

PROPOSED DEVELOPMENT INTERNAL DAYLIGHT & SUNLIGHT STUDY

relating to the

PROPOSED DEVELOPMENT

of

197 KENTISH TOWN ROAD, LONDON, NW5

on behalf of

ARIAN DEVELOPMENTS LIMITED

Project Ref: 197 KR (Rev 1)

Date: Nov 2019



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About CPMC Ltd

CPMC Chartered Surveying Ltd is a multi-disciplinary surveying practice, specialising in rights of light and BRE daylight and sunlight analysis for the planning process, the Party Wall etc Act 1996, access agreements, condition scheduling and crane oversail licences.

We are an industry leading Chartered Surveying practice with considerable experience in relation to resolving 'neighbourly matters' issues and related disputes in all parts of the UK. We have significant experience with regard to the provision of daylight and sunlight assessment criteria and regularly produce comprehensive assessments to aid planning authorities understand the impact of an applicant's site on its neighbours. We are also regularly asked to assess the likely light levels within a proposed developments, so that the likely light levels for future occupants can be better understood.

Our client base is broad and we work with developers, authorities and private individuals in order to effectively manage their neighbourly matters concerns. We are consistently rated 'excellent' by our clients and offer clear and concise advice in relation to this complicated area of surveying practice.

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Section 1: Executive Summary

The purpose of this report is to analyse the predicted natural daylight and sunlight levels within the proposed residential accommodation at 197 Kentish Town Road. The proposed development has been reviewed against the recommended criteria in the BRE 209 Site Layout Planning for Daylight and Sunlight guide.

The importance of applying daylight and sunlight advice flexibly is increasingly recognised and was stated in the recent National Planning Policy Framework (NPPF) draft revisions, and the NPPG 'Effective Use of Land' guidance (July 2019).

In this case the results for both daylight and sunlight are positive, and the development demonstrates a high level of compliance with the BRE Guide, particularly for a scheme found in in a dense urban environment such as Kentish Town.

Section 2: Introduction

The purpose of this report is to assess the natural daylight levels in the proposed habitable rooms within 197 Kentish Town Road, London, NW5.

This report considers the daylight issues against the criteria set out for national guidance in the following publications:

- Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 published by the BRE (Building Research Establishment).

The SLPDS is the culmination of research undertaken by the BRE to determine whether or not a new development will achieve acceptable levels of internal daylight. The BRE tests are approved by the Department of the Environment and are widely used by local authorities when deciding on development applications.

- BS 8206-2- Code of practice for skylighting.

There are no minimum mandatory requirements for daylighting in Building Regulations for England & Wales but the guidance set out in the BRE SLPDS (2011) is widely accepted as the approved methodology when calculating light levels in habitable rooms.

Section 3: Description of the Development

The scheme comprises of the extension, remodelling and conversion of the existing premises to form commercial space and residential accommodation.

The property is located on the west side of Kentish Town Road and is situated amongst a number of other similarly sized houses adjoining the road.

The assessment is based on the following drawings, provided by GBS Architectural:

- 2018-026 3D Rev N

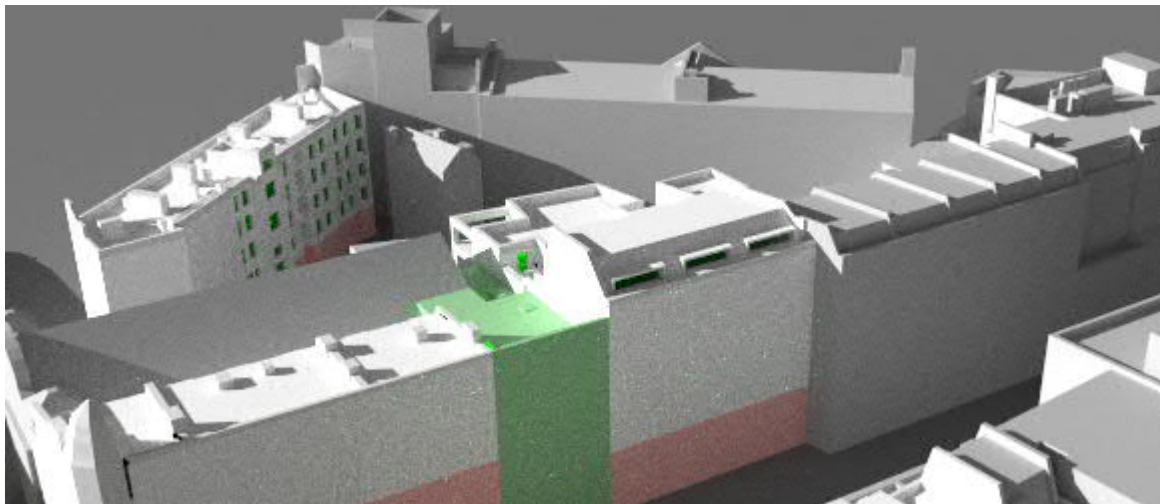


Fig. 1 – Image of the existing (green) site model (terrain not shown)

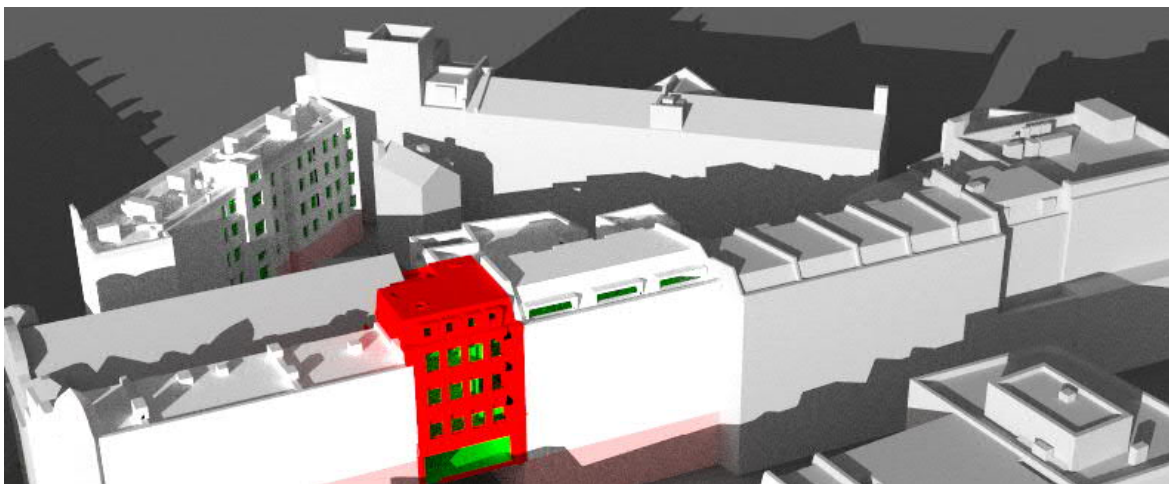


Fig. 2 – Image of the proposed (red) site model (terrain not shown)

