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STEPHENSON HOUSE, CAMDEN

## Internal Daylight Report

*Overshadowing*

• *Daylight & Sunlight* • *Light Pollution* •

*Solar Glare* • *Daylight Design*

DIRECTOR:	NICK LANE
CLIENT:	LAZARI PROPERTIES 2 LIMITED
DATE:	JULY 2017
VERSION:	001
PROJECT:	P883

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## 1 Summary

- 1.1 This report considers the internal daylight provision within the proposed accommodation of the Marks Barfield Architects proposed development for Stephenson House, in the London Borough of Camden.
- 1.2 The analysis shows that 88% (53 out of 60) rooms meet the relevant suggested ADF thresholds in the BRE guidelines for their designated use. All habitable rooms will also retain in excess of 80% of their area receiving sky view, with most recording in excess of 90%.
- 1.3 Six of the seven affected rooms are living / kitchen / diner (LKD) units in which the galley style kitchen element is designed to be artificially lit and located at the rear of the room, whereas the main living room area is located adjacent to the window. When the daylight is assessed to just the living room areas of these rooms, the ADF levels recorded in all of the living room areas either meet the BRE recommendations or fall within 0.1% of the suggested threshold. This shows that the main habitable areas of the rooms, which have been designed as the primary areas for enjoying daylight will preserve adequate ADF levels for an urban context.
- 1.4 It should also be noted that most of the rooms recording lower levels of ADF are also served by balconies, which provide important private amenity but also in turn restrict the daylight potential to the windows underneath them. Therefore, overall the level of amenity preserved within the habitable rooms is considered to be very good, particularly for a dense urban context such as this where daylight penetration is typically harder to achieve.



## 2 Methodology

- 2.1 The recognised methodology for undertaking daylight assessments is provided by the British Research Establishment – ‘Site planning for daylight and sunlight – a guide to good practice’ (2011); commonly referred to as the “BRE Guideline”.
- 2.2 The BRE recognise the importance for receiving adequate daylight within the proposed residential accommodation. The use of the Average Daylight Factor (ADF) is used to determine the average illuminance on the working plane in a room, divided by the illuminance on an unobstructed surface outdoors.
- 2.3 This daylight assessment method considers the diffuse visible transmittance of the glazing to the room in question, the net glazed area of the window in question, the total area of the room surfaces, and the angle of visible sky reaching the windows in question. It also makes allowance for the average reflectance of the internal surfaces of the room and of external obstruction. The BRE suggests minimum ADF standards for room use for which the following is recommended:
- Kitchens 2.0%
  - Living rooms 1.5%
  - Bedrooms 1.0%
- 2.4 The ADF calculation is designed to quantify the amount of daylight in a room as a whole and does not therefore illustrate the likely levels of daylight in the different areas of a large multi-use room. For example, where the living room is generally situated at the front of the room, followed by the dining area and then the kitchen at the rear (which is the case for many of the rooms within this scheme), the living room area may actually receive good levels of daylight which meet the BRE criteria whilst the kitchen at the rear may not.
- 2.5 The BRE guidelines state that small galley-type kitchens should be linked to well daylit living rooms. Therefore, in order to understand whether the living room areas of multi-use rooms, such as LKDs, will receive adequate daylight, analysis has been undertaken which notionally subdivides the kitchen area from the LKDs.
- 2.6 In performing the ADF assessments the following constants have been applied. Other factors such as the size of the room, angle of visible sky and amount of glazing has been taken from the architect’s drawings:
- Window Transmittance – 0.7
  - Maintenance Factor – 0.92
  - Wall Reflectance – 0.81
  - Ceiling Reflectance – 0.85
  - Floor Reflectance – 0.40



