	0.91	3	3	1.00
B1	West	Ground	2	23	20	0.87	1	1	1.00
B1	East	Ground	3	46	46	N/A	11	11	N/A
B1	East	Ground	4	47	47	N/A	12	12	N/A
B1	West	First	5	37	37	1.00	6	6	1.00
B1	West	First	6	41	38	0.93	6	3	0.50
B1	West	First	7	35	32	0.91	2	1	0.50

Rec. No	Aspect	Floor	Window	APSH Annual		Ratio	APSH Winter		Ratio
				Existing	Proposed		Existing	Proposed	
B1	South	First	8	53	13	0.25	9	0	0.00
B1	South	First	9	73	17	0.23	21	2	0.10
B1	East	First	10	49	49	N/A	14	14	N/A
B1	West	Second	11	49	45	0.92	14	10	0.71
B1	South	Second	12	94	84	0.89	28	18	0.64
B1	East	Second	13	50	47	N/A	15	12	N/A
B1	East	Second	14	50	50	N/A	15	15	N/A
B2	West	Ground	15	10	10	N/A	0	0	N/A
B2	West	Ground	16	34	33	N/A	10	9	N/A
B2	West	First	17	28	26	N/A	6	4	N/A

Note: Windows with N/A in the ratio column are those which face within 90° of due north and therefore do not need to be considered.

It can be identified from **Table 5.1** that two of the windows fail in respect of APSH and Winter APSH. Windows 8 and 9 are the only windows that face directly towards the proposed development and therefore are most adversely impacted. It should be noted that although many of the windows face east or west, they are marginally within 90° of due north and therefore there is no requirement to assess the APSH at those windows.

6. OVERSHADOWING

The effects of overshadowing and the loss of sunlight on amenity spaces and gardens is another important element of any sunlight or daylight assessment. Assessments should not restrict themselves to looking at just the effects on providing good natural lighting within buildings as sunlight in the spaces between buildings has an important impact on the overall appearance and ambience of a development.

The 2022 BRE Guidance requires at least 50% of the garden must receive at least two hours of direct sunlight on the 21st March. If this cannot be achieved, providing that the area overshadowed was not less than 0.8 times its former value, no significant impact would have occurred.

It can be identified in **Table 6.1** that there will be a minimal impact on the neighbouring amenity spaces at 332 High Road (R1), as a result of the proposed development. The overshadowing contours can be identified in **Appendix 3**.

Table 6.1: Overshadowing– Existing vs. Proposed

Rec. No	Total Amenity Area (m ²)	Existing Total lit area (m ²)	Proposed Total lit area (m ²)	Existing % receiving 120 minutes of sunlight	Proposed % receiving 120 minutes of sunlight	Ratio
R1 – Rear Garden	188.23	158.18	128.29	84%	68%	0.81
R1 – Font Garden	100.51	76.57	76.48	76%	76%	1.00

7. SELF TEST

For the proposed development, a self-test has been undertaken to determine whether the habitable rooms in the new residential property would receive sufficient levels of daylight and sunlight for the future inhabitants. The windows on the upper floors invariably have improved levels of natural lighting.

The self-test assessment considers the proposed development as identified in **Appendix 1**.

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

7.1. Vertical Sky Component (VSC)

When designing a new building the amount of light that that each window will receive is calculated through the VSC. The BRE report provides the following guidelines for the achievement of acceptable VSC values to provide well-lit rooms:

- At least 27%: Conventional window design will usually give reasonable results.
- Between 15% and 27%: Special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight.
- Between 5% and 15%: It is very difficult to provide adequate daylight unless very large windows are used.
- Less than 5%: It is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.

The results of the VSC Self Test are identified in **Table 7.1**

Table 7.1: Self-Test – Vertical Sky Component

Floor	Aspect	Window	VSC (%)	Meets BRE Criteria	Room Use
Basement	South	18	10.70	No	Kitchen / Living Room
Basement	South	19	12.37	No	
Basement	East	20	18.35	No	
Basement	East	21	21.40	No	
Basement	East	22	19.03	No	Study
Ground	West	23	27.98	Yes	Kitchen / Living Room
Ground	West	24	33.89	Yes	
Ground	West	25	27.63	Yes	
Ground	West	26	28.04	Yes	Bedroom
Ground	West	27	34.03	Yes	
Ground	West	28	27.84	Yes	
Ground	South	29	9.76	No	

Floor	Aspect	Window	VSC (%)	Meets BRE Criteria	Room Use
Ground	South	30	27.10	Yes	Bedroom
Ground	South	31	30.52	Yes	Bedroom
Ground	South	32	30.05	Yes	Bedroom
Ground	East	33	31.84	Yes	
Ground	East	34	32.59	Yes	Bedroom
First	West	35	35.83	Yes	Bedroom
First	West	36	35.86	Yes	Kitchen / Living Room
First	South	37	11.88	No	
First	South	38	19.67	No	
First	South	39	31.21	Yes	Bedroom
First	West	40	4.61	No	Kitchen / Living Room
First	South	41	33.59	Yes	
First	South	42	33.12	Yes	
First	East	43	35.36	Yes	
First	East	44	35.52	Yes	Bedroom
First	North	45	31.59	Yes	Bedroom
Second	West	46	36.30	Yes	Bedroom
Second	West	47	33.82	Yes	Kitchen / Living Room
Second	South	48	30.65	Yes	
Second	South	49	33.74	Yes	
Second	South	50	35.39	Yes	Bedroom
Second	West	51	14.81	No	Kitchen / Living Room
Second	South	52	35.11	Yes	
Second	South	53	34.77	Yes	
Second	East	54	36.31	Yes	
Second	East	55	36.33	Yes	Bedroom
Second	North	56	34.72	Yes	Bedroom

It can be identified in **Table 7.1** that 10 out of the 38 windows assessed do not meet the BRE target value of 27%. However, 9 of these windows let into 5 different rooms with multiple

windows that do meet the guidelines and therefore light levels in those rooms will be considered to be acceptable.

