herrington
CONSULTING LIMITED

Client : Progressive Property Management

Assessment of Daylight and Sunlight Provision to the Proposals at No. 20 Albert Terrace Mews, London

January 2017

Herrington Consulting Limited
Unit 6 – Barham Business Park
Elham Valley Road
Barham
Canterbury
Kent, CT4 6DQ
Tel/Fax +44 (0)1227 833855

www.herringtonconsulting.co.uk
This report has been prepared by Herrington Consulting Ltd in accordance with the instructions of their client, **Progressive Property Management**, for their sole and specific use. Any other persons who use any information contained herein do so at their own risk.

© Herrington Consulting Limited 2017
Template Rev – March16

Client : Progressive Property Management

Assessment of Daylight and Sunlight Provision to the Proposals at No. 20 Albert Terrace Mews, London

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Written by	Checked by
1	0	First Draft	20th January 2017	BB	NM

Contents

1 Background and Scope of Appraisal 1

2 The Site and Development Proposals 2
2.1 Site Location 2
2.2 The Development 2

3 Policy and Guidance 3
3.1 National Planning Policy 3
3.2 Regional Planning Policy 3
3.3 Local Planning Policy 3
3.4 Best Practice Guidance 4

4 Assessment Techniques 5
4.1 Background 5
4.2 Average Daylight Factor 5

5 Assessment Methodology 6
5.1 Method of Baseline Data Collation 6
5.2 Numerical Modelling 6
5.3 Calculation Assumptions 6

6 Daylight Provision Within New Rooms 8
6.1 Average Daylight Factor 8

7 Sunlight Provision 9
7.1 Annual Probable Sunlight Hours Assessment 9

8 Conclusions 11

A Appendices 12

1 Background and Scope of Appraisal

Herrington Consulting has been commissioned by Progressive Property Management to analyse and quantify the provision of natural daylight to the habitable rooms within the proposed development at No. 20 Albert Terrace Mews, London, NW1 7TA.

2 The Site and Development Proposals

2.1 Site Location

The site is located on Albert Terrace Mews in the London Borough of Camden, London. The location of the site in relation to the surrounding area is shown in Figure 2.1.

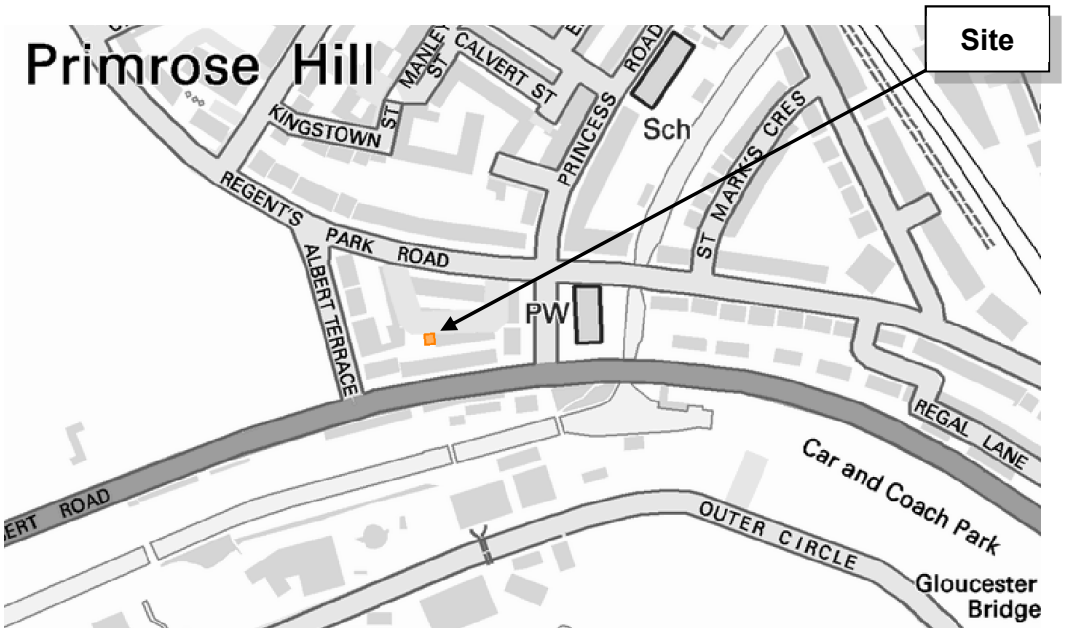


Figure 2.1 – Location map (Contains Ordnance Survey data © Crown copyright and database right 2014)

2.2 The Development

The proposal for development is to extend the current dwelling on site by building a basement level and extending two rooms on the first floor, at No. 20 Albert Terrace Mews.

3 Policy and Guidance

3.1 National Planning Policy

National Planning Policy Framework (2012)

The National Planning Policy Framework adopted on the 27th March 2012, replacing the Planning Policy Statements and Planning Policy Guidance, stipulates that *"…planning policies and decisions should always seek to secure a good standard of amenity for existing and future occupants of land and buildings."*

National Planning Practice Guidance (2014)

The National Planning Practice Guidance was launched in 2014, creating an online resource for planning practitioners. The guidance does not provide any further detail in terms of amenity beyond that stated above.

3.2 Regional Planning Policy

The London Plan – Spatial Development Strategy for London (2016)

Policy 7.6: 'Architecture' of the adopted London Plan, includes the following statements: *"Buildings and structures should… not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to… overshadowing. …". "New development, … , should not have a negative impact on the character or amenity of neighbouring sensitive land uses".*

3.3 Local Planning Policy

Camden Development Management Policies (2013)

Policy DP26 states that the council will only grant planning permission for development that does not cause harm to the amenity of existing and future occupiers and to nearby properties. To assess this impact, the council will consider; 'visual privacy and overlooking'; 'overshadowing and outlook', and 'sunlight, daylight and artificial light levels'. To assess whether a proposed development will have acceptable levels of daylight and sunlight provision, the council will follow the standard recommendations of the British Research Establishment's Site Layout Planning for Daylight and Sunlight- A Guide to Good Practice.

Camden Core Strategy 2010 – 2015 (adopted 2010)

Paragraph 5.7 states, *"Camden's high level of amenity - the features of a place that contribute to its attractiveness and comfort - is a major factor in the quality of life of the borough's residents, workers and visitors and fundamental to Camden's attractiveness and success. However, Camden's inner London location, the close proximity of various uses and the presence of major roads and railways can mean that privacy, noise and light can be particular issues in the borough."*

3.4 Best Practice Guidance

In the absence of official national planning guidance / legislation on daylight and sunlight, the most recognised guidance document is published by the Building Research Establishment and entitled 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', Second Edition, 2011; herein referred to as the 'BRE Guidelines'.

The BRE Guidelines are not mandatory and themselves state that they should not be used as an instrument of planning policy, however in practice they are heavily relied upon as they provide a good guide to approach, methodology and evaluation of daylight and sunlight provision within new developments.

