SYNTEGRA CONSULTING

13 Camden High Street, London, NW1 7JE

Internal Daylight and Sunlight Report

August 2024

Ref: 24-13711

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Quality Standards Control

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it has been signed by the originators and approved by a director.

Revision	*Initial*	*Rev 1*	*Rev 2*	*Rev 3*
Date	31/07/2024	19/08/2024		
Prepared by	H. Al Khalifa	H. Al Khalifa		
Checked by	S. Holthe	S. Holthe		
Authorised by	M. Standen	M. Standen		

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The conclusions and recommendations contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by SC has not been independently verified by SC, unless otherwise stated in the report.

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Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

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1. Executive Summary

This report has been prepared to demonstrate the levels of daylight seen within the proposed residential unit at **13 Camden High Street, London, 1 7JE**.

The report assesses the internal daylight and sunlight within the proposed accommodation. The assessment is undertaken in accordance with ***"BRE 209 Digest: Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice".***

The following can be concluded based on the studies undertaken:

- Internal daylight: All habitable rooms have been assessed for daylight. This has shown that all habitable rooms will exceed the levels suggested by the BRE. It can be concluded that the proposed accommodation provides very good levels of daylight.

- Internal sunlight: The living area on the first floor has been assessed for sunlight exposure. This has shown that the skylights and south facing windows will far exceed the recommended 1.5 hours of sunlight on the 21st March, as per the BR 209 guidance. Therefore, it can be concluded that the proposed accommodation will prove excellent levels of sunlight internally.

Therefore, it can be concluded that the proposed accommodation performs well in terms of daylight and sunlight.

2. Introduction

This report has been prepared to demonstrate the levels of daylight seen within the proposed residential unit at **13 Camden High Street, London, 1 7JE.**

The report assesses the internal daylight and sunlight within the proposed habitable rooms. The assessment is undertaken in accordance with ***"BRE 209 Digest: Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice".***

The proposed drawings of the project were provided by **CR Design** in **July 2024** and have been used in preparing this report.

3. Assessment Methodology

This study is based on guidelines set out in the *BRE Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice, 2022*. The assessment has been conducted using Radiance software through MBS Autocad. A 3D model has been built based on the latest architectural drawings.

The simulations assess the Annual Illuminance Target (ET), DA and sDA. Key points of the simulation include:

- Tested on a horizontal plane at 0.85 m above the floor
- Grid size of 0.25m
- Margin of 0.30m from the internal walls
- Glass surface maintenance factor of 0.95
- Hourly weather file for a whole year from London Heathrow TRY2016
- Windows frames based on drawings received

Surface reflectances

Surface	Reflectance Value
Internal Walls	0.5
Ceilings	0.7
Floors	0.4
External walls and obstructions	0.2
Exterior ground	0.2

Internal Daylight Assessment

British Standard "Daylight in buildings" (BS EN 17037)

The British Standard "Daylight in buildings" (BS EN 17037) contains advice and guidance on interior daylighting. The guidance contained in the BRE publication (BR 209, 2022) is intended to be used with BS EN 17037 and its UK National Annex.
BS EN 17037 supersedes BS 8206 Part 2 "Code of practice for daylighting"[C2], which contained a method of assessment based on Average Daylight Factor, which is now no longer recommended. For daylight provision in buildings, BS EN 17037 provides a methodology based on target illuminances from daylight to be achieved over specified fractions of the reference plane for at least half of the daylight hours in a typical year.
BS EN 17037 gives three levels of recommendation for daylight provision in interior spaces: minimum, medium and high. For compliance with the standard, a daylit space should achieve the minimum level of recommendation.
The National Annex A of BS EN 17037 also gives minimum values for housing, in living rooms, kitchens, and bedrooms. Achieving higher daylight factor values will give improved daylight provision. This would be particularly appropriate in housing for the elderly because they require more light and are more likely to be at home during the day.
However, interiors with very high daylight levels (for example where a daylight illuminance of 500 lux is exceeded over half the room for more than half of the daylight hours) sometimes have problems with summertime overheating or excessive heat loss in winter.

