

Daylight and Sunlight Report

SIG Dennington Park Rd Ltd

Proposed Residential Redevelopment
11 Dennington Park Road
London
NW6 1BB

3 November 2016

Prepared by

GL Hearn Limited
280 High Holborn
London WC1V 7EE

T +44 (0)20 7851 4900
F +44 (0)20 7851 4910
glhearn.com

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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 Business Director.

DATE

03/11/2016

ORIGINATOR

Irfan Ahmed

Senior Surveyor



APPROVED

Ian Smith

Development Director



Limitations

This document has been prepared for the stated objective and should not be used for any other purpose without the prior written authority of GL Hearn; we accept no responsibility or liability for the consequences of this document being used for a purpose other than for which it was commissioned.

1 INSTRUCTIONS AND BRIEF

- 1.1 This report has been prepared in support of a planning application by SIG Dennington Park Rd Ltd for the proposed redevelopment of 11 Dennington Park Road, London, NW6 1BB. The report assesses the daylight and sunlight amenity to the studio rooms at lower ground floor within the proposed development only.
- 1.2 We received existing and proposed drawings from Seed Property Consultants (drawing numbers 16-Den-100, 16-Den120, 16Den-150 received 1st November 2016) and have used them in preparing this report.
- 1.3 Our study has been undertaken by preparing a three-dimensional computer model of the property and surrounding buildings and analysing the daylight and sunlight levels received to the proposed accommodation using our bespoke software. Our assessment is based on a visual inspection, the information detailed above and estimates of relevant distances, dimensions and levels which are as accurate as the circumstances allow.

2 PLANNING POLICY

- 2.1 The Camden Development Policies 2010-2025 Local Development Framework document contains the following references to daylight and sunlight amenity:

“DP26 – Managing the impact of development on occupiers and neighbours:

The council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity. The factors we will consider include: -

- (a) *visual privacy and overlooking;*
- (b) *overshadowing and outlook;*
- (c) *sunlight, daylight and artificial light levels; ...”*

- 2.2 The document goes on to say, in paragraph 26.3 (visual privacy, overlooking, overshadowing, outlook, sunlight and daylight:

“A development's impact on visual privacy, overlooking, overshadowing, outlook, access to daylight and sunlight and disturbance from artificial light can be influenced by design and layout, the distance between properties, vertical levels of onlookers of occupiers and the angle of views. These issues will also affect the amenity of the new occupiers. We will expect that these elements are considered at the design stage of a scheme, to prevent potential negative impacts of the development on occupiers and neighbours. To assess whether acceptable levels of daylight and sunlight are available to habitable spaces, the council will take into account the standards recommended in the British Research Establishment's 'Site layout planning for daylight and sunlight – A guide to good practice' (1991).”

2.3 Part I of the Core Strategy document states at paragraph 5.7 (Protecting amenity):

“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 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.

2.4 Camden supplementary planning policy guidance document CPG6, sections 6 and 7 concern themselves with daylight and sunlight, overlooking, privacy and outlook. Section 6 of the document states that:

- “• We expect all buildings to receive adequate daylight and sunlight.*
- Daylight and sunlight reports will be required where there is potential to reduce existing levels of daylight and sunlight.*
- We will base our considerations on the average daylight factor and vertical sky component.”*

2.5 Section 7 of CPG6 states that:

- “• developments are to be designed to protect the privacy of existing dwellings;*
- mitigation measures are to be included when overlooking is unavoidable;*
- outlook from new developments should be designed to be pleasant;*
- public spaces benefit from overlooking as natural surveyors.”*

3 GUIDANCE

3.1 British Standard 8206: Part 2 British Standard for Daylighting and the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual: Daylighting and window Design provide

advice and guidance on interior daylighting. Appendix C of BRE Report "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" refers to the aforementioned publications. The BRE Report is intended to be used in conjunction with these documents, and its guidance is intended to fit in with their recommendations.