In conjunction with the BRE Guidelines further guidance is given within the British Standard (BS) 8206-2:2008: 'Lighting for buildings - Part 2: Code of practice for daylighting'.

In this assessment, the BRE Guidelines have been used to establish the extent to which the Proposed Development meets current best practice guidelines.

4 Assessment Techniques

4.1 Background

Natural light refers to both daylight and sunlight. However, a distinction between these two concepts is required for the purpose of analysis and quantification of natural light in buildings. In this assessment, the term '*Daylight*' is used for natural light where the source is the sky in overcast conditions, whilst '*Sunlight*' refers specifically to the light coming directly from the sun.

4.2 Average Daylight Factor

The Average Daylight Factor (ADF) method calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and considers the physical nature of the room behind the window, including; window transmittance, and surface reflectivity.

This method of quantifying the availability of daylight within a room does, however, require the internal layout to be known and is generally only used for establishing daylight provision in new rooms. The BRE Guide sets out the following guidelines for the assessment of the ADF:

If a predominantly daylit appearance is required, then the ADF should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. In dwellings, the following minimum average daylight factors should be achieved: 1% in bedrooms, 1.5% in living rooms and 2% in kitchens.

4.3 Annual Probable Sunlight Hours

It is also possible to quantify the amount of sunlight available to a new development and the recognised methodology for undertaking this analysis is the Annual Probable Sunlight Hours (APSH) method.

The APSH tests is applied by calculating the number of probable sunlight hours that will be received by each window. In general terms, it is considered that adequate levels of sunlight will be available if the centre point of the window receives more than one quarter of APSH, including at least 5% APSH in the winter months between 21st September and the 21st March.

It should also be noted that where rooms have windows on more than one elevation, it is acceptable to sum the non-coincident sunlight hours to achieve a 'room total'. This approach is acknowledged by the BRE Guidelines and facilitates a greater understanding of the sunlight received within a room by taking into account the fact that some windows will receive sunlight at different times during the day.

5 Assessment Methodology

5.1 Method of Baseline Data Collation

The following data and information has been used to inform this study:

- OS Mastermap mapping
- Topographic survey drawings (Townscape Surveys Ltd, Surrey – July 2016)
- Scheme drawings in AutoCAD format provided by architect
- Photographic information provided by the architect
- Aerial photography (Google Maps and Bing)

5.2 Numerical Modelling

The numerical analysis used in this assessment has been undertaken using the Waldrum Tools (Version 3.0.0.3) software package.

5.3 Calculation Assumptions

The following assumptions have been made when undertaking the analysis:

- When assessing the ADF for internal rooms and in the absence of specific information, the following parameters are assumed:
  - Glazing type is assumed to be double glazing (Pilkington K Glass 4/16/4 Argon filled) with a light transmittance value of 0.78 (value for double glazed unit not per pane)
  - Correction factor for frames and glazing bars = 0.8
  - Where information from the designer is not available, the following values are used to derive the Maintenance Factor applied to the transmittance values.

Location / setting	**Building type** (Residential – good maintenance)	**Exposure (normal)**	**Special exposure**	**Maintenance Factor**
Urban	8%	x 1.0	x 1.0	0.94
Rural / suburban	4%	x 1.0	x 1.0	0.97

Table 5.1 – Parameters used for deriving Maintenance Factor (refer to BS 8206-2:2008 Tables A3, A4 and A5

The reflectance values used in the ADF analysis are as shown in Table 5.3 unless specified otherwise by the designer.

Surface	Value
Internal walls (painted pale cream)	81%
Internal ceiling (painted white)	85%
Internal flooring	30%

Table 5.2 – Reflectance values used in ADF analysis

- Where the internal arrangements and room uses have been estimated, it should be noted that this has no bearing upon the tests for APSH because the reference point is at the centre of the window being tested and windows have been accurately drawn from the survey information. It is relevant to the daylight distribution assessment, but in the absence of suitable plans, estimation is a conventional approach.

- In areas where survey data has not been provided or needs to be supplemented with additional information, photographs, OS mapping and brick counts have been used in the process of building the 3D model of the surrounding and existing buildings.

- When analysing the effect of the new building on the existing buildings, the shading effect of the existing trees has been ignored. This is the recommended practice where deciduous trees that do not form a dense belt or tree line are present (BRE Guidelines – Appendix H). This is because daylight is at its scarcest and most valuable in the winter when most trees will not be in leaf.

6 Daylight Provision Within New Rooms

6.1 Average Daylight Factor

Using the analytical techniques discussed in Sections 4 and 5, the Average Daylight Factor (ADF) has been calculated for the habitable rooms within the proposed development. In accordance with the guidance set out in both the BRE Guidelines and the BS 8206-2:2008 document, rooms that have a dual use, i.e. an open plan kitchen and lounge, are assessed as a single room and assessed against the room use with the highest daylighting requirement. For example, where a room includes both living and kitchen spaces, then the higher daylighting requirement of the kitchen is adopted as the threshold target.

Results are summarised in Table 6.1 below and the detailed model outputs are included in Appendix A.3 of this report.

Room	Floor level	Room Use	Minimum Recommended ADF	Calculated ADF	Does this meet BRE Guidelines?
R1	-1	Bedroom	1.0%	1.54%	Yes
R3	-1	Study	1.5%	1.78%	Yes
R1	G	Living room	1.5%	2.18%	Yes
R2	G	Kitchen/dining	2%	2.54%	Yes
R1	1st	Bedroom	1.0%	3.76%	Yes
R2	1st	Bedroom	1.0%	1.57%	Yes
R3	1st	Bedroom	1.0%	2.68%	Yes

Table 6.1 – Calculated ADF analysis results for the habitable rooms within the proposed development

From the results in Table 6.1 it can be gathered that all the proposed habitable rooms receive in excess of the minimum ADF values, based on room uses, as recommended by BRE Guidelines and British Standards; this also includes the two proposed habitable rooms in the basement. It is possible to conclude that all habitable rooms will be well lit and have reduced reliance on supplementary electric lighting. The scheme is in full compliance with the BRE Guidelines on daylight.

7 Sunlight Provision

7.1 Annual Probable Sunlight Hours Assessment

The BRE Guidelines provide guidance in respect of sunlight quality for new developments stating: *"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 in the morning rather than the afternoon."*

The assessment criteria set out within the BRE document are discussed in Section 4.3 of this report, but in general terms the overall objective sought by the guidelines is as follows: *"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 the centre of at least one window to a main living room can receive 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21st September and 21st March.*

An observation from paragraph 5.3 of the BS 8206-2 is that with regards to sunlight duration, the degree of satisfaction is related to the expectation of sunlight. Therefore, if a room is north facing or if the building is in a densely-built urban area, the absence of sunlight is more acceptable than when its exclusion seems arbitrary.