### 3 Internal Daylight Results

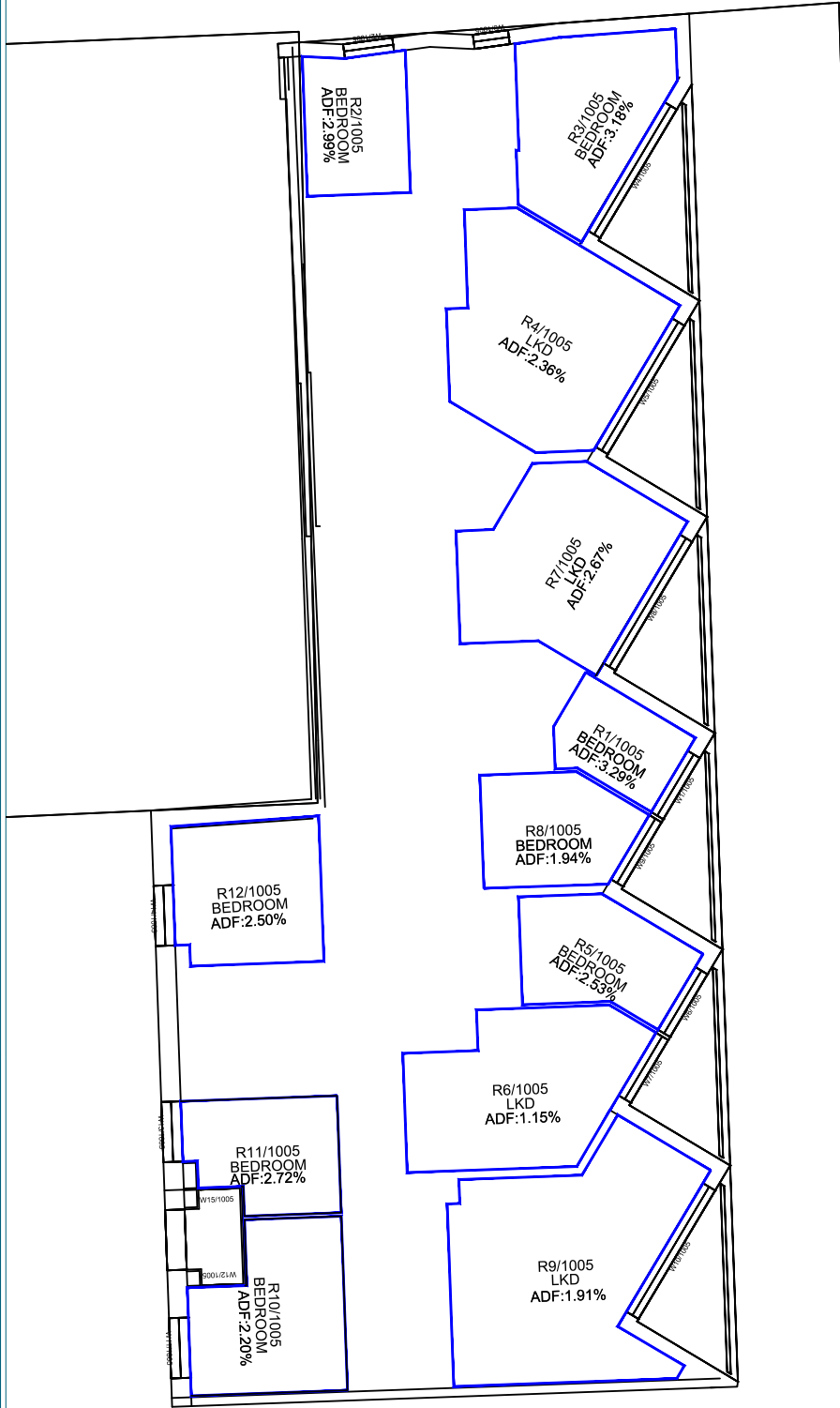
- 3.1 Appended to this report are annotated floorplans showing the proposed habitable room within the development. Within the floorplans are ADF values for each of the assessed rooms and these are presented in drawings number P883/INT/03-04 found in Appendix A. In addition, detailed tables of results are also found in Appendix A which break down the analysis of each room in further detail and also indicate the daylight distribution levels within the rooms assessed. This assessment is referred to as 'Scenario 1'.
- 3.2 The proposed development also contains a number of living-kitchen-diners (LKDs) that have small, galley-style kitchen units located at the rear of the room. The kitchen areas in each of these rooms have been designed to be lit by supplementary electric lighting, whereas the living room areas are located adjacent to the windows and are designed to be the main areas where daylight will be actively enjoyed. The BRE guidelines suggest that small galley-type kitchens of this nature should be linked to well daylight living rooms. Therefore, in order to understand whether the living room areas of the LKDs will receive adequate daylight, additional analysis has been undertaken which notionally subdivides the kitchen area or any circulation space from the LKDs and assesses the ADF levels just in the main living room areas. This is referred to as 'Scenario 2' and is detailed on the drawings and results in Appendix B.
- 3.3 The analysis of Scenario 1 show that 88% (53 out of 60) of the habitable residential rooms within the proposed scheme will meet their relevant ADF standards. All of the habitable rooms in the proposed development will also retain in excess of 80% of their area receiving sky view, which is a very high level for a dense urban context of this type. Of the seven rooms that do not meet the relevant ADF standards, six are LKDs with small galley-style kitchens located at the rear. The remaining room is a living room.
- 3.4 The analysis undertaken in Scenario 2 shows that 95% (57 out of 60) habitable rooms would meet their relevant ADF criteria. The remaining three rooms that do not meet the living room criteria only fall short by a very small margin of less than 0.1% ADF. This shows that the main habitable areas of the rooms, which have been designed as the primary areas for enjoying daylight will preserve in excess of or very close to the recommended ADF levels for a living room. Given that the site is within a dense urban context in Zone 1 of London, these levels are considered to be very reasonable for this context.
- 3.5 Five out of the seven rooms recording lower levels of ADF are also served by deep balconies. Whilst these balconies provide important private amenity to the units, they also in turn restrict the daylight potential to the windows underneath them. Therefore, there is a direct trade off in terms of the benefits the balconies provide in terms of external amenity and the restrictive effect they incur upon the daylight analysis. Although it should be noted that balconies also offer an alternative means of enjoying daylight amenity; and given that the main living rooms accord with or come very close to the suggested ADF thresholds with the balconies in place, it is considered that the daylight amenity preserved in reality will be very reasonable.