3.2 Lighting for buildings. Part 2: Code of Practice for daylighting BS 8206-2: 2008

3.2.1 Section 2 of the British Standard refers to criteria for the provision of view, for the use of skylight and sunlight for general room lighting and for the design of daylighting for task performance.

3.2.2 In terms of daylight, the publication suggests that the Average Daylight Factor assessment (ADF) is used as the measure of general illumination from skylight. The ADF assessment is a more representative indication of daylight adequacy as, unlike the Vertical Sky Component (VSC) (which is a 'spot' daylight reading taken on the face of the window), the assessment takes account of:

- The amount of light striking the face of the window
- The size of the window, hence the amount of light able to enter the room
- The size and surface area of the room being tested
- Use of the room being tested
- Reflectance value of the internal room finishes
- Loss of transmittance through the glazing

3.2.3 In terms of sunlight, BS 8206 states that:

"Interiors in which the occupants have a reasonable expectation of direct sunlight should receive at least 25% of probable sunlight hours. At least 5% of probable sunlight hours should be received during the winter months, between 23 September and 21 March."

3.2.4 It should be noted that BS8206-2:2008 is intended to provide guidance with regard to building design and access to daylight. The foreword to the British Standard states that:

"The aim of the standard is to give guidance to architects, builders and others who carry out lighting design. It is recognized that lighting is only one of many matters that influence fenestration. These include other aspects of environmental performance (such as noise, thermal equilibrium and the control of energy use), fire hazards, constructional requirements, the external appearance and the surroundings of the site. The best design for a building does not necessarily incorporate the ideal

solution for any individual function. For this reason, careful judgement should be exercised when using the criteria given in the standards for other purposes, particularly town planning control."

3.3 Daylighting and window design, (CIBSE) lighting guide LG 10: 2014 (The guide)

3.3.1 The publication is primarily intended to provide guidance to those responsible for the design, installation, commissioning, operation and maintenance of building services. Section 1.1 states:

3.3.2 *"In modern buildings, good daylighting is a balancing act: on one side is the need for sufficient access to daylight and sunlight, and on the other is the need to control its unwanted effects. The design team need to work together to achieve this balance, exploring the options to arrive at a satisfactory solution."* Section 2.2.1 states that:

"A well daylit space needs both adequate lighting levels and light that is well distributed. In some rooms, the lighting level at the back falls dramatically below the level close to a window, to such an extent that occupants feel deprived even though their actual task illuminance is otherwise acceptable."

3.3.3 Section 3.4 provides detailed guidance on daylight calculation. Section 3.4.3 provides guidance on the use of Average Daylight Factor (ADF) calculations and states:

"Average daylight factor calculations can provide a quick overview of the overall level of daylight within a room, and can be useful when comparing different design solutions."

3.3.4 The Guide also states that:

"The BS 8206 code of practice(10) recommends average daylight factors of at least 1% in bedrooms, 1.5% in living rooms and 2% in kitchens, even if a predominantly daylit appearance is not required."

3.4 BRE Report "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" Second Edition (2011) ('The Report')

3.4.1 Principles

The Second Edition of the Report replaces the 1991 document of the same name with effect from October 2011.

It is important to note that the introduction to the report stresses that the document is provided for guidance purposes only and it is not intended to be interpreted as a strict set of rules. It also suggests that it may be appropriate to adopt a flexible approach and alternative target values in dealing with "special circumstances" for example "in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to

match the height and proportions of existing buildings.” This is amplified by the following extracts from the introduction (P1, para. 6) and Section 2.2:

“The advice given here is not mandatory and this document should not be seen as an instrument of planning policy; Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design...” (P1, para. 1.6)

“In special circumstances the Developer or Planning Authority may wish to use different target values.” (P1, para. 1.6)

“Note that numerical values given here are purely advisory. Different criteria may be used, based upon the requirements for daylighting in an area viewed against other site layout constraints. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light”. (P7 para. 2.2.3)

The examples given in the Report can be applied to any part of the country: suburban, urban and rural areas. The inflexible application of the target values given in the Report may make reaching the BRE criteria difficult in a tight, urban environment where there is unlikely to be the same expectation of daylight and sunlight amenity as in a suburban or rural environment.