For the windows of the proposed habitable rooms including the basement rooms, the APSH test has also been undertaken. The results are summarised in Table 7.1 below and the detailed model outputs are included in Appendix A.4 of this report.

Floor level	Room	Window	Percentage APSH	
			All year	Winter
Basement	R1	W1	8%	0%
		W2	1%	0%
Room total			**8%**	**0%**
Basement	R3	W3	8%	0%
		W4	10%	0%
Room total			**13%**	**0%**
Ground	R1	W1	25%	2%
		W2	26%	2%
		W6	n/a – north facing	
		W7	n/a – north facing	
Room total			**27%**	**2%**
Ground	R2	W3	36%	3%
		W4	29%	4%
		W5	22%	2%
		W8	n/a – north facing	
Room total			**43%**	**6%**
First	R1	W1	30%	4%
		W3	53%	6%
		W5	n/a – north facing	
Room total			**57%**	**7%**
First	R2	W2	33%	5%
Room total			**33%**	**5%**
First	R3	W12	n/a – north facing	
		W13	n/a – north facing	
Room total			**n/a**	

Table 7.1 – Results of APSH analysis for the proposed development

Table 7.1 demonstrates that three rooms of the seven analysed within the proposed dwelling achieve the BRE recommended levels of sunlight, for both the whole year and winter period. Rooms R2 on the ground floor, and R1 and R2 on the first floor, all exceed the required 25% for the whole year and 5% for the winter period. Consequently, in accordance with the BRE guidelines suggested that at least one room achieves or exceeds these values, it is possible to conclude that the proposed dwelling will be well sunlit.

8 Conclusions

The detailed analysis undertaken as part of this assessment has examined the provision of natural daylight and sunlight to all of the habitable rooms of the proposed development at No. 20 Albert Terrace Mews, including the habitable rooms in the new proposed basement level. Using detailed numerical modelling applications, the Average Daylight Factor (ADF) has been quantified for all habitable rooms. In line with the assessment criteria prescribed by the BRE Guidelines, it has been shown that the provision of natural daylight will meet or exceed the minimum recommended threshold set out in both the BRE Guidelines and the British Standard (BS) 8206-2:2008: 'Lighting for buildings - Part 2: Code of practice for daylighting'.

The Annual Probable Sun Hours (APSH) assessment demonstrates that the proposals will exceed the BRE Guidelines recommendations, in that three of the rooms within the proposed dwelling will achieve the recommended levels of sunlight, for both the whole year and winter periods. Overall, therefore, it can be concluded that the proposed scheme will provide good levels of sunlight in accordance with the BRE stance on this matter.

A Appendices

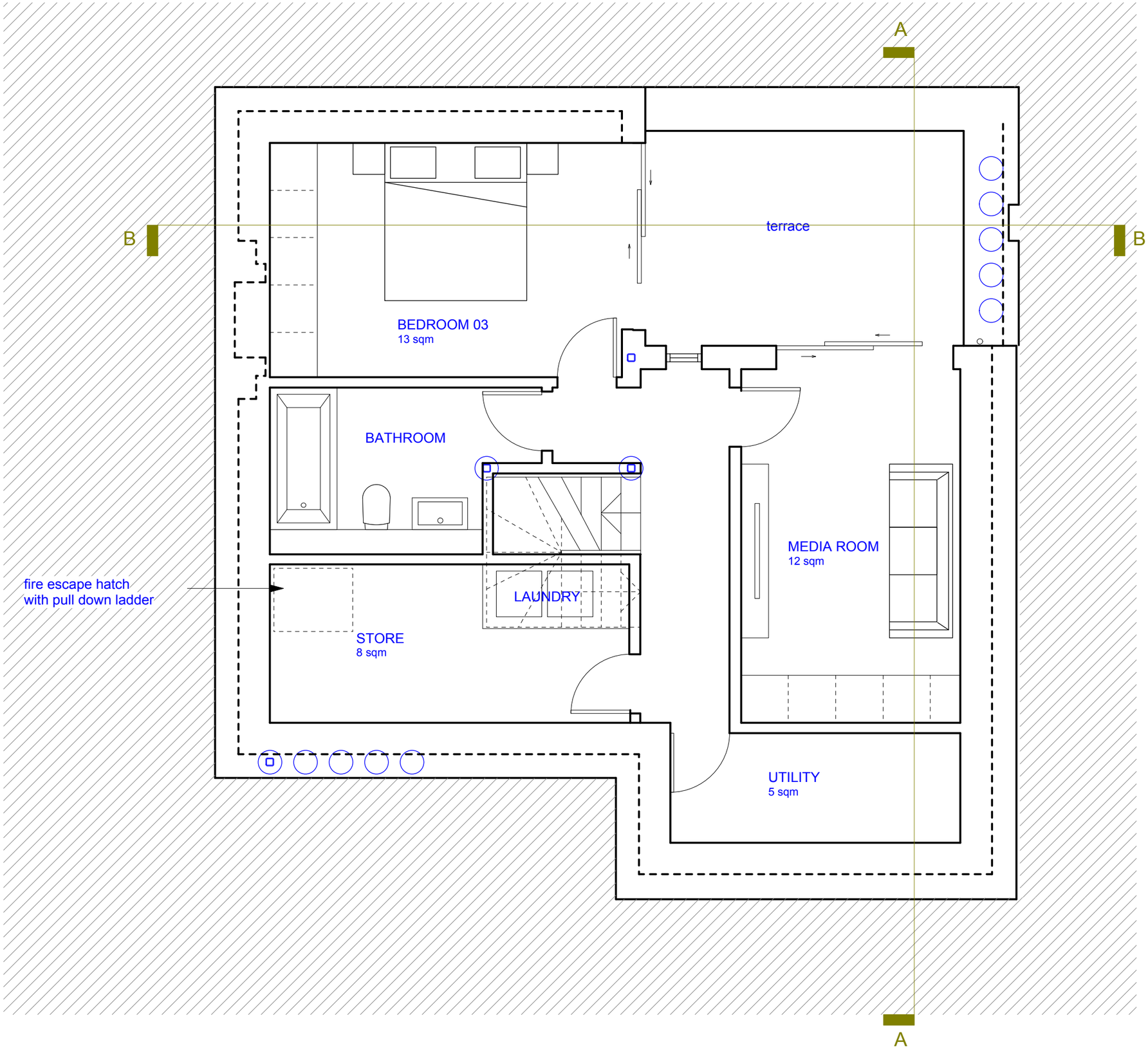
A.1 **Appendix A.1 – Scheme Drawings**

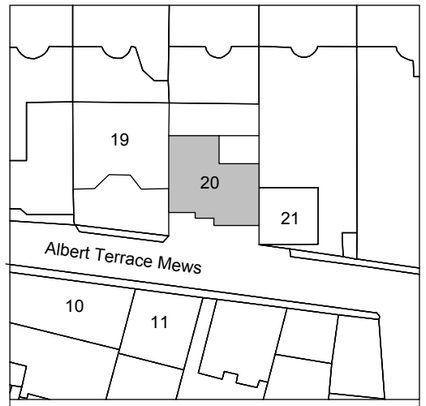
A.2 **Appendix A.2 – Daylight Model Drawings**

