LOVE
DESIGN
STUDIO

PROPOSED SCHEME DAYLIGHT AND SUNLIGHT STUDY

61 Redington Road, London, NW37RP
by Love Design Studio

May 2022
PR462_V1

CONTENTS

EXECUTIVE SUMMARY

Love Design Studio are appointed to prepare a daylight and sunlight assessment for the conversion of the three existing residential units at 61 Redington Road, London, NW37RP into one family dwelling and a one-bedroom flat at lower ground level; this is to assess the on-site daylight and sunlight access to rooms deemed habitable, based on relevant industry guidance.

To ensure that this assessment has correctly considered the daylight and sunlight access experienced on the site, it has been instigated in accordance with the Building Research Establishment's publication "Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice" (2011) (the "BRE Guidelines").

Daylight and sunlight access is typically desirable for occupants within 'habitable' rooms within residential buildings. This is acknowledged within the BRE guidelines, which place the most emphasis on these uses, mainly the living rooms.

30 windows and 15 adjoining habitable rooms were identified within the main dwelling of the proposed scheme as part of habitable spaces. Within them, there were seven bedrooms, one study, three living rooms, two dining rooms, one kitchen and one kitchen dining (KD). At the lower ground floor one bedroom flat (with two windows), and one living room (with three windows) were identified.

Please see below a concise summary of the study:

DAYLIGHT SUMMARY

The analysis demonstrates that the lower ground floor flat exceeds the recommended levels of ADF. Within the family dwelling 80% of the habitable rooms meet or exceed the recommended levels of ADF. One bedroom, one living room and one dining room fall short of the criteria.

The one bedroom in the family dwelling that falls short of the criteria is located on the second floor at a northwest facade and is an existing room where no changes to the room layouts and fenestration are planned.

The one living room space in the family dwelling which is falling short of the BRE criteria will be used as a 'snug room' and is located at the ground floor at north-west façade.

The remaining room falling short of the criteria is a dining room space located at southeast façade of the ground floor. As there are other dining room spaces to choose from with sufficient daylight access this is deemed acceptable.

Considering that there are other bedroom and living room spaces within the dwelling with sufficient daylight access it is deemed acceptable that three rooms fall short of the criteria.

SUNLIGHT SUMMARY

All south-facing LKD spaces and bedrooms, receive APSH and WPSH levels above that of the recommended targets.

GENERAL COMMENTS

The internal layouts of the development have been thoroughly designed to maximum daylight and sunlight access to habitants. There is emphasis within the National Planning Policy Framework (July 2021) for developers “to make efficient use of land”; the Applicant has done this for the 61 Redington Road scheme.

It is therefore considered that the proposed development design is in line with the objectives of the National, Regional and Local policy context and the guidelines on daylight and sunlight set by BRE whilst simultaneously considering other environmental factors.

INTRODUCTION

Love Design Studio are appointed to prepare a daylight and sunlight assessment for the conversion of the three existing residential units at 61 Redington Road, London, NW37RP into one family dwelling and a one-bedroom flat at lower ground level; this is to assess the on-site daylight and sunlight access to rooms deemed habitable, based on relevant industry guidance.

Neighbouring properties shown in the below image were included within the surrounding massing model where relevant; the 61, Redington Road site is indicated within the red line boundary.

Figure 1: Site plan aerial view with the proposed development (red boundary) and neighbouring buildings

PLANNING POLICY

There are various National, Regional and Local planning policy documents and supplementary design guides available to help steer designers and assessors in maximising daylight and sunlight to rooms within new development. The overarching national guidance sits within the Revised National Planning Policy Framework (2021); regional and local policy supplements set out further detailed/technical guidance, often quoting relevant industry guidance, such as British Standards and the 'BRE Guidance' as tools for implementing a methodology to help define daylight and sunlight targets.