Annual Daylight Metrics

The annual daylight method involves using climatic data for the location of the site (via the use of an appropriate, typical or average year, weather file) to calculate the illuminance from daylight at each point on an assessment grid on the reference plane at an at least hourly interval for a typical year.
A target illuminance (ET) is the Illuminance from daylight that should be achieved for at least half of annual daylight hours across a specified fraction of the reference plane in a daylit space.
Daylight Autonomy (DA) is the percentage of occupied hours that each sensor receives more than the illuminance threshold, and Spatial Daylight Autonomy (sDA) is an annual daylighting metric that quantifies the fraction of the area within a space for which the daylight autonomy exceeds a specified value.

Specific recommendations for daylight provision in UK dwellings

The UK National Annex gives specific minimum recommendations for habitable rooms in dwellings in the United Kingdom. These are intended for 'hard to light' dwellings, for example in basements or with significant external obstructions or with tall trees outside, or for existing buildings being refurbished or converted into dwellings. The National Annex, therefore, provides the UK guidance on minimum daylight provision in all UK dwellings.
The UK National Annex gives illuminance recommendations of:

- 100 lux in bedrooms,
- 150 lux in living rooms and
- 200 lux in kitchens.

These are the median illuminances, to be exceeded over at least 50% of the assessment points in the room for at least half of the daylight hours.

Annual Sunlight Metrics

In terms of Sunlight the BRE states that it is generally more important for residential properties. Within section 3.1 of it states *"in housing, the main requirement for sunlight is in living rooms, where it is valued at any time of the day, but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens where people prefer it I the morning rather than the afternoon."*

The guide suggests that designers minimise the number of units/dwellings with living areas windows facing solely north. This is unless there are other factors steering the design such as views and privacy.

The BRE refers to the BS EN 17037 criterion to establish sunlight targets for dwellings. It states that each dwelling should have at least one habitable room receiving 1.5 hours of exposer on the 21st March. There are also medium and high sunlight targets (3 and 4 hours respectively). That being said it must be taken flexibly when considering the sites existing environment, as it may have constraints that determine the orientation of the proposed.

This is tested by taking the centre point of the inner surface of the window and assesses the amount of sunlight hours it would receive on the 21st of March.

Below is a summary of section 3.1 of the guidance:

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

- *At least one main window faces within 90 degrees of due south, and*
- *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 cand be added provided the occur at different times and sunlight hours are not double counted..."*

