

Report for:

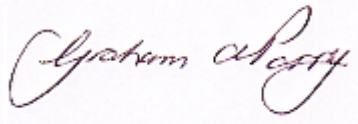
Eurospeak Build Limited

13 – 16 Market Place, Reading

Daylight and Sunlight Assessment

Status: Final

Date: 08.06.2023

Author	 Henry Robins Consultant
Reviewed and Approved By	 Graham Parry Managing Director
Report For	EUROSPEAK BUILD LIMITED Tunmers Lodge Narcot Lane Chalfont St. Peter Gerrards Cross SL9 8TL
Date	08/06/2023
Version Number	A4731/DS/006
Status	Final

This report has been prepared by ACCON UK Limited with all reasonable care and diligence within the terms of the contract with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. We accept no responsibility to third parties to whom this report, or any part, thereof is made available. Any such party relies upon the report at their own risk.

CONTENTS

1. INTRODUCTION	4
2. THE NATURE AND EFFECT OF DAYLIGHT AND SUNLIGHT	5
3. ASSESSMENT CRITERIA	6
3.1. National Policy	6
3.2. The BRE Report	7
3.3. Daylight Assessment	8
3.4. Sunlight Assessment	9
4. DAYLIGHT IMPACT ASSESSMENT	10
4.1. Identification of Receptors	10
4.2. Vertical Sky Component (VSC)	10
5. SUNLIGHT IMPACT ASSESSMENT	16
5.1. Annual Probable Sunlight Hours	16
6. SELF TEST	26
7. CONCLUSION	31

LIST OF TABLES

Table 3.1: Summary criteria contained within the BRE Report	8
Table 4.1: Vertical Sky Component	11
Table 5.1: Annual Probable Sunlight Hours (APSH)	17
Table 6.1: Self Test Results	27

LIST OF APPENDICES

Appendix 1 Development Site Plan with Relevant Receptor	33
Appendix 2 Window Locations	35
Appendix 3 The BRE Report	49

1. INTRODUCTION

ACCON UK Limited (ACCON) has been commissioned by Danks Badnell Architects Limited on behalf of Eurospeak Build Limited to undertake a daylight and sunlight assessment in respect of the proposed development at 13 – 16 Market Place, Reading. 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 sensitive properties.

This is an updated report addressing those comments received on 28th September from Reading Borough Council in respect of additional sensitive receptors and windows to be included in the “Self Test”.

Appendix 1 provides a site location of the proposed development site with the locations 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 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.

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 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. It should be 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.

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 consideration 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 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 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.

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	Average Daylight Factor (ADF)	Greater than 1%-2%*
	Appendix D	Percentage of the Working Plane beyond the No-Sky Line (NSL)	“Significant Part”+
Sunlight	Section 3.1 & 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 21 st March	Maximum 40%

*= Varies depending on room use. See **Appendix 3** 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.

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 affected 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.

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 2022 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:** St Laurence House, 10 -12 The Forbury
- **Receptor 2:** Sussex House
- **Receptor 3:** 11 – 12 Market Place
- **Receptor 4:** 6 – 8 Soane Point

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. The 3D model was provided by Danks Badnell Architects Limited dated 5th May 2022 and includes the window locations of the surrounding buildings.

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

Table 4.1: Vertical Sky Component

Rec. No	Aspect	Floor	Window	VSC (%)		Ratio	Room Type
				Existing	Proposed		
R1	South	Ground	1	21.28	15.49	0.73	Bedroom
R1	East	Ground	2	7.24	6.81	0.94	
R1	South	Ground	3	16.32	12.35	0.76	Kitchen
R1	South	Ground	4	15.86	11.85	0.75	
R1	West	Ground	5	7.32	7.31	1.00	Living room
R1	East	First	6	10.89	10.53	0.97	Bedroom
R1	South	First	7	18.75	15.63	0.83	Kitchen
R1	South	First	8	19.88	16.93	0.85	
R1	West	First	9	13.41	12.84	0.96	Living room
R1	South	Second	10	22.26	19.84	0.89	N/A
R1	South	Second	11	26.42	24.05	0.91	N/A
R2	East	Ground	12	12.46	11.48	0.92	N/A
R2	East	Ground	13	8.87	8.87	1.00	N/A
R2	East	Ground	14	13.12	11.90	0.91	N/A
R2	East	Ground	15	13.40	11.99	0.89	N/A
R2	East	Ground	16	13.58	12.04	0.89	N/A
R2	South	Ground	17	13.64	11.23	0.82	N/A
R2	South	Ground	18	21.13	15.37	0.73	N/A
R2	East	First	19	22.09	14.99	0.68	Stairwell
R2	East	First	20	12.21	12.21	1.00	Bedroom
R2	East	First	21	13.95	13.95	1.00	Kitchen/Living room
R2	East	First	22	15.34	15.32	1.00	
R2	East	First	23	16.17	15.93	0.99	Bedroom
R2	East	First	24	16.45	15.94	0.97	
R2	East	First	25	16.04	15.41	0.96	
R2	East	First	26	15.11	14.43	0.95	
R2	East	First	27	14.65	13.95	0.95	Kitchen/living room
R2	South	First	28	13.80	13.11	0.95	Kitchen/living room
R2	South	First	29	18.99	17.76	0.94	
R2	South	First	30	21.09	19.19	0.91	Bedroom
R2	South	First	31	24.06	21.14	0.88	
R2	South	First	32	25.83	21.41	0.83	Stairwell
R2	South	First	33	26.99	21.79	0.81	Bedroom
R2	South	First	34	27.75	22.19	0.80	
R2	South	First	35	27.91	22.01	0.79	Bedroom
R2	South	First	36	27.93	21.69	0.78	
R2	East	Second	37	28.71	18.58	0.65	Stairwell
R2	East	Second	38	17.40	17.40	1.00	Bedroom

Rec. No	Aspect	Floor	Window	VSC (%)		Ratio	Room Type
				Existing	Proposed		
R2	East	Second	39	19.37	19.37	1.00	Kitchen/Living room
R2	East	Second	40	20.61	20.60	1.00	
R2	East	Second	41	21.04	20.92	0.99	
R2	East	Second	42	20.69	20.40	0.99	Bedroom
R2	East	Second	43	19.57	19.21	0.98	
R2	East	Second	44	17.88	17.50	0.98	Kitchen/Living room
R2	East	Second	45	16.25	15.88	0.98	
R2	South	Second	46	17.43	17.19	0.99	Kitchen/Living room
R2	South	Second	47	25.31	24.48	0.97	
R2	South	Second	48	27.37	26.22	0.96	Bedroom
R2	South	Second	49	29.52	27.81	0.94	
R2	South	Second	50	30.11	27.17	0.90	Stairwell
R2	South	Second	51	30.39	26.96	0.89	Bedroom
R2	South	Second	52	31.10	27.38	0.88	
R2	South	Second	53	31.13	27.11	0.87	Bedroom
R2	South	Second	54	31.04	26.68	0.86	
R2	East	Third	55	31.70	25.66	0.81	Stairwell
R2	East	Third	56	28.31	28.31	1.00	Bedroom
R2	East	Third	57	28.92	28.92	1.00	Kitchen/Living room
R2	East	Third	58	28.75	28.69	1.00	
R2	East	Third	59	27.94	27.79	0.99	
R2	East	Third	60	26.53	26.39	0.99	Bedroom
R2	East	Third	61	24.50	24.39	1.00	
R2	East	Third	62	21.71	21.61	1.00	Kitchen/living room
R2	East	Third	63	18.20	18.10	0.99	
R2	South	Third	64	24.26	24.14	1.00	Kitchen/Living Room
R2	South	Third	65	33.61	33.35	0.99	
R2	South	Third	66	34.15	33.84	0.99	Bedroom
R2	South	Third	67	34.50	34.01	0.99	
R2	South	Third	68	33.99	32.79	0.96	Stairwell
R2	South	Third	69	33.35	31.85	0.96	Bedroom
R2	South	Third	70	34.09	32.37	0.95	
R2	South	Third	71	34.06	32.11	0.94	Bedroom
R2	South	Third	72	33.93	31.68	0.93	
R2	South	Fourth	73	36.55	36.24	0.99	Stairwell
R3	North	Ground	74	6.29	5.42	0.86	Bedroom
R3	North	Ground	75	7.37	5.22	0.71	Studio Flat
R3	Sky Light	Ground	77	51.37	44.08	0.86	
R3	Sky Light	Ground	78	58.33	50.80	0.87	