The various policy documents are set out below:

NATIONAL PLANNING POLICY

The National Planning Policy Framework (July 2021) – paragraph 123 (c):

LOCAL PLANNING AUTHORITIES SHOULD REFUSE APPLICATIONS WHICH THEY CONSIDER FAIL TO MAKE EFFICIENT USE OF LAND, TAKING INTO ACCOUNT THE POLICIES IN THIS FRAMEWORK. IN THIS CONTEXT, WHEN CONSIDERING APPLICATIONS FOR HOUSING, AUTHORITIES SHOULD TAKE A FLEXIBLE APPROACH IN APPLYING POLICIES OR GUIDANCE RELATING TO DAYLIGHT AND SUNLIGHT, WHERE THEY WOULD OTHERWISE INHIBIT MAKING EFFICIENT USE OF A SITE (AS LONG AS THE RESULTING SCHEME WOULD PROVIDE ACCEPTABLE LIVING STANDARDS).

REGIONAL PLANNING POLICY

Paragraph 1.3.19 from the London Plan's Housing SPG states:

FOR PLANNING PURPOSES, A HABITABLE ROOM IS USUALLY DEFINED AS ANY ROOM USED OR INTENDED TO BE USED FOR SLEEPING, COOKING, LIVING OR EATING PURPOSES. ENCLOSED SPACES SUCH AS THE BATH OR TOILET FACILITIES, SERVICE ROOMS, CORRIDORS, LAUNDRIES, HALLWAYS, UTILITY ROOMS OR SIMILAR SPACES ARE EXCLUDED FROM THIS DEFINITION. IN SOME CIRCUMSTANCES, A LARGE KITCHEN OR KITCHEN DINING ROOM MAY BE COUNTED AS A HABITABLE ROOM, BUT THE APPROACH VARIES BETWEEN BOROUGHS. THERE IS NO STATUTORY SIZE THRESHOLD. MANY BOROUGHS, HOWEVER, INCLUDE A FIGURE OF BETWEEN 13 AND 15 SQUARE METERS IN LDFS: ANY KITCHEN ABOVE THAT MINIMUM IS USUALLY COUNTED AS A HABITABLE ROOM. GENERALLY, A KITCHEN WITH A SMALL TABLE AND CHAIRS IN ONE CORNER, OR A KITCHEN 'BAR', WOULD NOT BE COUNTED AS A HABITABLE ROOM. A ROOM WITH A CLEARLY DEFINED KITCHEN AT ONE END AND A CLEARLY DEFINED DINING AREA AT THE OTHER (WITH A DINING TABLE AND CHAIRS) WOULD BE COUNTED AS A HABITABLE ROOM (SEE ALSO PART 2 ON QUALITY).

A Greater London Authority (GLA) hearing, referenced as 'representation hearing report D&P/3067/03 – Appendix 1 (18th November 2013) noted:

BRE GUIDELINES CONFIRM THAT THE ACCEPTABLE MINIMUM ADF TARGET VALUE DEPENDS ON THE ROOM USE. THAT IS 1% FOR A BEDROOM, 1.5% FOR A LIVING ROOM AND 2% FOR A FAMILY KITCHEN. IN CASES WHERE ONE ROOM SERVES MORE THAN ONE PURPOSE, THE

MINIMUM ADF SHOULD BE THAT FOR THE ROOM TYPE WITH THE HIGHER VALUE. NOTWITHSTANDING THIS, THE INDEPENDENT DAYLIGHT AND SUNLIGHT REVIEW STATES THAT, IN PRACTICE, THE PRINCIPAL USE OF ROOMS DESIGNED AS A 'LIVING ROOM/KITCHEN/DINING ROOM' IS AS A LIVING ROOM. ACCORDINGLY, IT WOULD BE REASONABLE TO APPLY A TARGET OF 1.5% TO SUCH ROOMS.

