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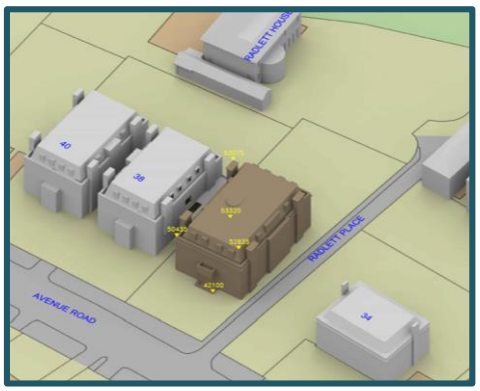


36 Avenue Road, London

Daylight, Sunlight & Overshadowing Report

Director:	Barry Hood
Client:	M Cheung (Zitron)
Date:	May 2015
Version:	Planning
Project::	P524

Overshadowing

• Daylight & Sunlight • Light Pollution •

Solar Glare • Daylight Design

Contents

Appendices

1 Executive Summary

1.1 This reports relates to the KSR Architects' 28th April 2015 Proposed Scheme for the 36 Avenue Road site insofar as it affects the daylight and sunlight amenity to the surrounding residential properties and areas of amenity space.

1.2 There is full technical analysis contained within the appendices of this report, however, in summary, all surrounding residential windows will be fully BRE compliant in relation to the VSC test with only one room within 38 Avenue Road experiencing a minor NSL alteration. Any alterations in sunlight and overshadowing levels will also be fully BRE compliant. This means that the occupants of the surrounding rooms/gardens are unlikely to notice any alteration to their levels of sunlight amenity.

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.

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:

"all main living rooms of dwellings…should be checked if they have a window facing within 90° of due south, kitchens and bedrooms are less important, although care should be taken not to block too much sun."

Overshadowing

3.11 The 2011 BRE Guidelines acknowledge that sunlight in the space between buildings has an important effect on the overall appearance and ambience of a development. It states:

"…good site layout planning for daylight and sunlight should not limit itself to providing good natural light inside buildings. Sunlight in the space between buildings has an important effect on the overall appearance and ambience of a development."

3.12 One method for assessing sun on the ground is the 'sun-on-ground indicator'. The BRE Guidelines suggest that the Spring Equinox (March 21st) is a suitable date for the assessment.

3.13 Using specialist software, the path of the sun is tracked to determine where the sun would reach the ground and where it would not. This assessment reviews the total percentage of an area that receives at least two hours of direct sunlight on the March 21st.

3.14 The BRE Guidelines suggest that for a garden or amenity area to appear adequately sunlit throughout the year, no more than half (50%) of the area should be prevented by buildings from receiving two hours of sunlight on March 21st.

3.15 The BRE Guidelines suggest that where large buildings are proposed which may affect a number of gardens or open spaces, it is useful to plot a shadow plan to illustrate the location of shadows at different times of the day and year. For the purpose of this assessment the overshadowing was mapped for the following three key dates in the year:

- 21st March (Spring Equinox);
- 21st June (Summer Solstice);
- 21st December (Winter Solstice).

3.16 September 21st (Autumn Equinox) provides the same overshadowing images as March 21st (Spring Equinox) as the sun follows the same path at these corresponding times of year.

3.17 For each of these dates, the overshadowing is calculated at hourly intervals throughout the day from 08:00 to 19:00. Some images are not included within Appendix B because the sun would not be present during these times (e.g. from approximately 16:00 onwards on 21st December) and thus no shadow can be cast.

3.18 The indicators are calculated for different latitudes, London being at 51.5° north. Southern orientation is critically important, as are the heights of the existing and proposed buildings.

3.19 The table below shows the sunset and sunrise times for 21st March, 21st June and 21st December. It also shows the maximum altitude of the sun and the time at which the sun reaches the altitude of 10° which is the altitude at which the BRE Guidelines specifies overshadowing should be assessed. Receipt of sunlight can be disregarded when it is lower than this altitude.