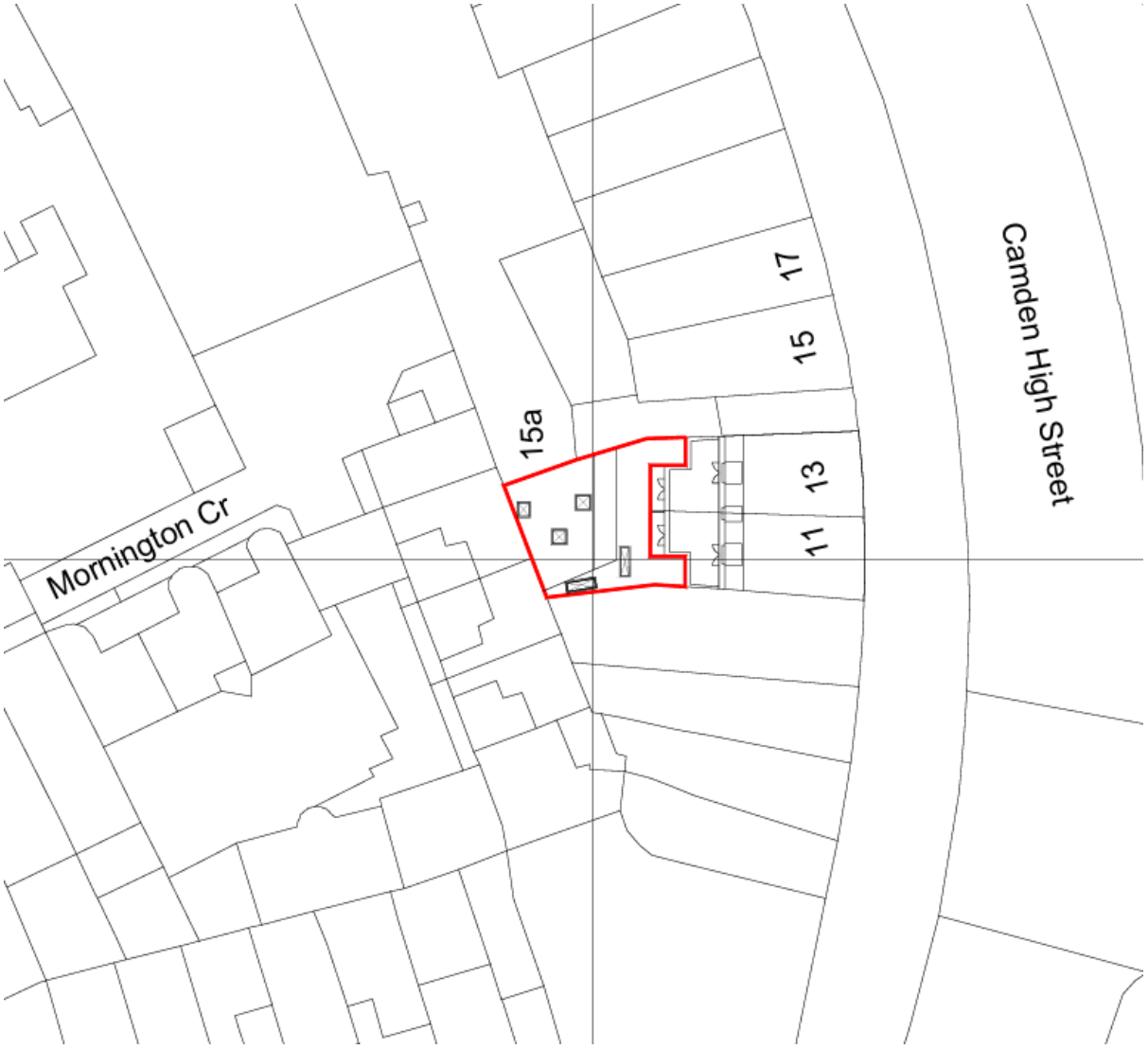

Image 1 – Location plan

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4. Results

Annual Daylight Results

The annual daylight method involves using climatic data for the location of the site (via the use of an appropriate, typical or average year, weather file) to calculate the illuminance from daylight at each point on an assessment grid on the reference plane at an at least hourly interval for a typical year.
A target illuminance (ET) is the Illuminance from daylight that should be achieved for at least half of annual daylight hours across a specified fraction of the reference plane in a daylit space.
Daylight Autonomy (DA) is the percentage of occupied hours that each sensor receives more than the illuminance threshold, and Spatial Daylight Autonomy (sDA) is an annual daylighting metric that quantifies the fraction of the area within a space for which the daylight autonomy exceeds a specified value.

Internal Daylight Analysis						
Floor	Room No	Room Use	Median Lux	lux sDA Target	SDA Achieved	Compliance
Ground	R1	Bedroom	164	100	66%	Met
	R2	Bedroom	108	100	85%	Met
First	R1	LKD	425	200	99%	Met

Table 1 – Internal Daylight Assessment results

As shown in the table above, all habitable rooms will far exceed the recommended levels of daylight. Therefore, it can be concluded that as future occupants will have access to excellent levels of daylight, the proposed accommodation performs well in terms of daylight.