LOCAL PLANNING POLICY

The site is located within Borough of Camden is formed of the Camden Local Plan (2017). The various references, within the Local Authority's Local Plan, related to daylight and sunlight are as follows:

Policy A1: Managing the impact of development:

THERE ARE PLENTY OF FACTORS LOOKED BY COUNCIL TO PROTECT THE QUALITY OF LIFE OF OCCUPIERS AND NEIGHBOURS. SOME OF THEM APPROPRIATE FOR THE CONSTRUCTION INCLUDES VISUAL PRIVACY; **SUNLIGHT, DAYLIGHT, AND OVERSHADOWING; ARTIFICIAL LIGHTING LEVELS; NOISE AND VIBRATION LEVELS**

6.5 THE LOCAL AUTHORITY TAKE THE CONVENTIONAL APPROACH OF CONSIDERING DAYLIGHT AND SUNLIGHT AMENITY WITH REFERENCE TO THE VARIOUS NUMERICAL TESTS LAID DOWN IN THE BUILDING RESEARCH ESTABLISHMENT (BRE) GUIDE 'SITE LAYOUT PLANNING FOR DAYLIGHT AND SUNLIGHT: A GUIDE TO GOOD PRACTICE, 2ND EDITION' BY P J LITTLEFAIR 2011.

METHODOLOGY

Using GRIGGS drawings (received 21st April 2022), and online research, we have produced a 3D computer model of the proposed development and the neighbouring residential properties to the site as indicated in the previous sections; the 3D model includes the window locations and internal configurations of the proposed development.

Using a specialist computer programme, we have undertaken the analysis set out in the BRE Guidelines for the proposed scenario only. There is no requirement to consider the implications of reduction to daylight and sunlight access during the development and construction process as these will only be short term – should the dwellings be occupied in a phased approach.

MODELLING METHODOLOGY

3D models were created in industry accepted daylight and sunlight software; these included:

- The proposed development, and
- The neighbouring properties and other existing obstructions affecting access to daylight and sunlight.

Assessments were made of the Vertical Sky Component (VSC) & Average Daylight Factor (ADF) tests to measure daylight access and probable sunlight hours (APSH/WPSH) to measure annual sunlight and winter sunlight exposure, respectively.

The guidelines for modelling and testing the scheme's daylight and sunlight access were provided by the BRE's "Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice" by PJ Littlefair (2011); accepted as good practice by Planning Authorities when assessing the applications for new schemes. For further guidance on the methodology please see the BRE's document[1].

[1] https://www.bregroup.com/services/testing/indoor-environment-testing/natural-light/

ASSESSMENT METHODOLOGY

The numerical values contained within the BRE Guidelines are used to establish whether the proposals will have sufficient daylight access and are based primarily on the ADF tests rather than the individual VSC results.

In relation to daylight factor, the BRE Guidelines set out numerical values for the internal daylight factor and seeks to ensure that habitable rooms receive ample daylight access. Depending on the room type there are different guidelines on the ADF target; with living rooms and large kitchens given greater weighting.

A table of the scheme's target ADF values are set out below:

Table 1: The proposed scheme target ADF values

Item	Target ADF	Comment
Living Rooms	1.5%	As per the BRE Guidelines
Kitchen	2%	As per the BRE Guidelines
Dining Rooms	1.5%	As per the BRE Guidelines
Kitchen & Dining (KD)	2%	As per the BRE Guidelines
Bedrooms	1%	As per the BRE Guidelines

ADFs, unlike VSCs are reliant on a combination of the internal layout arrangement, window placement, window solar transmittance and internal/external reflectance. It is often found at the planning stage that reflectance and maintenance factors are not quite specified and therefore assumptions are taken from the British Standards BS 8206-2:2008 document.

Assumptions of the reflectance and other modelling variables are set out below:

Table 2: The proposed scheme ADF variables.

Item	Value	Comment
Window light transmittance	0.72	Clear or translucent glass
Maintenance factor	96%	% Loss of daylight based on:
		'suburban'[2]
		vertical glazing
		rain
Frame factor	80%	-
Room reflectance	0.68	-

With regards to sunlight, the BRE Guidelines seek that window within 90 degrees of due south should look to achieve 25% of the Average Probable Sunlight Hours (APSH) with at least 5% during the winter months, where feasible.