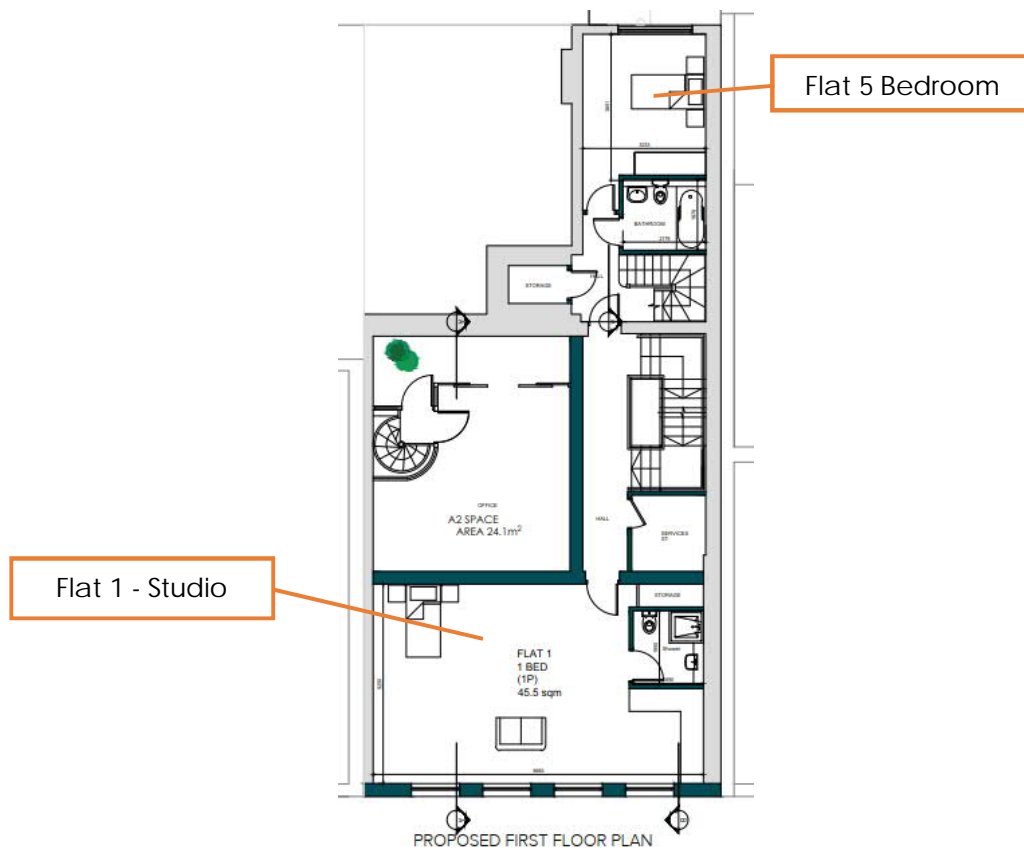
Section 4: Assessment Process

The guidance states that rooms to be assessed should be living rooms, kitchens and bedrooms in residential properties. In non-domestic buildings rooms where occupants 'have a reasonable expectation of daylight' should be assessed. Although these spaces are not defined, examples are given of the type of non-domestic buildings that would normally fall into this category. These include schools, hospitals, hotels and hostels, small workshops and some offices.