Rec. No	Aspect	Floor	Window	VSC (%)		Ratio	Room Type
				Existing	Proposed		
R3	North	Ground	76	5.15	3.94	0.76	Studio Flat
R3	Sky Light	Ground	79	72.72	63.12	0.87	
R3	Sky Light	Ground	80	79.09	64.17	0.81	
R3	Sky Light	Ground	81	80.43	57.37	0.71	Corridor
R3	Sky Light	Ground	82	81.13	68.34	0.84	Corridor
R3	Sky Light	Ground	83	81.89	59.20	0.72	Hallway
R3	Sky Light	Ground	84	78.21	59.21	0.76	Kitchen/Living room
R3	Sky Light	Ground	85	81.56	68.13	0.84	Hallway
R3	Sky Light	Ground	86	79.30	68.38	0.86	Kitchen/Living room
R3	Sky Light	Ground	87	58.02	53.13	0.92	Bedroom
R3	Sky Light	Ground	88	77.73	69.75	0.90	Bedroom
R3	East	First	89	26.32	23.32	0.89	Kitchen/Living Room
R3	East	First	90	26.68	23.09	0.87	
R3	East	First	91	27.07	22.28	0.82	Studio Flat
R3	East	First	92	27.24	21.43	0.79	
R3	North	First	93	28.27	14.87	0.53	
R3	North	First	94	22.04	12.29	0.56	
R3	East	First	95	17.75	10.37	0.58	Kitchen/Living Room
R3	East	Second	96	29.80	28.00	0.94	
R3	East	Second	97	30.03	27.82	0.93	Studio Flat
R3	East	Second	98	30.26	27.18	0.90	
R3	East	Second	99	30.34	26.46	0.87	
R3	North	Second	100	31.73	23.26	0.73	
R3	North	Second	101	24.63	18.69	0.76	Kitchen/Living Room
R3	East	Second	102	19.43	15.05	0.77	
R3	East	Third	103	33.72	33.41	0.99	Kitchen/Living Room
R3	East	Third	104	33.71	33.20	0.98	
R3	East	Third	105	22.76	22.73	1.00	Stairwell
R4	North	First	106	25.46	21.95	0.86	Studio Flat
R4	North	First	107	26.33	22.13	0.84	
R4	North	First	108	26.99	22.16	0.82	Bedroom
R4	North	First	109	27.33	22.32	0.82	Kitchen/Living room
R4	North	First	110	27.33	22.34	0.82	
R4	North	First	111	27.06	22.20	0.82	Studio Flat
R4	North	First	112	26.40	21.84	0.83	
R4	North	First	113	25.28	21.16	0.84	Studio Flat
R4	North	First	114	23.77	20.13	0.85	
R4	North	First	115	21.94	18.77	0.86	Studio Flat

Rec. No	Aspect	Floor	Window	VSC (%)		Ratio	Room Type
				Existing	Proposed		
R4	North	First	116	19.10	16.67	0.87	
R4	North	First	117	14.86	13.87	0.93	Studio Flat
R4	North	First	118	10.07	9.92	0.99	
R4	East	First	119	12.50	12.48	1.00	Bedroom
R4	East	First	120	12.99	12.99	1.00	Studio Flat
R4	East	First	121	12.13	12.13	1.00	
R4	North	Second	122	28.17	25.53	0.91	Studio Flat
R4	North	Second	123	29.16	25.98	0.89	
R4	North	Second	124	29.82	26.15	0.88	Bedroom
R4	North	Second	125	30.20	26.44	0.88	Kitchen/Living room
R4	North	Second	126	30.28	26.60	0.88	
R4	North	Second	127	30.17	26.63	0.88	Studio Flat
R4	North	Second	128	29.69	26.39	0.89	
R4	North	Second	129	28.76	25.83	0.90	Studio Flat
R4	North	Second	130	27.45	24.87	0.91	
R4	North	Second	131	25.82	23.57	0.91	Studio Flat
R4	North	Second	132	23.30	21.56	0.93	
R4	North	Second	133	19.77	19.12	0.97	Studio Flat
R4	North	Second	134	14.52	14.47	1.00	
R4	East	Second	135	14.84	14.84	1.00	Bedroom
R4	East	Second	136	16.07	16.07	1.00	Studio Flat
R4	East	Second	137	15.01	15.01	1.00	
R4	North	Third	138	31.07	29.39	0.95	Studio Flat
R4	North	Third	139	32.02	29.93	0.93	
R4	North	Third	140	32.66	30.30	0.93	Bedroom
R4	North	Third	141	33.07	30.72	0.93	Kitchen/Living room
R4	North	Third	142	33.23	31.01	0.93	
R4	North	Third	143	33.32	31.27	0.94	Studio Flat
R4	North	Third	144	33.09	31.24	0.94	
R4	North	Third	145	32.50	30.90	0.95	Studio Flat
R4	North	Third	146	31.66	30.25	0.96	
R4	North	Third	147	30.57	29.35	0.96	Studio Flat
R4	North	Third	148	28.90	27.92	0.97	
R4	North	Third	149	27.09	26.80	0.99	Studio Flat
R4	North	Third	150	23.59	23.59	1.00	
R4	East	Third	151	18.67	18.67	1.00	Studio Flat
R4	East	Third	152	20.97	20.97	1.00	
R4	East	Third	153	19.28	19.28	1.00	Bedroom
R4	North	Fourth	154	33.90	33.23	0.98	Studio

Rec. No	Aspect	Floor	Window	VSC (%)		Ratio	Room Type
				Existing	Proposed		
R4	North	Fourth	155	34.71	33.86	0.98	
R4	North	Fourth	156	35.28	34.32	0.97	Bedroom
R4	North	Fourth	157	35.65	34.71	0.97	Kitchen/Living room
R4	North	Fourth	158	35.87	34.98	0.98	
R4	North	Fourth	159	36.08	35.26	0.98	Studio Flat
R4	North	Fourth	160	36.18	35.46	0.98	
R4	North	Fourth	161	36.11	35.51	0.98	Studio Flat
R4	North	Fourth	162	35.89	35.39	0.99	
R4	North	Fourth	163	35.58	35.17	0.99	Studio Flat
R4	North	Fourth	164	35.04	34.72	0.99	
R4	North	Fourth	165	34.79	34.79	1.00	Studio Flat
R4	North	Fourth	166	34.95	34.86	1.00	

It can be identified from **Table 4.1** that in respect of the daylight impact assessment 8% of the habitable windows assessed do not meet the BRE guideline Criteria of a ratio of at least 0.8. It should be noted that a number of the windows that do not meet the criteria are only marginally below the guideline level and for those windows they are not considered to be significantly impacted.