[2] CIBSE Guide A Table 1.13, Calculation of maintenance factor for daylight factor

ASSUMPTIONS & LIMITATIONS

A 3D model file was produced from 2D drawings; this file was used for placement of neighbouring properties, where possible, and desktop research, where required.

This study does not calculate the effects of trees and hedges on daylight and sunlight. The BRE guide states that it is usual to ignore the effect of existing trees and shrubs.

Where limited access or information is available, assumptions will have been made which may affect the conclusions reached in this report. Therefore, the report may need to be updated if room uses are confirmed by the local authority or by the consultation responses. The report provided is solely for the use of the client and no liability to anyone else is accepted and this report is based upon and subject to the scope of work set out in Love Design Studio's terms and conditions.

PROPOSED SCHEME MODEL IMAGE

For reference, please see below images of the constructed model from the relevant software; this is for illustrative purposes only. One bedroom flat at the lower ground floor and the family dwelling were considered separately.

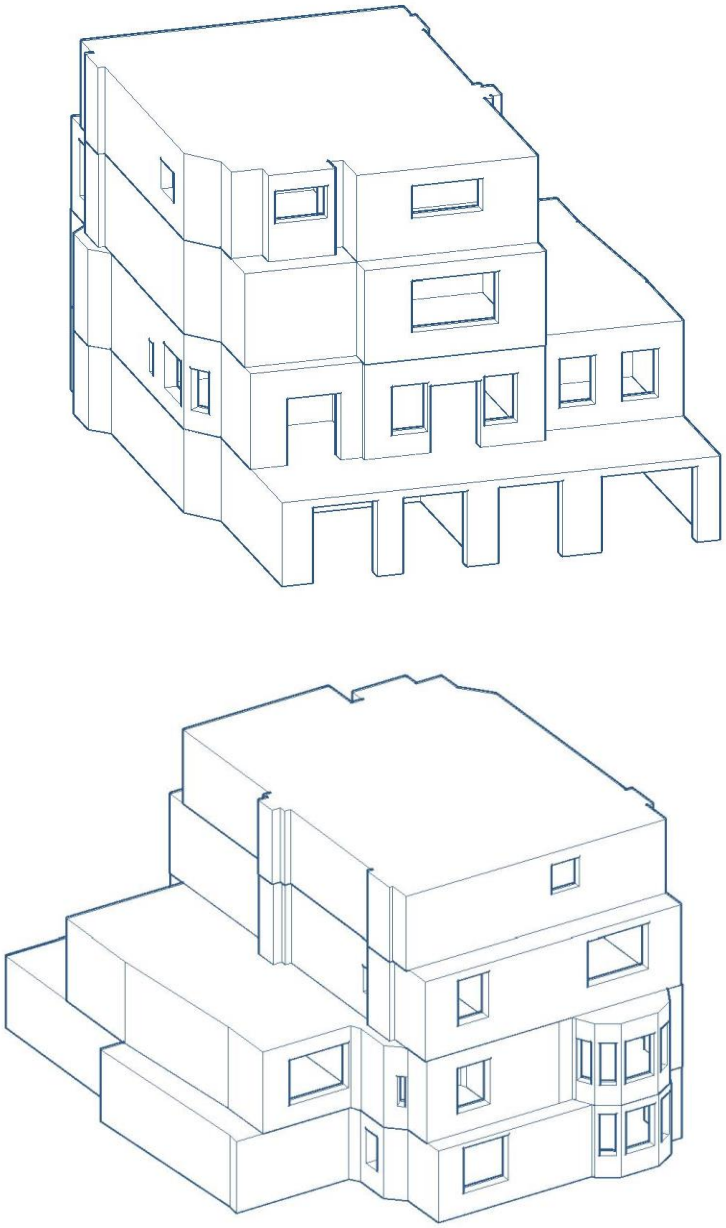


Figure 2: Aerial views of the proposed development daylight and sunlight model (southwest view, top; northeast view, bottom)

DAYLIGHT AND SUNLIGHT SUMMARY

Assessments were made of the Vertical Sky Component (VSC) and Average Daylight Factor (ADF) for measure of daylight; and probable sunlight hours (APSH/WPSH) for measure of sunlight, annually and in winter, respectively.