London, UK - Greenwich Mean Time (Accurate to Nearest 10 minutes)					
Date	Sunrise Time	Time at 10° Altitude Rising	Maximum (degrees) Altitude	Time at 10° Altitude Setting	Sunset Time
21 Mar	06:10	07:10	39.4	17:10	18:10
21 June	03:50	05:10	62.4	19:00	20:10
21 Dec	08:10	09:50	15.6	14:10	16:00

3.20 The BRE Guidelines state:

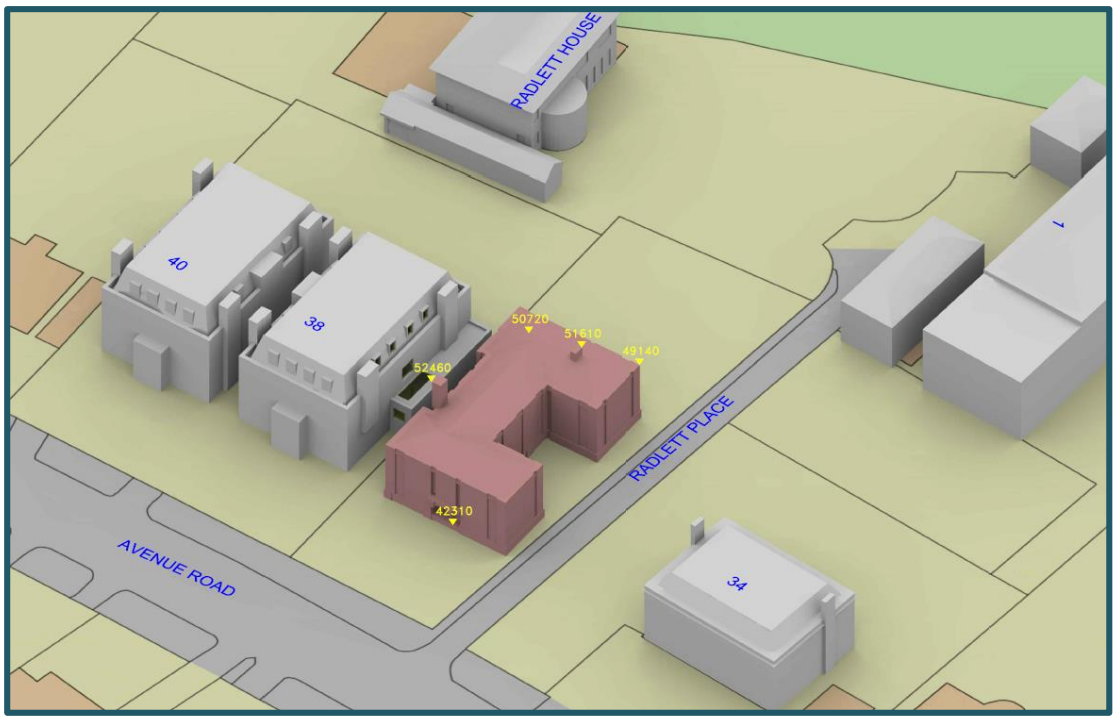
"Adverse effects occur when there is a significant decrease in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space… The assessment of effect will depend on a combination of factors, and there is no simple rule of thumb that can be applied."

4 Sources of Information

Site Photographs	-	Point 2 Surveyors
Survey	-	OS Map
		Matrix Surveys Topographical dated March 2014
Proposed Scheme Drawings	-	KSR Architects - Proposed scheme dated 28/04/15