Whilst some windows fail, the rooms benefit from more than one window allowing an appropriate level of light into the rooms.

Windows 1 and 2 let into the same bedroom and although Window 1 does not meet the recommended guideline level, Window 2 does, therefore this room is still considered to be receiving adequate light levels.

Windows 3 and 4 let into the same kitchen, although both of these windows fail but they are close to the 0.8 pass ratio and therefore the light levels in these rooms should not be adversely affected.

Four of the studios have some windows that do not meet the guidelines, but all of the studio flats have windows that do pass and therefore the studios should receive adequate levels of overall daylight.

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 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.

Where the above test is not met then the results are shown in **bold** in **Table 5.1**.

Table 5.1: Annual Probable Sunlight Hours (APSH)

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R1	South	Ground	1	39	27	0.69	14	2	0.14	Bedroom
R1	East	Ground	2	N/A	N/A	N/A	N/A	N/A	N/A	
R1	South	Ground	3	29	22	0.76	12	5	0.42	Kitchen
R1	South	Ground	4	29	21	0.72	13	5	0.38	
R1	West	Ground	5	18	18	1.00	1	1	1.00	Living room
R1	East	First	6	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R1	South	First	7	34	29	0.85	12	7	0.58	Kitchen
R1	South	First	8	38	34	0.89	12	8	0.67	
R1	West	First	9	27	23	0.85	10	6	0.6	Living room
R1	South	Second	10	39	36	0.92	12	9	0.75	N/A
R1	South	Second	11	54	51	0.94	17	14	0.82	N/A
R2	East	Ground	12	N/A	N/A	N/A	N/A	N/A	N/A	N/A
R2	East	Ground	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
R2	East	Ground	14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
R2	East	Ground	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
R2	East	Ground	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A
R2	South	Ground	17	32	26	0.81	3	0	0	N/A
R2	South	Ground	18	51	39	0.76	9	1	0.11	N/A
R2	East	First	19	N/A	N/A	N/A	N/A	N/A	N/A	Stairwell
R2	East	First	20	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R2	East	First	21	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R2	East	First	22	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	First	23	N/A	N/A	N/A	N/A	N/A	N/A	

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R2	East	First	24	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R2	East	First	25	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	First	26	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	First	27	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R2	South	First	28	34	34	1.00	6	6	1.00	Kitchen/Living Room
R2	South	First	29	42	41	0.98	6	5	0.83	
R2	South	First	30	47	44	0.94	8	5	0.63	Bedroom
R2	South	First	31	55	51	0.93	11	7	0.64	
R2	South	First	32	61	54	0.89	13	6	0.46	Stairwell
R2	South	First	33	64	54	0.84	19	9	0.47	Bedroom
R2	South	First	34	68	57	0.84	20	9	0.45	
R2	South	First	35	68	57	0.84	20	9	0.45	Bedroom
R2	South	First	36	63	52	0.83	17	6	0.35	
R2	East	Second	37	N/A	N/A	N/A	N/A	N/A	N/A	Stairwell
R2	East	Second	38	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R2	East	Second	39	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R2	East	Second	40	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	Second	41	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	Second	42	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R2	East	Second	43	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	Second	44	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R2	East	Second	45	N/A	N/A	N/A	N/A	N/A	N/A	
R2	South	Second	46	39	39	1.00	8	8	1.00	

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R2	South	Second	47	54	54	1.00	11	11	1.00	Kitchen/Living Room
R2	South	Second	48	62	62	1.00	14	14	1.00	Bedroom
R2	South	Second	49	69	65	0.94	17	13	0.76	
R2	South	Second	50	74	69	0.93	20	15	0.75	Stairwell
R2	South	Second	51	70	64	0.91	22	16	0.73	Bedroom
R2	South	Second	52	74	68	0.92	23	17	0.74	
R2	South	Second	53	74	67	0.91	23	16	0.7	Bedroom
R2	South	Second	54	73	66	0.9	23	16	0.7	
R2	East	Third	55	N/A	N/A	N/A	N/A	N/A	N/A	Stairwell
R2	East	Third	56	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R2	East	Third	57	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R2	East	Third	58	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	Third	59	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	Third	60	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R2	East	Third	61	N/A	N/A	N/A	N/A	N/A	N/A	
R2	East	Third	62	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R2	East	Third	63	N/A	N/A	N/A	N/A	N/A	N/A	
R2	South	Third	64	54	54	1.00	15	15	1.00	Kitchen/Living Room
R2	South	Third	65	82	82	1.00	24	24	1.00	
R2	South	Third	66	83	83	1.00	26	26	1.00	Bedroom
R2	South	Third	67	83	83	1.00	26	26	1.00	
R2	South	Third	68	80	79	0.99	25	24	0.96	Stairwell
R2	South	Third	69	74	72	0.97	25	23	0.92	Bedroom

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R2	South	Third	70	79	77	0.97	26	24	0.92	
R2	South	Third	71	80	77	0.96	26	23	0.88	Bedroom
R2	South	Third	72	79	77	0.97	26	24	0.92	
R2	South	Fourth	73	86	86	1	28	28	1	Stairwell
R3	North	Ground	74	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R3	North	Ground	75	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R3	Sky Light	Ground	77	32	32	1.00	1	1	1.00	
R3	Sky Light	Ground	78	32	32	1.00	0	0	1.00	
R3	North	Ground	76	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R3	Sky Light	Ground	79	40	40	1.00	0	0	1.00	
R3	Sky Light	Ground	80	46	47	1.00	1	1	1.00	
R3	Sky Light	Ground	81	52	53	1.00	5	5	1.00	Corridor
R3	Sky Light	Ground	82	43	44	1.00	0	0	1.00	Corridor
R3	Sky Light	Ground	83	56	55	0.98	6	6	1.00	Hallway
R3	Sky Light	Ground	84	54	53	0.98	6	6	1.00	Kitchen/Living Room
R3	Sky Light	Ground	85	44	45	1.00	0	0	1.00	Hallway
R3	Sky Light	Ground	86	45	46	1.00	0	0	1.00	Kitchen/Living room