All habitable rooms within the proposed development have been assessed for their ADFs. In addition, all living areas with a southerly aspect have been assessed for sunlight availability both over the whole year (Annual Probable Sunlight Hours or APSH) and in winter (Winter Probable Sunlight Hours or WPSH).

30 windows and 15 adjoining habitable rooms were identified within the main dwelling of the proposed scheme as part of habitable spaces. Within them, there were seven bedrooms, one study, three living rooms, two dining rooms, one kitchen and one kitchen dining (KD). At the lower ground floor one bedroom flat (with two windows), and one living room (with three windows) were identified.

The layouts have been designed to maximise daylight and sunlight access to future occupiers whilst considering other environmental factors.

The analysis demonstrates that the lower ground floor flat exceeds the recommended levels of ADF.

Within the family dwelling 80% of the habitable rooms meet or exceed the recommended levels of ADF, except for one bedroom, one living room and one dining room.

The one bedroom falling short of the criteria is located on the second floor at northwest facade and is an existing room where no changes to the room layouts and fenestration are planned.

The one living room space which is falling short of the BRE criteria will be used as a ‘snug room’ and is located at the ground floor at north-west façade.

The remaining room falling short of the criteria is a dining room space located at southeast façade of the ground floor. As there are other dining room spaces to choose from with sufficient daylight access this is deemed acceptable

Considering that there are other bedroom and living room spaces within the dwelling with sufficient daylight access it is deemed acceptable that three rooms fall short of the criteria.

All south-facing LKD spaces and bedrooms, receive APSH and WPSH levels above that of the recommended targets.

It is therefore considered that the proposed development design is in line with the objectives of the National, Regional and Local policy context and the guidelines on daylight and sunlight set by BRE.

FULL DETAILED DAYLIGHT AND SUNLIGHT RESULTS

A full set of calculations of the daylight and sunlight access are set out in the table below.

Table 3: Full Daylight and Sunlight Test results for the proposed development

Reference	VSC %	APSH %	WPSH %	ADF %	ADF Target %
One-Bedroom Flat - Lower Ground Floor					
LG /Bedroom/R1/W1	11.7	-	-	1.02	1.0
LG /Bedroom/R1/W2	13.45	-	-		
LG /Bedroom/R1/W3	13.28	-	-		
LG/LKD/R4/W4	19.79	-	-	1.51	1.5
LG/LKD/R4/W5	13.22	-	-		
Family Dwelling - Lower Ground Floor					
LG/Bedroom/R2/W1	39.46	66.00	24.00	2.96	1.0
LG/Bedroom/R2/W2	39.45				
LG /Living Room/R3/W3	39.46	66.00	24.00	2.85	1.50
LG /Living Room/R3/W4	39.62				
Family Dwelling - Ground Floor					
GF / Bedroom /R1/W1	37.84	24.00	3.00	2.43	1.0
GF / Bedroom /R1/W17	28.54				

Reference	VSC %	APSH %	WPSH %	ADF %	ADF Target %
GF /Living Room/R2/W2	28.38				
GF /Living Room/R2/W3	36.17				
GF /Living Room/R2/W4	39.19	30.00	5.00	2.24	1.5
GF /Living Room/R2/W5	34.88				
GF /Living Room/R2/W6	26.60				
GF /Living Room/R3/W7	6.47				
GF /Living Room/R3/W8	4.97				
GF /Living Room/R3/W9	11.49	16.00	4.00	0.71	1.5
GF /Dining Room/R4/W10	38.57	62.00	21.00	2.13	1.5
GF /KD/R5/W11	39.33				
GF /KD/R5/W12	39.05				
GF /KD/R5/W13	39.36	66.00	24.00	2.04	2.0
GF /Kitchen/R6/W14	38.83	66.00	24.00	2.27	2.0
GF /Kitchen/R6/W15	36.03				
GF /Dining Room/R7/W16	26.52	13.00		1.32	1.50
Family Dwelling - First Floor					
1F/Bedroom /R1/W1	39.33	31.00	5.00	2.19	1.0

