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1A Highgate Road

Daylight & Sunlight Report

Overshadowing

• Daylight & Sunlight • Light Pollution •

Solar Glare • Daylight Design

Director:	Liam Dunford
Client:	IDM LAND LTD
Date:	February 2016
Version:	Planning
Project:	P717

Contents

Appendices

Appendix A – Drawings

Appendix B – Technical Analysis

1 Introduction

1.1 This reports relates to the Ellis Miller Architects Proposed Scheme for the redevelopment of 1A Highgate received 28th January 2016 insofar as it affects the daylight and sunlight amenity to the surrounding residential properties.

2 Planning Overview

2.1 Through the planning process the local authority will wish to be reassured that the construction of the new scheme will not materially harm the neighbours' daylight and sunlight beyond BRE and British Standard Guidance.

2.2 The Local Authority will be informed in this by the BRE document entitled *Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011* (the BRE guidelines). This document is the principal guidance in this area and sets out the methodology for measuring light and recommends what it considers to be permitted or unobtrusive levels of change.

2.3 The BRE guidelines are not mandatory, though local planning authorities and planning inspectors will consider the suitability of a proposed scheme for a site within the context of BRE guidance. Consideration will be given to the urban context within which a scheme is located and the daylight and sunlight will be one of a number of planning considerations which the local authority will weigh.

2.4 The London borough of Camden provides guidance on daylight and sunlight insofar as policy DP26 states *"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:…c) sunlight, daylight…".*

2.5 Furthermore the Council state that: *"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"*

3 Methodology

3.1 To quantify the effects of the Proposed Scheme we have constructed a three dimensional computer model of the site and relevant neighbouring properties. We have then undertaken technical analysis to measure the light received by neighbouring properties both before and after the Proposed Scheme is constructed.

Daylight

3.2 In accordance with the BRE Guidelines, only residential properties are considered for daylight levels. Living rooms, kitchens and bedrooms are the primary focus of the guideline recommendations.

3.3 The initial test proposed by the BRE Guidelines is to establish if the proposed massing subtends above a 25° section line drawn from the centre of the window/room in question. If the angle is breached it is necessary to undertake more detailed technical calculations such as Vertical Sky Component (VSC) and No Sky Line (NSL).

3.4 The Vertical Sky Component (VSC) analysis assesses the amount of sky visibility at the centre of the outside of a window face. The No Sky Line (NSL) analysis assesses the extent of the area of a room which can benefit from sky visibility at working plane height (850mm). These measurements are taken both before and after the construction of the proposed development.

3.5 The BRE Guidelines permit a reduction of up to 20% of the existing VSC values in situations where the retained VSC value falls below 27%, which is the BRE recommended VSC level for adequate daylight amenity in a suburban environment. The 20% maximum recommended reduction is based upon the BRE stating that a change up to this extent would remain unnoticeable. The 20% reduction recommendation is also applicable to the NSL values.

Sunlight

3.6 Sunlight is measured using a sun indicator which contains 100 spots, each representing 1% of Annual Probable Sunlight Hours (APSH). Where no obstruction exists the total Annual Probable Sunlight Hours would amount to 1486 hours and therefore each spot equates to 14.86 hours of the total annual sunlight hours.

3.7 British Standard 8206 part 2 (section 5.3) 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 21 September and 21 March. Sunlight is taken to enter an interior when it reaches one or more window reference points."

3.8 When a room has multiple windows, not all may be located southwards and, therefore, they may not meet the target criteria. However, these windows may contribute to the levels of sunlight within the room even if by 1-2% APSH. On this basis the analysis results within this report are presented on a room basis. This is calculated by giving a unique reference to each of the sun spots and totalling the number of unique spots the windows within a room receive for the year and during the winter period. If two windows can see the same sun spot then this will be counted as one to avoid double counting.

3.9 Only residential properties that face within 90º of due south are taken into account for sunlight analysis, the BRE Guidelines considers that sunlight to main living room windows as the most important.

3.10 For existing residential properties, the BRE Guidelines state in Section 3.2.3 that:

3.11 *"all main living rooms of dwellings…should be checked if they have a window facing within 90° of due south, kitchens and bedrooms*

4 Sources of Information

Point 2 Surveyors	-	Site Photos
Survey	-	Ordnance Survey & Digital Superplan Data
Ellis Miller Architects	-	Proposed Scheme Drawings (180-Highgate 3D Model.dwg) Received 28.01.16

5 Standard Survey Limitations

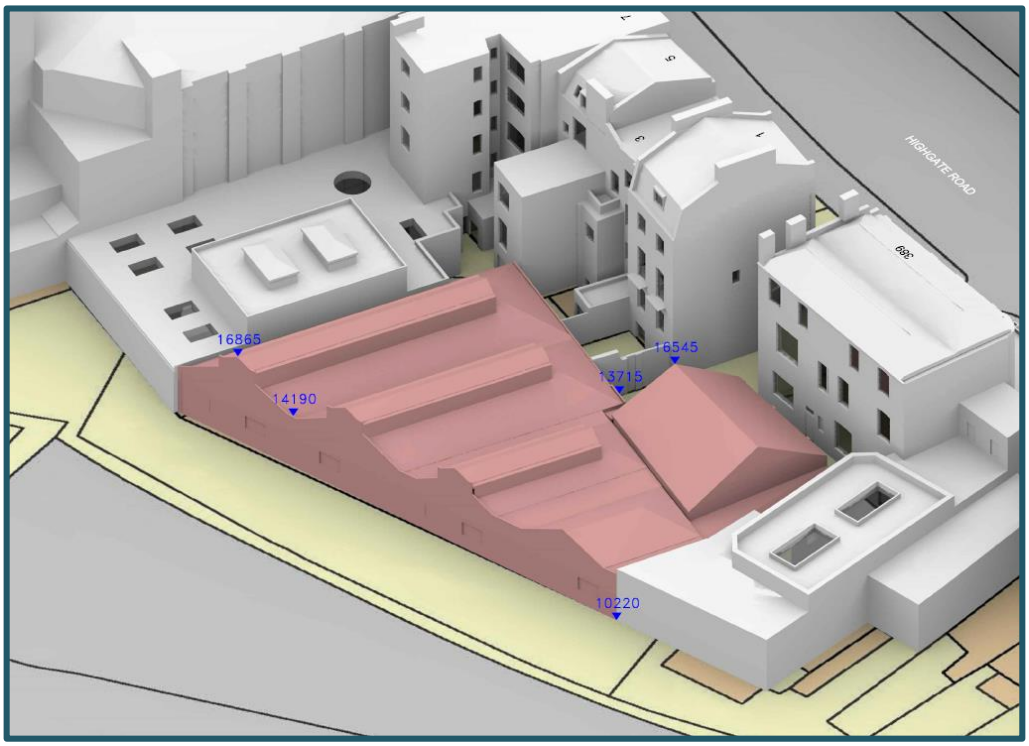
Although we have undertaken as detailed an inspection as possible, we are required by our professional indemnity insurers to notify you that our report is based upon the Standard Terms and Conditions provided along with our fee proposal. Our understanding of the existing massing, including the surrounding context was established from a site visit and aerial photography.