A.3 **Appendix A.3 – Average Daylight Factor Calculations**

A.4 **Appendix A.4 – Annual Probable Sunlight Hours (APSH) Calculations**

Appendix A.1 – Scheme Drawings





KEY PLAN
nts

N

REV	Description	Date
B	ISSUED FOR INFO	23.10.2016
A	ISSUED FOR PLANNING	30.07.2016

Scale	1:50
Size	A3
Drawn by	ET

Client
JONATHAN MORLEY

Project
20 ALBERT TERRACE MEWS, NW1

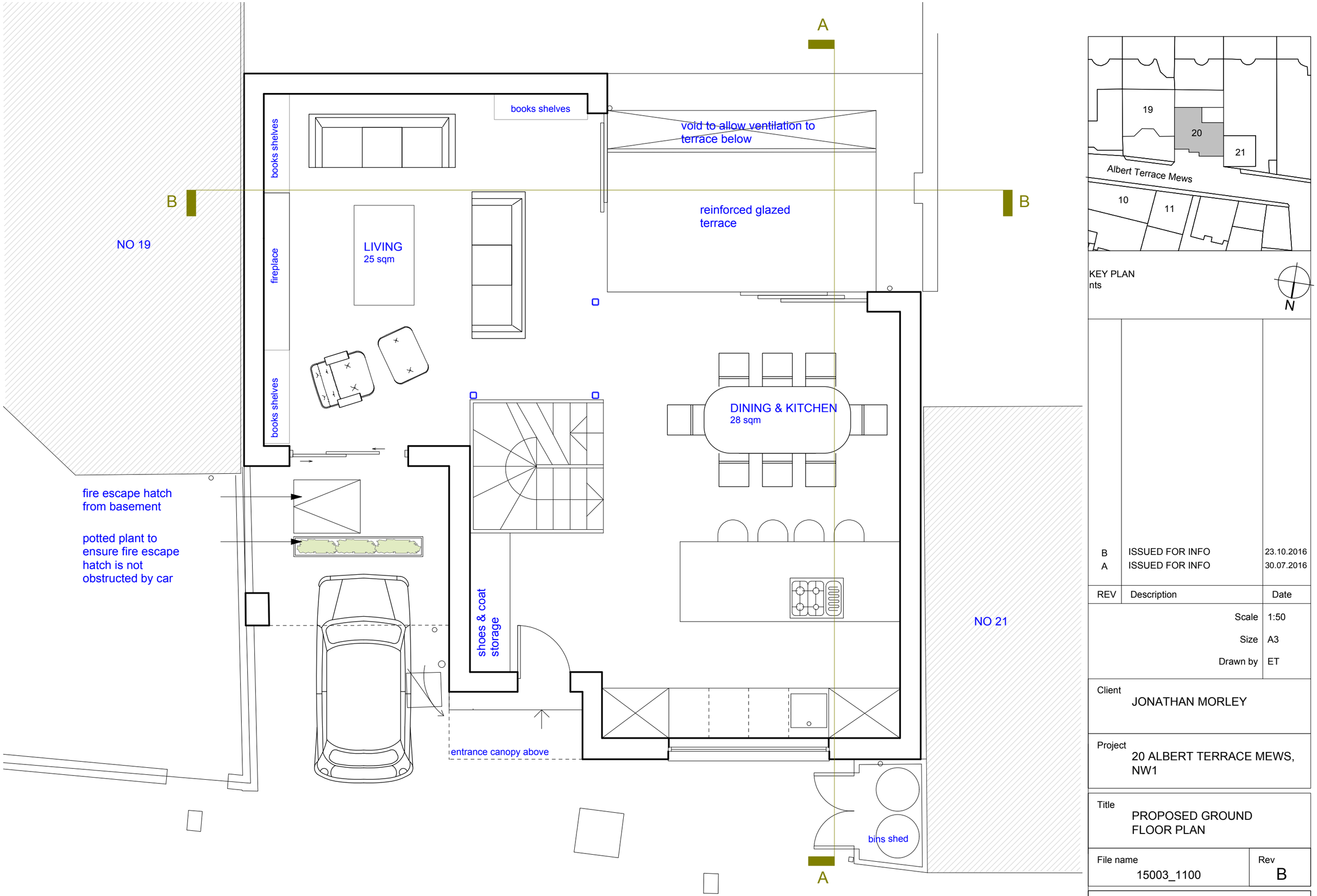
Title
PROPOSED BASEMENT FLOOR PLAN

File name
15003_1103

Rev
B

Status
PLANNING

0 1 2 3 4 5
Metres



REV	Description	Date
B	ISSUED FOR INFO	23.10.2016
A	ISSUED FOR INFO	30.07.2016

Scale	1:50
Size	A3
Drawn by	ET

Client
JONATHAN MORLEY

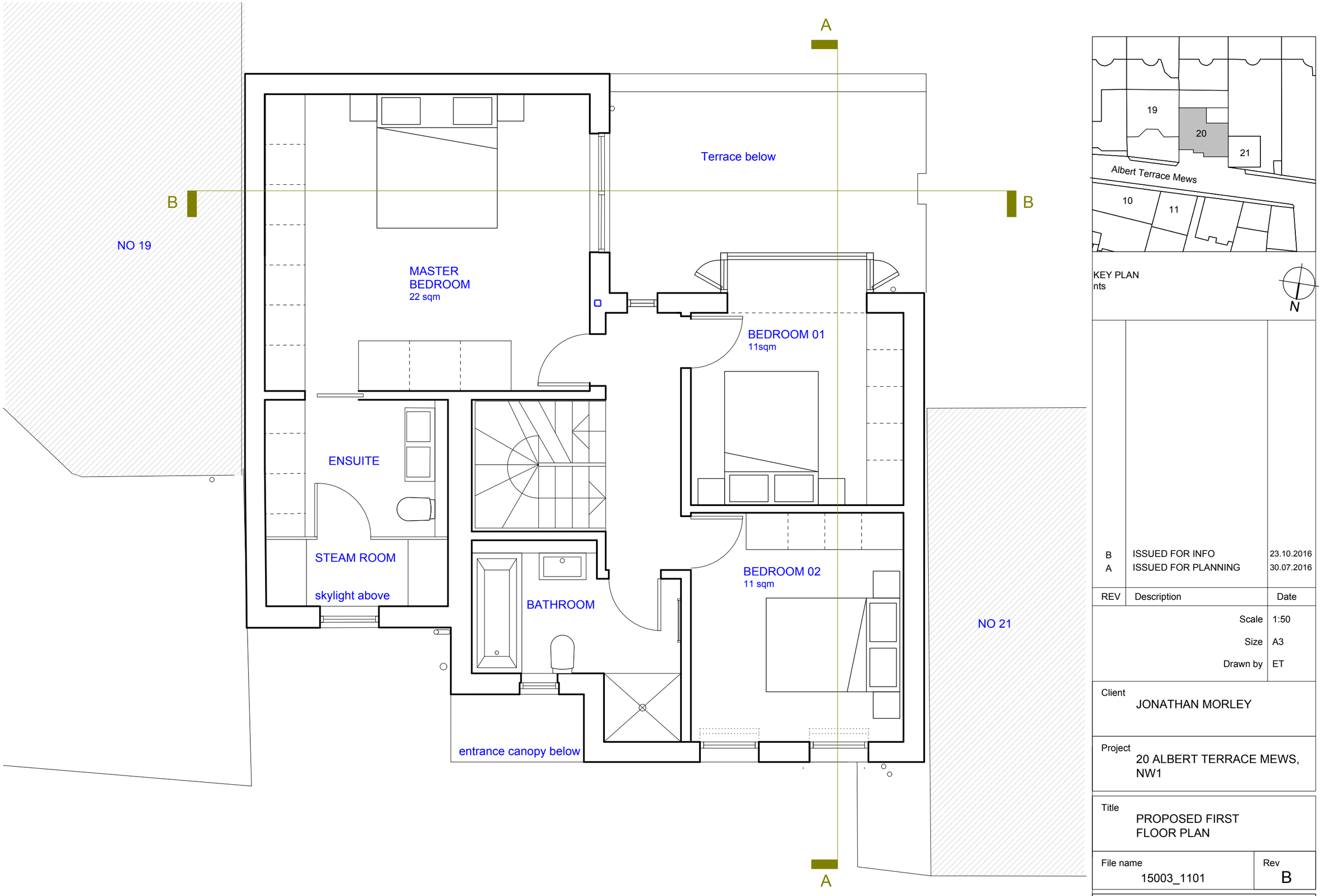
Project
20 ALBERT TERRACE MEWS, NW1

Title
PROPOSED GROUND FLOOR PLAN

File name
15003_1100

Rev
B

Status
PLANNING



REV	Description	Date
B	ISSUED FOR INFO	23.10.2016
A	ISSUED FOR PLANNING	30.07.2016

Scale	1:50
Size	A3
Drawn by	ET

Client
JONATHAN MORLEY

Project
20 ALBERT TERRACE MEWS, NW1

Title
PROPOSED FIRST FLOOR PLAN

File name
15003_1101

Rev
B

Status
PLANNING

A

B

B

Terrace below

NO 19

Oriel window below

FLAT ROOF

SKYLIGHT

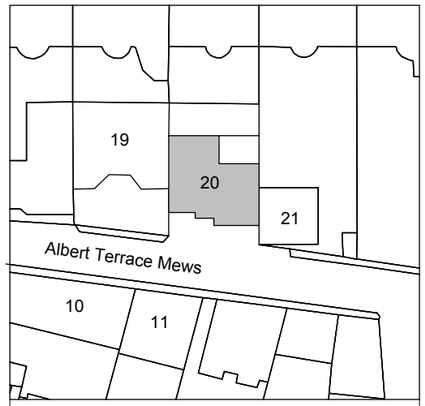
ROOFLIGHT

FLAT ROOF

entrance canopy below

NO 21

A



KEY PLAN
nts

N

REV	Description	Date
B	ISSUED FOR INFO	23.10.2016
A	ISSUED FOR PLANNING	30.07.2016