Reference	VSC %	APSH %	WPSH %	ADF %	ADF Target %
1F/Bedroom /R1/W5	23.55				
1F/Bedroom /R2/W2	38.66	29.00	5.00	2.91	1.0
1F/Bedroom /R2/W3	17.53				
1F/Bedroom /R3/W4	39.28	66.00	24.00	2.38	1.0
Family Dwelling - Second Floor					
2F/Bedroom /R1/W1	39.32	31.00	5.00	0.73	1.0
2F/Bedroom /R2/W2	19.36				
2F/Bedroom /R2/W3	36.83	58.00	17.00	1.17	1.0
2F/Bedroom /R3/W4	39.59	68.00	24.00	1.46	1.0

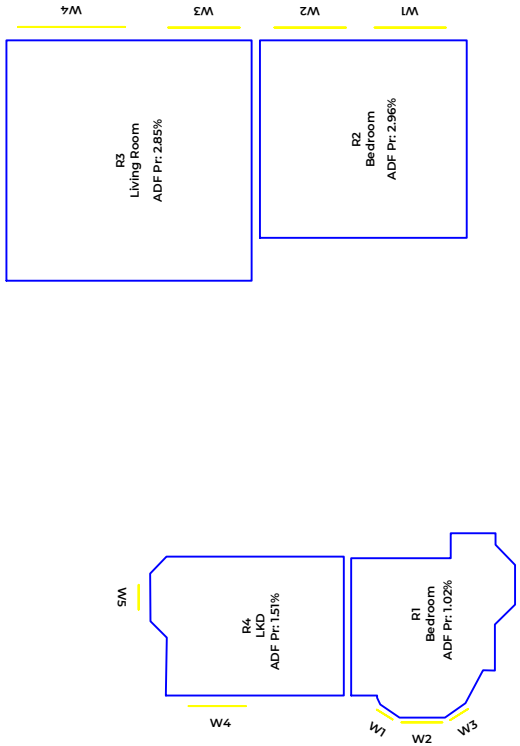
*X/XX(X)/XX/XX – Floor/Room Use/Room Ref/Window Ref