Windows 18, 19, 20 and 21 all fail in respect of VSC but all let into the same room and it should also be noted that this is a Kitchen/Living room and is at the basement level therefore it will be difficult to receive high levels of light. Window 22 is located at basement level and lets into a study, this window has a VSC value of 19.03%, light levels in this room may be acceptable with larger windows and a careful room layout.

7.1.1. 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, as residents are particularly likely to notice a loss of sunlight entering their homes.

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 results of the sunlight provisions assessment can be identified in **Table 7.2**.

Table 7.2: Proposed Building Sunlight Provision

Room Ref.	Window	Floor	Sunlight Provision (Hours)	Meets BRE Criteria	Room Use
1.0	18	Basement	0	Yes	Kitchen / Living Room
	19		0		
	20		2.2		
	21		1.8		
Total Sunlight Provision			2.2		
1.1	22	Basement	1.5	Yes	Study
Total Sunlight Provision			1.5		
1.2	34	Basement	4.0	Yes	Bedroom
Total Sunlight Provision			4.0		
1.3	32	Ground	9.4	Yes	Bedroom

Room Ref.	Window	Floor	Sunlight Provision (Hours)	Meets BRE Criteria	Room Use
	33		4.2		
Total Sunlight Provision			9.4		
1.4	31	Ground	9.4	Yes	Bedroom
Total Sunlight Provision			9.4		
2.0	23	Ground	1.6	Yes	Kitchen / Living Room
	24		3.8		
	25		4.1		
Total Sunlight Provision			4.2		
2.1	29	Ground	4.2	Yes	Bedroom
	26		3.8		
	27		3.5		
	28		1.5		
Total Sunlight Provision			6.4		
2.2	30	Ground	6.7	Yes	Bedroom
Total Sunlight Provision			6.7		
3.0	40	First	4.3	Yes	Kitchen / Living Room
	41		9.4		
	42		3.0		
	43		9.4		
Total Sunlight Provision			9.4		
3.1	44	First	4.0	Yes	Bedroom
Total Sunlight Provision			4.0		
4.0	36	First	3.9	Yes	Kitchen / Living Room
	37		8.7		

Room Ref.	Window	Floor	Sunlight Provision (Hours)	Meets BRE Criteria	Room Use
	38		1.7		
Total Sunlight Provision			9.1		
4.1	45	First	0.0	Yes	Bedroom
	35		4.0		
Total Sunlight Provision			4.0		
4.2	39	First	6.7	Yes	Bedroom
Total Sunlight Provision			6.7		
5.0	51	second	4.3	Yes	Kitchen / Living Room
	52		3.0		
	53		9.4		
	54		9.4		
Total Sunlight Provision					
5.1	55	Second	4.0	Yes	Bedroom
Total Sunlight Provision			4.0		
6.0	47	Second	7.8	Yes	Kitchen / Living Room
	48		6.6		
	49		3.6		
Total Sunlight Provision			8.8		
6.1	56	Second	0.0	Yes	Bedroom
	46		3.9		
Total Sunlight Provision			3.9		
6.2	50	Second	9.4	Yes	Bedroom
Total Sunlight Provision			9.4		

It has been identified in **Table 7.2** that all of the rooms at the proposed rooms will receive acceptable levels of sunlight.

8. CONCLUSIONS

Calculations were undertaken in accordance with the BRE guidelines to determine if the proposed development at Maryland Road, Haringey, would impact the surrounding properties in terms of daylight, sunlight and overshadowing, as well as determining if the proposed development would receive acceptable levels of daylight and sunlight.

The proposed building will only result in two existing receptor windows being impacted with respect to daylight and sunlight (Windows 8 and 9). These two windows are the only windows that face directly towards the proposed development. It has been assumed that these windows let into bathrooms due to their location and having obscured glazing and therefore are not considered to be habitable rooms.

The amenity spaces at No. 332 High Road, were assessed without the proposed development and with the proposed development in place. 50% of the amenity space will remain sunlit for more than 2 hours and the ratio with and without the proposed development is higher than 0.8 times its former value in line with the BRE Guidance requirements. Therefore, the overshadowing impact of the development on the amenity spaces at No. 332 High Road will be negligible.

It has been identified in the self-test for the proposed development, that 10 of the windows at the proposed development do not meet the BRE target values in respect of VSC, however, 9 of these windows let into rooms that have multiple windows and one lets into a study. It would be recommended that additional artificial lighting would be installed in the study and Room 1.0 which are both at basement level.

All of the rooms at the proposed development meet the BRE target values in respect of sunlight and therefore it can be concluded that the overall light levels at the proposed development will be acceptable.