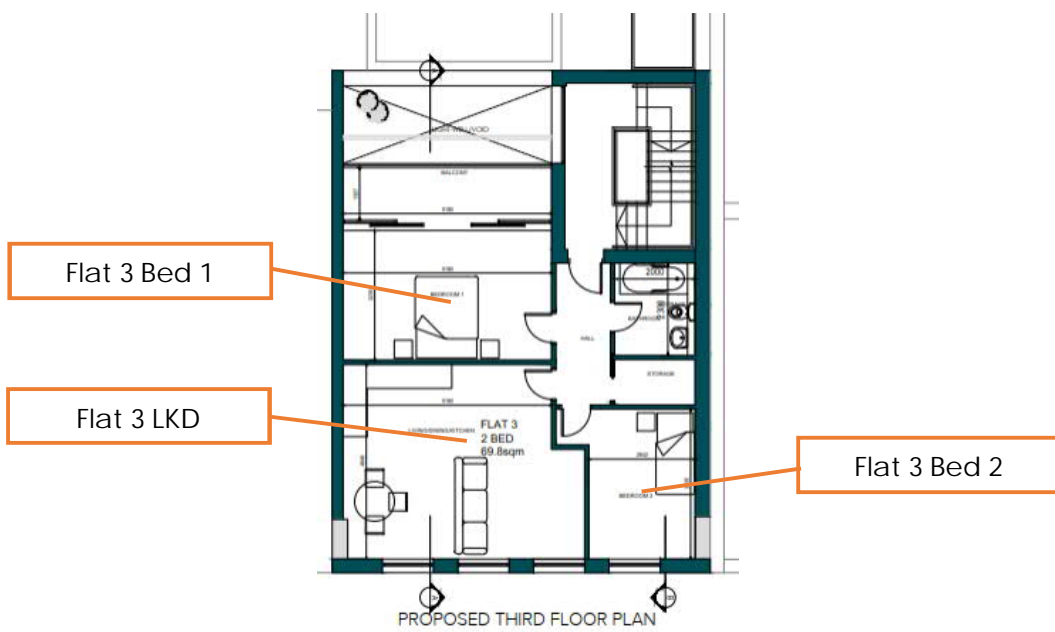
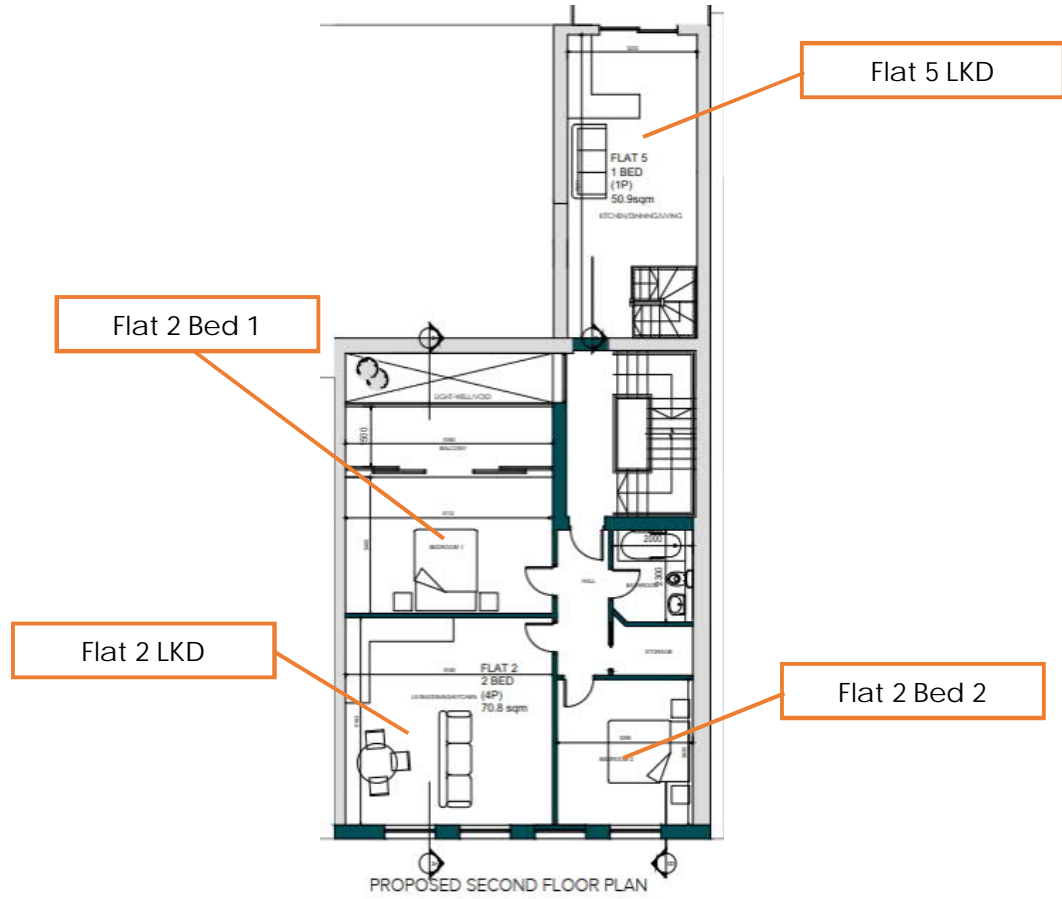
It is important to note that the numerical values in the guidance are purely advisory and different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

The two parameters we have assessed are:

- Average Daylight Factor (ADF)
- Room Depth Criteria (RDC)
- Daylight Distribution (DD)¹
- Average Probable Sunlight Hours (APSH)



¹ Also known as the 'No-Sky Line'