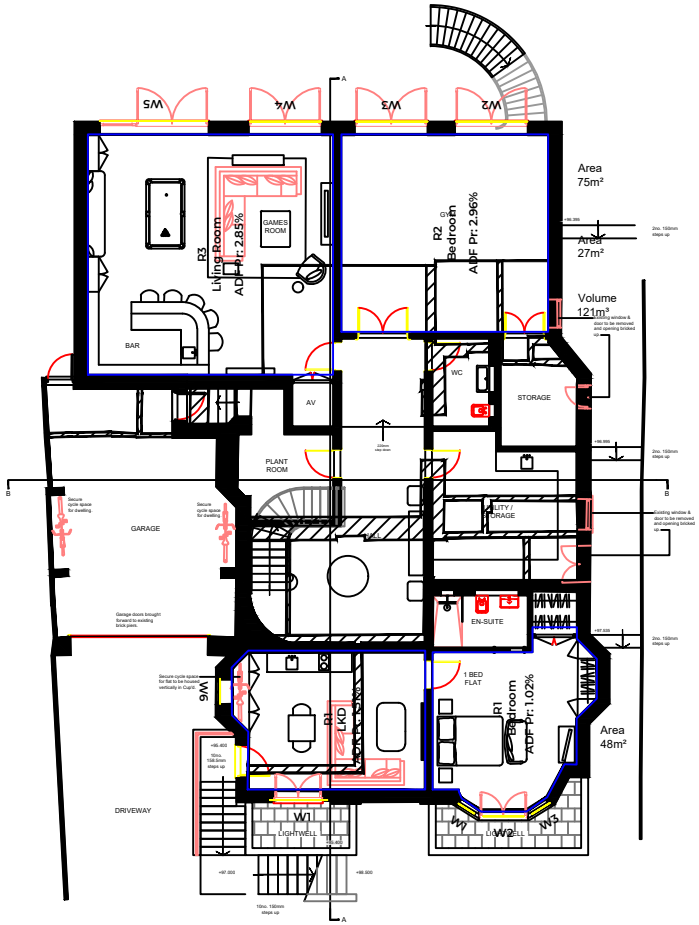
APPENDICES

The following images reference the window and room locations as per the results tables from earlier sections.