In addition to our standard limitations the following limitations and assumptions also apply.

- Best estimates were made in establishing building use (residential or commercial) and room uses; generally these were made from external observations and recourse to planning records where available.
- When floor plans of surrounding properties were not available, room depths have been assumed from external observations. Where no indicators of room depth were available a standard of 4m, 6m or 8m depths have been used.

6 The Site

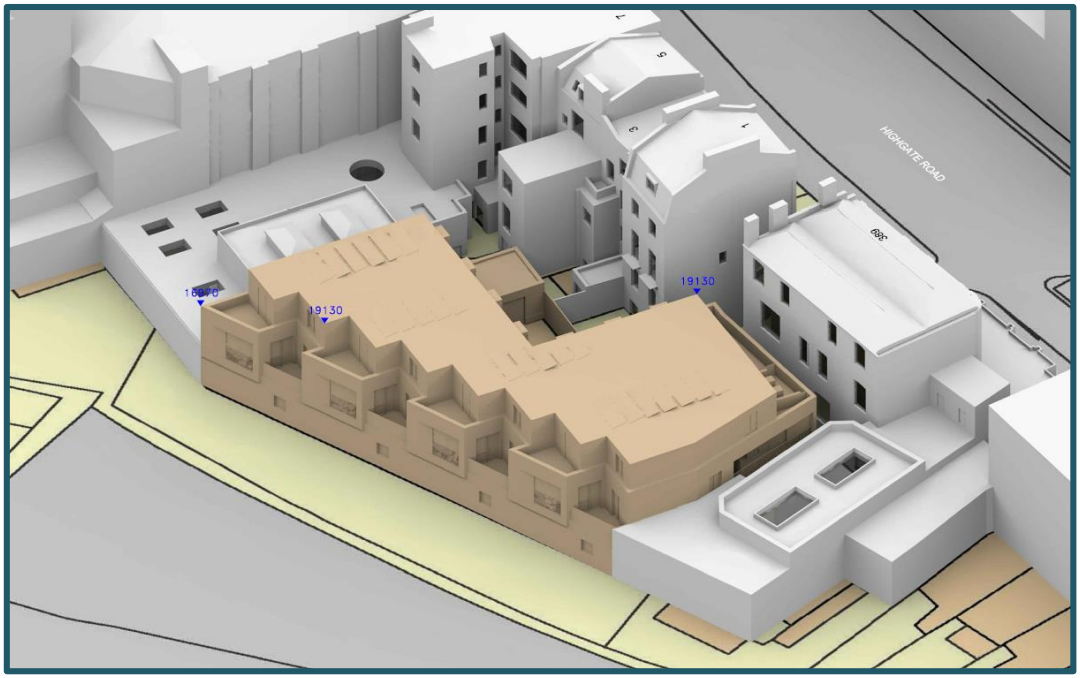
6.1 The site is located in the London Borough of Camden



Drawing Number: P717/07 – 3D View – Existing Building

6.2 Our understanding of the site location and existing building which occupy the site can be seen within drawings P717/01-03 and can be found within Appendix A

7 The Proposed Scheme



Drawing Number: P717/20 – 3D View – Proposed Scheme

7.1 Our understanding of the proposed scheme is illustrated in drawings P717/19-21 located within Appendix A.

8 The Surrounding Properties

8.1 The following surrounding properties contain residential accommodation and, due to their proximity to the development site, have been assessed in terms of the effects of the proposed development upon their daylight and sunlight amenity:

- 389 Kentish Town Road
- 1 Highgate Road
- 3 Highgate Rod
- 5 Highgate Road
- 7 Highgate Road

8.2 The location of these properties can be seen in the drawings within Appendix A.

8.3 The proposed scheme can be found illustrated within drawings P717/19-21 in Appendix A. Detailed results for each window/room assessed can be found in Appendix B and are summarised below.

389 Kentish Town Road

8.4 Located directly to the west of the development site this property contains both commercial and residential elements. It appears the ground and first floor is reserved to the public house and therefore these element of the building are not material for assessment.

Daylight

8.5 There are 8 site facing windows serving 8 individual rooms, all of which have been assessed. We have had the benefit of floor plans from Camden's online planning archive.

8.6 Three of the total number of windows experience derogations from BRE guidance in terms of VSC alterations. Nevertheless the rooms which these windows serve are non-habitable and therefore not material for assessment with regard to BRE criterion.

8.7 All remaining windows are fully compliant in terms of any VSC and NSL alterations. In accordance with BRE guidance this means the occupiers of these rooms will not notice any change in their level of daylight amenity.

Sunlight

8.8 The 8 rooms within this building which have site facing windows and are orientated within 90 degrees of due south do not experience any alterations in APSH that exceed BRE guidance. The occupiers of these rooms will not notice any change in their levels of sunlight amenity.

1 Highgate Road

8.9 Located to the north/north-east of the development site this building contains residential accommodation throughout.

Daylight

8.10 There are 10 site facing windows serving 5 rooms, all of which have been assessed. 8 out 10 windows are fully BRE compliant in terms of any alteration to VSC. In accordance with BRE guidance this means the occupiers of these rooms should not notice any change in their levels of daylight amenity.

8.11 The remaining two windows (W1/20 & W2/20) experience alterations which marginally derogate from BRE guidance in terms of VSC, but, these windows retain 24.65% and 25.65% VSC respectively. The BRE guidelines provides that 27% VSC in a suburban environment will receive adequate sky visibility. In consideration of 1 Highgate Road being in the town centre (i.e an urban environment) a lower baseline value is acceptable in this instance.