Sunlight Results

The BRE refers to the BS EN 17037 criterion to establish sunlight targets for dwellings. It states that each dwelling should have at least one habitable room receiving 1.5 hours of exposure on the 21st March. There are also medium and high sunlight targets (3 and 4 hours respectively). That being said it must be taken flexibly when considering the sites existing environment, as it may have constraints that determine the orientation of the proposed.

Sunlight Assessment					
Floor Ref	Room No.	Room Use	Window Orientation	no. of Hours	Result
First	R1	LKD	90° Hz	3.7	
			157°	2.3	
			157°	3.3	
			342°N	0	
			90° Hz	5.2	
				5.5	High

Table 2 – Internal Sunlight Assessment results

The L/K/D has been assessed for sunlight exposure on the 21st of March, in line with the guidance. This has shown that both roof lights and the south facing windows will exceed the 1.5 hours of sunlight. Therefore, it can be concluded that the proposed accommodation will provide excellent levels of sunlight internally.

Note: Rooms with the result N/A are rooms with windows that do not face within due south, therefore are exempt from this analysis.

5. Conclusion

This report has been prepared to demonstrate the levels of daylight seen within the proposed residential unit at **13 Camden High Street, London, 1 7JE**.

The report assesses the internal daylight and sunlight within the proposed accommodation. The assessment is undertaken in accordance with ***"BRE 209 Digest: Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice".***

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Therefore, it can be concluded that the proposed accommodation performs well in terms of daylight and sunlight.

DO NOT SCALE DRAWING -
IF IN DOUBT, ASK

GENERAL
1. Do not scale from drawing.
2. All dimensions are in metres, unless stated otherwise.
3. This drawing to be read & printed in colour.
4. This drawing to be read in conjunction with other contract drawings.

CONSTRUCTION
1. Works shall comply with the current Department of Transport Specification for Highway Works.
2. Filling of voids formed by site clearance operations shall be measured under Series 600 of the Specification.
3. Contractor is to ensure that all voids are to be filled with granular sub base material Type 1.
4. All hard material broken out under the Contract is to be disposed of to contractor's tip.

CDM (RISKS & HAZARDS)
1. Prior to commencement of construction the contractor is to liaise with all relevant statutory undertakers and protect / divert apparatus and to protect the workforce during the works. Any damage caused to the apparatus to be the responsibility of the contractor.
2. Contractor to undertake their own statutory plant checks on site prior to the commencement of excavation exercise.
3. The contractor is to make sure that any excavation should be adequately covered at night to protect both public and wildlife from becoming trapped.
4. Appropriate health and safety measures should be adhered to while working in close proximity to the existing overhead power lines.

DISCLAIMERS
1. The information contained in this drawing is based on a combination of OS and survey data provided by others and we shall not be liable for any inaccuracies or deficiencies.

Rev	Drawn	App'd	Date	Revision Description
P2	HAK	MS	19.08.24	Second Issue
P1	HAK	MS	29.07.24	First Issue