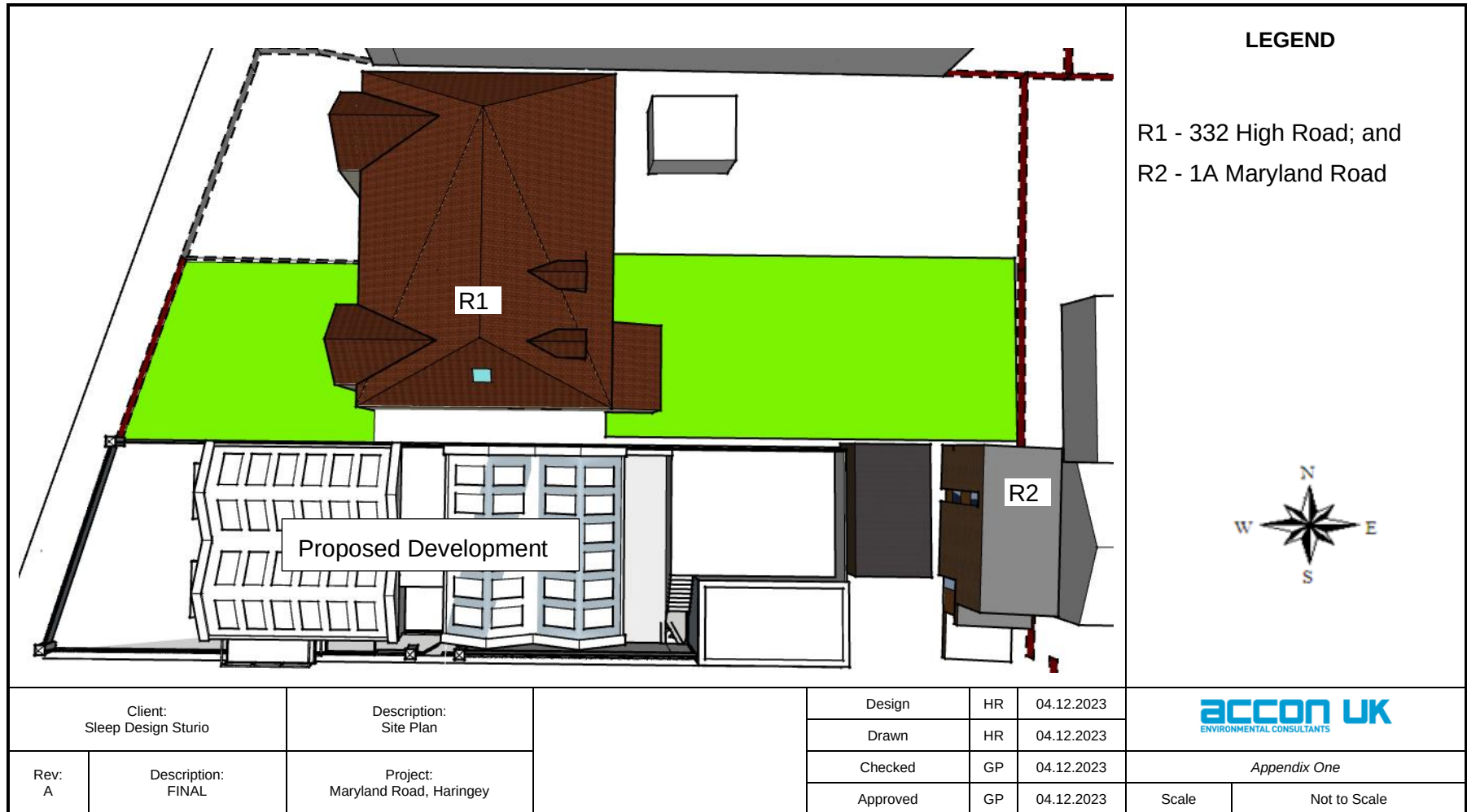
Appendix 1

Development Site Plan with Relevant Receptors

Appendix 1: Development Site Plan with Relevant Receptors



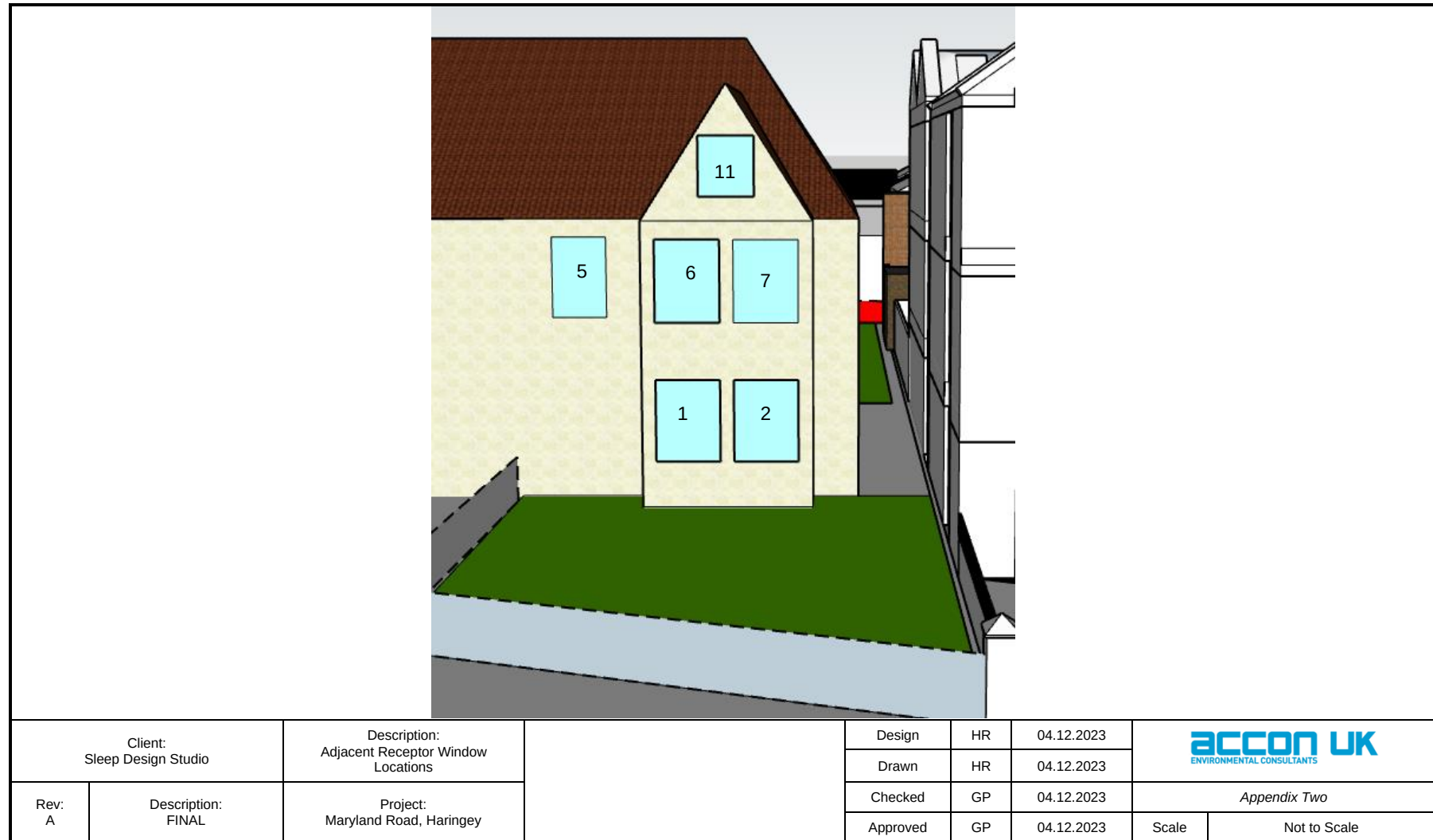
Appendix 1: Development Site Plan



Appendix 2

Window Locations