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R3	Sky Light	Ground	87	34	34	1.00	0	0	1.00	Bedroom
R3	Sky Light	Ground	88	39	39	1.00	0	0	1.00	Bedroom
R3	East	First	89	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R3	East	First	90	N/A	N/A	N/A	N/A	N/A	N/A	
R3	East	First	91	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R3	East	First	92	N/A	N/A	N/A	N/A	N/A	N/A	
R3	North	First	93	N/A	N/A	N/A	N/A	N/A	N/A	
R3	North	First	94	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R3	East	First	95	N/A	N/A	N/A	N/A	N/A	N/A	
R3	East	Second	96	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R3	East	Second	97	N/A	N/A	N/A	N/A	N/A	N/A	
R3	East	Second	98	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R3	East	Second	99	N/A	N/A	N/A	N/A	N/A	N/A	
R3	North	Second	100	N/A	N/A	N/A	N/A	N/A	N/A	
R3	North	Second	101	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R3	East	Second	102	N/A	N/A	N/A	N/A	N/A	N/A	
R3	East	Third	103	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R3	East	Third	104	N/A	N/A	N/A	N/A	N/A	N/A	
R3	East	Third	105	N/A	N/A	N/A	N/A	N/A	N/A	Stairwell
R4	North	First	106	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	First	107	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	First	108	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R4	North	First	109	N/A	N/A	N/A	N/A	N/A	N/A	

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R4	North	First	110	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R4	North	First	111	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	First	112	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	First	113	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	First	114	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	First	115	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	First	116	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	First	117	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	First	118	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	East	First	119	N/A	N/A	N/A	N/A	N/A	N/A	
R4	East	First	120	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	East	First	121	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Second	122	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Second	123	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Second	124	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R4	North	Second	125	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R4	North	Second	126	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Second	127	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Second	128	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Second	129	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Second	130	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Second	131	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Second	132	N/A	N/A	N/A	N/A	N/A	N/A	

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R4	North	Second	133	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Second	134	N/A	N/A	N/A	N/A	N/A	N/A	
R4	East	Second	135	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R4	East	Second	136	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	East	Second	137	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Third	138	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Third	139	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Third	140	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R4	North	Third	141	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R4	North	Third	142	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Third	143	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Third	144	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Third	145	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Third	146	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Third	147	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Third	148	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Third	149	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Third	150	N/A	N/A	N/A	N/A	N/A	N/A	
R4	East	Third	151	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	East	Third	152	N/A	N/A	N/A	N/A	N/A	N/A	
R4	East	Third	153	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom
R4	North	Fourth	154	N/A	N/A	N/A	N/A	N/A	N/A	Studio
R4	North	Fourth	155	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Fourth	156	N/A	N/A	N/A	N/A	N/A	N/A	Bedroom

Rec. No	Aspect	Floor	Window	APSH Annual (%)		Ratio	APSH Winter (%)		Ratio	Room type
				Existing	Proposed		Existing	Proposed		
R4	North	Fourth	157	N/A	N/A	N/A	N/A	N/A	N/A	Kitchen/Living Room
R4	North	Fourth	158	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Fourth	159	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Fourth	160	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Fourth	161	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Fourth	162	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Fourth	163	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Fourth	164	N/A	N/A	N/A	N/A	N/A	N/A	
R4	North	Fourth	165	N/A	N/A	N/A	N/A	N/A	N/A	Studio Flat
R4	North	Fourth	166	N/A	N/A	N/A	N/A	N/A	N/A	

Note - Values denoted with N/A are windows that do not face within 90° of south and therefore are not valid for a sunlight assessment.

It can be identified from **Table 5.1** that of those windows that are within 90° of due south, 2 do not achieve the guideline value for the annual APSH and 3 do not achieve the guideline value for the winter APSH. The windows that do not achieve the winter APSH at Receptors 1 and 2 (south façades), do achieve the annual APSH therefore are not considered to be significantly impacted.

Overall, 2 rooms are affected with the APSH ratio's being 0.76 and 0.72 for a kitchen (Receptor 1, Windows 3 and 4), as these two windows let into the same room and are only marginally below the 0.8 recommended level the kitchen should receive reasonable levels of light.

The other room which fails is a bedroom where the ratio is 0.69 (Receptor 1, Window 1), which can receive lower levels of light.

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 and sunlight levels for the windows of the proposed development. The windows that do not meet the BRE criteria are identified in **bold**.

A separate scenario with the proposed 2 - storey extension at 6 – 8 Soane Point has also been included within the self-test calculations and is identified in **Table 6.1**.

Table 6.1: Self Test Results

Floor	Window	Aspect	No Extension 6 – 8 Soane Point			With Extension of 6 – 8 Soane Point			Room Type
			VSC (%)	APSH (%)		VSC (%)	APSH (%)		
				Annual	Winter		Annual	Winter	
Ground	167	North	19.31	N/A	N/A	19.31	N/A	N/A	Class E use
First	168	South	15.16	31	7	10.78	22	0	Bedroom
First	169	South	15.25	32	9	9.99	21	0	Bedroom
First	170	South	19.62	47	9	12.91	35	2	Bedroom
First	171	South	16.18	46	8	9.46	33	0	Kitchen/Living Room
First	172	South	20.85	47	9	14.39	35	1	Bedroom
First	173	South	18.69	53	10	12.72	43	3	Kitchen/Living Room
First	174	East	8.11	N/A	N/A	8.11	N/A	N/A	
First	175	East	6.64	N/A	N/A	6.64	N/A	N/A	
First	176	East	6.15	N/A	N/A	6.15	N/A	N/A	
First	177	North	25.10	N/A	N/A	25.10	N/A	N/A	Stairwell
First	178	West	10.37	19	0	10.37	19	0	Kitchen/Living Room
First	179	West	16.22	12	0	16.22	12	0	Bedroom
First	180	East	11.04	N/A	N/A	11.04	N/A	N/A	Stairwell
First	181	North	13.56	N/A	N/A	13.56	N/A	N/A	
First	182	East	14.44	N/A	N/A	14.44	N/A	N/A	Hallway
First	183	East	17.54	N/A	N/A	17.54	N/A	N/A	Toilet
First	184	East	15.05	N/A	N/A	15.00	N/A	N/A	Bedroom
Second	185	South	18.62	40	9	13.73	31	0	Bedroom
Second	186	South	19.17	44	13	13.18	32	1	Bedroom
Second	187	South	24.48	58	14	16.60	44	2	Bedroom
Second	188	South	20.86	62	15	12.96	46	1	Kitchen/Living Room

Floor	Window	Aspect	No Extension 6 – 8 Soane Point			With Extension of 6 – 8 Soane Point			Room Type
			VSC (%)	APSH (%)		VSC (%)	APSH (%)		
				Annual	Winter		Annual	Winter	
Second	189	South	25.21	60	17	17.62	47	5	Bedroom
Second	190	South	21.11	59	15	13.95	46	3	Kitchen/living room
Second	191	East	10.62	N/A	N/A	10.62	N/A	N/A	
Second	192	East	9.13	N/A	N/A	9.13	N/A	N/A	
Second	193	East	8.63	N/A	N/A	8.63	N/A	N/A	
Second	194	North	28.77	N/A	N/A	28.77	N/A	N/A	Bedroom
Second	195	West	20.45	31	5	20.45	31	5	Stairwell
Second	196	West	22.96	21	0	22.96	21	0	Kitchen/Living Room
Second	197	East	14.80	N/A	N/A	14.80	N/A	N/A	Bedroom
Second	198	North	23.06	N/A	N/A	23.06	N/A	N/A	Stairwell
Second	199	East	19.87	N/A	N/A	19.87	N/A	N/A	
Second	200	East	23.50	N/A	N/A	23.50	N/A	N/A	Hallway
Second	201	East	21.20	N/A	N/A	21.16	N/A	N/A	Toilet
Second	202	East	18.42	N/A	N/A	18.32	N/A	N/A	Bedroom
Second	203	East	14.33	N/A	N/A	14.18	N/A	N/A	
Third	204	South	26.20	57	13	20.91	49	5	
Third	205	South	25.37	53	18	19.04	44	9	Bedroom
Third	206	South	30.30	72	22	21.82	56	6	Bedroom
Third	207	South	30.67	73	23	22.10	58	8	Bedroom
Third	208	South	29.91	72	23	21.67	60	11	Kitchen/Living Room
Third	209	South	29.77	72	23	22.01	59	10	Bedroom
Third	210	East	14.39	N/A	N/A	14.39	N/A	N/A	Kitchen/Living Room
Third	211	East	13.02	N/A	N/A	13.02	N/A	N/A	
Third	212	East	12.59	N/A	N/A	12.59	N/A	N/A	