5 The Site

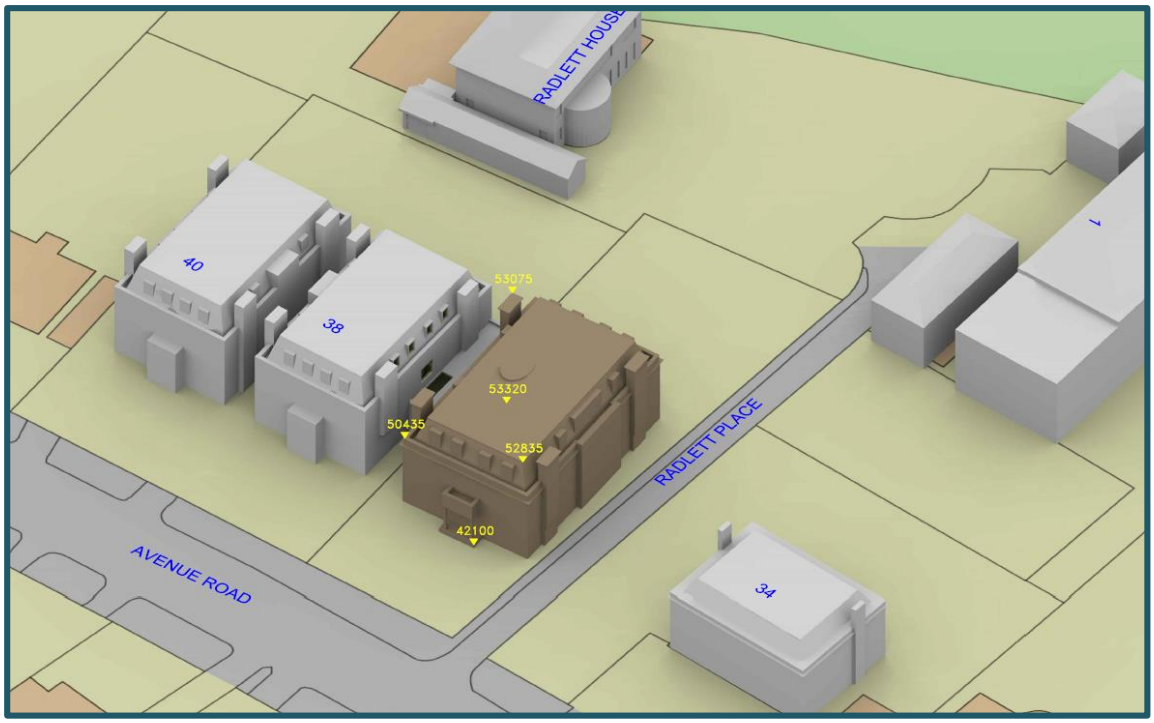
5.1 The site is located in Central London in the London Borough of Camden.



Drawing Number: P524/02 – 3D View - Existing Buildings

5.2 Our understanding of the site location and the existing buildings which occupy the site can be seen within drawings P524/01-03 which can be found within Appendix A.

6 The Scheme



Drawing Number: P524/05 – 3D View – Proposed Scheme

6.1 Our understanding of the proposed scheme is illustrated in drawings P524/04-06 located in Appendix A.

7 The Neighbours

7.1 The following neighbouring 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:

- 53 Avenue Road
- 34 Avenue Road
- 38 Avenue Road

7.2 The location of these properties can be seen in the drawings at Appendix A.

8 Effects of the Scheme

8.1 The proposed scheme can be found illustrated within drawings P524/04-06 in Appendix A. Detailed results for each window/room/garden assessed can be found in Appendix B and Appendix C and are summarised below.

53 Avenue Road

Located to the south west of the development site, this property appears from external inspection to be a two storey residential detached house.

8.2 Drawing P524/07 at Appendix B shows that the Proposed Scheme will fall below a 25° section line taken from the centre of the lowest site facing window. The daylight and sunlight amenity enjoyed by the occupants of 53 Avenue Road will not, therefore, be affected by the construction of the Proposed Scheme.

34 Avenue Road

Located to the south east of the development site, this property appears from external inspection to be a three storey residential detached house.

8.3 Drawing P524/07 at Appendix B shows that the Proposed Scheme will fall below a 25° section line taken from the centre of the lowest site facing window. The daylight and sunlight amenity enjoyed by the occupants of 34 Avenue Road will not, therefore, be affected by the construction of the Proposed Scheme.

38 Avenue Road

Located on the North West boundary of the development site, this property appears from external inspection and a review of planning application documents to be a three storey residential detached house.

Daylight

8.4 There are 7 windows serving 6 site facing rooms within this building. Planning application drawings indicate, however, that 4 of the 6 rooms are bathrooms, which are not material for consideration in daylight and sunlight terms. The remaining two rooms are a ground floor kitchen (R1/20) and a 2nd floor bedroom (R3/22).

8.5 Room R3/22 will be fully BRE compliant in terms of any VSC and/or NSL alteration resulting from the construction of the proposed scheme. The effect upon this room is, therefore, considered to be negligible since, in accordance with BRE guidance, the occupants are unlikely to notice any alteration to their levels of daylight amenity.