Issue

PRELIMINARY

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Client

EZI Letting Ltd

Project

24-13711 - 13 Camden High Street
London, NW1 7JE

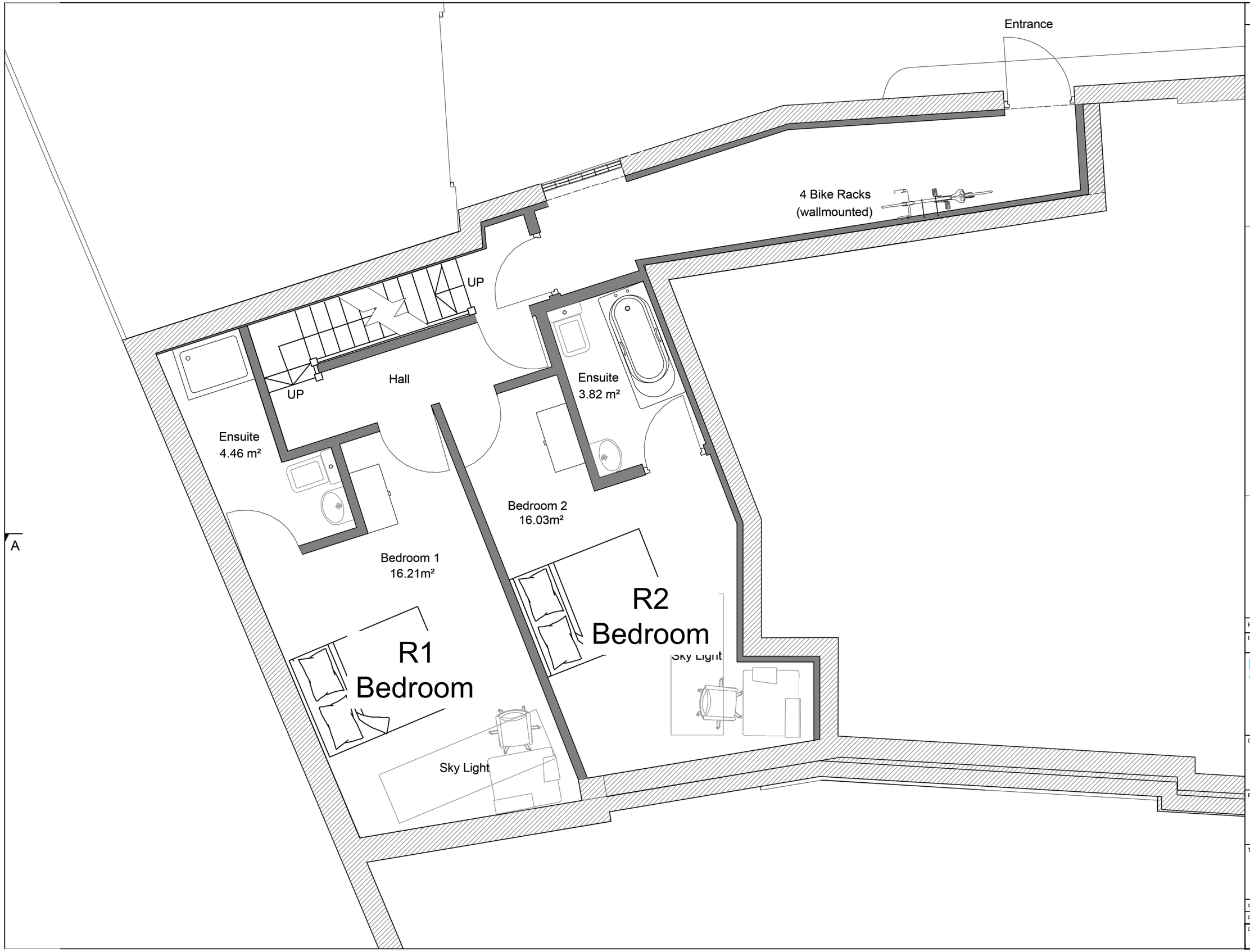
Title

Overview

Scale: 1:100 @ A1	Drawn By: HAK
Date: August 2024	Checked By: MS

Drg. No. 24-13711 - 01

Rev. P2



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Client