## Appendix A – Internal Daylight Analysis Scenario 1

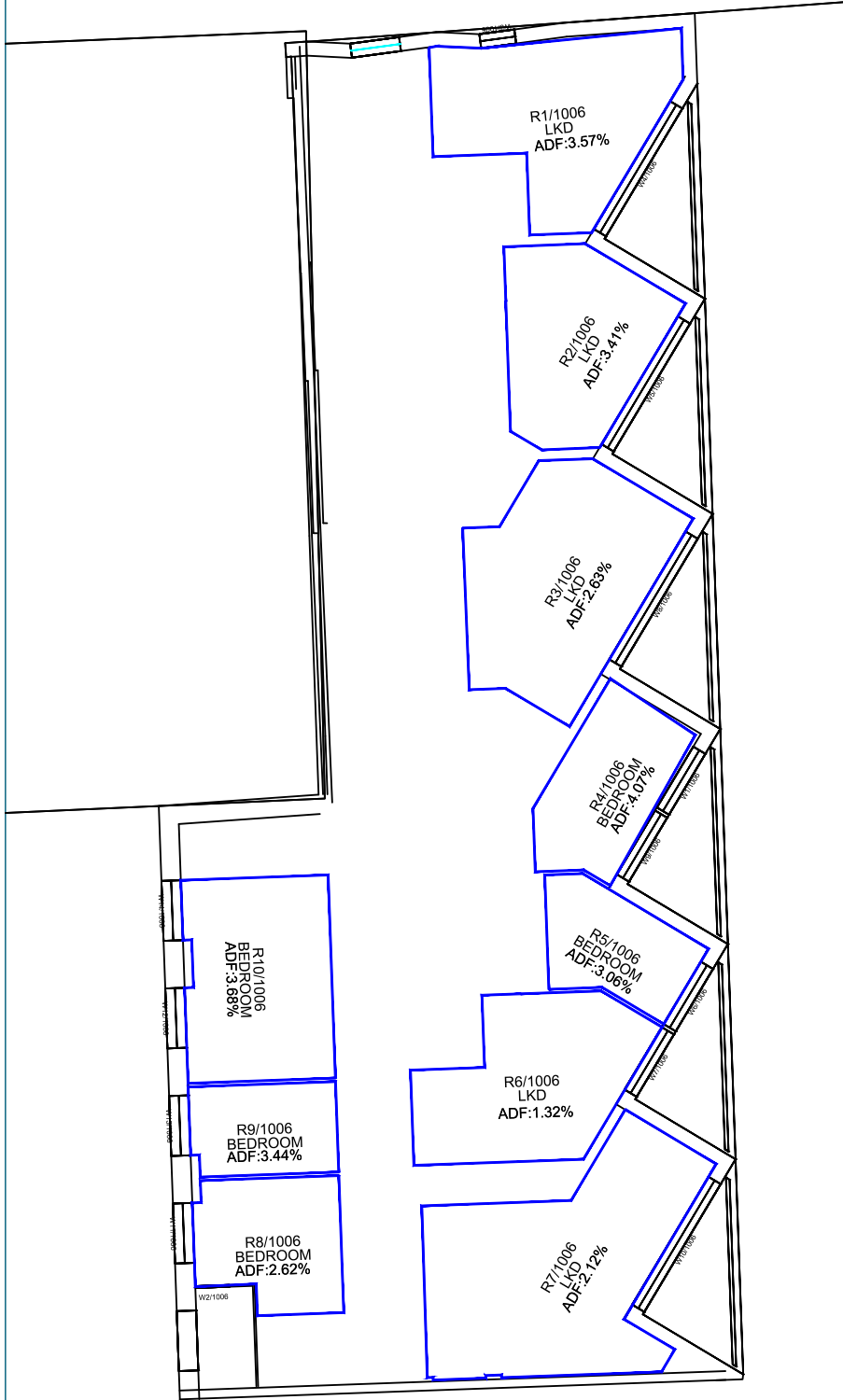




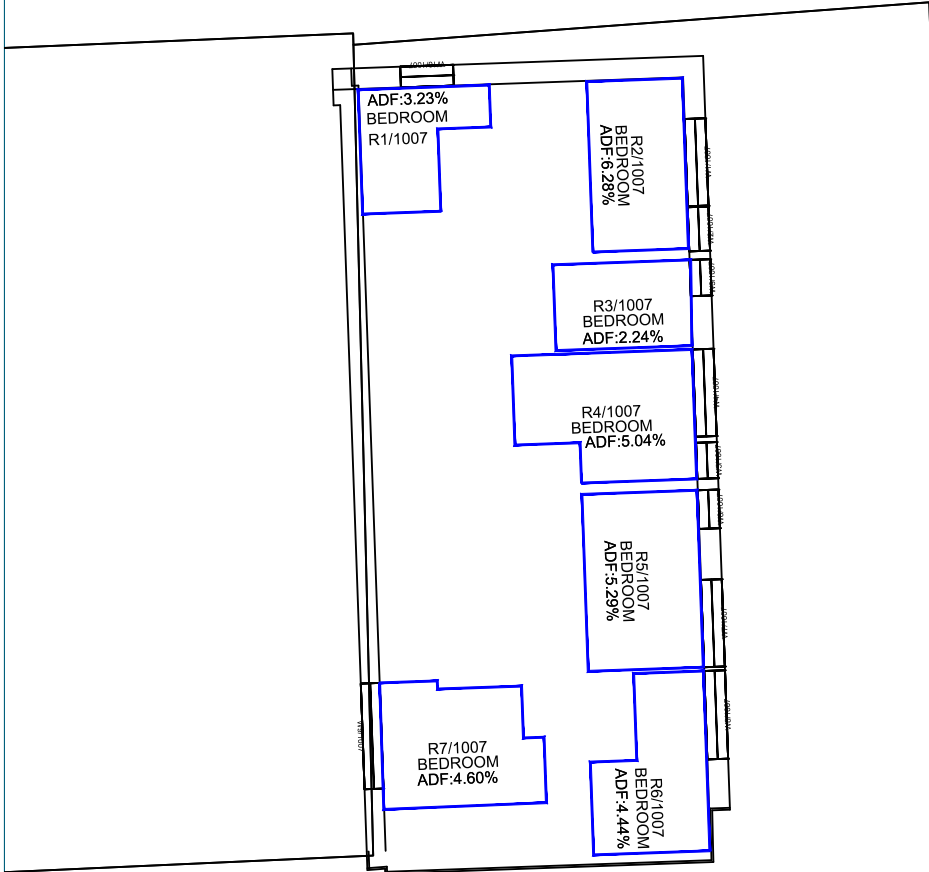
Fifth Floor



Sixth Floor



Seventh Floor



Sources: Point2 Surveyors  
Point Cloud Data  
Site Photos  
ZMapping  
Marks Barfield Architects  
Proposed scheme dated 070317  
601-A-ASM-Massing-170307.dwg