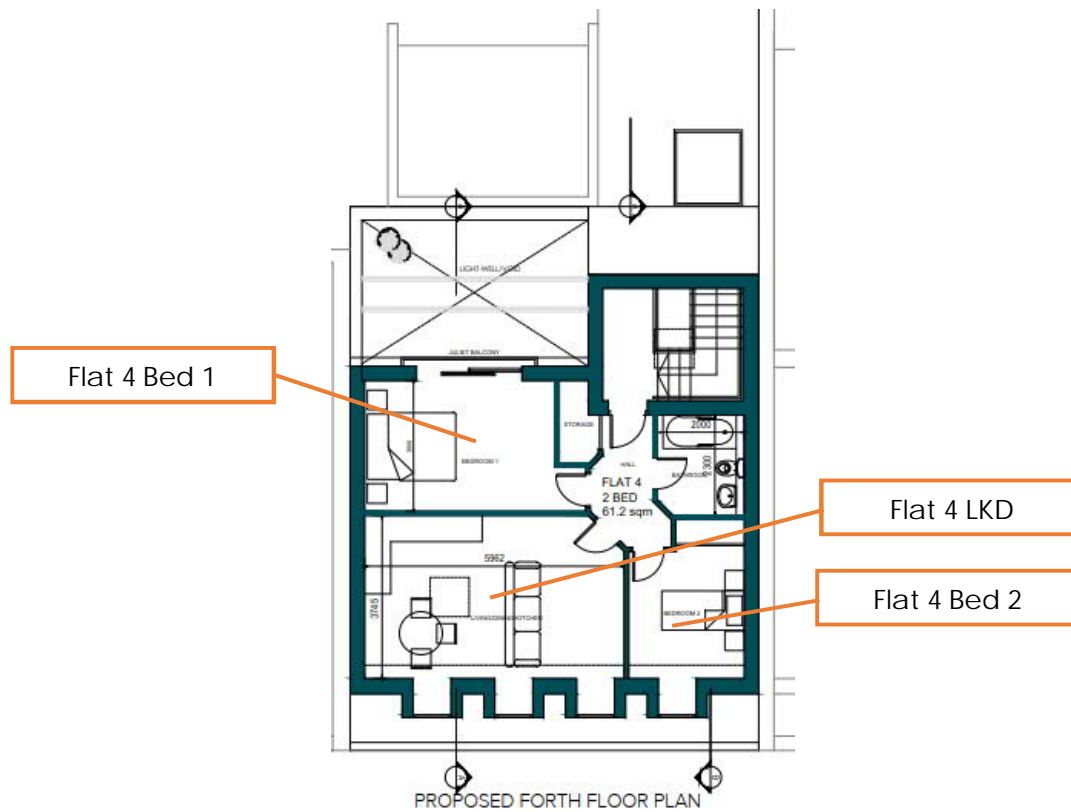


Fig. 3 – Floor plans and flat / room references

Section 5: The Amount of Daylight in the Proposed Development:

Average Daylight Factors (ADF)

The BRE guidance states daylight provision may be checked by using the Average Daylight Factor. The ADF is a measure of the overall amount of daylight in a space.

BS 8206-2 Code of Practice for Daylighting recommends the following values for residential buildings:

Kitchens	2%
Living Rooms	1.5%
Bedrooms	1%

Other non-habitable rooms need not be assessed.

The calculation of the Average Daylight Factor takes into account the following variables:

- The diffuse visible transmittance of the glazing (we have assumed a figure of 0.68 for standard clear double glazing)
- A maintenance factor, allowing for the effects of dirt
- The net glazed area of the window
- The total area of the room surfaces
- The average reflectance of the rooms (we have assumed a light-coloured room with a value of 0.5)

Results

Our results show that all rooms assessed achieve ADF values above the BRE guidelines. We have reduced the test area for the Living, kitchen, dining space (LKD) within flat 5, but we have ensured that the entire seating and kitchen areas have been tested (Fig. 4). This approach has been deemed to be acceptable by The Planning Inspectorate (APP/G5180/W/17/3178436) and the area outside this is circulation space.

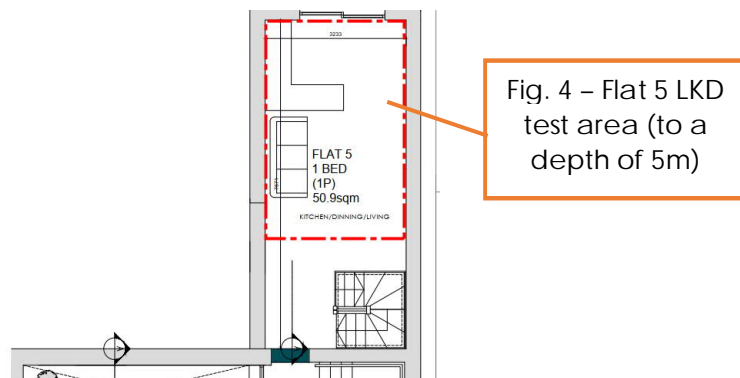


Fig. 4 - Flat 5 Living / Dining / Kitchen test area (kitchen and seating area)