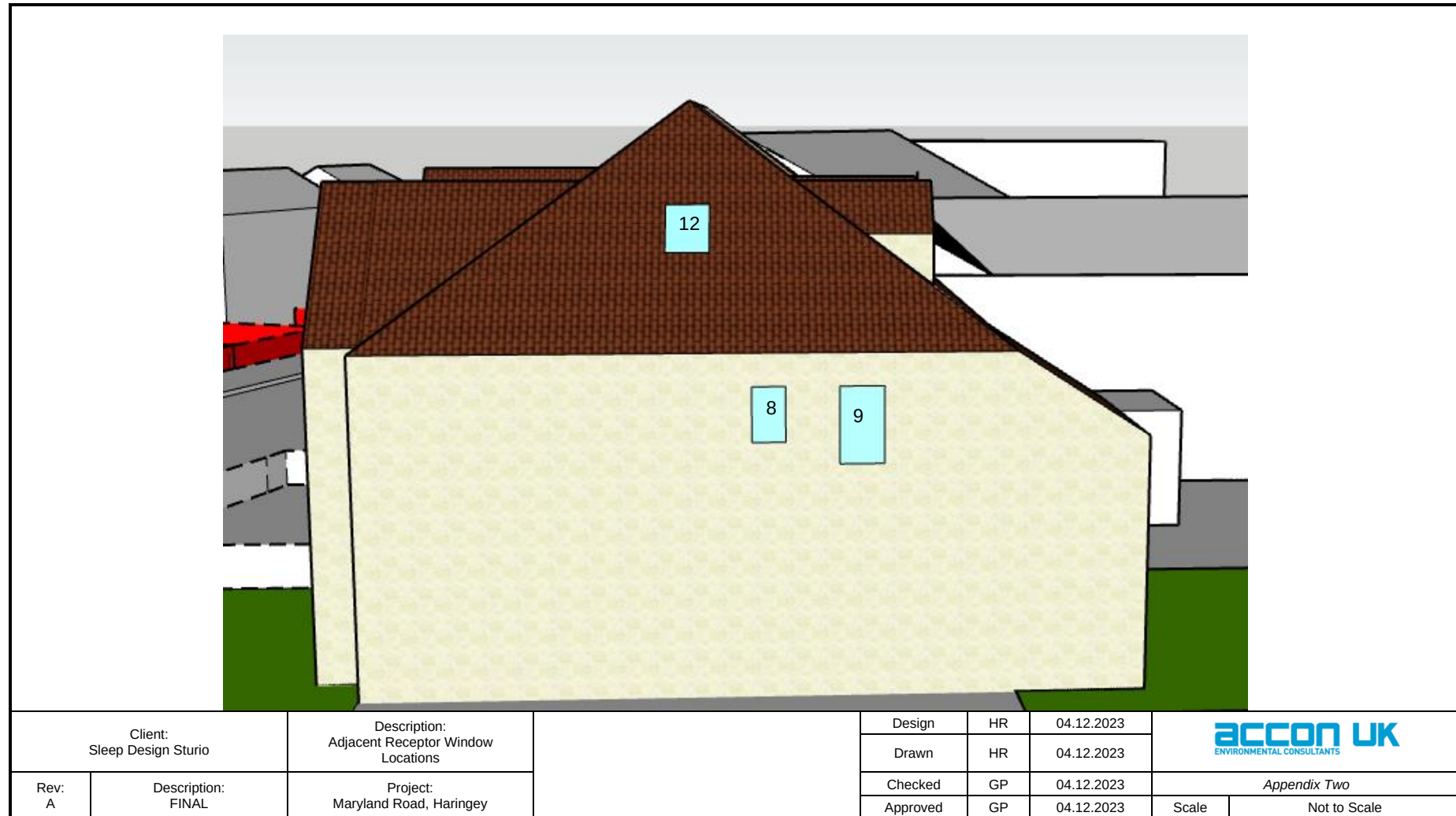
Appendix 2: Receptor 1 – West Façade Window Locations



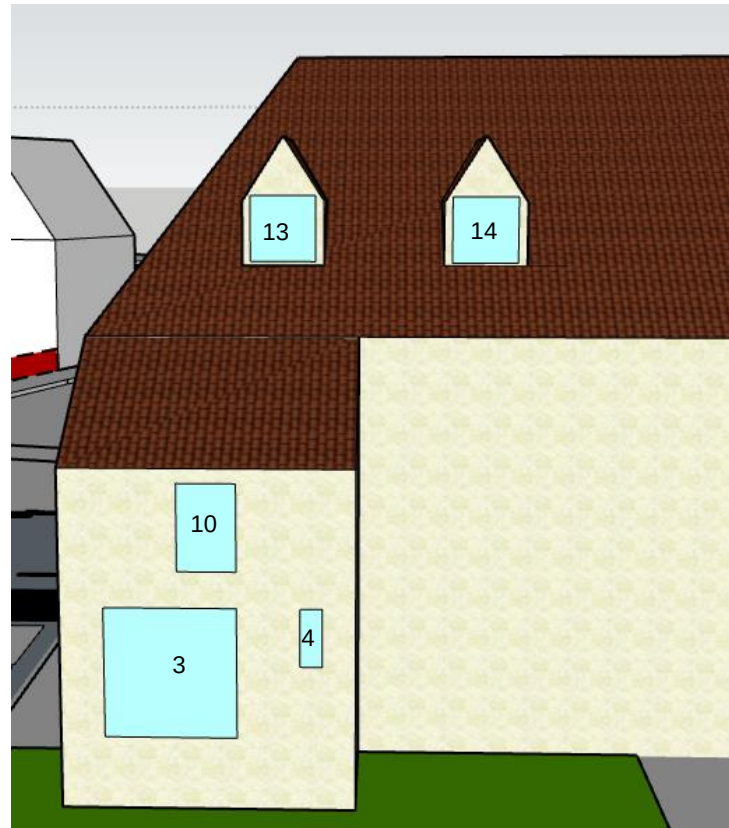
13.12.2023

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Appendix 2: Receptor 1– South and East Façade Window Locations