8.12 Furthermore, the room (R1/20) which is served by these windows does, however, only experience a 4.3% alteration in NSL against the BRE recommended 20%. In accordance with BRE this means the occupants will not notice a change in their existing levels of daylight distribution and in fact continue to benefit from 92% of the room benefitting from a view of the sky at the working plain.

Sunlight

8.13 Of the 5 rooms within this building which have site facing windows and are orientated within 90 degrees of due south 4 do not experience any alterations in APSH that exceed BRE guidance. The occupiers of these rooms will not notice any change in their levels of sunlight amenity.

8.14 Ground floor room R1/19 is subject to a 4% derogation from BRE guidance with regard to Winter APSH whilst the total Annual Probable Sunlight Hours improves upon BRE guidelines. Given the high boundary wall of the rear garden and the balconies above this degree of alteration is virtually unavoidable with regard to Winter Sunlight.

3 Highgate Road

8.15 Located to the north-east of the development site this property bounds 1 Highgate Road and contains residential accommodation throughout.

Daylight

8.16 There are 6 site facing windows serving 5 residential rooms all of which have been assessed. All windows and associated rooms are fully compliant in terms of any VSC and NSL alterations; the greatest alteration to VSC being 14.77% against the BRE recommended 20%.

8.17 In accordance with BRE guidance, this means that the occupants of these rooms will not notice any change to their levels of daylight amenity.

8.18 In fact, the ground floor room/windows considered actually benefit from an increase from their existing levels of daylight as a result of the scheme.

Sunlight

8.19 The 5 rooms within this building which have site facing windows and are orientated within 90 degrees of due south do not experience any alterations in APSH that exceed BRE guidance. The occupiers of these rooms will not notice any change in their levels of sunlight amenity.

8.20 In fact one rooms benefits from an increase in its level of sunlight amenity as a result of the scheme.

5 Highgate Road

8.21 Located to the north-east of the development site this property bounds 1 Highgate Road and contains residential accommodation throughout.

Daylight

8.22 There are 7 site facing windows serving 7 residential rooms all of which have been assessed. All windows and associated rooms are fully compliant in terms of any VSC alterations; the greatest alteration to VSC being 12.46% against the BRE recommended 20%.

8.23 In accordance with BRE guidance, this means that the occupants of these rooms will not notice any change to their levels of daylight amenity.

Sunlight

8.24 The 7 rooms within this building which have site facing windows and are orientated within 90 degrees of due south do not experience any alterations in APSH that exceed BRE guidance. The occupiers of these rooms will not notice any change in their levels of sunlight amenity.

7 Highgate Road

8.25 Located to the north-east of the development site this property bounds 5 Highgate Road and assumed to contain residential accommodation throughout.

Daylight

8.26 There are 19 site facing windows assumed to serve 19 residential rooms all of which have been assessed. All windows and associated rooms are fully compliant in terms of any VSC and NSL alterations; the greatest alteration to VSC being 10.19% against the BRE recommended 20%.

8.27 In accordance with BRE guidance, this means that the occupants of these rooms will not notice any change to their levels of daylight amenity.

Sunlight

8.28 The 19 rooms within this building which have site facing windows and are orientated within 90 degrees of due south do not experience any alterations in APSH that exceed BRE guidance. The occupiers of these rooms will not notice any change in their levels of sunlight amenity.

9 Conclusion

Daylight to Surrounding Properties

9.1 Full technical analysis indicates that the scheme demonstrates very good levels of BRE compliance in terms of daylight amenity. There is one derogation to a windows' level of VSC at 1 Highgate Road as a result of the proposed scheme, however, the result is offset by virtue of the minimal alteration to the room's daylight distribution.

9.2 Furthermore, it is reminded that the guidance given by BRE is based on a suburban environment where 1A Highgate Road is situated within a town centre and therefore lower levels of daylight are expected.

9.3 We fully support this application in terms of daylight amenity.

Sunlight to Surrounding Properties

9.4 All rooms across the context benefit from fully BRE compliant levels of Annual sunlight amenity. Only one room across the whole context was picked up to experience a small derogation from BRE guidance in terms of an alteration in Winter sunlight amenity, and, in consideration of sun being lower in the Winter months and the a high boundary wall next to 1 Highgate, the derogation is virtually unavoidable.

9.5 We therefore conclude that the scheme demonstrates good levels of BRE compliance in terms of sunlight amenity. Thus, we fully support this application in terms of daylight and sunlight amenity.

Appendix A – Drawings

Sources: ORDNANCE SURVEY
Digital Superplan Data

Ellis Miller
Site Survey, Drawings no. 180-L-001, 020 to 23

Proposed Scheme, Drawings no. 180-3D Model-3D View - {3D}
Received 08/10/15

Key:

N

Existing Buildings

Proposed Scheme

Project: 1a Highgate Road
London

Title: Site Plan
Existing Buildings

Point 2 Surveyors Ltd,
3rd Floor,
17 Slingsby Place,
London WC2E 9AB,
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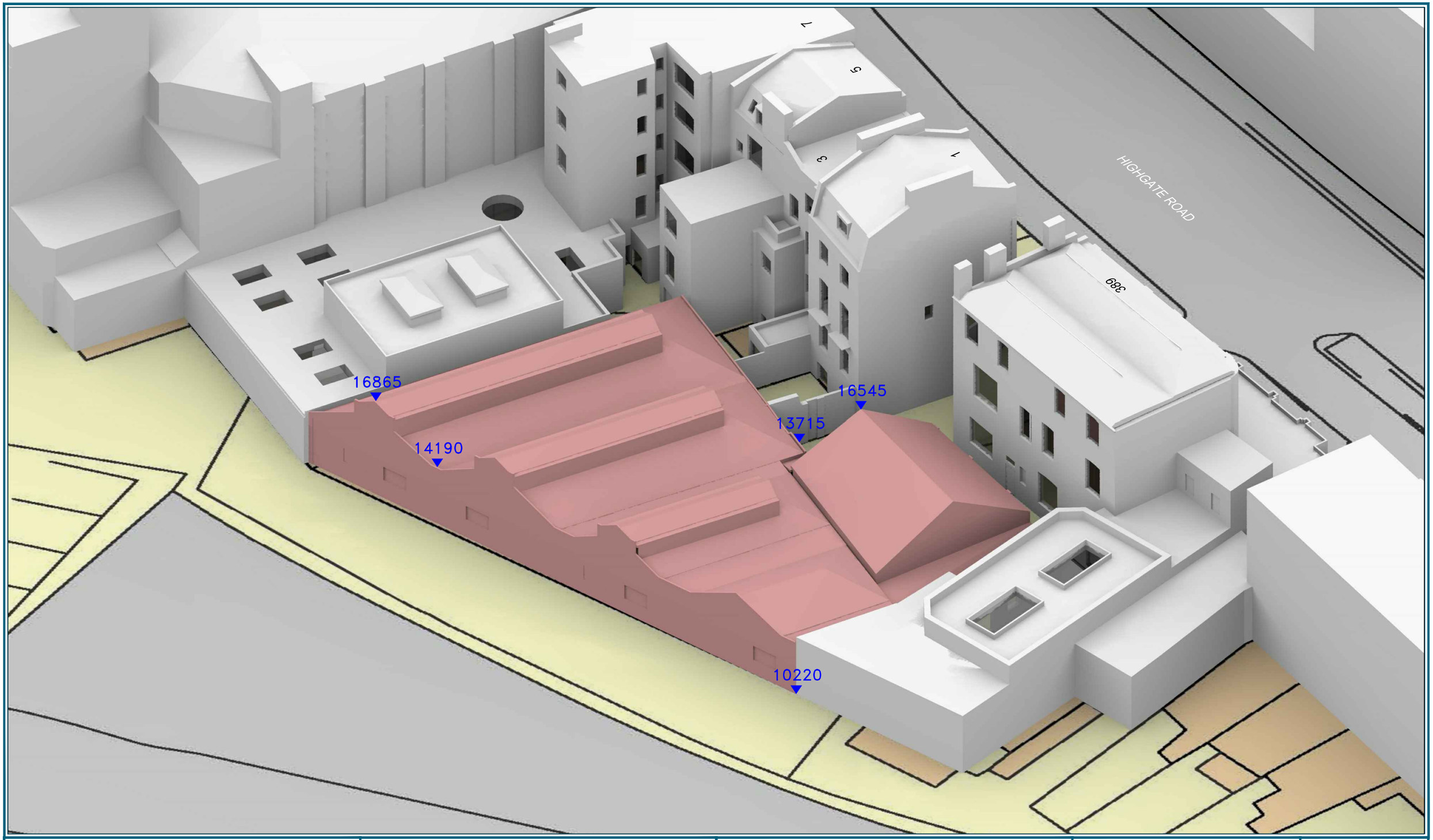
www.point2surveyors.com

Drawn By: DT

Scale: 1:300

Date: OCT' 15

Dwg No: **P717/01**



Sources: ORDNANCE SURVEY
Digital Superplan Data

Ellis Miller
Site Survey, Drawings no. 180-L-001, 020 to 23

Proposed Scheme, Drawings no. 180-3D Model-3D View - {3D}
Received 08/10/15

Key:

All heights in mm above local datum

Existing Buildings

Proposed Scheme

Project: 1a Highgate Road
London

Title: 3D View
Existing Buildings

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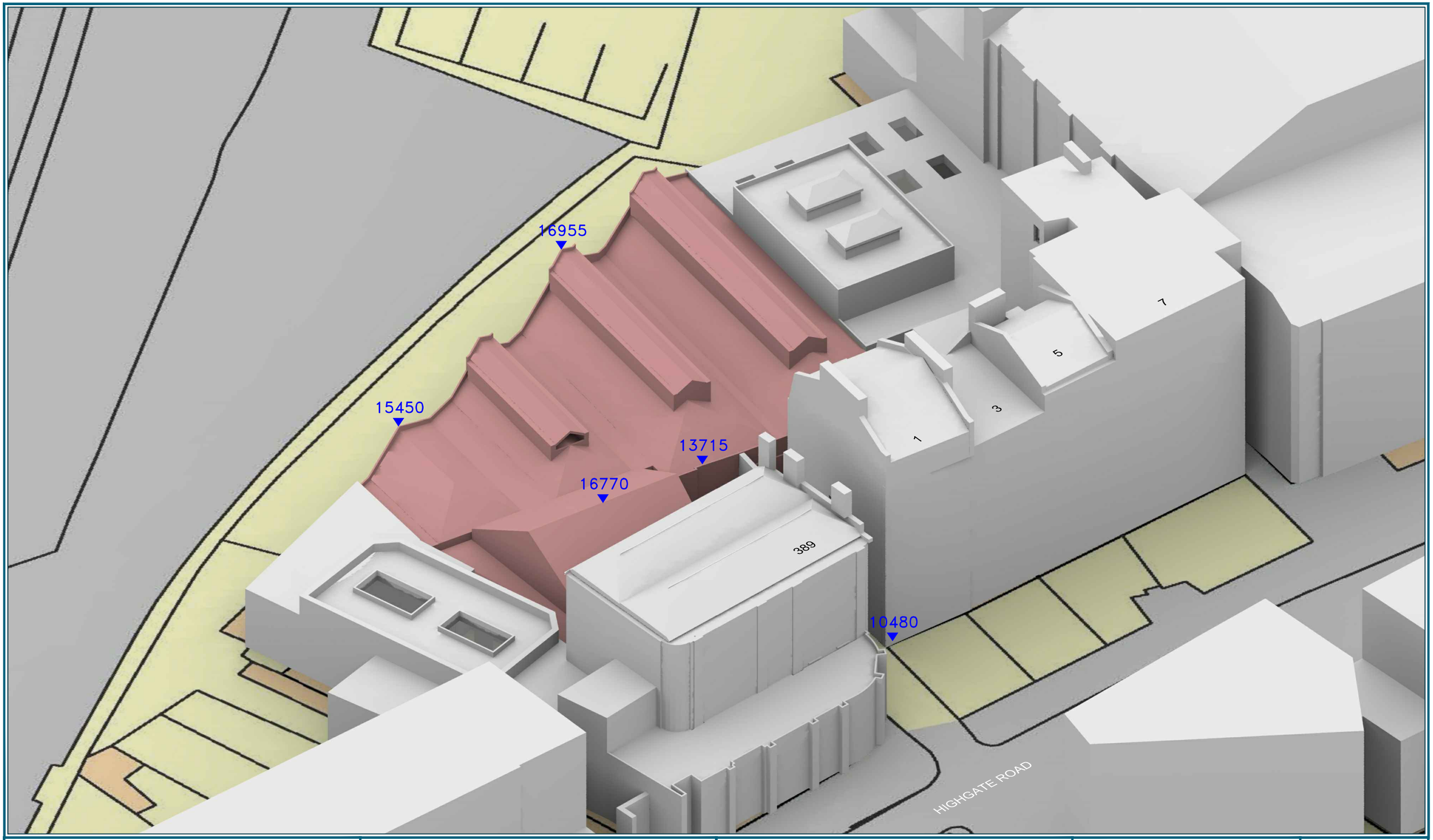
0207 836 5828
www.point2surveyors.com