Floor	Window	Aspect	No Extension 6 – 8 Soane Point			With Extension of 6 – 8 Soane Point			Room Type
			VSC (%)	APSH (%)		VSC (%)	APSH (%)		
				Annual	Winter		Annual	Winter	
Third	213	North	31.49	N/A	N/A	31.49	N/A	N/A	Stairwell
Third	214	West	32.67	44	10	32.67	44	10	Kitchen/Living Room
Third	215	West	30.64	39	5	30.64	39	5	Bedroom
Third	216	East	27.46	N/A	N/A	27.46	N/A	N/A	Bedroom
Third	217	East	27.57	N/A	N/A	27.45	N/A	N/A	Bedroom
Fourth	218	South	34.68	75	25	26.66	64	14	Bedroom
Fourth	219	South	34.51	75	25	26.40	64	14	Kitchen/Living Room
Fourth	220	South	34.14	75	25	26.33	65	15	Bedroom
Fourth	221	South	33.80	75	25	26.51	64	14	Kitchen/Living Room
Fourth	222	East	20.81	N/A	N/A	20.81	N/A	N/A	
Fourth	223	East	19.77	N/A	N/A	19.77	N/A	N/A	
Fourth	224	East	19.54	N/A	N/A	19.54	N/A	N/A	Bedroom
Fourth	225	North	34.50	N/A	N/A	34.50	N/A	N/A	Stairwell

Note - Values denoted with N/A are windows that do not face within 90° of south and therefore are not valid for a sunlight assessment.

It can be identified from **Table 6.1** that only 41% of the windows assessed in the self-test, without the extension to 6 – 8 Soane Point, meet the BRE criteria for daylight. Of the 59 windows assessed, 46 of these windows let into habitable rooms. Eleven of the rooms assessed were kitchen/living rooms and of these eleven rooms four meet the BRE criteria (windows 207, 209, 214, 119).

Windows 221, 222 and 223 all let into the same kitchen/living room and although windows 222 and 223 fail in respect to daylight, window 221 passes and the room will therefore receive adequate daylight. Windows 171, 173, 188, 190, 195 all let into kitchen/ living rooms and do not meet the criteria for daylight but do all pass in respect of sunlight. Window 178 fails in respect of both daylight and sunlight.

Furthermore, 18 of the windows which let into bedrooms do not meet the requirements for daylight, although it is less important that bedrooms receive adequate daylight levels compared to kitchen and living rooms.

Overall, 11 windows letting in to 9 rooms, fail for both daylight and sunlight. Seven of these rooms, are bedrooms, where the levels of daylight are not as important as other habitable rooms. All other rooms have at least one window that meets the BRE guidelines for either VSC, APSH or both.

The proposed 2 - storey extension of 6 – 8 Soane Point (Receptor 4), as identified in **Appendix 2**, will cause a decrease in daylight and sunlight on all the windows on the south façade of the proposed building.

The proposed extension of 6 – 8 Soane Point will result in eight of the windows to fail in respect to daylight where they previously passed without the proposed extension (windows, 206, 207, 208, 218, 219, 220, 221). It should be noted that all of these windows still pass the sunlight criteria.

With respect to sunlight, the extension to 6 – 8 Soane Point will result in two windows failing for both annual and winter probable sunlight hours where they did not previously fail, and eight windows will fail for winter sunlight where they did not previously fail.

Windows 168 and 169 are the worst affected as with the extension of Soane Point in place they will fail in respect of both daylight and sunlight, although it should be noted that these windows let into bedrooms. All the other windows pass for either daylight or sunlight.

7. CONCLUSION

Calculations were conducted in accordance with BRE guidelines to determine if the proposed development at 13 -16 Market Place, Reading, would result in a significant impact at the surrounding properties, as well as determining if the proposed development would receive acceptable levels of daylight and sunlight.

Impact at Existing Receptors

The currently proposed building envelope will result in:

- Marginal impacts for both daylight and sunlight at all three of the existing receptors, however there are only a limited number of rooms which are likely to be significantly impacted and the majority of these have other windows that are less significantly impacted that let into the same room.
- Overall, only two rooms fall below the guidelines at 10 – 12, The Forbury on the ground floor. Window 1 still achieves levels above the required APSH, and Windows 3 and 4 are close to the APSH guideline levels at 22% and 21%, and both achieve 5% for the winter period and with respect to VSC the ratios of these windows are 0.73, 0.76 and 0.75.

Acceptability of Light at the Proposed Development

With respect to the self-test for the proposed development:

- With no extension of 6 – 8 Soane Point, nine rooms have reduced levels of VSC and APSH, however seven are bedrooms, which are less important than kitchen/living rooms.
- With the proposed 2 - storey extension at 6 – 8 Soane Point (Receptor 4) in place, there will be a decrease in daylight and sunlight at all of the windows on the south façade of the proposed development. Although, there is a reduction in light levels with a 2–storey extension to 6 – 8 Soane Point only two windows will fail with regard to both daylight and sunlight with all of the other windows exceeding the guideline values for either daylight or sunlight.

Summary of Conclusions

The proposal will have marginal but acceptable impact at existing surrounding properties.