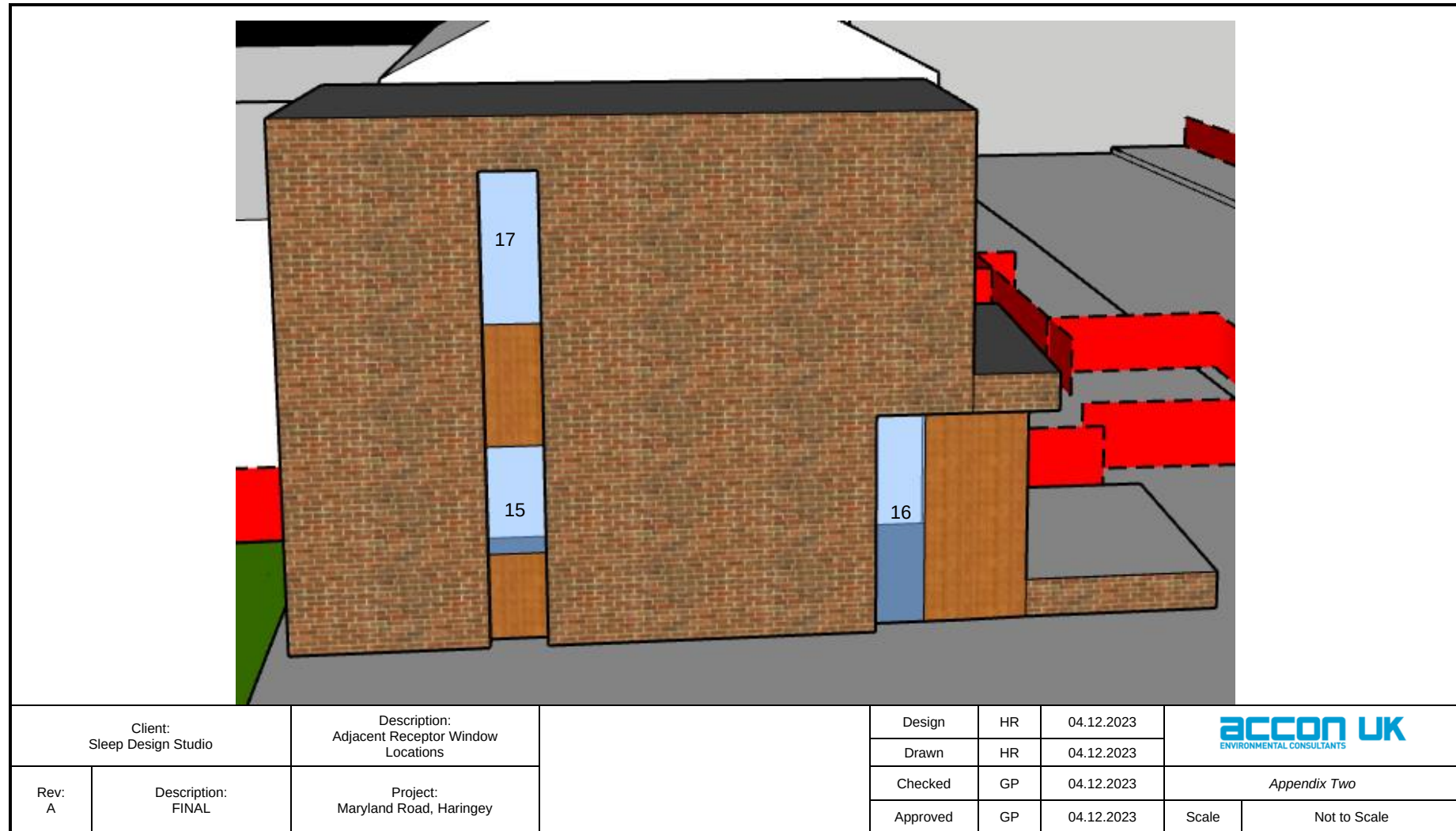


Appendix 2: Receptor 1– East Façade Window Locations



Client: Sleep Design Studio		Description: Adjacent Receptor Window Locations		Design	HR	04.12.2023	ACCON UK ENVIRONMENTAL CONSULTANTS	
				Drawn	HR	04.12.2023		
Rev: A	Description: FINAL	Project: Maryland Road, Haringey		Checked	GP	04.12.2023	Appendix Two	
				Approved	GP	04.12.2023	Scale	Not to Scale

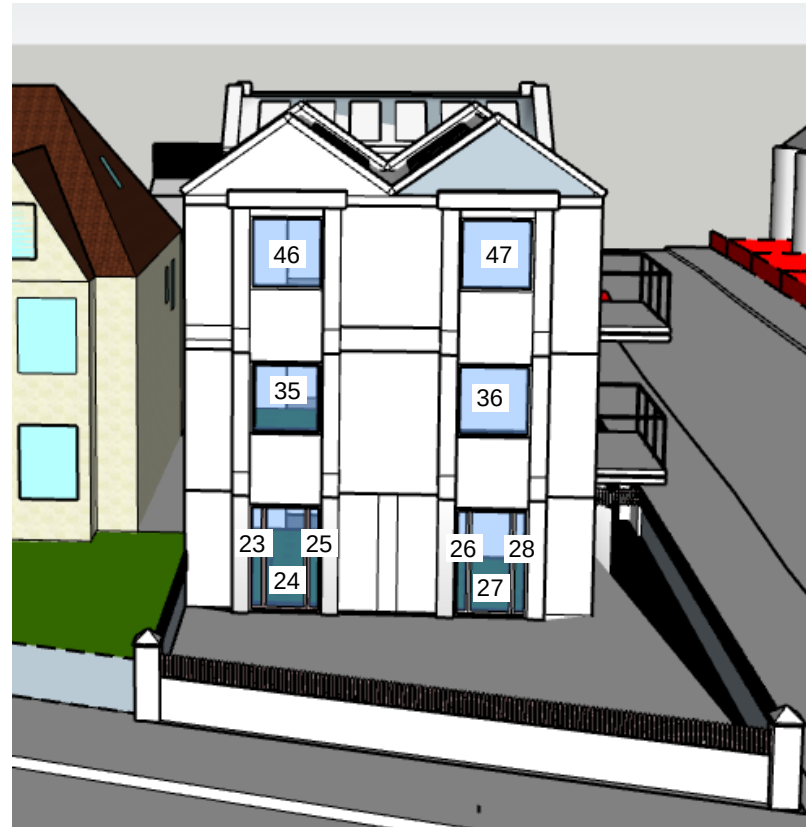
Appendix 2: Receptor 2– West Façade Window Locations