8.6 Both windows serving the ground floor kitchen will be fully BRE compliant in relation to the VSC daylight test. The room will, however, despite experiencing a minor NSL alteration which derogates from BRE guidance, still be able to benefit from daylight distribution at working plane height to over 66% of its area. The effect upon this room is, therefore, considered to be minor in nature.

Sunlight

8.7 The rooms within this building which are material for sunlight assessment will all be fully compliant with the BRE guidelines relating to APSH alterations. The effect upon these rooms is, therefore, considered to be negligible since, in accordance with BRE guidance, the occupants are unlikely to notice any alteration to their levels of sunlight amenity.

Overshadowing

8.8 The detailed sun on ground and transient overshadowing analysis results can be found at Appendix C.

8.9 The sun on ground analysis results show that, on 21st March, 71.3% of the garden area of 38 Avenue Road will continue to receive at least two hours of sunlight. In accordance with BRE

guidance, this means that the garden will be adequately sunlit throughout the year. This is confirmed by looking at the transient overshadowing analysis, which compares the path of the shadow from the existing and proposed buildings at hourly intervals on 21st March (representing spring and autumn sunlight levels), 21st December (winter sunlight) and 21st June (summer sunlight).

8.10 The overshadowing results show that the small increase in the level of shadowing that the Proposed Scheme will cause to the garden of 38 Avenue Road (4.4% of the total area) is well within BRE guidance. This means that the effect of the Proposed Scheme upon this garden is unlikely to be noticed by its users.

9 Conclusion

9.1 Detailed technical analysis has been undertaken to quantify the effect of the construction of the proposed 36 Avenue Road scheme upon the daylight and sunlight amenity of the surrounding neighbouring residential properties and areas of amenity space.

9.2 Analysis results show that all surrounding residential windows will be fully BRE compliant in relation to the VSC test with only one room within 38 Avenue Road experiencing a minor NSL alteration. Any alterations in sunlight and overshadowing levels will also be fully BRE compliant. This means that the occupants of the surrounding rooms/gardens are unlikely to notice any alteration to their levels of sunlight amenity.

9.3 Overall, the proposed 36 Avenue Road scheme will relate well to the neighbouring residential properties and gardens. We, therefore, fully support this application with regards to daylight, sunlight and overshadowing.