Appendix C of the Report provides details of BS8206: Part 2 British Standard for Daylighting and the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual: Windows Design which provide advice and guidance on interior daylighting. The BRE Report is intended to be used in conjunction with these documents, and its guidance is intended to fit-in with their recommendations. The British Standard and the CIBSE manual put forward three main criteria for interior daylighting, one of which is the use of the ADF (df) calculation. Essentially, the documents recommend that, if a supplementary electric lighting is provided, a df value of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms should be attained.

The British Standard also suggests, that if a predominately daylit appearance is required, then df should be 5% or more if there is no supplementary electric lighting. However, in all modern living accommodation supplementary electric lighting is provided and, as such, df values detailed above are used as target values.

3.4.2 Daylight Distribution (DD) or no-sky line

The BRE Report states that:

“Where room layouts are known, the impact on the daylighting distribution in the existing building can be found by plotting the ‘no-sky line’ in each of the main rooms. For houses this would include living rooms, dining rooms and kitchens; bedrooms should also be analysed, although they are less important. In non-domestic buildings each main room where daylight is expected should be investigated.”

...Windows to bathrooms, toilets, store rooms, circulation areas and garages need not be analysed.”

The test considers the position of the NSL, which is the line that divides the points on the working plane (0.7m from floor level in offices and 0.85m in dwellings) which can and cannot see the sky. The BRE guide suggests that areas beyond the NSL may look dark and gloomy compared with the rest of the room and should be kept to no more than 20% of the room.

3.4.3 Sunlight

The BRE Report advises that new development should take care to safeguard access to sunlight for existing buildings and any non-domestic buildings where there is a particular requirement for sunlight. In summary, the report states:

“If a living room of an existing dwelling has a main window facing within 90 degrees of due south, and any part of a new development subtends an angle of more than 25 degrees to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and
- receives less than 0.8 times its former sunlight hours during either period and
- has a reduction in sunlight over the whole year greater than 4% of annual probable sunlight hours”

4 ASSESSMENT

4.1 Daylight

- 4.1.1 We have analysed the daylight levels received within the six studio apartments at lower ground floor using the Average Daylight Factor (ADF) and Daylight Distribution (DD) assessments. For the ADF assessment, as recommended by the BRE Report, we have used a glass transmittance value of 0.68 for standard double glazing and an average internal reflectance value of 0.71.

- 4.1.2 The location of the tested rooms and window references are shown on the drawings appended to this report; the results are also included in the appendices and on the relevant spreadsheets.
- 4.1.3 All six assessed studios will achieve a DD value in excess of 80%, in-line with BRE Report recommendations.
- 4.1.4 The analysis results show that five of the six studios will achieve ADF values ranging from 2.26% to 6.18%; far in excess of BRE recommendations for all room types. The remaining studio would achieve an ADF value of 1.02%, exceeding the BRE target value for bedrooms which is likely to be the primary use of these studios.

4.2 Sunlight

- 4.2.1 We have used the Annual Probable Sunlight Hours (APSH) test to assess sunlight amenity to all studios at lower ground floor. It should be noted that the BRE Report states:

“A south-facing window will, in general, receive most sunlight, while a north-facing one will only receive it on a handful of occasions (early morning and late evening in summer). East and west-facing windows will receive sunlight only at certain times of day.”

- 4.2.2 The results show that 4 of the 6 studios analysed will exceed the recommendation for sunlight amenity achieving in excess of 25% of available sunlight hours annually and 5% in the winter months. These studios are south facing and, due to being located within the rear extension of the property, are able to benefit from a roof light.

The two studios that transgress the recommended APSH level of the BRE Report guidance are orientated within 90 degrees of due north, for which the BRE Report states:

“The BS 8206-2 criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met.”