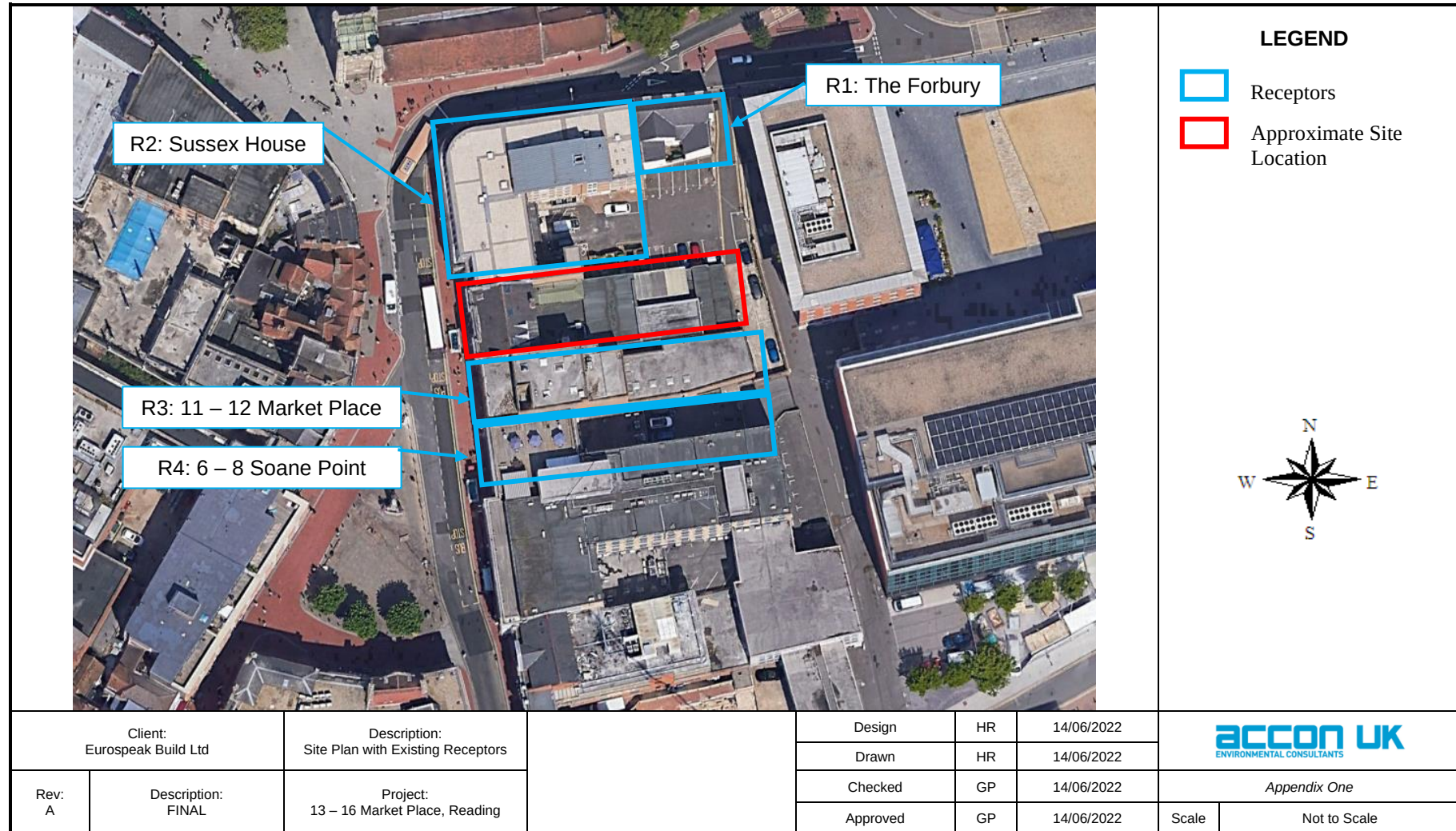
The proposed development will receive acceptable light levels at 98% of all the windows, except for two windows that do not meet guideline values.

APPENDICES

Appendix 1

Development Site Plan with Relevant Receptor

Appendix 1: Development Site Plan with Relevant Receptors

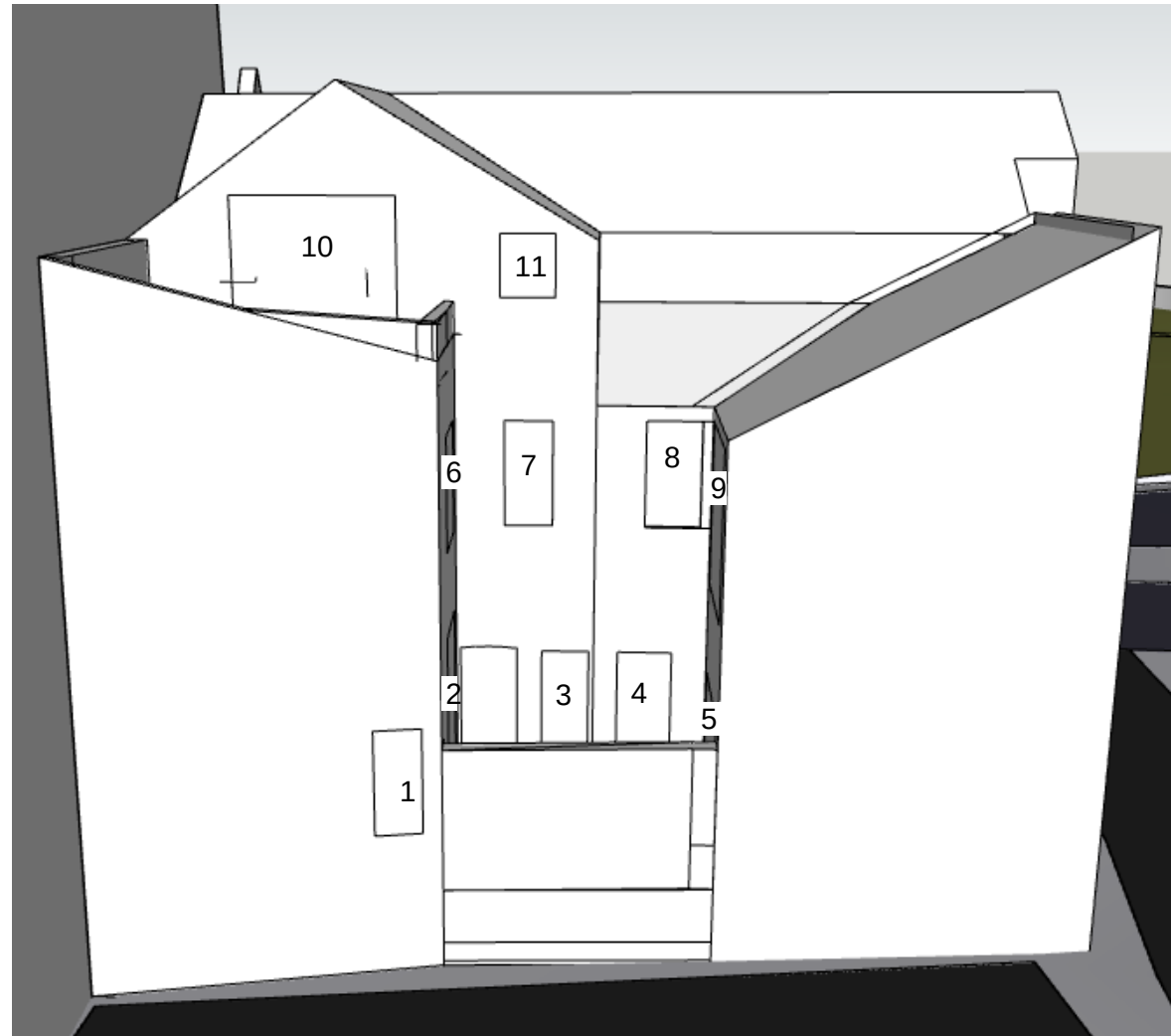


08.06.2023

Page | 34

Appendix 2 Window Locations

Appendix 2: Receptor 1 Window Locations (South Façade)