Appendix A – Drawings

Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

EXISTING BUILDINGS

N

Project: 36 AVENUE ROAD
LONDON

Title: SITE PLAN
EXISTING BUILDINGS

Point 2 Surveyors Ltd,
3rd Floor,
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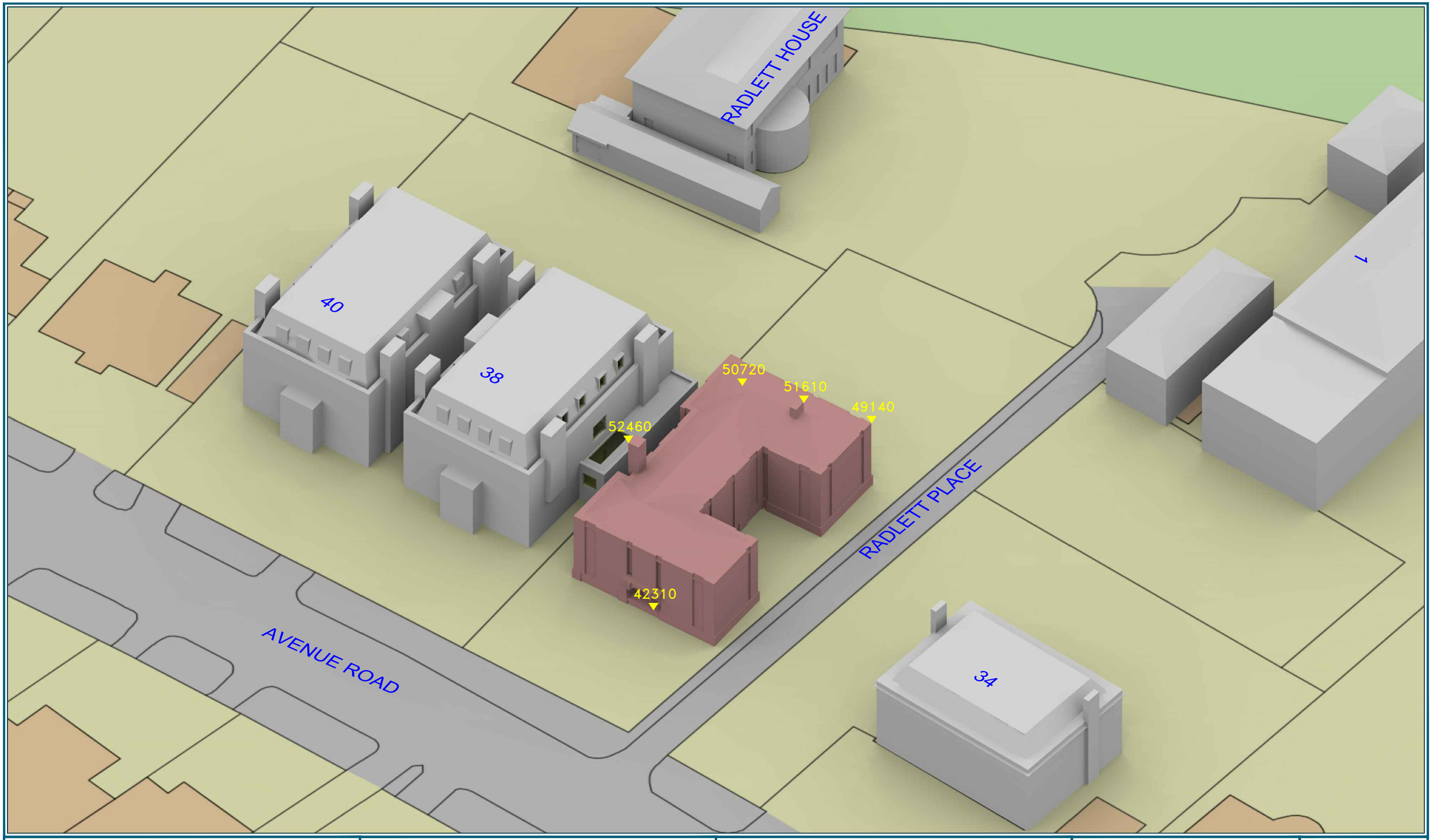
London WC2E 9AB,
0207 836 5828
www.point2surveyors.com

Drawn By: AA - SFB

Scale: 1:450 @ A3

Date: MAY 15

Dwg No: **P524/01**



Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

EXISTING BUILDINGS

42310 ALL HEIGHTS IN MM AOD

Project: 36 AVENUE ROAD
LONDON

Title: 3D VIEW
EXISTING BUILDINGS

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3rd Floor,
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www.point2surveyors.com