EZI Letting Ltd

Project

24-13711 - 13 Camden High Street
London, NW1 7JE

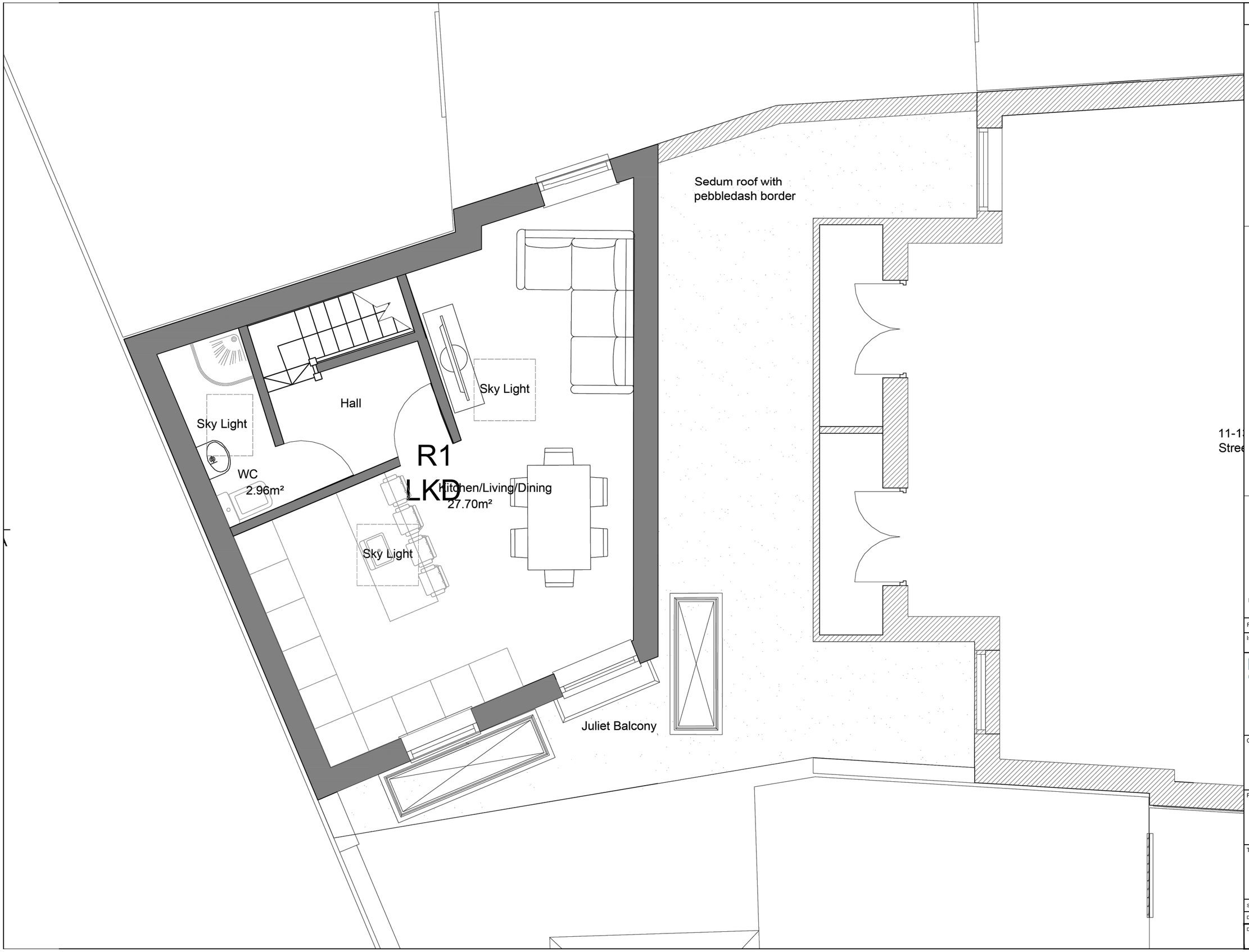
Title

Ground Floor Plan

Scale: 1:100 @ A1	Drawn By: HAK
Date: August 2024	Checked By: MS

Drg. No. 24-13711 - 02

Rev. P2



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Client: EZI Letting Ltd

Project: 24-13711 - 13 Camden High Street
London, NW1 7JE