Received 060617  
A-0504-0509-PL - Proposed Residential Second - seventh Floor  
General Arrangement Plan.dwg

Key:

Project: Stephenson House, London		Title: ADF Results Proposed Scheme 06/06/17	
Drawn By: JF/CJ	Scale: 1:200	Date: JUN 17	Dwg No: P883/INT/04

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Room/Floor	Room Use	Room Area sq ft	No-Sky Line sq ft	% Of Room Area
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Stephenson House

R1/1002	LKD	327.8	288.7	88.1
R2/1002	BEDROOM	142.4	136.4	95.8
R3/1002	BEDROOM	126.2	115.7	91.7
R4/1002	BEDROOM	94.0	93.8	99.8
R5/1002	KD	141.4	139.2	98.4
R6/1002	LIVINGROOM	163.6	163.6	100.0
R7/1002	LKD	270.2	269.3	99.7
R8/1002	BEDROOM	146.0	145.1	99.4
R9/1002	BEDROOM	176.4	142.9	81.0
R1/1003	LKD	327.8	297.8	90.8
R2/1003	BEDROOM	142.4	136.7	96.0
R3/1003	BEDROOM	126.2	115.7	91.7
R4/1003	BEDROOM	94.0	93.8	99.8
R5/1003	KD	141.4	139.2	98.4
R6/1003	LIVINGROOM	163.6	163.6	100.0
R7/1003	BEDROOM	138.0	137.1	99.3
R8/1003	BEDROOM	146.0	145.1	99.4
R9/1003	BEDROOM	176.4	142.9	81.0
R10/1003	BEDROOM	91.7	91.5	99.8
R1/1004	BEDROOM	94.4	92.3	97.8
R2/1004	BEDROOM	142.4	136.7	96.0
R3/1004	BEDROOM	126.2	115.7	91.7
R4/1004	BEDROOM	94.0	93.8	99.8
R5/1004	KD	141.4	139.2	98.4
R6/1004	LIVINGROOM	163.6	163.6	100.0
R7/1004	LKD	270.2	269.3	99.7
R8/1004	BEDROOM	136.5	136.5	100.0
R9/1004	LKD	421.2	390.6	92.7
R10/1004	BEDROOM	161.4	161.4	100.0
R11/1004	BEDROOM	134.6	129.5	96.2
R12/1004	BEDROOM	148.2	140.4	94.7
R1/1005	BEDROOM	94.4	92.3	97.8
R2/1005	BEDROOM	122.7	118.7	96.7
R3/1005	BEDROOM	207.2	196.6	94.9
R4/1005	LKD	326.8	324.5	99.3
R5/1005	BEDROOM	144.5	143.5	99.3
R6/1005	LKD	268.9	261.4	97.2
R7/1005	LKD	270.2	269.3	99.7
R8/1005	BEDROOM	136.5	136.5	100.0
R9/1005	LKD	406.2	375.6	92.5
R10/1005	BEDROOM	199.6	173.1	86.7
R11/1005	BEDROOM	138.2	132.8	96.1
R12/1005	BEDROOM	178.5	169.5	95.0
R1/1006	LKD	294.4	283.7	96.4
R2/1006	LKD	232.2	231.3	99.6
R3/1006	LKD	333.4	329.7	98.9
R4/1006	BEDROOM	162.2	161.8	99.8
R5/1006	BEDROOM	128.0	125.8	98.3
R6/1006	LKD	263.8	256.7	97.3
R7/1006	LKD	419.8	390.8	93.1

Room/Floor	Room Use	Room Area sq ft	No-Sky Line sq ft	% Of Room Area
R8/1006	BEDROOM	156.4	150.0	95.9
R9/1006	BEDROOM	113.7	112.6	99.0
R10/1006	BEDROOM	255.4	251.1	98.3
R1/1007	BEDROOM	90.0	84.1	93.4
R2/1007	BEDROOM	122.8	121.2	98.7
R3/1007	BEDROOM	88.5	83.3	94.1
R4/1007	BEDROOM	156.2	156.2	100.0
R5/1007	BEDROOM	153.6	152.5	99.3
R6/1007	BEDROOM	127.1	120.1	94.5
R7/1007	BEDROOM	139.9	139.5	99.7



Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
<b>Stephenson House</b>					
<b>R1/1002</b>	LKD	W1/1002	19.51	1.07	1.07
<b>R2/1002</b>	BEDROOM	W2/1002	29.11	2.11	2.11
<b>R3/1002</b>	BEDROOM	W4/1002	21.10	2.46	2.46
<b>R4/1002</b>	BEDROOM	W5/1002	9.47	1.91	1.91
<b>R5/1002</b>	KD	W6/1002	21.18	2.22	2.22
<b>R6/1002</b>	LIVINGROOM	W7/1002	9.51	1.36	1.36
<b>R7/1002</b>	LKD	W8/1002	14.52	2.27	2.27
<b>R8/1002</b>	BEDROOM	W9/1002	21.05	2.05	2.05
<b>R9/1002</b>	BEDROOM	W10/1002	9.48	1.21	1.21
<b>R1/1003</b>	LKD	W1/1003	23.36	1.19	1.19
<b>R2/1003</b>	BEDROOM	W2/1003	34.04	2.41	2.41
<b>R3/1003</b>	BEDROOM	W4/1003	23.62	2.67	2.67
<b>R4/1003</b>	BEDROOM	W5/1003	11.71	2.21	2.21
<b>R5/1003</b>	KD	W6/1003	23.69	2.41	2.41
<b>R6/1003</b>	LIVINGROOM	W7/1003	11.74	1.58	1.58
<b>R7/1003</b>	BEDROOM	W8/1003	23.55	2.49	2.49
<b>R8/1003</b>	BEDROOM	W9/1003	23.50	2.21	2.21
<b>R9/1003</b>	BEDROOM	W10/1003	11.64	1.39	1.39
<b>R10/1003</b>	BEDROOM	W11/1003	11.67	2.24	2.24
<b>R1/1004</b>	BEDROOM	W1/1004	25.23	3.28	3.28
<b>R2/1004</b>	BEDROOM	W2/1004	38.04	2.65	2.65
<b>R3/1004</b>	BEDROOM	W4/1004	25.18	2.78	2.78

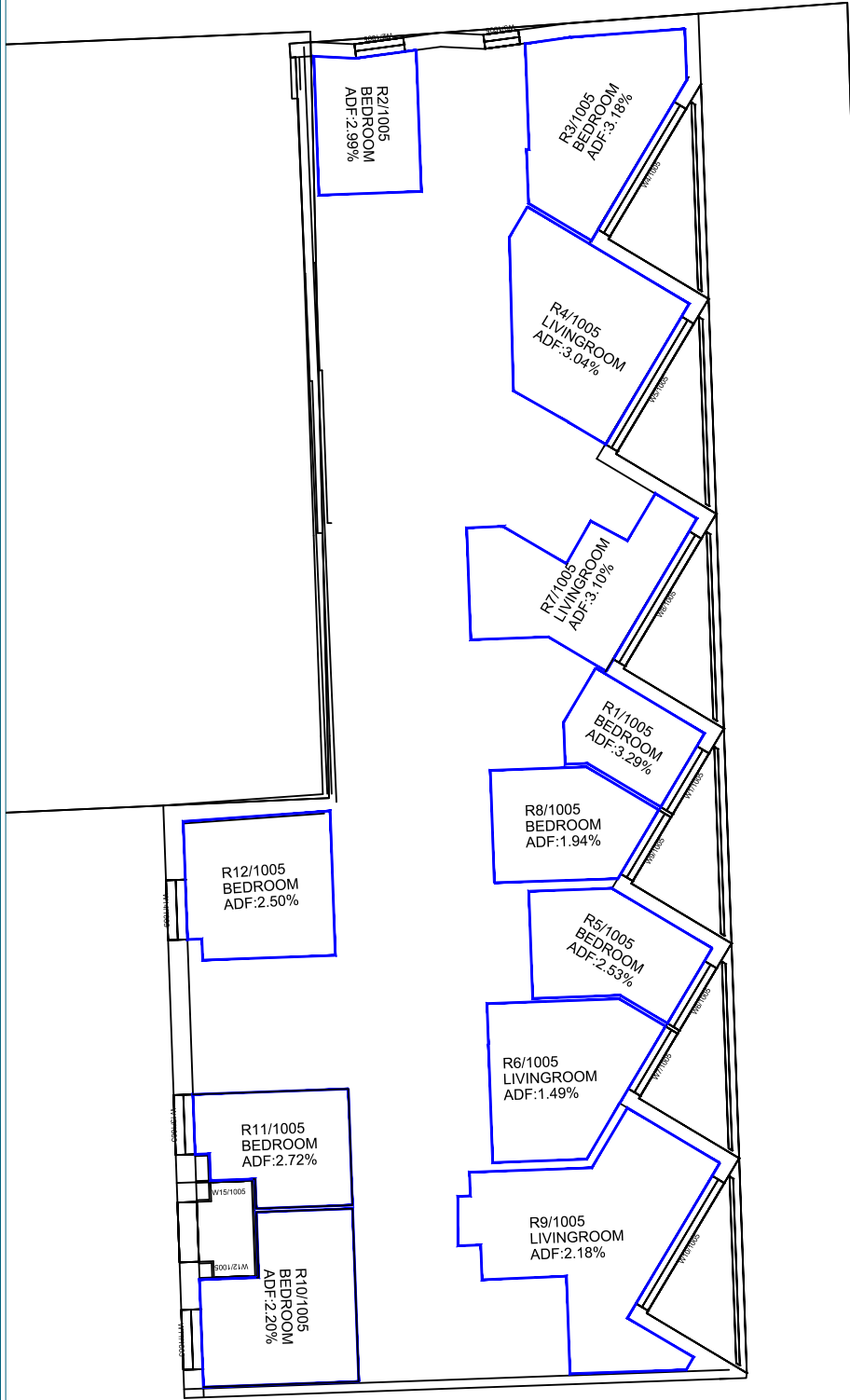
Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
R4/1004	BEDROOM	W5/1004	13.09	2.35	2.35
R5/1004	KD	W6/1004	25.26	2.51	2.51
R6/1004	LIVINGROOM	W7/1004	13.13	1.68	1.68
R7/1004	LKD	W8/1004	18.40	2.66	2.66
R8/1004	BEDROOM	W9/1004	13.09	1.94	1.94
R9/1004	LKD	W10/1004	18.24	1.88	1.88
R10/1004	BEDROOM	W11/1004	6.01	1.42	1.42
R11/1004	BEDROOM	W12/1004	31.90	2.82	2.82
R12/1004	BEDROOM	W13/1004	30.11	2.61	2.61
R1/1005	BEDROOM	W1/1005	25.47	3.29	3.29
R2/1005	BEDROOM	W2/1005	39.21	2.99	2.99
R3/1005	BEDROOM	W4/1005	18.63	3.18	3.18
R4/1005	LKD	W5/1005	18.61	2.36	2.36
R5/1005	BEDROOM	W6/1005	25.27	2.53	2.53
R6/1005	LKD	W7/1005	13.17	1.15	1.15
R7/1005	LKD	W8/1005	18.57	2.67	2.67
R8/1005	BEDROOM	W9/1005	13.24	1.94	1.94
R9/1005	LKD	W10/1005	18.47	1.91	1.91
R10/1005	BEDROOM	W11/1005	33.64	2.10	
R10/1005	BEDROOM	W12/1005	2.65	0.10	2.20
R11/1005	BEDROOM	W13/1005	34.38	2.72	
R11/1005	BEDROOM	W15/1005	1.33	0.00	2.72
R12/1005	BEDROOM	W14/1005	34.71	2.50	2.50

Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
R1/1006	LKD	W3/1006	39.43	0.89	
R1/1006	LKD	W4/1006	21.30	2.68	3.57
R2/1006	LKD	W5/1006	21.31	3.41	3.41
R3/1006	LKD	W8/1006	21.31	2.63	2.63
R4/1006	BEDROOM	W1/1006	27.74	2.31	
R4/1006	BEDROOM	W9/1006	15.65	1.75	4.07
R5/1006	BEDROOM	W6/1006	27.62	3.06	3.06
R6/1006	LKD	W7/1006	15.59	1.32	1.32
R7/1006	LKD	W10/1006	21.32	2.12	2.12
R8/1006	BEDROOM	W2/1006	1.75	0.02	
R8/1006	BEDROOM	W11/1006	35.60	2.61	2.62
R9/1006	BEDROOM	W13/1006	35.79	3.44	3.44
R10/1006	BEDROOM	W12/1006	36.09	1.84	
R10/1006	BEDROOM	W14/1006	36.34	1.84	3.68
R1/1007	BEDROOM	W10/1007	39.56	3.23	3.23
R2/1007	BEDROOM	W1/1007	39.54	4.35	
R2/1007	BEDROOM	W2/1007	39.54	1.94	6.28
R3/1007	BEDROOM	W3/1007	39.53	2.24	2.24
R4/1007	BEDROOM	W4/1007	39.53	3.75	
R4/1007	BEDROOM	W5/1007	39.52	1.29	5.04
R5/1007	BEDROOM	W6/1007	39.51	1.44	
R5/1007	BEDROOM	W7/1007	39.47	3.85	5.29
R6/1007	BEDROOM	W8/1007	39.32	4.44	4.44
R7/1007	BEDROOM	W9/1007	34.12	4.60	4.60

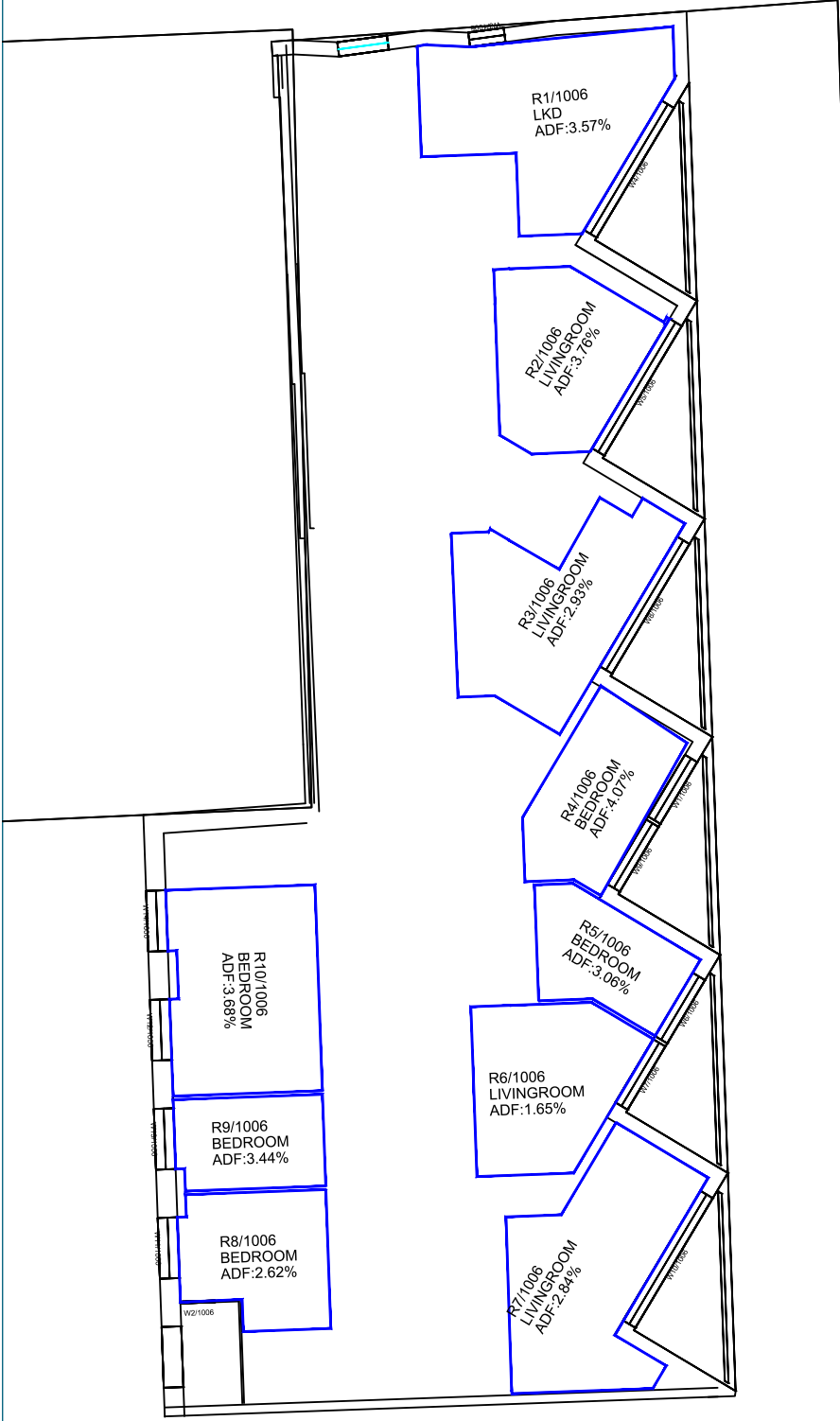
## Appendix B - Internal Daylight Analysis Scenario 2