Drawn By: DT

Scale: NTS

Date: OCT' 15

Dwg No: **P717/02**



Sources: ORDNANCE SURVEY
Digital Superplan Data

Ellis Miller
Site Survey, Drawings no. 180-L-001, 020 to 23

Proposed Scheme, Drawings no. 180-3D Model-3D View - {3D}
Received 08/10/15

Key:

All heights in mm above local datum

Existing Buildings

Proposed Scheme

Project: 1a Highgate Road
London

Title: 3D View
Existing Buildings

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www.point2surveyors.com

Drawn By: DT

Scale: NTS

Date: OCT' 15

Dwg No: **P717/03**

Sources: ORDNANCE SURVEY
Digital Superplan Data

Ellis Miller
Site Survey, Drawings no. 180-L-001, 020 to 23

Proposed Scheme 3d model -
160128 - 180 Highgate 3D Model.dwg

Key:

N

Existing Buildings

Proposed Scheme

Project: 1a Highgate Road
London

Title: Site Plan
January 2016 Proposal

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www.point2surveyors.com

Drawn By: TB

Scale: 1:300

Date: JAN 16

Dwg No: **P717/19**

Sources: ORDNANCE SURVEY
Digital Superplan Data

Ellis Miller
Site Survey, Drawings no. 180-L-001, 020 to 23

Proposed Scheme 3d model -
160128 - 180 Highgate 3D Model.dwg

Key:

All heights in mm above local datum

Existing Buildings

Proposed Scheme

Project: 1a Highgate Road
London

Title: 3D View
January 2016 Proposal

Point 2 Surveyors Ltd,
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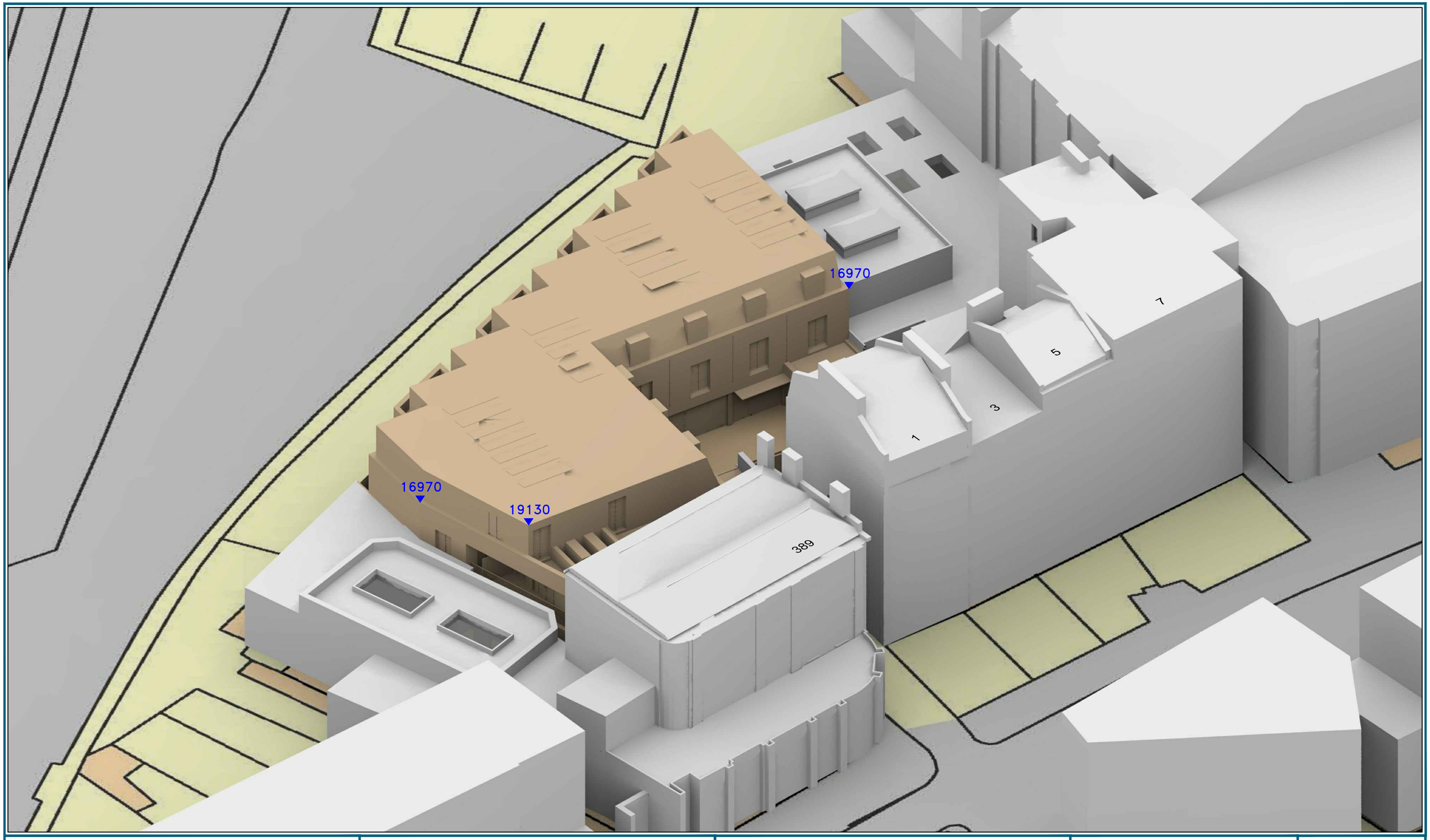
Drawn By: TB

Scale: NTS

Date: JAN 16

Dwg No: **P717/20**



Sources: ORDNANCE SURVEY
Digital Superplan Data

Ellis Miller
Site Survey, Drawings no. 180-L-001, 020 to 23

Proposed Scheme 3d model -
160128 - 180 Highgate 3D Model.dwg

Key:

All heights in mm above local datum

Existing Buildings

Proposed Scheme

Project: 1a Highgate Road
London

Title: 3D View
January 2016 Proposal

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Drawn By: TB

Scale: NTS

Date: JAN 16

Dwg No: **P717/21**

Appendix B – Technical Analysis

1a Highgate Road
London

DAYLIGHT ANALYSIS
Proposed Scheme
Received 20/11/15

FEB 2016

Room	Room Use	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Room Use	Window	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
389 Kentish Town Road							**389 Kentish Town Road**								
R1/201		W1/201	36.99	24.61	12.38	33.47	**R1/201**		W1/201	3.46	3.46	2.58	2.58	0.88	25.53
R2/201	STAIRS	W2/201	37.03	24.87	12.16	32.84	**R2/201**	STAIRS	W2/201	2.81	2.81	2.07	2.07	0.73	26.09
R3/201	WC	W5/201	37.06	25.19	11.87	32.03	**R3/201**	WC	W5/201	0.59	0.59	0.44	0.44	0.16	26.14
R4/201	STORE/LOCKER	W3/201	37.74	27.31	10.43	27.64	**R4/201**	STORE/LOCKER	W3/201	1.78	1.78	1.38	1.38	0.40	22.67
R5/201	WC	W4/201	38.51	33.06	5.45	14.15	**R5/201**	WC	W4/201	2.15	2.15	1.88	1.88	0.27	12.35
R1/202	BEDROOM	W1/202	38.11	38.11	0.00	0.00	**R1/202**	BEDROOM	W1/202	2.02	2.02	2.02	2.02	0.00	0.15
R2/202	KITCHEN	W2/202	38.79	38.79	0.00	0.00	**R2/202**	KITCHEN	W2/202	2.03	2.03	2.03	2.03	0.00	0.15
R4/202	BEDROOM	W4/202	39.16	39.16	0.00	0.00	**R4/202**	BEDROOM	W4/202	1.75	1.75	1.75	1.75	0.00	0.06
1 Highgate Road							**1 Highgate Road**								
R1/19		W1/19	18.62	17.07	1.55	8.32	**R1/19**		W1/19	0.26		0.23			
R1/19		W2/19	17.24	15.09	2.15	12.47	**R1/19**		W2/19	0.55	0.81	0.49	0.72	0.09	10.74
R1/20		W1/20	32.81	24.65	8.16	24.87	**R1/20**		W1/20	0.75		0.62			
R1/20		W2/20	32.50	25.65	6.85	21.08	**R1/20**		W2/20	0.75	1.50	0.64	1.26	0.25	16.33
R1/21		W1/21	22.05	19.30	2.75	12.47	**R1/21**		W1/21	0.12		0.11			
R1/21		W2/21	37.92	32.36	5.56	14.66	**R1/21**		W2/21	1.04		0.93			
R1/21		W3/21	37.53	32.87	4.66	12.42	**R1/21**		W3/21	1.03	2.19	0.94	1.99	0.20	9.32
R1/22		W1/22	38.60	38.60	0.00	0.00	**R1/22**		W1/22	0.63		0.63			
R1/22		W2/22	38.39	38.39	0.00	0.00	**R1/22**		W2/22	0.62	1.25	0.62	1.25	0.00	0.00

Room	Room Use	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Room Use	Window	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
R1/23		W1/23	38.89	38.89	0.00	0.00	**R1/23**		W1/23	0.43	0.43	0.43	0.43	0.00	0.00
3 Highgate Road							**3 Highgate Road**								
R1/39	KITCHEN_TW	W1/39	14.76	16.40	-1.64	-11.11	**R1/39**	KITCHEN_TW	W1/39	0.94		0.98			
R1/39	KITCHEN_TW	W2/39	3.51	3.62	-0.11	-3.13	**R1/39**	KITCHEN_TW	W2/39	0.84	1.78	0.86	1.84	-0.06	-3.55
R1/40	KITCHEN	W1/40	21.66	18.46	3.20	14.77	**R1/40**	KITCHEN	W1/40	1.01	1.01	0.88	0.88	0.13	12.49
R1/41	KD	W1/41	31.16	28.43	2.73	8.76	**R1/41**	KD	W1/41	1.31	1.31	1.22	1.22	0.09	6.56
R1/42	STUDY	W1/42	34.92	34.92	0.00	0.00	**R1/42**	STUDY	W1/42	1.10	1.10	1.10	1.10	0.00	0.00
R1/49	LIVING/BEDROOM	W1/49	7.16	6.47	0.69	9.64	**R1/49**	LIVING/BEDROO	W1/49	0.26	0.26	0.25	0.25	0.02	7.20
5 Highgate Road							**5 Highgate Road**								
R1/69		W1/69	13.77	12.89	0.88	6.39	**R1/69**		W1/69	0.86	0.86	0.82	0.82	0.04	4.56
R1/70		W1/70	27.36	23.95	3.41	12.46	**R1/70**		W1/70	1.35	1.35	1.24	1.24	0.12	8.57
R1/71		W1/71	34.95	32.09	2.86	8.18	**R1/71**		W1/71	1.70	1.70	1.59	1.59	0.11	6.46
R1/72		W1/72	34.08	34.08	0.00	0.00	**R1/72**		W1/72	1.90	1.90	1.90	1.90	0.00	0.11
R1/80		W1/80	7.78	7.78	0.00	0.00	**R1/80**		W1/80	0.36	0.36	0.36	0.36	0.00	0.00
R1/81		W1/81	9.70	9.70	0.00	0.00	**R1/81**		W1/81	0.55	0.55	0.55	0.55	0.00	0.00
R1/83		W1/83	33.40	33.40	0.00	0.00	**R1/83**		W1/83	0.78	0.78	0.78	0.78	0.00	0.00
7 Highgate Road							**7 Highgate Road**								