Drawn By: AA - SFB

Scale: -

Date: MAY 15

Dwg No: **P524/02**

Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

EXISTING BUILDINGS

42310 ALL HEIGHTS IN MM AOD

Project: 36 AVENUE ROAD
LONDON

Title: 3D VIEW
EXISTING BUILDINGS

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Drawn By: AA - SFB

Scale: -

Date: MAY 15

Dwg No: **P524/03**

Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

PROPOSED SCHEME

N

Project: 36 AVENUE ROAD
LONDON

Title: SITE PLAN
PROPOSED SCHEME DATED
28/04/15

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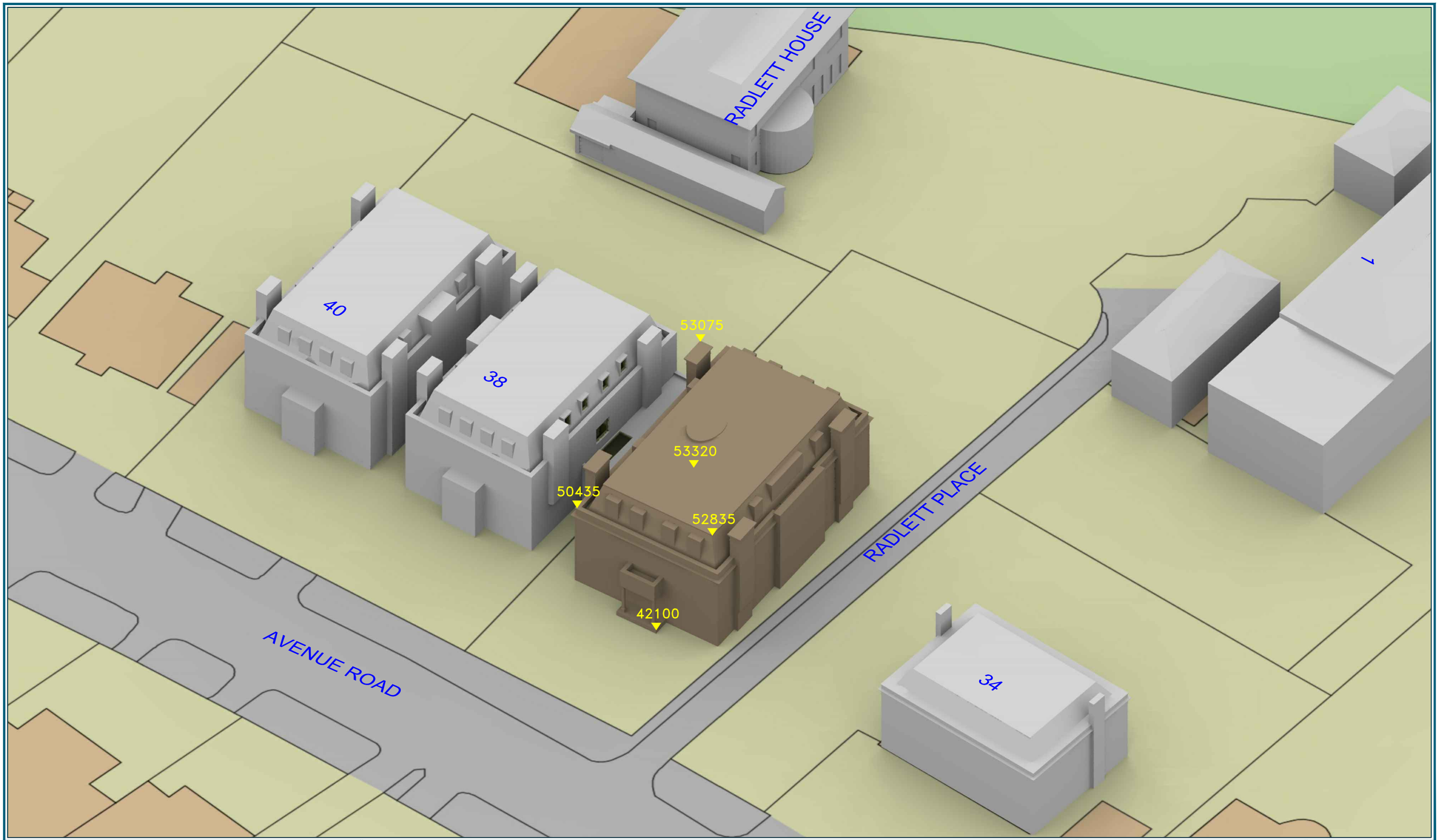

Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

PROPOSED SCHEME

42310 ALL HEIGHTS IN MM AOD

Project: 36 AVENUE ROAD
LONDON

Title: 3D VIEW
PROPOSED SCHEME DATED
28/04/15

Point 2 Surveyors Ltd,
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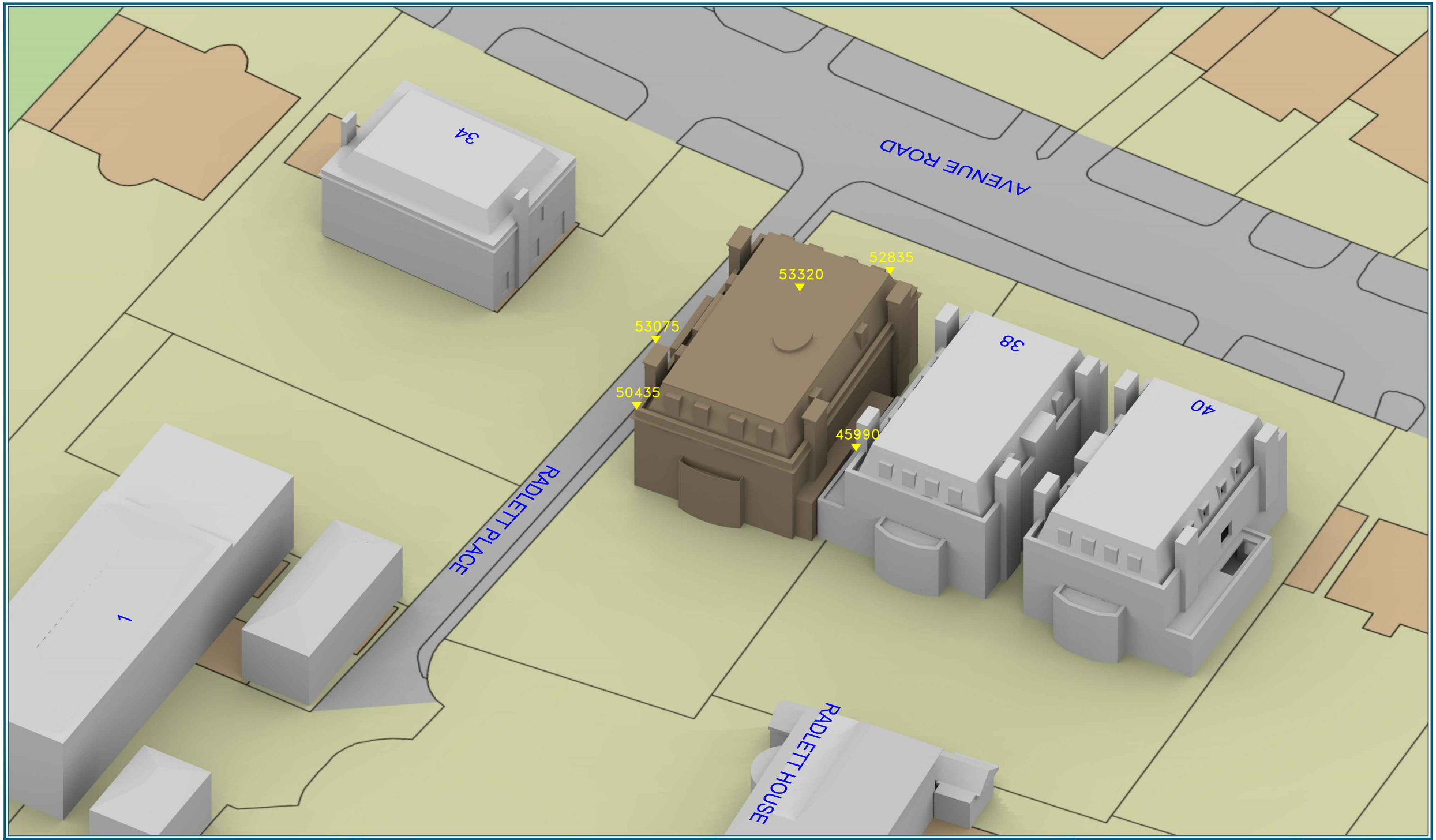
Scale: -

Date: MAY 15

Dwg No: **P524/05**



Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

PROPOSED SCHEME

42310 ALL HEIGHTS IN MM AOD

Project: 36 AVENUE ROAD
LONDON

Title: 3D VIEW
PROPOSED SCHEME DATED
28/04/15

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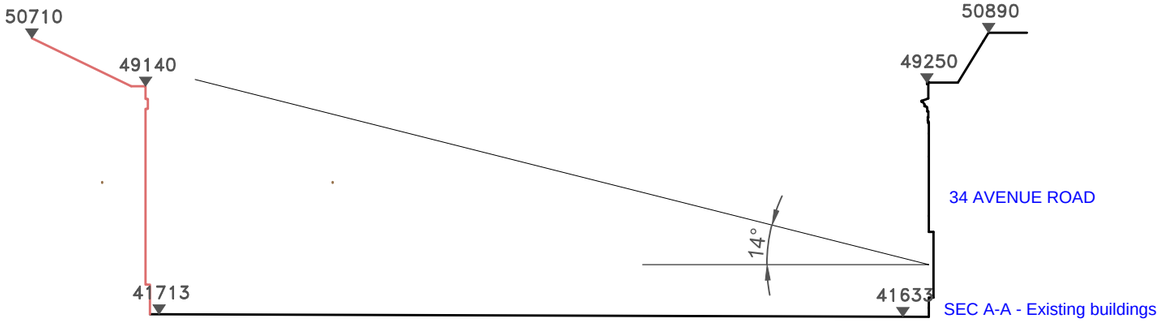
Scale: -