Scale 1:50

Size A3

Drawn by ET

Client
JONATHAN MORLEY

Project
20 ALBERT TERRACE MEWS, NW1

Title
PROPOSED ROOF PLAN

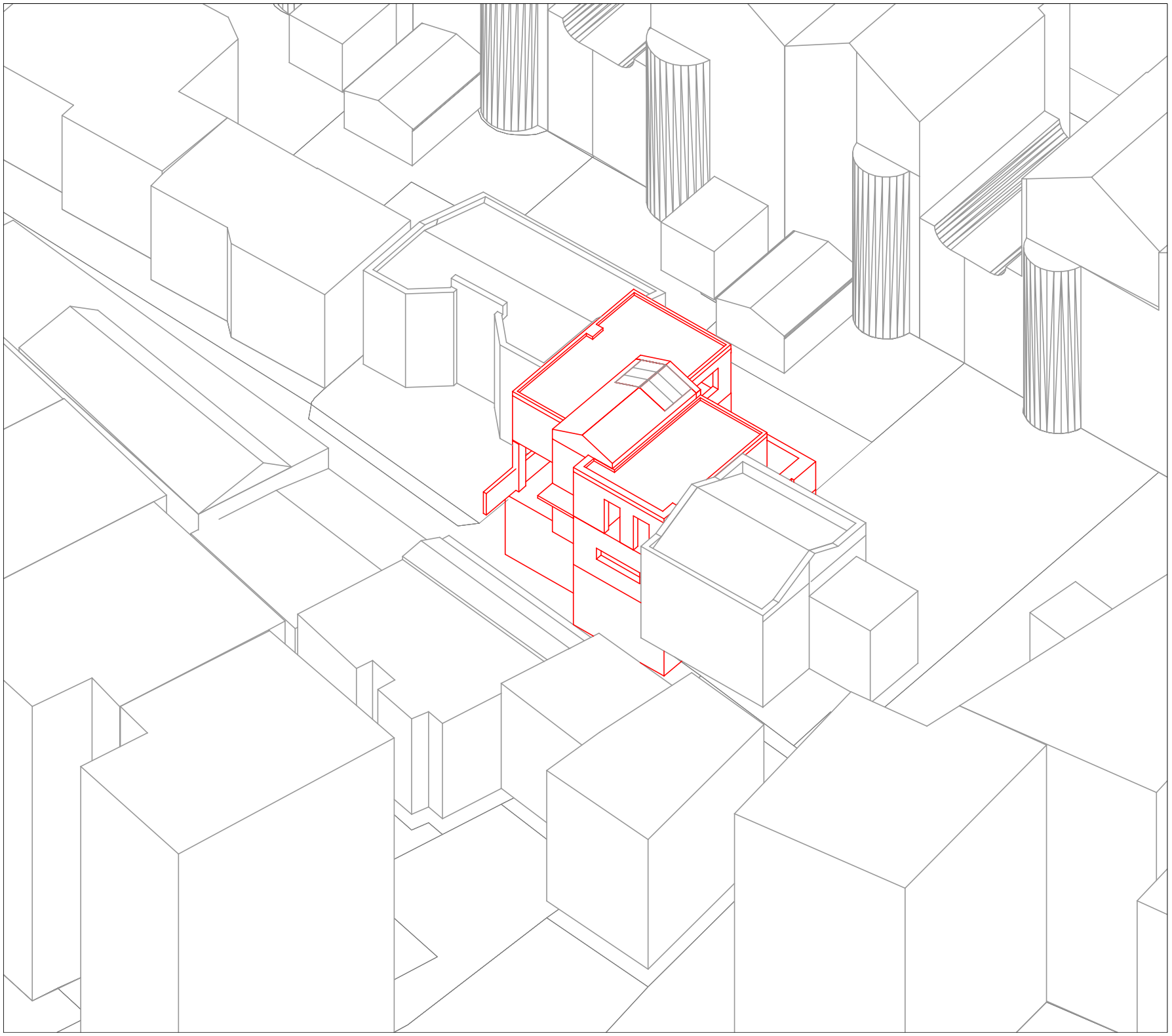
File name
15003_1102

Rev
B

Status
PLANNING

0 1 2 3 4 5
Metres

Appendix A.2 Daylight Model Drawings



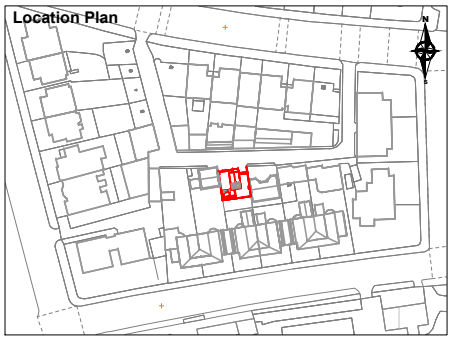
herrington
CONSULTING LIMITED

Unit 6 - Barham Business Park
Elham Valley Road
Canterbury
Kent CT4 6DQ

Tel : 01227 833855
enquiries@herringtonconsulting.co.uk
www.herringtonconsulting.co.uk

Legend

Location Plan



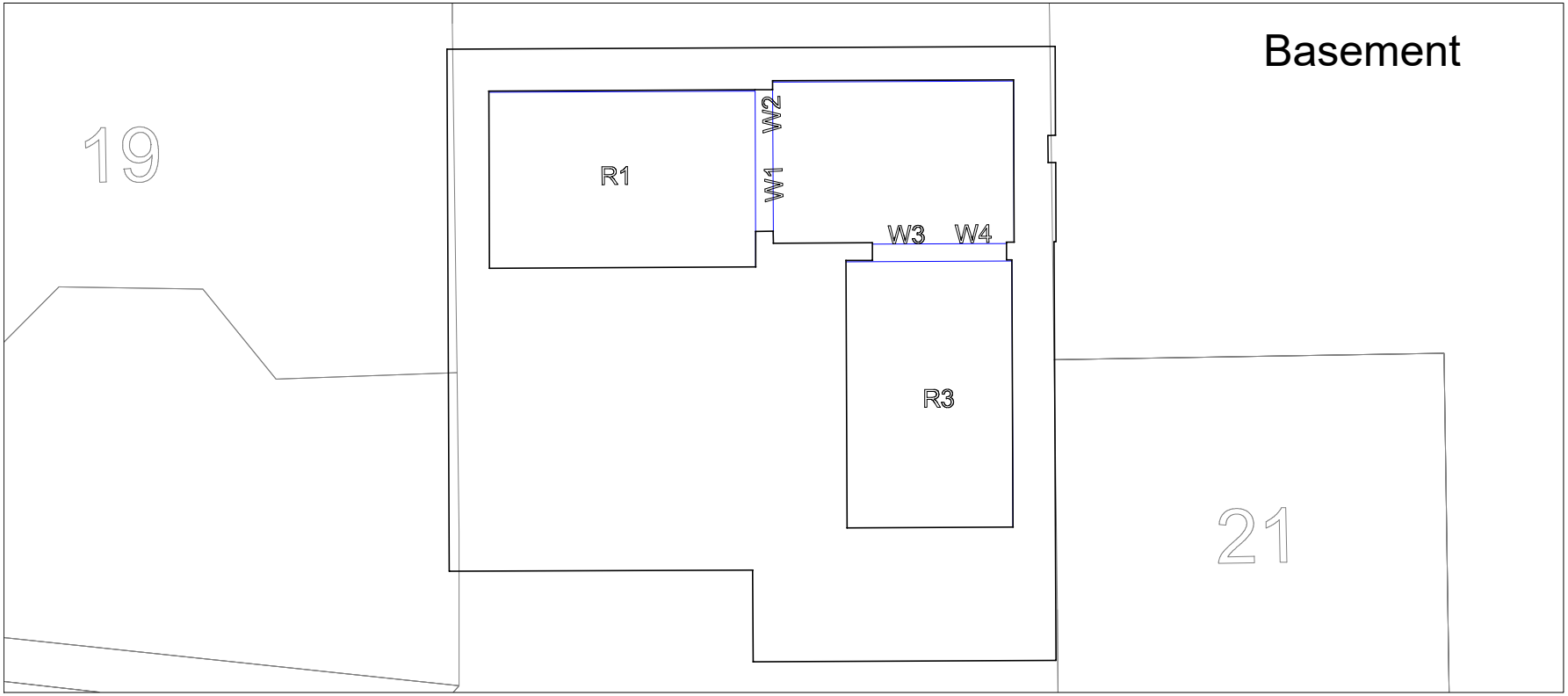
Rev	Description	Date
00	First issue	20/01/17