Title: First Floor Plan

Scale: 1:100 @ A1	Drawn By: HAK
Date: August 2024	Checked By: MS

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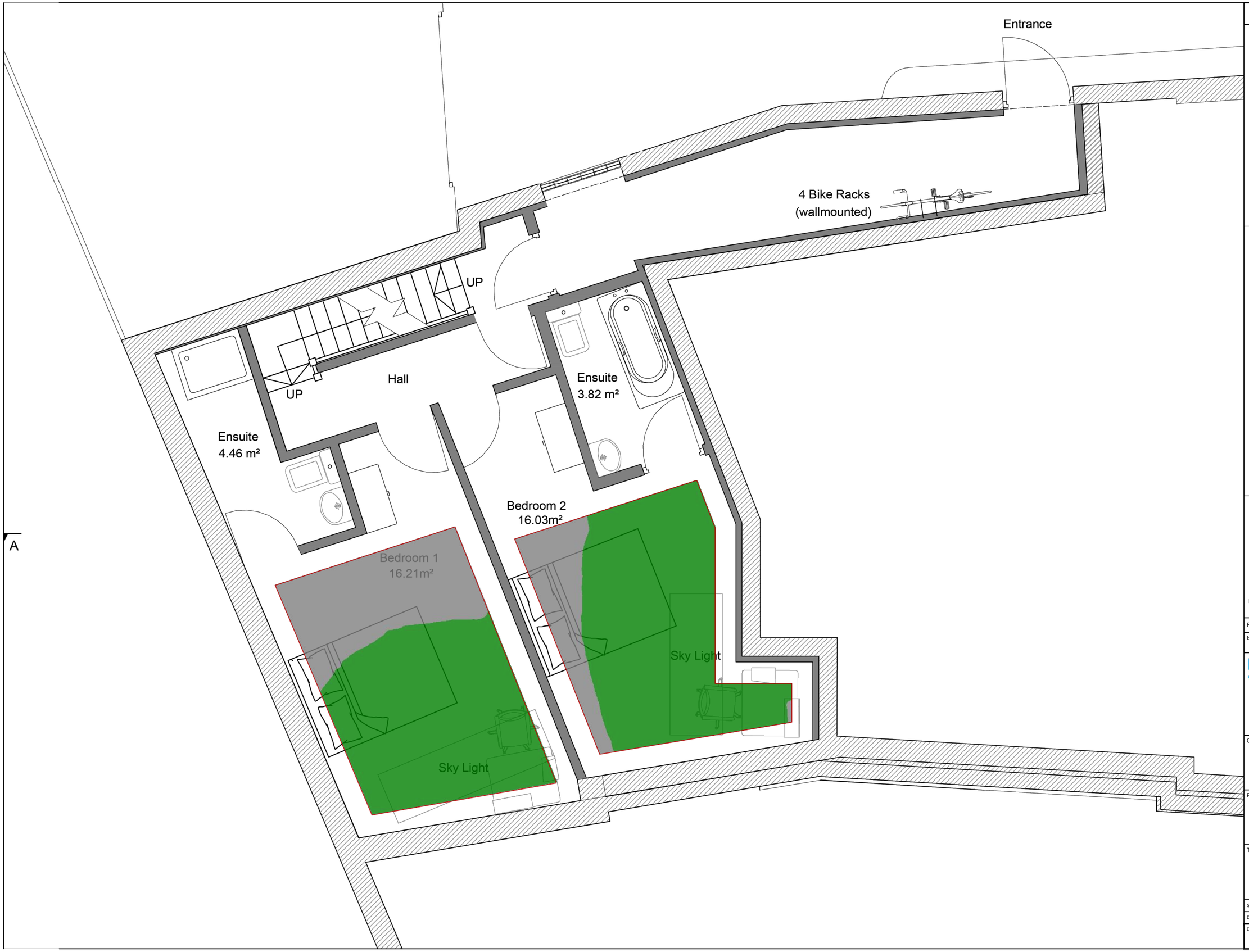

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Client: EZI Letting Ltd

Project: 24-13711 - 13 Camden High Street
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Title: Ground Floor sDA results