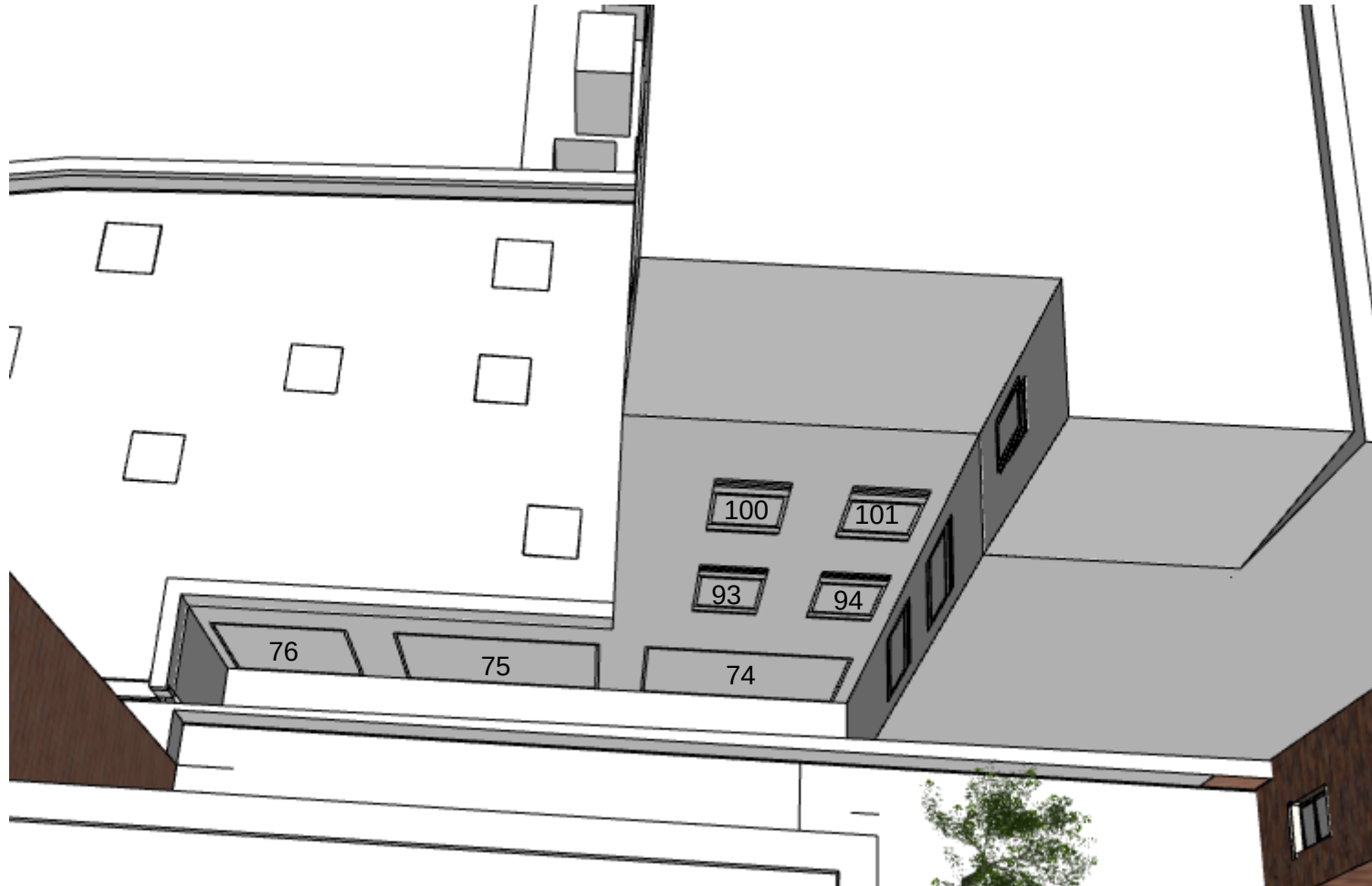
Appendix 2: Receptor 2 Window Locations (East Façade)



Appendix 2: Receptor 2 Window Locations (East Façade)



Appendix 2: Receptor 3 Window Locations (North Façade)



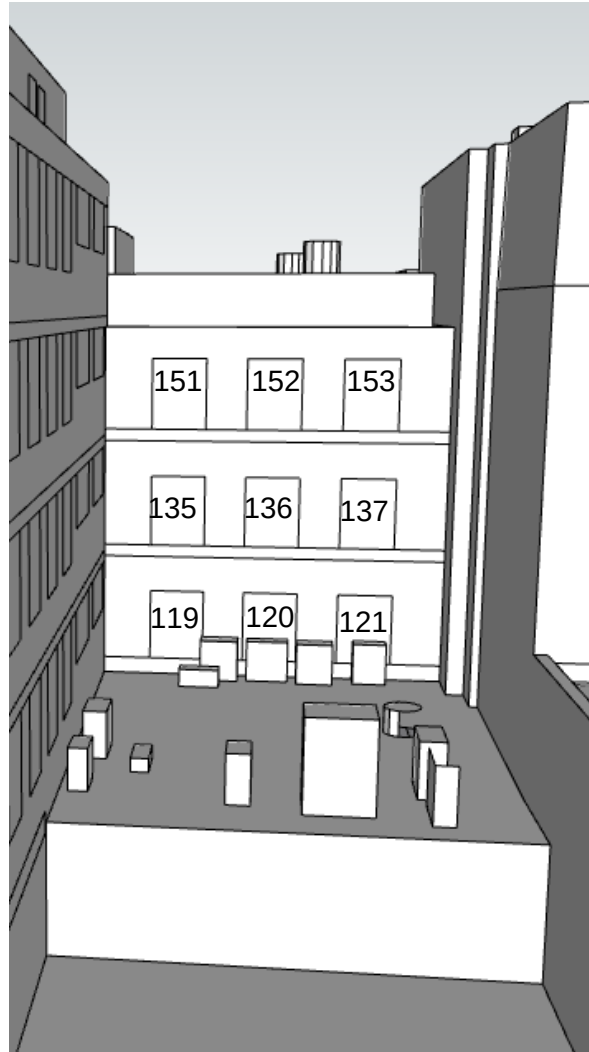
Appendix 2: Receptor 3 Window Locations (East Façade)



Appendix 2: Receptor 4 Window Locations (East Façade)



Appendix 2: Receptor 4 Window Locations (East Façade)



Appendix 2: Proposed Window Locations (South Façade – Existing Building)



Appendix 2: Proposed Window Locations (East Façade)



Appendix 2: Proposed Window Locations (North Façade)