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Appendix 2: Self-Test Proposed Development – East Façade Window Locations

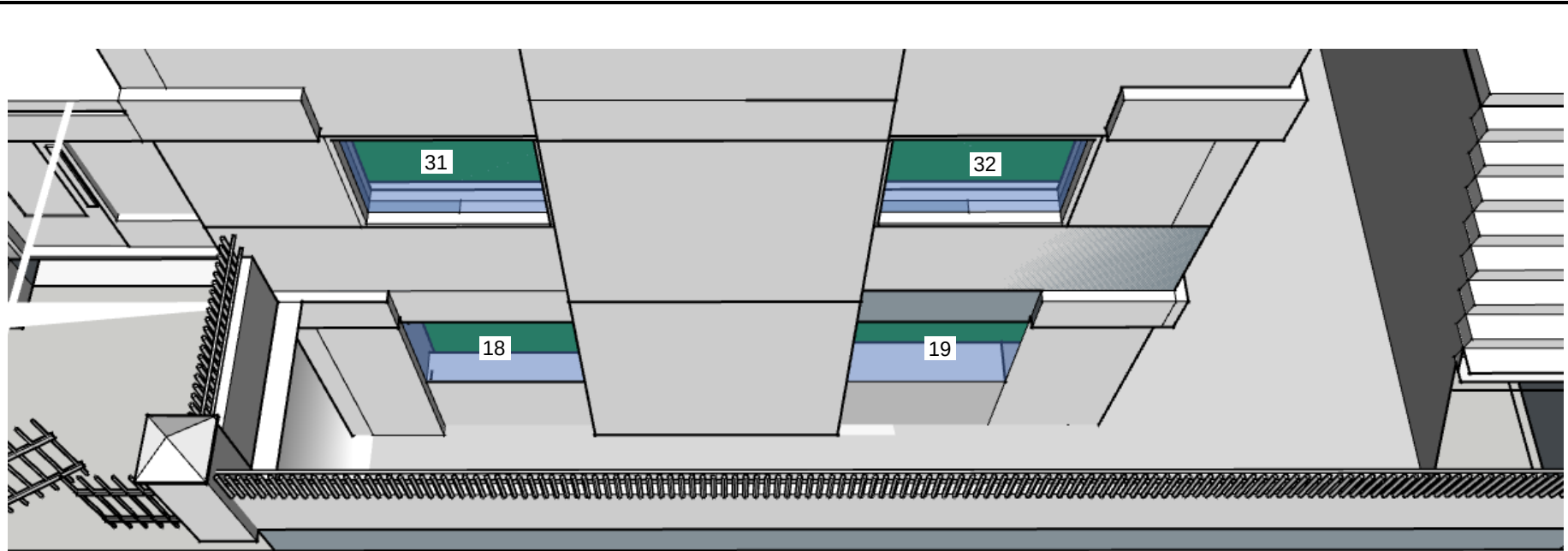


Client: Sleep Design Studio		Description: Proposed Development Locations		Design	HR	04.12.2023	ACCON UK ENVIRONMENTAL CONSULTANTS	
				Drawn	HR	04.12.2023		
Rev: A	Description: FINAL	Project: Maryland Road, Haringey		Checked	GP	04.12.2023	Appendix Two	
				Approved	GP	04.12.2023	Scale	Not to Scale

13.12.2023

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Appendix 2: Self-Test proposed Development – South Façade Window Locations



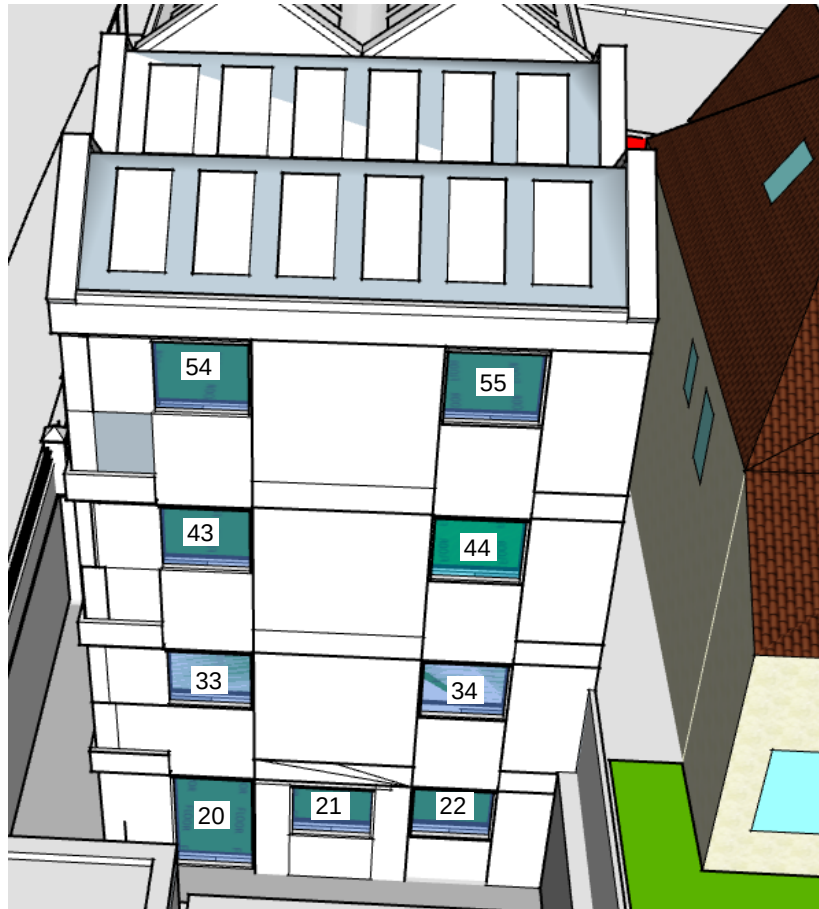
Client: Sleep Design Studio		Description: Proposed Development Window Locations		Design	HR	04.12.2023		
				Drawn	HR	04.12.2023		
Rev: A	Description: FINAL	Project: Maryland Road, Haringey		Checked	GP	04.12.2023	Appendix Two	
				Approved	GP	04.12.2023	Scale	Not to Scale