- 4.2.3 Furthermore, it is likely that these studios will primarily be used as bedrooms with a small kitchenette; both of which are room types that the BRE Report considers to have a lesser requirement for sunlight amenity.

5 CONCLUSION

- 5.1 The foreword to BS 8206-2:1992 states that:

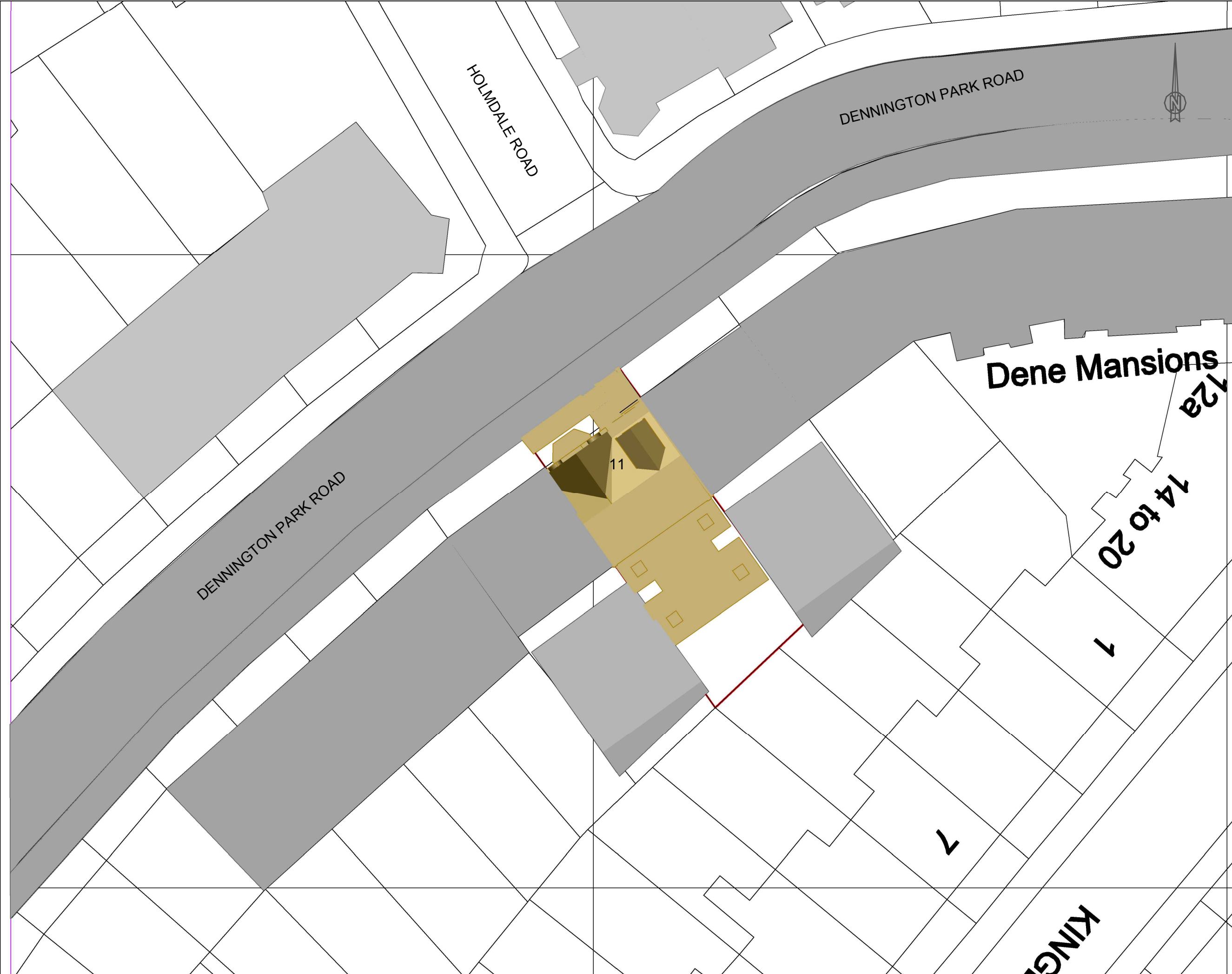
“The aim of the standard is to give guidance to architects, builders and others who carry out lighting design. It is recognised that lighting is only one of many matters that influence fenestration. These include other aspects of environmental performance (such as noise, thermal equilibrium and the