LOVE DESIGN STUD/O

61 Redington Road
Lower Ground Floor
Window Ref
Room Ref





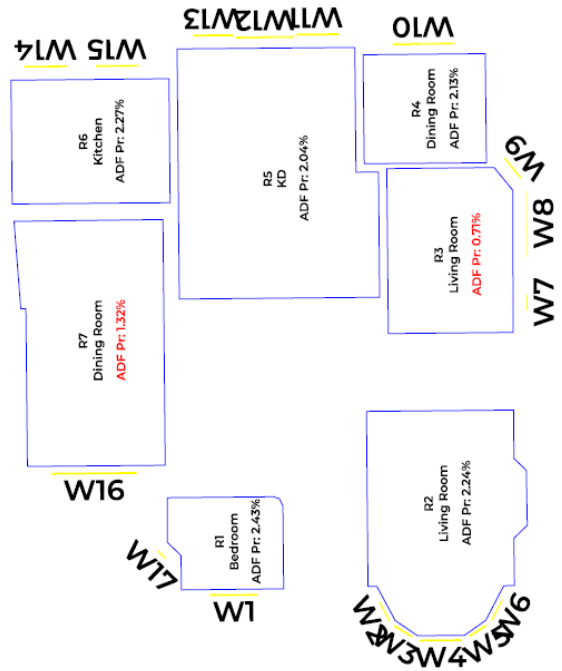
NOT TO SCALE
ILLUSTRATIVE ONLY

Date: 04/05/2022
Drawing: 462-61RR-RR&WR-LGF
Issue: 00A

Lovedesignstudio.co.uk
mail@lovedesignstudio.co.uk

LOVE DESIGN STUD/O

61 Redington Road
Ground Floor
Window Ref
Room Ref



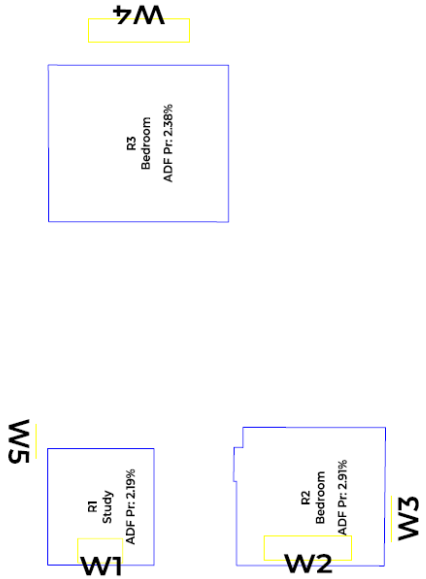
NOT TO SCALE
ILLUSTRATIVE ONLY

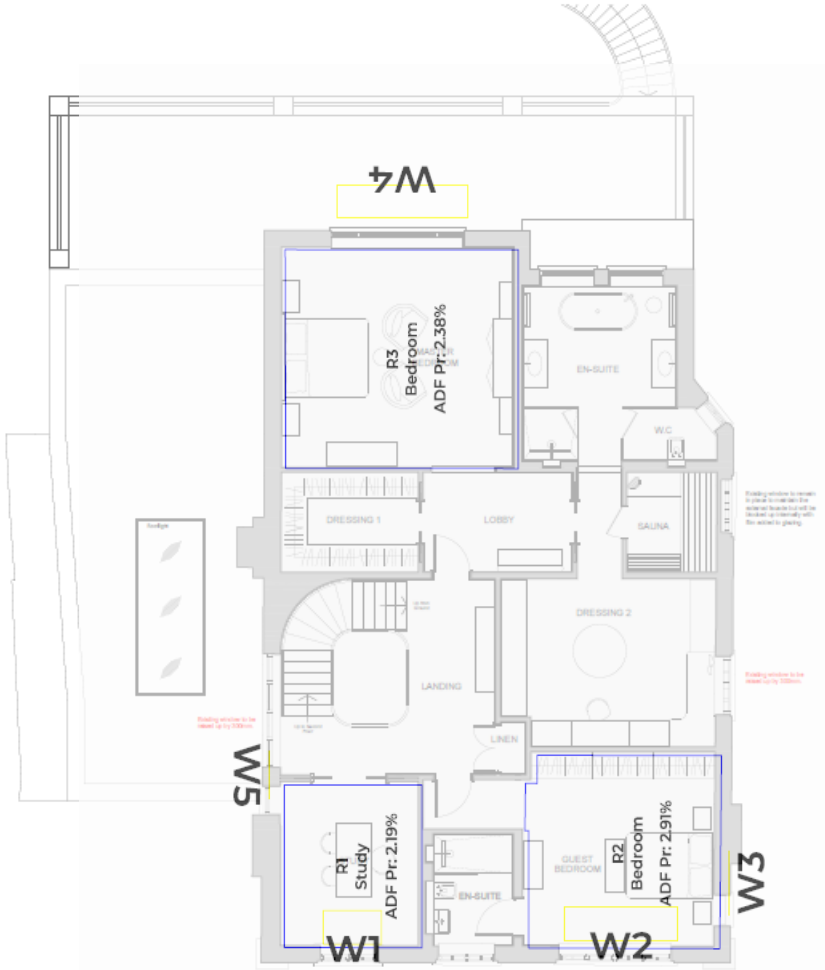
Date: 04/05/2022
Drawing: 462-61RR-RR&WR-GF
Issue: 00A

Lovedesignstudio.co.uk
mail@lovedesignstudio.co.uk

LOVE DESIGN STUD/O

61 Redington Road
First Floor
Window Ref
Room Ref





First Floor

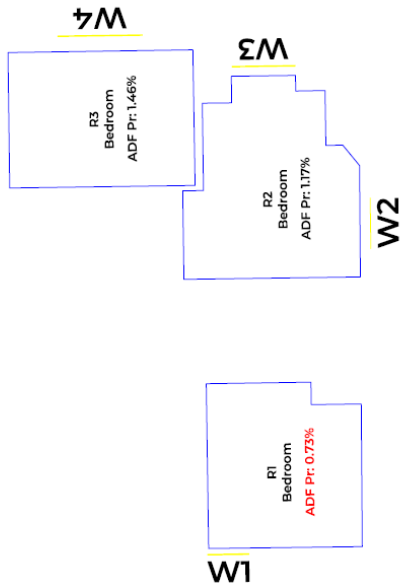
NOT TO SCALE
ILLUSTRATIVE ONLY

Date: 04/05/2022
Drawing: 462-61RR-RR&WR-1F
Issue: 00A

Lovedesignstudio.co.uk
mail@lovedesignstudio.co.uk

LOVE DESIGN STUD/O

61 Redington Road
Second Floor
Window Ref
Room Ref



NOT TO SCALE
ILLUSTRATIVE ONLY

Date: 04/05/2022
Drawing: 462-61RR-RR&WR-2F
Issue: 00A

Lovedesignstudio.co.uk
mail@lovedesignstudio.co.uk

LOVE DESIGN STUDIO Ltd
(+44) (0) 20 7846 0261
mail@lovedesignstudio.co.uk
London
Author: YN
Reviewed by: AL