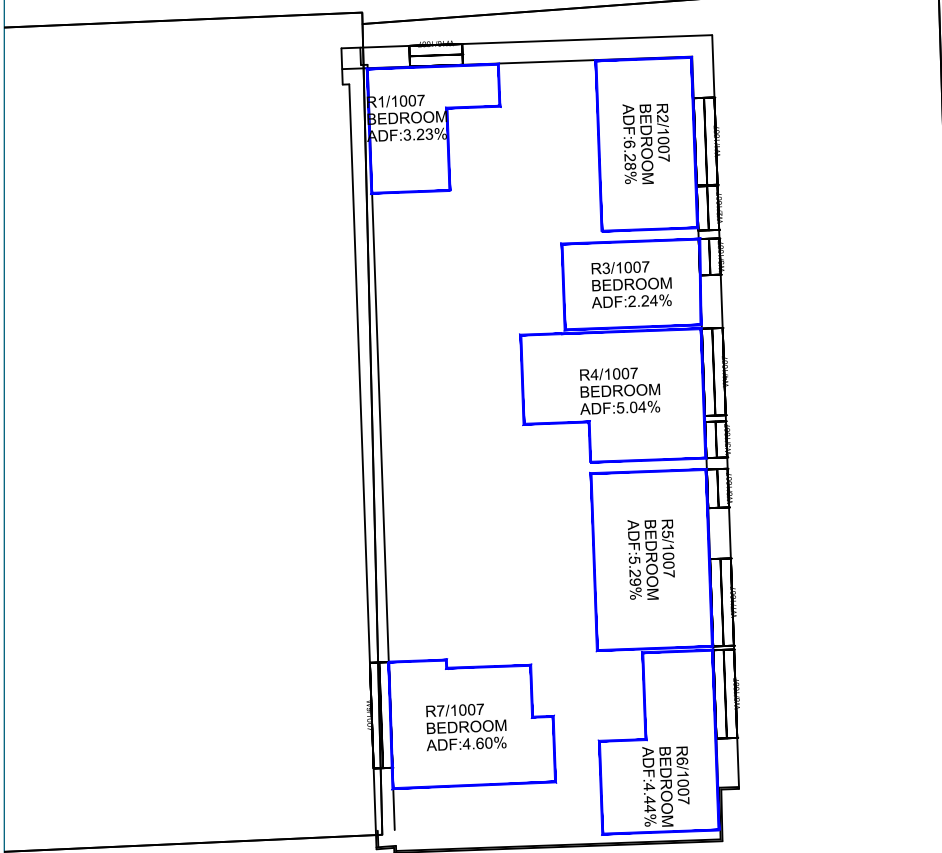
Fifth Floor



Sixth Floor



Seventh Floor



Sources: Point2 Surveyors  
Point Cloud Data  
Site Photos  
ZMapping  
Marks Barfield Architects  
Proposed scheme dated 070317  
601-A-ASM-Massing-170307.dwg

Received 060617  
A-0504-0509-PL - Proposed Residential Second - seventh Floor  
General Arrangement Plan.dwg

Key:

Project: Stephenson House, London			Title: ADF Results Proposed Scheme 06/06/17 Kitchens Removed	
Drawn By: JF/CJ	Scale: 1:200	Date: JUN 17	Dwg No:	P883/INT/06