Room Depth Criteria

The BRE guidance states that if a daylight room is lit by windows in one wall only, the depth of the room should not exceed the limiting value given by:

$$\frac{L}{W} + \frac{L}{H} < \frac{2}{1 - R_b}$$

Where:

L is the room length

W is the room width

H is the window head height above floor level

R_b is the average reflectance of surfaces in the rear half of the room (away from the window)

Results

Calculations were undertaken in accordance with the procedures shown in SLPDS. Our results show that all rooms assessed achieve Room Depth Criteria values better than the BRE target threshold.

Daylight Distribution (also known as the 'no sky line')

The no sky line effectively divides the points on the working plane (0.85m high for residential properties and 0.7m high for relevant other buildings) that cannot see the sky. Therefore areas beyond the no sky line will receive no direct daylight but will instead be lit from reflected light.

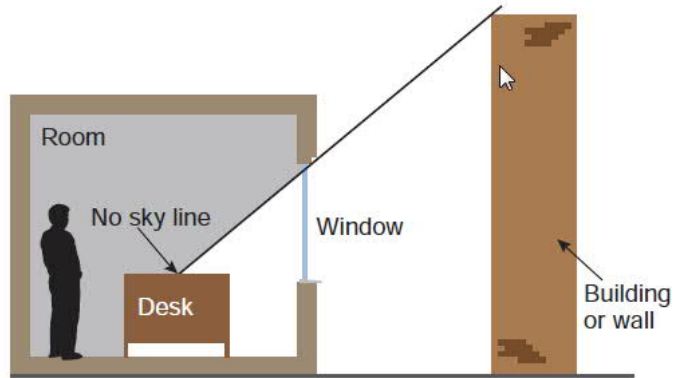


Fig. 5 – Excerpt taken from the BRE 209 Guide

In the case of new accommodation, it is recommended (paragraph C16 of the BRE Guide) that no more than 20 percent of the working plane lies beyond the no sky line or the daylight distribution will look poor and supplementary electric lighting will be required.

Results

Calculations were undertaken in accordance with the procedures shown in SLPDS. All proposed rooms pass this test.

Section 6: Sunlight

For new accommodation the BRE recommend 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 percent of annual probable sunlight, including 5 percent of annual probable sunlight hours in the winter months (21st September to 21st March).

In this case, we have assessed the LKD rooms for the new residential accommodation.

Results

Calculations were undertaken in accordance with the procedures shown in SLPDS. All rooms have windows that receive sufficient annual and winter sunlight hours, with the exception of Flat 5. However, it is recognised by the BRE Guide and Housing Supplementary Planning Guidance that it is unlikely that all units are likely to pass in a dense urban environment. We believe that the results are not only acceptable, but also demonstrate a high level of compliance for a central London scheme.

197 Kentish Town Road, London, NW5

Appendix 1

Results

Average Daylight Factor (ADF)