Scale: 1:100 @ A1	Drawn By: HAK
Date: August 2024	Checked By: MS

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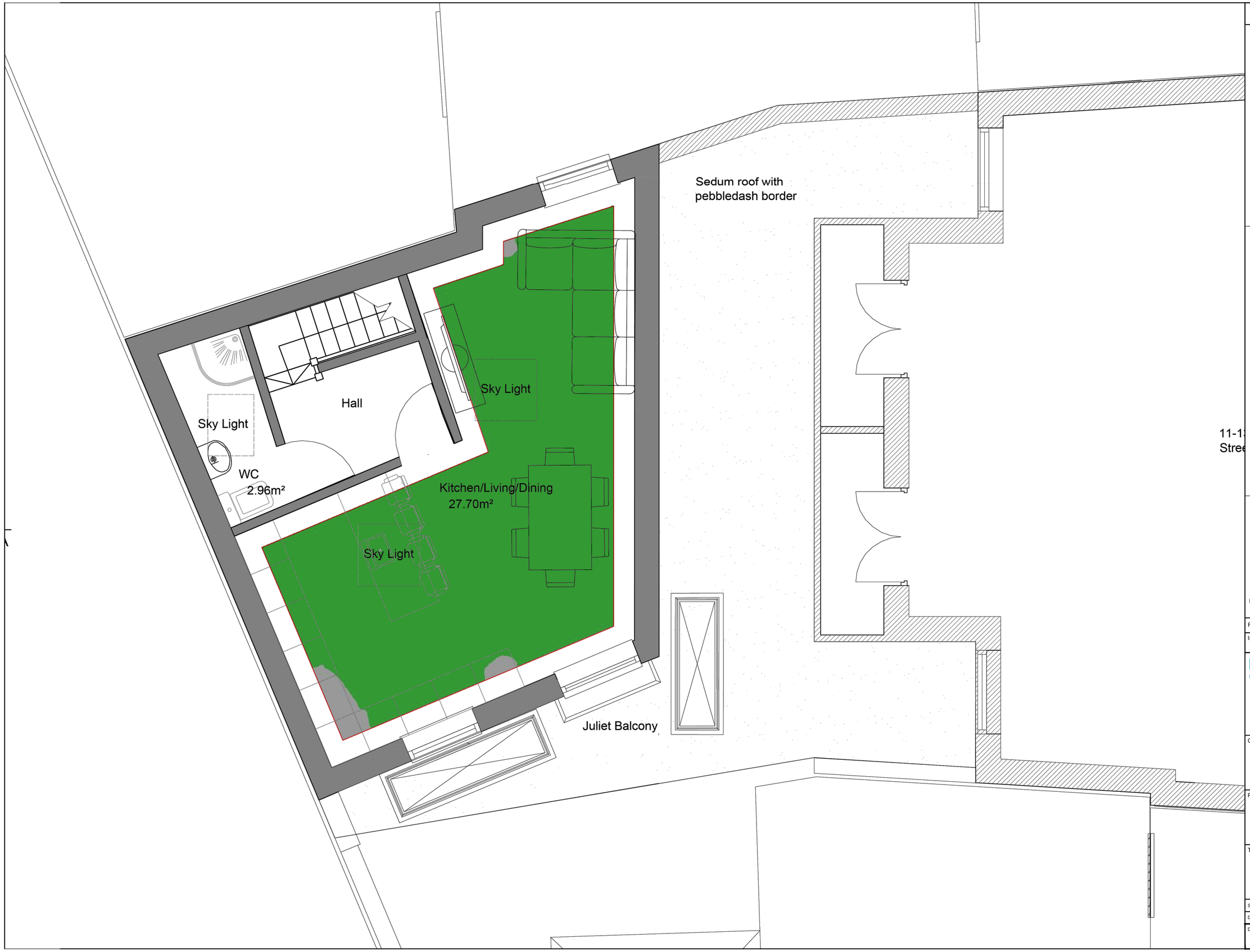

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Client: EZI Letting Ltd

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Title: First Floor sDA results

Scale: 1:100 @ A1	Drawn By: HAK
Date: August 2024	Checked By: MS

Drg. No. 24-13711 - 05 Rev. P2