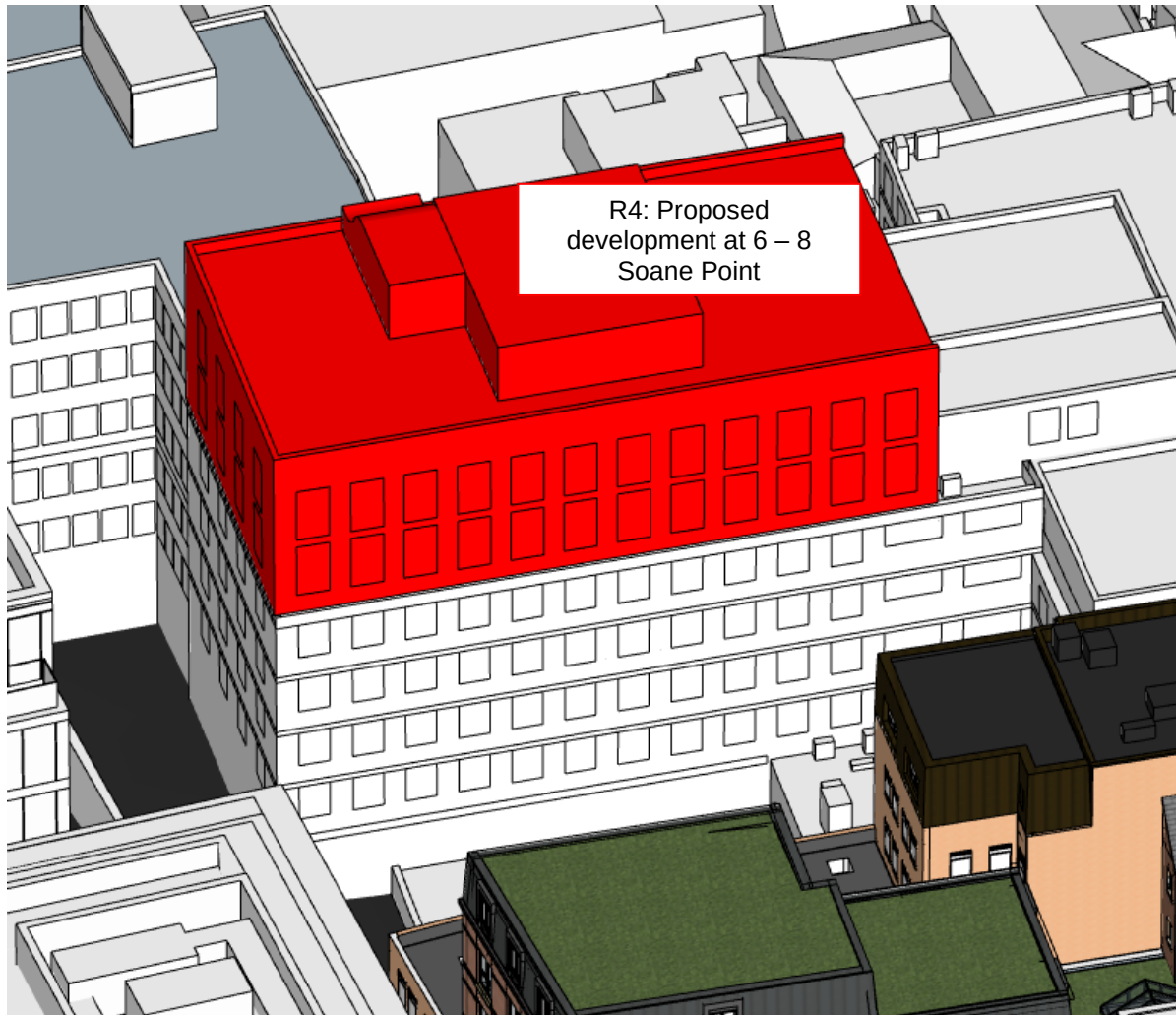
Appendix 2: Proposed Window Locations (North Façade)



Appendix 2: Proposed Window Locations (West Façade)



Appendix 2: Proposed extension at Receptor 4



Appendix 3 **The BRE Report**

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 et al.

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 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

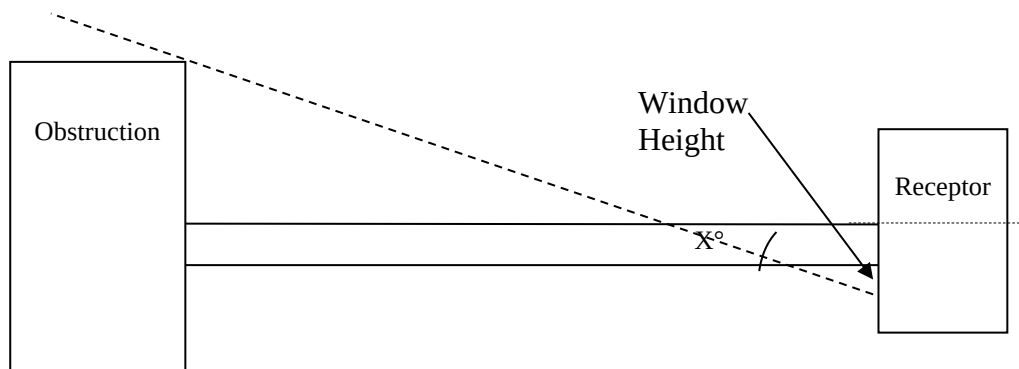
- b) If a) is not satisfied, then all points on the main face on a line 2m above ground level are within 4m (measured sideways) of a point which has a Vertical Sky Component (VSC) of 27% or more.

The report contains a methodology for calculating the VSC, but also indicates that the methodology for calculating the levels of interior daylighting in 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 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 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% 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 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 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 Average Daylight Factor

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 Average Daylight Factor (ADF) introduced in BS 8206: 2008.

The ADF is a very common and easy to understand measure for expressing daylight availability in a room. It describes the ratio of outside illuminate over inside illuminance,

expressed as percentage. The higher the DF then the more that natural light is available in a room.

Rooms with an average DF of 2% give us a feeling of daylight. However, it is only when the ADF rises above 5% that we perceive it as well day lit. Different types of rooms have difference minimum requirements for daylighting. **Table A2.1** details the acceptable criteria for average daylight factor for habitable rooms.

Table A2.1: Daylight Factor Criteria

Criteria	Minimum Daylight Factor
Predominantly daylight without the need for supplementary electric lighting	5%
With supplementary electric lighting:	
Suitable for kitchens	2%
Suitable for living rooms	1.5%
Suitable for bedrooms	1%

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.

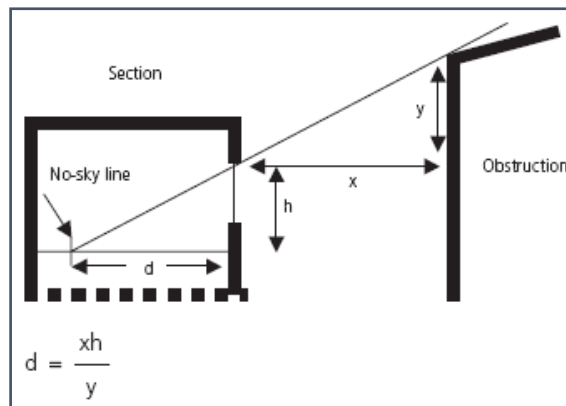
The working plane is a notional surface, typically at about desk or table height, at which the daylight factor or the 'no-skyline' is calculated or plotted. For calculations in dwellings, it is taken to be at a position 0.85m above the floor.

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 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-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.

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 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 needs 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.



Email: enquiry@accon-uk.com

Reading Office:

Unit B, Fronds Park,
Frouds Lane, Aldermaston,
Reading, RG7 4LH
Tel: 0118 971 0000 Fax: 0118 971 2272

Brighton Office:

Citibase, 95 Ditchling Road,
Brighton, East Sussex, BN1 4ST
Tel: 01273 573 814

www.accon-uk.com