Appendix 2: Self-Test proposed Development – South Façade Window Locations



Client: Sleep Design Studio		Description: Proposed Development Window Locations		Design	HR	04.12.2023		
				Drawn	HR	04.12.2023		
Rev: A	Description: FINAL	Project: Maryland Road, Haringey		Checked	GP	04.12.2023	Appendix Two	
				Approved	GP	04.12.2023	Scale	Not to Scale

Appendix 2: Self-Test proposed Development – East Façade Window Locations

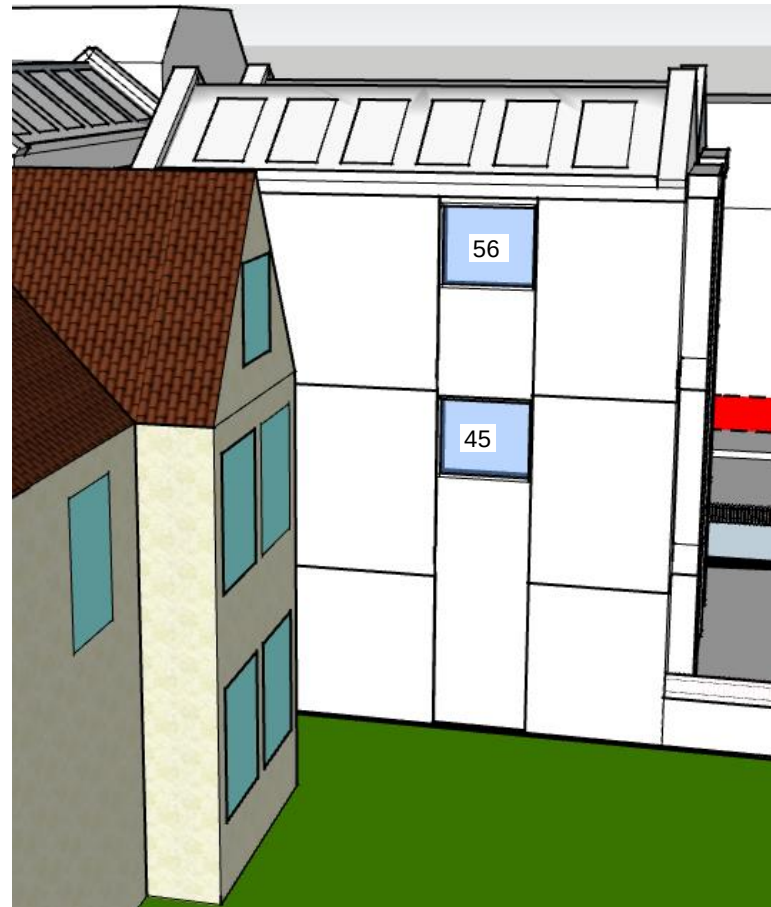


Client: Sleep Design Studio		Description: Proposed Development Window Locations		Design	HR	04.12.2023		
				Drawn	HR	04.12.2023		
Rev: A	Description: FINAL	Project: Maryland Road, Haringey		Checked	GP	04.12.2023	Appendix Two	
				Approved	GP	04.12.2023	Scale	Not to Scale

13.12.2023

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Appendix 2: Self-Test proposed Development – North Façade Window Locations



Client: Sleep Design Studio		Description: Proposed Development Window Locations		Design	HR	04.12.2023		
				Drawn	HR	04.12.2023		
Rev: A	Description: FINAL	Project: Maryland Road, Haringey		Checked	GP	04.12.2023	Appendix Two	
				Approved	GP	04.12.2023	Scale	Not to Scale

13.12.2023

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Appendix 2: Proposed Development – Room Reference