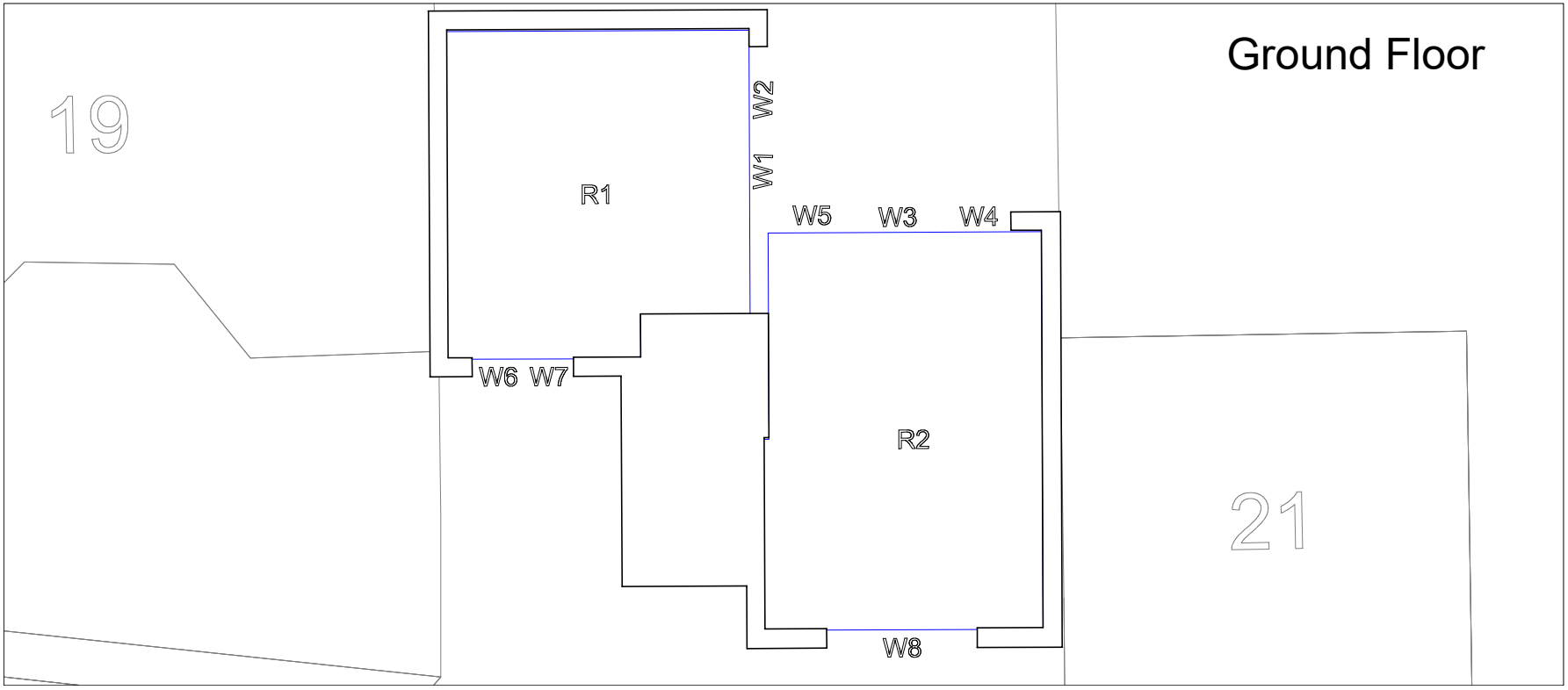
CLIENT
Progressive Property Management

PROJECT
Albert Terrace Mews

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1708	BB	BB

DWG REF.	REV.
3D Model - Proposed (Red)	0



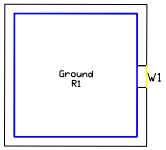


herrington
CONSULTING LIMITED

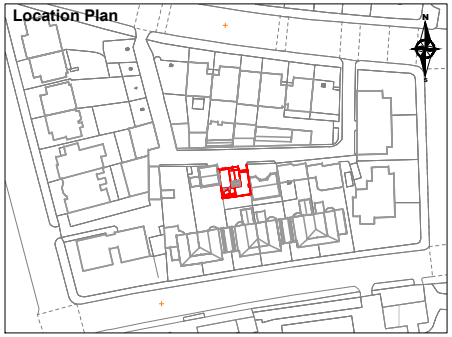
Unit 6 - Barham Business Park
Elham Valley Road
Canterbury
Kent CT4 6DQ

Tel : 01227 833855
enquiries@herringtonconsulting.co.uk
www.herringtonconsulting.co.uk