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Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
<b>Stephenson House</b>					
<b>R1/1002</b>	LIVINGROOM	W1/1002	19.51	1.40	1.40
<b>R2/1002</b>	BEDROOM	W2/1002	29.11	2.11	2.11
<b>R3/1002</b>	BEDROOM	W4/1002	21.10	2.46	2.46
<b>R4/1002</b>	BEDROOM	W5/1002	9.47	1.91	1.91
<b>R5/1002</b>	KD	W6/1002	21.18	2.22	2.22
<b>R6/1002</b>	LIVINGROOM	W7/1002	9.51	1.43	1.43
<b>R7/1002</b>	LIVINGROOM	W8/1002	14.52	2.64	2.64
<b>R8/1002</b>	BEDROOM	W9/1002	21.05	2.05	2.05
<b>R9/1002</b>	BEDROOM	W10/1002	9.48	1.21	1.21
<b>R1/1003</b>	LIVINGROOM	W1/1003	23.36	1.56	1.56
<b>R2/1003</b>	BEDROOM	W2/1003	34.04	2.41	2.41
<b>R3/1003</b>	BEDROOM	W4/1003	23.62	2.67	2.67
<b>R4/1003</b>	BEDROOM	W5/1003	11.71	2.21	2.21
<b>R5/1003</b>	KD	W6/1003	23.69	2.41	2.41
<b>R6/1003</b>	LIVINGROOM	W7/1003	11.74	1.66	1.66
<b>R7/1003</b>	BEDROOM	W8/1003	23.55	2.49	2.49
<b>R8/1003</b>	BEDROOM	W9/1003	23.50	2.21	2.21
<b>R9/1003</b>	BEDROOM	W10/1003	11.64	1.39	1.39
<b>R10/1003</b>	BEDROOM	W11/1003	11.67	2.24	2.24
<b>R1/1004</b>	BEDROOM	W1/1004	25.23	3.28	3.28
<b>R2/1004</b>	BEDROOM	W2/1004	38.04	2.65	2.65
<b>R3/1004</b>	BEDROOM	W4/1004	25.18	2.78	2.78
<b>R4/1004</b>	BEDROOM	W5/1004	13.09	2.35	2.35
<b>R5/1004</b>	KD	W6/1004	25.26	2.51	2.51
<b>R6/1004</b>	LIVINGROOM	W7/1004	13.13	1.77	1.77
<b>R7/1004</b>	LIVINGROOM	W8/1004	18.40	3.09	3.09

Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
R8/1004	BEDROOM	W9/1004	13.09	1.94	1.94
R9/1004	LIVINGROOM	W10/1004	18.24	2.23	2.23
R10/1004	BEDROOM	W11/1004	6.01	1.42	1.42
R11/1004	BEDROOM	W12/1004	31.90	2.82	2.82
R12/1004	BEDROOM	W13/1004	30.11	2.61	2.61
R1/1005	BEDROOM	W1/1005	25.47	3.29	3.29
R2/1005	BEDROOM	W2/1005	39.21	2.99	2.99
R3/1005	BEDROOM	W4/1005	18.63	3.18	3.18
R4/1005	LIVINGROOM	W5/1005	18.61	3.04	3.04
R5/1005	BEDROOM	W6/1005	25.27	2.53	2.53
R6/1005	LIVINGROOM	W7/1005	13.17	1.49	1.49
R7/1005	LIVINGROOM	W8/1005	18.57	3.10	3.10
R8/1005	BEDROOM	W9/1005	13.24	1.94	1.94
R9/1005	LIVINGROOM	W10/1005	18.47	2.18	2.18
R10/1005	BEDROOM	W11/1005	33.64	2.10	
R10/1005	BEDROOM	W12/1005	2.65	0.10	2.20
R11/1005	BEDROOM	W13/1005	34.38	2.72	
R11/1005	BEDROOM	W15/1005	1.33	0.00	2.72
R12/1005	BEDROOM	W14/1005	34.71	2.50	2.50
R1/1006	LKD	W3/1006	39.43	0.89	
R1/1006	LKD	W4/1006	21.30	2.68	3.57
R2/1006	LIVINGROOM	W5/1006	21.31	3.76	3.76
R3/1006	LIVINGROOM	W8/1006	21.31	2.93	2.93
R4/1006	BEDROOM	W1/1006	27.74	2.31	
R4/1006	BEDROOM	W9/1006	15.65	1.75	4.07
R5/1006	BEDROOM	W6/1006	27.62	3.06	3.06
R6/1006	LIVINGROOM	W7/1006	15.59	1.65	1.65
R7/1006	LIVINGROOM	W10/1006	21.32	2.84	2.84

Room	Roomuse	Window	VSC(%)	ADF(%)	TOTAL ADF(%)
R8/1006	BEDROOM	W2/1006	1.75	0.02	
R8/1006	BEDROOM	W11/1006	35.60	2.61	2.62
R9/1006	BEDROOM	W13/1006	35.79	3.44	3.44
R10/1006	BEDROOM	W12/1006	36.09	1.84	
R10/1006	BEDROOM	W14/1006	36.34	1.84	3.68
R1/1007	BEDROOM	W10/1007	39.56	3.23	3.23
R2/1007	BEDROOM	W1/1007	39.54	4.35	
R2/1007	BEDROOM	W2/1007	39.54	1.94	6.28
R3/1007	BEDROOM	W3/1007	39.53	2.24	2.24
R4/1007	BEDROOM	W4/1007	39.53	3.75	
R4/1007	BEDROOM	W5/1007	39.52	1.29	5.04
R5/1007	BEDROOM	W6/1007	39.51	1.44	
R5/1007	BEDROOM	W7/1007	39.47	3.85	5.29
R6/1007	BEDROOM	W8/1007	39.32	4.44	4.44
R7/1007	BEDROOM	W9/1007	34.12	4.60	4.60