Room	Room Use	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Room Use	Window	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
R1/100		W1/100	15.04	13.79	1.25	8.31	**R1/100**		W1/100	1.48	1.48	1.40	1.40	0.08	5.14
R2/100		W3/100	17.57	15.78	1.79	10.19	**R2/100**		W3/100	0.99	0.99	0.92	0.92	0.06	6.38
R3/100		W2/100	6.78	6.58	0.20	2.95	**R3/100**		W2/100	0.47	0.47	0.46	0.46	0.01	1.28
R4/100	TEST_WINDOWS	W4/100	5.06	5.06	0.00	0.00	**R4/100**	TEST_WINDOWS	W4/100	0.51	0.51	0.51	0.51	0.00	0.00
R1/101		W1/101	20.72	19.78	0.94	4.54	**R1/101**		W1/101	1.79	1.79	1.74	1.74	0.05	2.84
R2/101		W2/101	26.58	25.16	1.42	5.34	**R2/101**		W2/101	1.14	1.14	1.10	1.10	0.04	3.16
R3/101		W4/101	12.70	12.49	0.21	1.65	**R3/101**		W4/101	0.68	0.68	0.68	0.68	0.00	0.59
R4/101		W5/101	31.30	30.26	1.04	3.32	**R4/101**		W5/101	1.48	1.48	1.45	1.45	0.03	2.10
R5/101	TEST_WINDOWS	W6/101	6.55	6.55	0.00	0.00	**R5/101**	TEST_WINDOWS	W6/101	0.51	0.51	0.51	0.51	0.00	0.00
R1/102		W1/102	24.01	24.01	0.00	0.00	**R1/102**		W1/102	1.71	1.71	1.71	1.71	0.00	0.00
R2/102		W2/102	32.25	32.25	0.00	0.00	**R2/102**		W2/102	1.02	1.02	1.02	1.02	0.00	0.00
R3/102		W3/102	16.17	16.17	0.00	0.00	**R3/102**		W3/102	0.71	0.71	0.71	0.71	0.00	0.00
R4/102		W4/102	35.11	35.11	0.00	0.00	**R4/102**		W4/102	1.36	1.36	1.36	1.36	0.00	0.00
R5/102	TEST_WINDOWS	W5/102	10.84	10.84	0.00	0.00	**R5/102**	TEST_WINDOWS	W5/102	0.51	0.51	0.51	0.51	0.00	0.00
R1/103		W1/103	28.47	28.47	0.00	0.00	**R1/103**		W1/103	2.17	2.17	2.17	2.17	0.00	0.00
R2/103		W2/103	36.30	36.30	0.00	0.00	**R2/103**		W2/103	0.99	0.99	0.99	0.99	0.00	0.00
R3/103		W3/103	19.53	19.53	0.00	0.00	**R3/103**		W3/103	0.63	0.63	0.63	0.63	0.00	0.00

Room	Room Use	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC	Room	Room Use	Window	EXISTING ADF	EXISTING TOTAL	PROPOSED ADF	PROPOSED TOTAL	TOTAL LOSS	%LOSS ADF
R4/103		W4/103	37.09	37.09	0.00	0.00	**R4/103**		W4/103	1.25	1.25	1.25	1.25	0.00	0.00
R5/103	TEST_WINDOWS	W5/103	23.95	23.95	0.00	0.00	**R5/103**	TEST_WINDOWS	W5/103	0.71	0.71	0.71	0.71	0.00	0.00

Room/ Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
389 Kentish Town Road						
R1/201		147.7	143.3	143.3	0.0	0.0
R2/201	STAIRS	24.7	24.7	24.7	0.0	0.0
R3/201	WC	28.2	27.1	27.1	0.0	0.0
R4/201	STORE/LOCKER	111.6	105.5	105.5	0.0	0.0
R5/201	WC	136.5	132.6	132.6	0.0	0.0
R1/202	BEDROOM	115.8	112.3	112.3	0.0	0.0
R2/202	KITCHEN	90.9	88.5	88.5	0.0	0.0
R4/202	BEDROOM	144.6	139.5	139.5	0.0	0.0
1 Highgate Road						
R1/19		257.1	136.0	85.0	50.9	37.4
R1/20		254.3	246.7	236.1	10.6	4.3
R1/21		263.1	256.1	256.1	0.0	0.0
R1/22		242.8	234.6	234.6	0.0	0.0
R1/23		218.6	193.5	193.5	0.0	0.0
3 Highgate Road						
R1/39	KITCHEN_TW	79.8	64.0	68.9	-4.9	-7.7
R1/40	KITCHEN	58.9	50.5	50.5	0.0	0.0
R1/41	KD	110.1	95.8	95.8	0.0	0.0
R1/42	STUDY	110.1	99.2	99.2	0.0	0.0
R1/49	LIVING/BEDRO(	172.7	62.5	45.4	17.1	27.4
5 Highgate Road						
R1/69		167.3	111.0	67.4	43.6	39.3
R1/70		167.3	156.8	156.8	0.0	0.0
R1/71		167.3	160.6	160.6	0.0	0.0
R1/72		134.6	114.2	114.2	0.0	0.0
R1/80		99.0	59.1	59.1	0.0	0.0
R1/81		99.0	72.6	72.6	0.0	0.0
R1/83		127.8	105.7	105.7	0.0	0.0
7 Highgate Road						
R1/100		151.7	147.8	147.8	0.0	0.0
R2/100		55.5	43.1	43.1	0.0	0.0
R3/100		30.2	19.0	19.0	0.0	0.0
R4/100	TEST_WINDOW	68.1	35.3	35.3	0.0	0.0

Room/ Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
R1/101		151.7	148.5	148.5	0.0	0.0
R2/101		55.5	54.8	54.8	0.0	0.0
R3/101		30.2	22.2	22.2	0.0	0.0
R4/101		123.6	107.3	107.3	0.0	0.0
R5/101	TEST_WINDOW	68.1	37.5	37.5	0.0	0.0
R1/102		151.7	149.1	149.1	0.0	0.0
R2/102		55.5	54.7	54.7	0.0	0.0
R3/102		30.2	22.7	22.7	0.0	0.0
R4/102		123.6	115.8	115.8	0.0	0.0
R5/102	TEST_WINDOW	68.1	48.1	48.1	0.0	0.0
R1/103		151.7	151.2	151.2	0.0	0.0
R2/103		55.5	54.7	54.7	0.0	0.0
R3/103		30.2	26.4	26.4	0.0	0.0
R4/103		123.6	115.8	115.8	0.0	0.0
R5/103	TEST_WINDOW	68.1	63.5	63.5	0.0	0.0