Legend



Location Plan



Rev	Description	Date
00	First issue	20/01/17

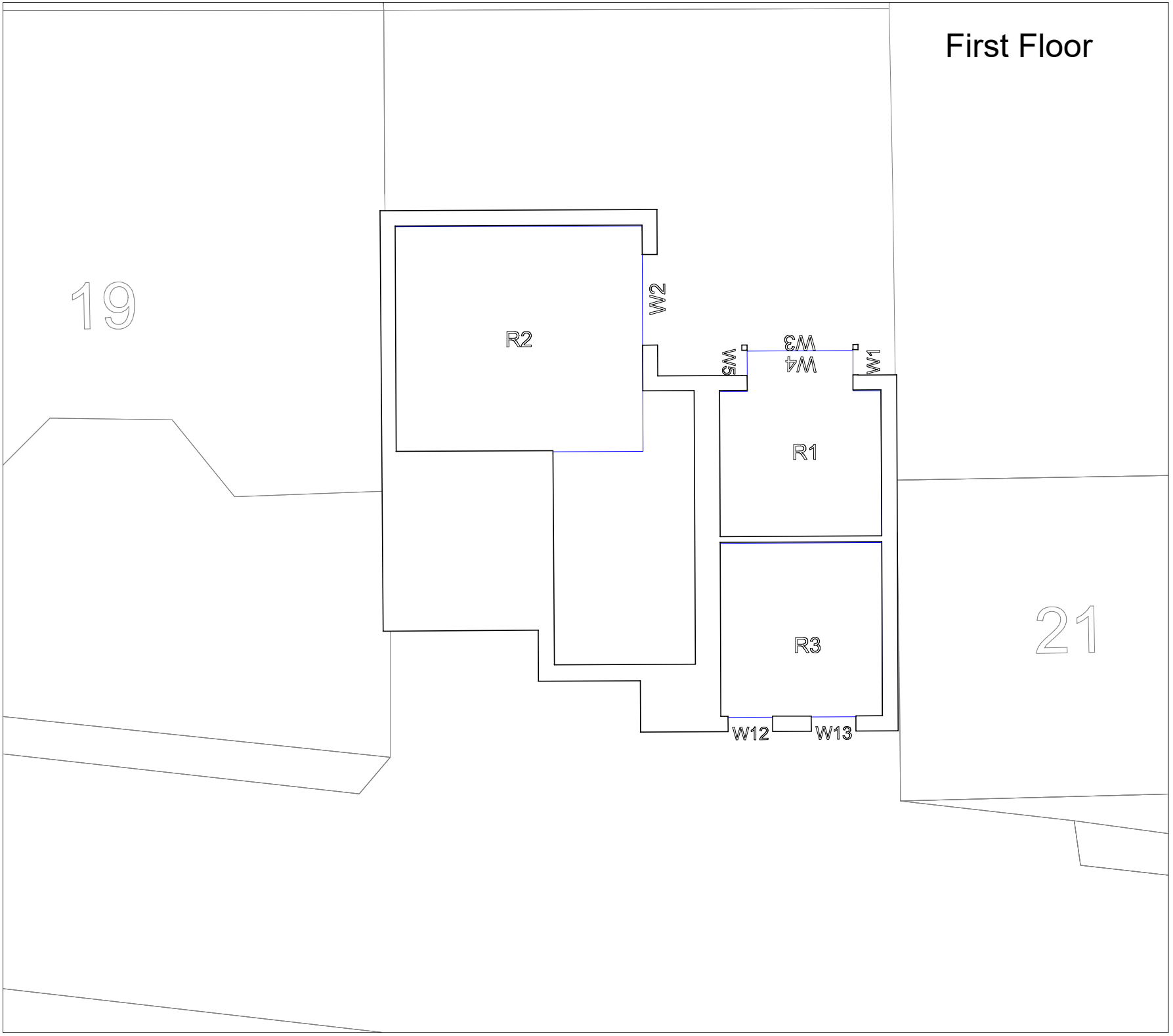
CLIENT
Progressive Property Management

PROJECT
Albert Terrace Mews

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1708	BB	BB

DWG REF.	REV.
3D Model - Proposed (Red)	0

First Floor

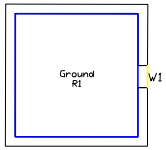


herrington
CONSULTING LIMITED

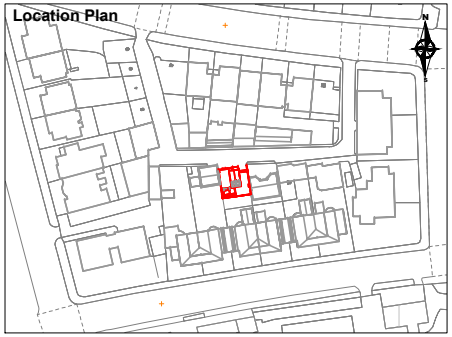
Unit 6 - Barham Business Park
Elham Valley Road
Canterbury
Kent CT4 6DQ

Tel : 01227 833855
enquiries@herringtonconsulting.co.uk
www.herringtonconsulting.co.uk

Legend



Location Plan



00	First issue	20/01/17
Rev	**Description**	**Date**

CLIENT
Progressive Property Management

PROJECT
Albert Terrace Mews

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	1708	BB	BB

DWG REF.	REV.
3D Model - Proposed (Red)	0

Appendix A.3 Average Daylight Factor Calculations

Project Name: 20 Albert Terrace Mews
Project No.: 1708
Report Title: ADF Analysis to Proposed New Rooms
Date: 20/01/2017

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value	Meets BRE Criteria
						Proposed						
Basement	R1	Bedroom	W1-L	0.78	0.81	21.51	68.08	0.65	0.15	0.05		
			W1-U	0.78	1.59	23.47	68.08	0.65	1.00	0.75		
			W2-L	0.78	0.80	20.13	68.08	0.65	0.15	0.05		
			W2-U	0.78	1.57	22.21	68.08	0.65	1.00	0.70		
										1.54	1.00	YES
Basement	R3	Study	W3-L	0.78	0.68	20.27	65.54	0.65	0.15	0.04		
			W3-U	0.78	1.33	25.91	65.54	0.65	1.00	0.72		
			W4-L	0.78	0.85	21.73	65.54	0.65	0.15	0.06		
			W4-U	0.78	1.66	27.89	65.54	0.65	1.00	0.96		
										1.78	1.50	YES
Ground	R1	Living Room	W1-L	0.78	0.91	35.46	101.70	0.65	0.15	0.07		
			W1-U	0.78	1.49	37.32	101.70	0.65	1.00	0.74		
			W2-L	0.78	0.91	40.67	101.70	0.65	0.15	0.07		
			W2-U	0.78	1.48	45.29	101.70	0.65	1.00	0.90		
			W6-L	0.78	0.57	26.97	101.70	0.65	0.15	0.03		
			W6-U	0.78	0.91	17.69	101.70	0.65	1.00	0.22		
			W7-L	0.78	0.54	25.06	101.70	0.65	0.15	0.03		
			W7-U	0.78	0.88	11.18	101.70	0.65	1.00	0.13		
										2.18	1.50	YES
Ground	R2	KD	W3-L	0.78	0.89	36.30	113.40	0.65	0.15	0.06		
			W3-U	0.78	1.45	33.20	113.40	0.65	1.00	0.58		