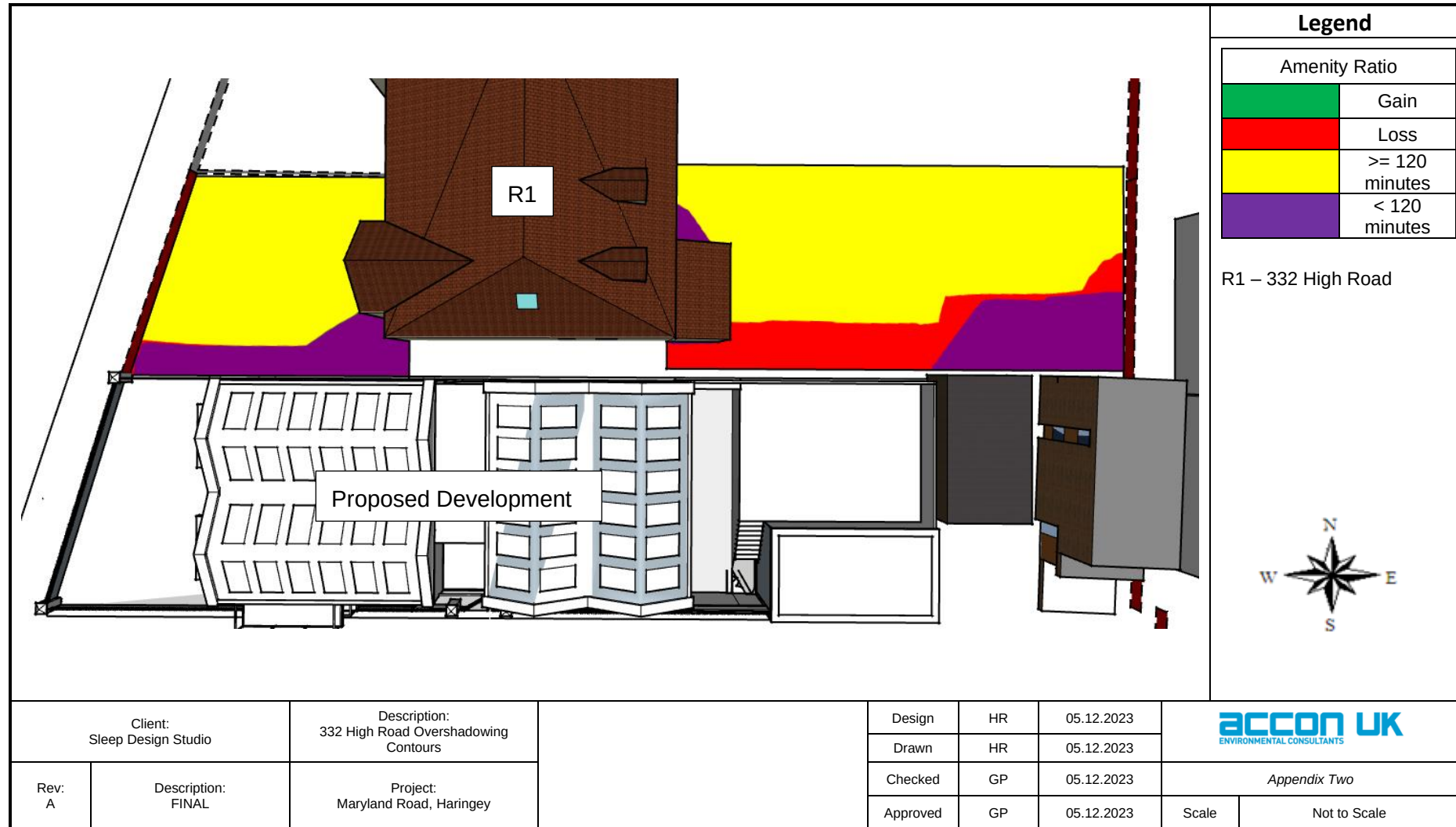
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Appendix 3

Overshadowing Contours

Appendix 3: 332 High Road - Overshadowing Contours for Amenity Spaces



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Appendix 4

The BRE Report

Appendix 4: 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 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 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-Sky Line and the Working Plane**

A2.1.1 The 25° Rule and Vertical Sky Component

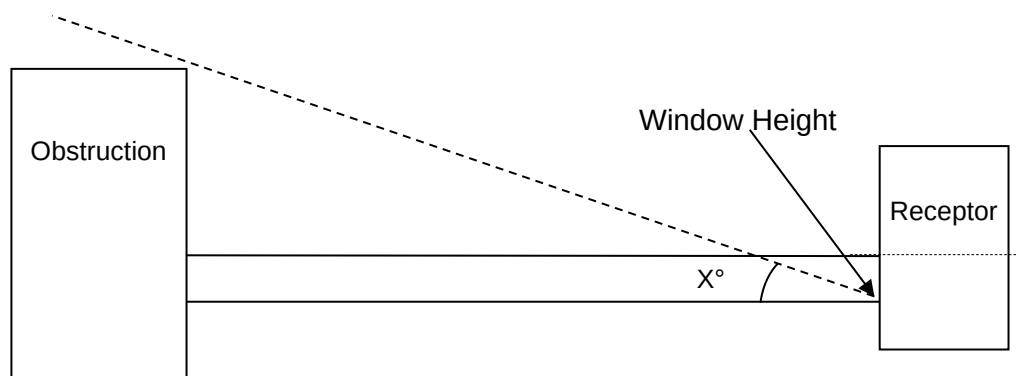
The BRE Report contains guidance on how to design developments, whilst minimising the impacts of existing buildings from overshadowing and reduced levels of daylight and sunlight, as well as ensuring developments are adequately daylighted. The report suggests that in general, a building will have the 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 BS EN 17037 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 an angle of less than 25° to the horizontal from the lowest window of the existing property, then it is unlikely that the development will cause any substantive effects of the lighting of existing buildings; greater than 25° and further analysis will be 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 determines 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% from 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 calculates the amount of light falling on the wall in 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 windows, 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 Daylight Factor (DF) 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.

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 daylight space should achieve the minimum level of recommendation.

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.

Table A2.1: Daylight Factor Criteria

Level of Recommendation	Target daylight factor for 50% of the assessment grid	Target daylight factor for 95% of assessment grid
Minimum	2.1%	0.7%
Medium	3.5%	2.1%
High	5.3%	3.5%

A2.2.3 No-Sky Line and the Working Plane

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

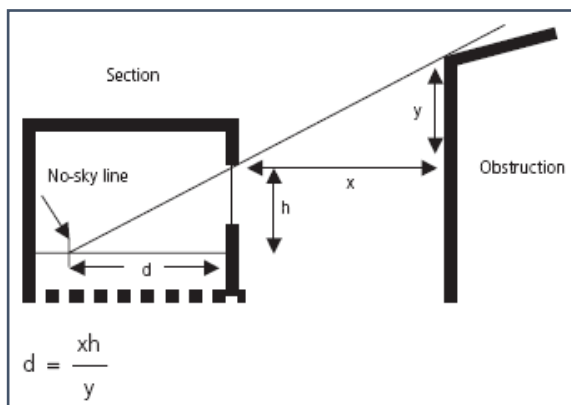
The working plane is a notional surface, typically at about desk or table height, at which the daylight factor or the 'no-sky line' is calculated or plotted. For calculations in dwellings, it is taken to be at a position 0.85 m above the floor.

The no-sky line divides those areas of the working plane 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-sky line in a room.

The assessment criteria for the working plane is detailed in the Communities & Local Government published report *Code for Sustainable Homes-Technical Guidance (2008)*. The minimum requirement stated by the guidance is 80% of the working plane 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 sky-line will then be parallel to the window at a distance 'd' from the window wall. **Figure A2.2** illustrates how the no-sky line can be calculated. If 'd' is greater than the room depth, then no part of the room lies beyond this *no-sky line*.

Figure A2.2: Pictorial calculation of the No-Sky Line



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 must 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 the 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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