197 Kentish Town Road - Average Daylight Factor (ADF) Results																
Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use	Window Ref.	Glass Transmittance	Maintenance Factor	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value	Pr/Ex	Meets BRE Criteria
197 Kentish Town Road																
First	R1	Flat1	Residential	LKD	W1	0.68	0.92	1.24	77.55	77.55	0.58	1.00	0.61	2.00	1.00	YES
					W2	0.68	0.92	1.24	77.40	77.40	0.58	1.00	0.61			
					W3	0.68	0.92	1.24	77.23	77.23	0.58	1.00	0.61			
					W4	0.68	0.92	1.24	77.02	77.02	0.58	1.00	2.44			
First	R2	Flat5	Residential	Bedroom	W5-L	0.68	0.92	1.33	33.04	33.04	0.58	0.15	0.10	2.00	1.00	YES
					W5-U	0.68	0.92	2.34	28.37	28.37	0.58	1.00	1.04			
Second	R1	Flat2	Residential	LKD	W1	0.68	0.92	1.46	83.10	83.10	0.58	1.00	1.04	2.00	1.00	YES
					W2	0.68	0.92	1.46	82.99	82.99	0.58	1.00	1.04			
Second	R2	Flat2	Residential	Bedroom	W5-L	0.68	0.92	3.53	33.50	33.50	0.58	0.15	0.18	2.00	1.00	YES
					W5-U	0.68	0.92	8.06	55.39	55.39	0.58	1.00	4.62			
Second	R3	Flat2	Residential	Bedroom	W3	0.68	0.92	1.46	82.69	82.69	0.58	1.00	1.93	2.00	1.00	YES
													1.93			
Second	R4	Flat5	Residential	LKD	W4-L	0.68	0.92	1.43	48.41	48.41	0.58	0.15	0.13	2.00	1.00	YES
					W4-U	0.68	0.92	2.69	53.98	53.98	0.58	1.00	1.87			
Third	R1	Flat3	Residential	LKD	W1	0.68	0.92	1.31	83.75	83.75	0.58	1.00	0.98	2.00	1.00	YES
					W2	0.68	0.92	1.31	83.75	83.75	0.58	1.00	0.98			
					W3	0.68	0.92	1.31	83.73	83.73	0.58	1.00	0.98			
					W6	0.68	0.92	0.74	81.48	81.48	0.58	1.00	0.53			
					W7	0.68	0.92	0.74	81.48	81.48	0.58	1.00	0.53			
					W8	0.68	0.92	0.74	81.48	81.48	0.58	1.00	0.53			
					W10	0.68	0.84	0.65	N/A	N/A	0.61	1.00	0.77			
													5.30			
Third	R2	Flat3	Residential	Bedroom	W5-L	0.68	0.92	3.52	55.84	55.84	0.58	0.15	0.37	2.00	1.00	YES
					W5-U	0.68	0.92	6.22	59.71	59.71	0.58	1.00	4.61			
					W11	0.68	0.92	4.56	83.46	83.46	0.58	1.00	4.73			
Third	R3	Flat3	Residential	Bedroom	W4	0.68	0.92	1.27	83.76	83.76	0.58	1.00	1.83	2.00	1.00	YES
					W9	0.68	0.92	0.74	81.48	81.48	0.58	1.00	1.03			
Fourth	R1	Flat4	Residential	LKD	W6	0.68	0.92	0.74	81.48	81.48	0.58	1.00	0.53	2.00	1.00	YES
					W7	0.68	0.92	0.74	81.48	81.48	0.58	1.00	0.53			
					W8	0.68	0.92	0.74	81.48	81.48	0.58	1.00	0.53			
					W10	0.68	0.84	0.65	N/A	N/A	0.62	1.00	0.91			
																2.50

197 Kentish Town Road - Average Daylight Factor (ADF) Results																
Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use.	Window Ref.	Glass Transmittance	Maintenance Factor	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value	Pr/Ex	Meets BRE Criteria
Fourth	R2	Flat4	Residential	Bedroom	W11-L W11-U	0.68 0.68	0.92 0.92	1.65 2.91	31.18 83.46	31.18 83.46	0.58 0.58	0.15 1.00	0.12 3.78	1.00	1.00	YES
	R3	Flat4	Residential	Bedroom	W9	0.68	0.92	0.74	81.48	81.48	0.58	1.00	1.17	1.00	1.00	YES

197 Kentish Town Road, London, NW5

Room depth Criteria (RDC)

Room Depth Analysis for Daylighting



Site:	197 Kentish Town Road
Date:	Nov-19

Room	Depth of Room (m) [L]	Width of Room (m) [W]	Window Head Height Above Floor Level (m) [H]	Average Reflectance of Surfaces at Rear of Room (R _b)	$[(L/W)+(L/H)]$	Limiting Value $[2/(1-R_b)]$	Pass or Fail?
Flat 1 - Studio	5.25	8.68	2.50	0.58	2.70	4.76	PASS
Flat 2 - LKD	5.18	5.18	2.80	0.58	2.85	4.76	PASS
Flat 2 - Bed 1	3.4	5.11	2.40	0.58	2.08	4.76	PASS
Flat 2 - Bed 2	3.63	3.39	2.80	0.58	2.37	4.76	PASS
Flat 3 - LKD	4.84	5.18	2.50	0.58	2.87	4.76	PASS
Flat 3 - Bed 1	3.23	5.18	2.40	0.58	1.97	4.76	PASS
Flat 3 - Bed 2	3.73	2.64	2.50	0.58	2.90	4.76	PASS
Flat 4 - LKD	3.74	5.96	2.20	0.58	2.33	4.76	PASS
Flat 4 - Bed 1	3	4.35	2.20	0.58	2.05	4.76	PASS
Flat 4 - Bed 2	3	2.6	2.20	0.58	2.52	4.76	PASS
Flat 5 - Bed	3.85	3.23	2.40	0.58	2.80	4.76	PASS
Flat - LKD	5	3.23	2.40	0.58	3.63	4.76	PASS