			W4-L	0.78	0.89	37.03	113.40	0.65	0.15	0.06		
			W4-U	0.78	1.45	31.47	113.40	0.65	1.00	0.55		
			W5-L	0.78	0.87	33.82	113.40	0.65	0.15	0.05		
			W5-U	0.78	1.42	34.48	113.40	0.65	1.00	0.59		
			W8	0.78	1.26	43.55	113.40	0.65	1.00	0.66		
										2.54	2.00	YES
First	R1	Bedroom	W1-L	0.78	0.34	41.53	55.83	0.65	0.15	0.05		
			W1-U	0.78	0.47	42.18	55.83	0.65	1.00	0.49		
			W3-L	0.78	1.42	50.87	55.83	0.65	0.15	0.26		
			W3-U	0.78	1.98	53.24	55.83	0.65	1.00	2.57		
			W5-L	0.78	0.34	22.08	55.83	0.65	0.15	0.03		
			W5-U	0.78	0.47	31.56	55.83	0.65	1.00	0.36		
										3.76	1.00	YES
First	R2	Bedroom	W2	0.78	1.80	55.08	85.88	0.65	1.00	1.57		
										1.57	1.00	YES
First	R3	Bedroom	W12-L	0.78	0.60	55.39	52.17	0.65	0.15	0.13		
			W12-U	0.78	0.84	56.99	52.17	0.65	1.00	1.24		
			W13-L	0.78	0.60	50.70	52.17	0.65	0.15	0.12		
			W13-U	0.78	0.84	54.48	52.17	0.65	1.00	1.19		
										2.68	1.00	YES

Appendix A.4 APSH Calculations

Project Name: 20 Albert Terrace Mews
Project No.: 1708
Report Title: APSH Analysis to Proposed New Rooms
Date: 20/01/2017

Floor Ref.	Room Ref.	Property Type	Room Use.	Window Ref.		Annual	Meets BRE Criteria	Winter	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
					Proposed								
Basement	R1	Residential	Bedroom	W1	Proposed	8		0					
				W2	Proposed	1		0					
										8	YES	0	YES
	R3	Residential	Study	W3	Proposed	8		0					
				W4	Proposed	10		0					
										13	YES	0	YES
Ground	R1	Residential	Living Room	W1	Proposed	25		2					
				W2	Proposed	26		2					
				W6	Proposed		*North*		*North*				
				W7	Proposed		*North*		*North*				
										27	YES	2	YES
	R2	Residential	KD	W3	Proposed	36		3					
				W4	Proposed	29		4					
				W5	Proposed	22		2					
				W8	Proposed		*North*		*North*				
										43	YES	6	YES
First	R1	Residential	Bedroom	W1	Proposed	30		4					
				W3	Proposed	53		6					
				W5	Proposed		*North*		*North*				
										57	YES	7	YES
	R2	Residential	Bedroom	W2	Proposed	33		5					
										33	YES	5	YES
	R3	Residential	Bedroom	W12	Proposed		*North*		*North*				
				W13	Proposed		*North*		*North*				
										3	YES	0	YES