1a Highgate Road
London

SUNLIGHT ANALYSIS
Proposed Scheme
Received 20/11/15

FEB 2016

			Window						Room					
			Existing		Proposed				Existing		Proposed			
Room	Window	Room Use	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss
389 Kentish Town Road														
R1/201	**W1/201**		24	65	14	49	41.7	24.6	24	65	14	49	41.7	24.6
R2/201	**W2/201**	STAIRS	23	64	16	47	30.4	26.6	23	64	16	47	30.4	26.6
R3/201	**W5/201**	WC	23	64	16	47	30.4	26.6	23	64	16	47	30.4	26.6
R4/201	**W3/201**	STORE/LOCKER	24	65	17	50	29.2	23.1	24	65	17	50	29.2	23.1
R5/201	**W4/201**	WC	24	66	22	59	8.3	10.6	24	66	22	59	8.3	10.6
R1/202	**W1/202**	BEDROOM	24	65	24	65	0.0	0.0	24	65	24	65	0.0	0.0
R2/202	**W2/202**	KITCHEN	24	65	24	65	0.0	0.0	24	65	24	65	0.0	0.0
R4/202	**W4/202**	BEDROOM	24	66	24	66	0.0	0.0	24	66	24	66	0.0	0.0
1 Highgate Road														
R1/19	**W1/19**		0	23	0	20	-	13.0						
R1/19	**W2/19**		4	32	1	27	75.0	15.6	4	36	1	29	75.0	19.4
R1/20	**W1/20**		20	57	5	40	75.0	29.8						
R1/20	**W2/20**		18	54	7	40	61.1	25.9	21	60	8	44	61.9	26.7

1a Highgate Road
London

SUNLIGHT ANALYSIS
Proposed Scheme
Received 20/11/15

FEB 2016

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Room	Window	Room Use	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss
R1/21	**W1/21**		18	48	15	45	16.7	6.3						
R1/21	**W2/21**		22	62	15	54	31.8	12.9						
R1/21	**W3/21**		22	62	20	59	9.1	4.8	22	68	20	65	9.1	4.4
R1/22	**W1/22**		22	62	22	62	0.0	0.0						
R1/22	**W2/22**		22	62	22	62	0.0	0.0	22	62	22	62	0.0	0.0
R1/23	**W1/23**		21	62	21	62	0.0	0.0	21	62	21	62	0.0	0.0
3 Highgate Road														
R1/39	**W1/39**	KITCHEN_TW	0	21	1	23	-	-9.5						
R1/39	**W2/39**	KITCHEN_TW	0	4	0	4	-	0.0	0	24	1	26	-	-8.3
R1/40	**W1/40**	KITCHEN	3	25	2	23	33.3	8.0	3	25	2	23	33.3	8.0
R1/41	**W1/41**	KD	15	42	13	40	13.3	4.8	15	42	13	40	13.3	4.8
R1/42	**W1/42**	STUDY	15	50	15	50	0.0	0.0	15	50	15	50	0.0	0.0
R1/49	**W1/49**	LIVING/BEDROO	0	10	0	9	-	10.0	0	10	0	9	-	10.0
5 Highgate Road														

1a Highgate Road
London

SUNLIGHT ANALYSIS
Proposed Scheme
Received 20/11/15

FEB 2016

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			Existing		Proposed				Existing		Proposed			
Room	Window	Room Use	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss
R1/69	**W1/69**		0	17	0	15	-	11.8	0	17	0	15	-	11.8
R1/70	**W1/70**		16	51	8	43	50.0	15.7	16	51	8	43	50.0	15.7
R1/71	**W1/71**		21	59	19	57	9.5	3.4	21	59	19	57	9.5	3.4
R1/72	**W1/72**		23	59	23	59	0.0	0.0	23	59	23	59	0.0	0.0
R1/80	**W1/80**		0	8	0	8	-	0.0	0	8	0	8	-	0.0
R1/81	**W1/81**		1	8	1	8	0.0	0.0	1	8	1	8	0.0	0.0
R1/83	**W1/83**		15	48	15	48	0.0	0.0	15	48	15	48	0.0	0.0
7 Highgate Road														
R1/100	**W1/100**		7	28	5	26	28.6	7.1	7	28	5	26	28.6	7.1
R2/100	**W3/100**		15	43	12	40	20.0	7.0	15	43	12	40	20.0	7.0
R3/100	**W2/100**		3	16	3	16	0.0	0.0	3	16	3	16	0.0	0.0
R4/100	**W4/100**	TEST_WINDOWS	0	3	0	3	-	0.0	0	3	0	3	-	0.0
R1/101	**W1/101**		16	45	16	45	0.0	0.0	16	45	16	45	0.0	0.0

1a Highgate Road
London

SUNLIGHT ANALYSIS
Proposed Scheme
Received 20/11/15

FEB 2016

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Room	Window	Room Use	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss
R2/101	**W2/101**		20	58	20	58	0.0	0.0	20	58	20	58	0.0	0.0
R3/101	**W4/101**		10	24	10	24	0.0	0.0	10	24	10	24	0.0	0.0
R4/101	**W5/101**		21	56	21	56	0.0	0.0	21	56	21	56	0.0	0.0
R5/101	**W6/101**	TEST_WINDOWS	0	4	0	4	-	0.0	0	4	0	4	-	0.0
R1/102	**W1/102**		23	52	23	52	0.0	0.0	23	52	23	52	0.0	0.0
R2/102	**W2/102**		25	69	25	69	0.0	0.0	25	69	25	69	0.0	0.0
R3/102	**W3/102**		12	26	12	26	0.0	0.0	12	26	12	26	0.0	0.0
R4/102	**W4/102**		21	57	21	57	0.0	0.0	21	57	21	57	0.0	0.0
R5/102	**W5/102**	TEST_WINDOWS	0	9	0	9	-	0.0	0	9	0	9	-	0.0
R1/103	**W1/103**		23	54	23	54	0.0	0.0	23	54	23	54	0.0	0.0
R2/103	**W2/103**		26	75	26	75	0.0	0.0	26	75	26	75	0.0	0.0
R3/103	**W3/103**		12	30	12	30	0.0	0.0	12	30	12	30	0.0	0.0

1a Highgate Road
London

SUNLIGHT ANALYSIS
Proposed Scheme
Received 20/11/15

FEB 2016

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Room	Window	Room Use	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss
R4/103	**W4/103**		21	59	21	59	0.0	0.0	21	59	21	59	0.0	0.0
R5/103	**W5/103**	TEST_WINDOWS	2	24	2	24	0.0	0.0	2	24	2	24	0.0	0.0