control of energy use), fire hazards, constructional requirements, the external appearance and the surroundings of the site. The best design for a building does not necessarily incorporate the ideal solution for any individual function. For this reason, careful judgement should be exercised when using the criteria given in the standards for other purposes, particularly town planning control."

- 5.2 It is our view that that the studios at lower ground floor will be primarily used as bedrooms, with a kitchenette area for basic cooking purposes. We therefore consider the majority of the ADF values achieved will exceed expectations for a lower-ground floor dwelling in an urban area, and the remainder will be acceptable to accommodate the primary use of the studios.
- 5.3 With this in mind, our analysis shows all rooms assessed would exceed the BRE guidelines recommended ADF value for a bedroom.
- 5.4 All studios will benefit from excellent direct sky visibility with daylight penetration to the rear of the rooms. The BRE Report suggests 80% of the room should be in direct sky visibility, which all assessed studios exceed.
 - 5.4.1 All studios facing within 90 degrees of due south will exceed the recommendation for sunlight amenity, achieving in excess of 25% of available sunlight hours annually, 5% of which during the winter months.
 - 5.4.2 Where sunlight levels fall below the BRE Report recommended level, these studios are north facing. The BRE considers that northerly orientated rooms are unlikely to meet sunlight criteria.
- 5.5 In our opinion, the level of daylight and sunlight amenity achieved within the lower ground studios to be acceptable and will exceed expectations of occupants in such urban areas.

APPENDIX A

DRAWINGS



INFORMATION USED IN ANALYSIS:

Seed Property Consultants
Proposed scheme drawings received 02/11/2016

PLAN KEY:

-  Surrounding Buildings and Structures
-  Analysed Buildings
-  Proposed Building on Site

SITE KEY:

PROJECT:
11 Dennington Park Road,
London,
NW6 1BB

CLIENT:
SIG Dennington Park Rd Ltd

DRAWING TITLE:
Proposed Site Plan

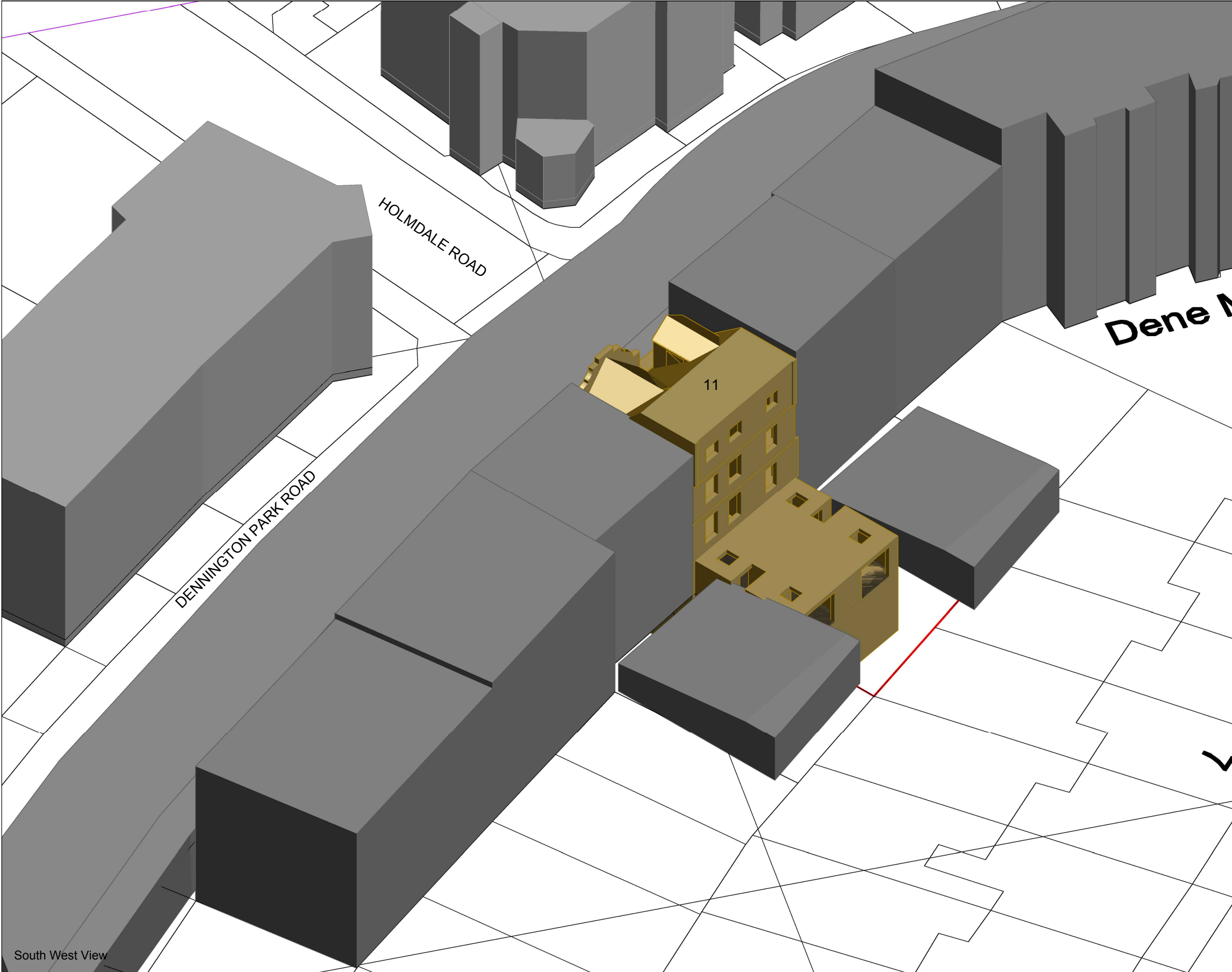
PROJECT NO:	ISS NO	DRAWING NO:	REVISION:
J036185	01	004	-

DATE:	DRAWN BY:
02/11/2016	JO

SCALE: NTS

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South West View

INFORMATION USED IN ANALYSIS:

Seed Property Consultants
Proposed scheme drawings received 02/11/2016

PLAN KEY:

-  Surrounding Buildings and Structures
-  Analysed Buildings
-  Proposed Building on Site

SITE KEY:

PROJECT:
11 Dennington Park Road,
London,
NW6 1BB

CLIENT:
SIG Dennington Park Rd Ltd

DRAWING TITLE:
Proposed 3D Views

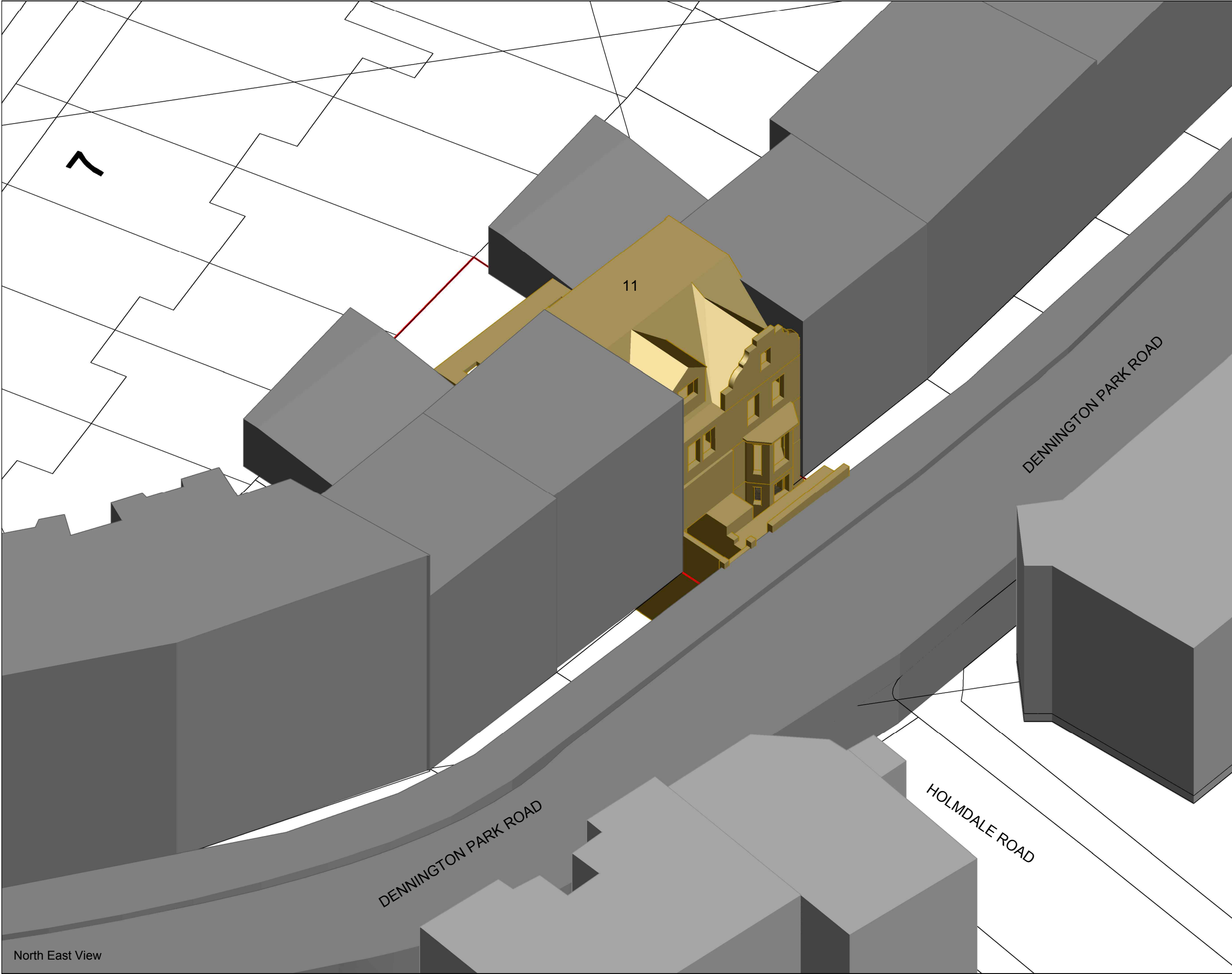
PROJECT NO:	ISS NO	DRAWING NO:	REVISION:
J036185	01	005	-

DATE:	DRAWN BY:
02/11/2016	JO

SCALE: NTS

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North East View

INFORMATION USED IN ANALYSIS:

Seed Property Consultants
Proposed scheme drawings received 02/11/2016

PLAN KEY:

-  Surrounding Buildings and Structures
-  Analysed Buildings
-  Proposed Building on Site

SITE KEY:

PROJECT:
11 Dennington Park Road,
London,
NW6 1BB

CLIENT:
SIG Dennington Park Rd Ltd

DRAWING TITLE:
Proposed 3D Views

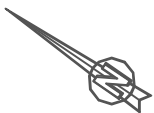
PROJECT NO:	ISS NO	DRAWING NO:	REVISION:
J036185	01	006	-

DATE:	DRAWN BY:
02/11/2016	JO

SCALE: NTS

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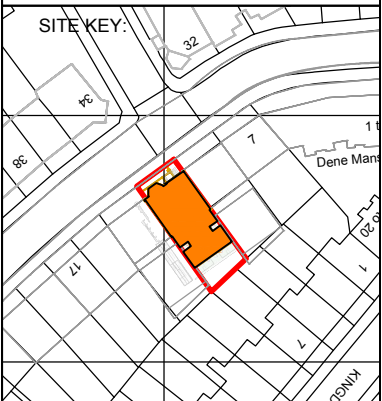
INFORMATION USED IN ANALYSIS:

Seed Property Consultants
Proposed scheme drawings received 02/11/2016

PLAN KEY:

- Surrounding Buildings and Structures
- Proposed Building on Site
- Room Layout
- Area of Visible Sky

SITE KEY:



PROJECT:
11 Dennington Park Road,
London,
NW6 1BB

CLIENT:
SIG Dennington Park Rd Ltd

DRAWING TITLE:
Internal Daylight Distribution Plan

PROJECT NO:	ISS NO:	DRAWING NO:	REVISION:
J036185	01	401	-

DATE:	DRAWN BY:
02/11/2016	JO

SCALE: NTS

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Proposed Lower ground floor
scale 1:50



Lower Ground Floor

Seed Property Consultants
Beaufort House, 15 St Botolph Street,
London, EC3A 7BB

Client: SEED
Job Title: 11 Dennington Park Rd, NW6 1BB

Drawing Title: Proposed Lower Ground floor		
Scale: 1:50 @ A3	Date: OCT 16	Drawn: CHP
Drawing Number: 16-DEN-100	Rev: -	

APPENDIX B

AVERAGE DAYLIGHT FACTOR, DAYLIGHT DISTRIBUTION AND ANNUAL PROBABLE SUNLIGHT RESULTS TO PROPOSED SCHEME

Average Daylight Factor
ADF Results

Floor Ref.	Room Ref.	Room Use	Window Ref.	ADF Proposed	Req'd Value
11 Dennington Park Road					
Lower Ground	R1	Studio	W1	0.51	2
			W2	1.36	
			W3	0.41	
				2.28	
Lower Ground	R2	Studio	W4-L	0.08	2
			W4-U	0.94	
				1.02	
Lower Ground	R3	Studio	W5-L	0.05	2
			W5-U	1.18	
			W6	1.12	
				2.35	
Lower Ground	R4	Studio	W7-L	0.35	2
			W7-U	4.69	
			W8	1.14	
				6.18	
Lower Ground	R5	Studio	W9-L	0.33	2
			W9-U	4.46	
			W10	1.17	
				5.96	
Lower Ground	R6	Studio	W11-L	0.04	2
			W11-U	1.11	
			W12	1.11	
				2.26	

J03618501

SIG Dennington Park Rd Ltd

11 Dennington Park Road,
London,
NW6 1BB

Daylight Distribution
DD Results



Floor Ref.	Room Ref.	Room Use.	Room Area	Lit Area Proposed
11 Dennington Park Road				
Lower Ground	R1	Studio	15.04	12.34 82%
	R2	Studio	12.84	10.64 83%
	R3	Studio	13.17	12.72 97%
	R4	Studio	13.34	12.70 95%
	R5	Studio	13.73	13.07 95%
	R6	Studio	14.17	13.75 97%

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SIG Dennington Park Rd Ltd

11 Dennington Park Road,
London,
NW6 1BBDaylight and Sunlight
VSC and APSH Results

Floor Ref. Room Ref. Room Use. Window Ref.					Available Sunlight Hours		*North*
					Annual (%)	Winter (%)	
11 Dennington Park Road							
Lower Ground	R1	Studio	W1	Proposed	11	2	*North*
			W2	Proposed	2	0	*North*
			W3	Proposed	0	0	*North*
	R2	Studio	W4	Proposed	0	0	*North*
	R3	Studio	W5	Proposed	9	0	
			W6	Proposed	81	27	
	R4	Studio	W7	Proposed	58	22	
			W8	Proposed	85	27	
	R5	Studio	W9	Proposed	54	11	
			W10	Proposed	84	27	
	R6	Studio	W11	Proposed	17	0	
			W12	Proposed	79	27	