197 Kentish Town Road, London, NW5

Daylight Distribution / No Sky Line (DD)

197 Kentish Town Road - Daylight Distribution (DD) Results

Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use.		Lit Area Proposed	Meets BRE Criteria	
197 Kentish Town Road								
First	R1	Flat1	Residential	LKD	Area m2	39.01	YES	
					% of room	98%		
	R2	Flat5	Residential	Bedroom	Area m2	11.79	YES	
					% of room	94%		
Second	R1	Flat2	Residential	LKD	Area m2	28.18	YES	
					% of room	96%		
	R2	Flat2	Residential	Bedroom	Area m2	22.16		YES
					% of room	100%		
R3	Flat2	Residential	Bedroom	Area m2	10.95	YES		
				% of room	91%			
R4	Flat5	Residential	LKD	Area m2	21.41	YES		
				% of room	99%			
Third	R1	Flat3	Residential	LKD	Area m2	25.58	YES	
					% of room	96%		
	R2	Flat3	Residential	Bedroom	Area m2	16.99		YES
				% of room	100%			
R3	Flat3	Residential	Bedroom	Area m2	8.67	YES		
				% of room	86%			
Fourth	R1	Flat4	Residential	LKD	Area m2	22.19	YES	
					% of room	93%		
	R2	Flat4	Residential	Bedroom	Area m2	10.33		YES
				% of room	95%			
R3	Flat4	Residential	Bedroom	Area m2	7.08	YES		
				% of room	85%			

197 Kentish Town Road, London, NW5

Average Probable Sunlight Hours (APSH)

197 Kentish Town Road - Average Probable Sunlight Hour (APSH) Results												
Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use.	Window Ref.	VSC	Meets BRE Criteria	Window Orientation	Annual	Meets BRE Criteria	Winter	Meets BRE Criteria
197 Kentish Town Road												
First	R1	Flat1	Residential	LKD	W1	N/R	N/A	100°	51	YES	15	YES
					W2	N/R	N/A	100°	51	YES	15	YES
					W3	N/R	N/A	100°	51	YES	15	YES
					W4	N/R	N/A	100°	50	YES	14	YES
Second	R1	Flat2	Residential	LKD	W1	N/R	N/A	100°	52	YES	15	YES
					W2	N/R	N/A	100°	52	YES	15	YES
Third	R4	Flat5	Residential	LKD	W4	N/R	N/A	280°N	13	NO	0	NO
					W1	N/R	N/A	100°	50	YES	15	YES
Fourth	R1	Flat3	Residential	LKD	W2	N/R	N/A	100°	50	YES	15	YES
					W3	N/R	N/A	100°	50	YES	15	YES
					W6	N/R	N/A	100°	58	YES	18	YES
					W7	N/R	N/A	100°	58	YES	18	YES
					W8	N/R	N/A	100°	58	YES	18	YES
					W10	N/R	N/A	10°N	100	YES	30	YES
					W6	N/R	N/A	100°	58	YES	18	YES
					W7	N/R	N/A	100°	58	YES	18	YES
W8	N/R	N/A	100°	58	YES	18	YES					
W10	N/R	N/A	10°N	100	YES	30	YES					

Notes:

This report has been prepared for the sole use of Arian Developments Limited. No representation or warranty (expressed or implied) is given to any other parties. Therefore this report should not be relied upon by any third party and we accept no liability from the use of this report by any other party.

We are not aware of any conflicts of interest between ourselves and any other party concerning this project.

Where required we may have adjusted the room area to remove door or circulation space.