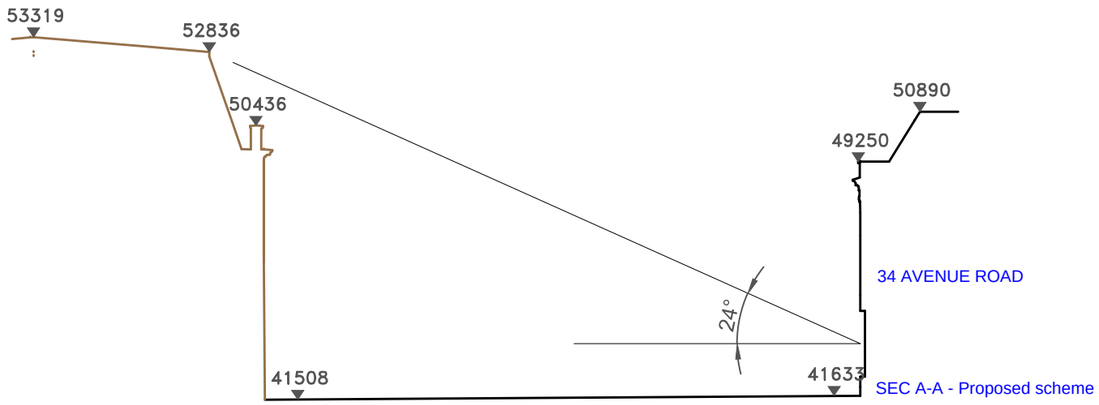
Date: MAY 15

Dwg No: **P524/06**

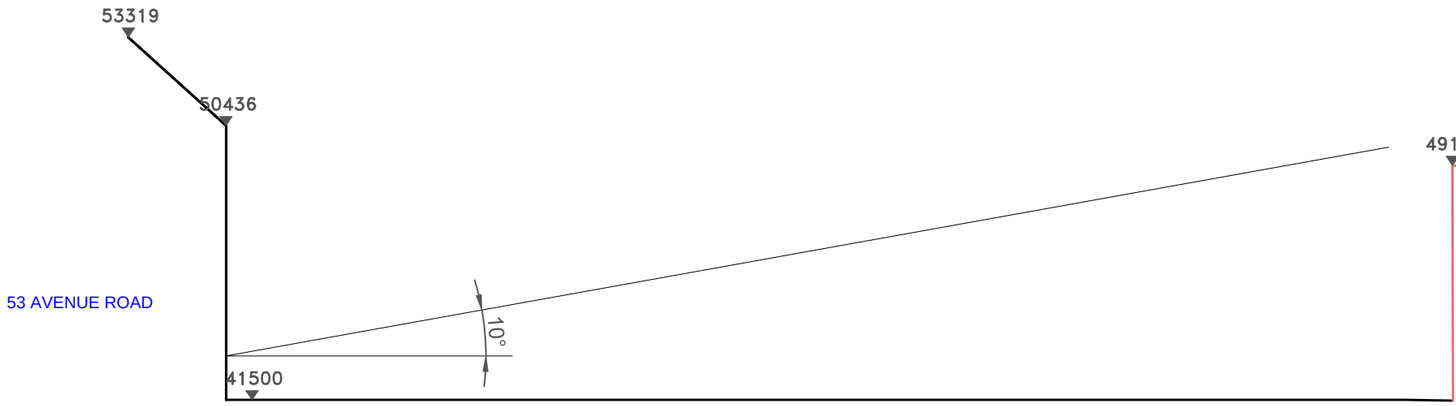
Appendix B –Daylight & Sunlight Results



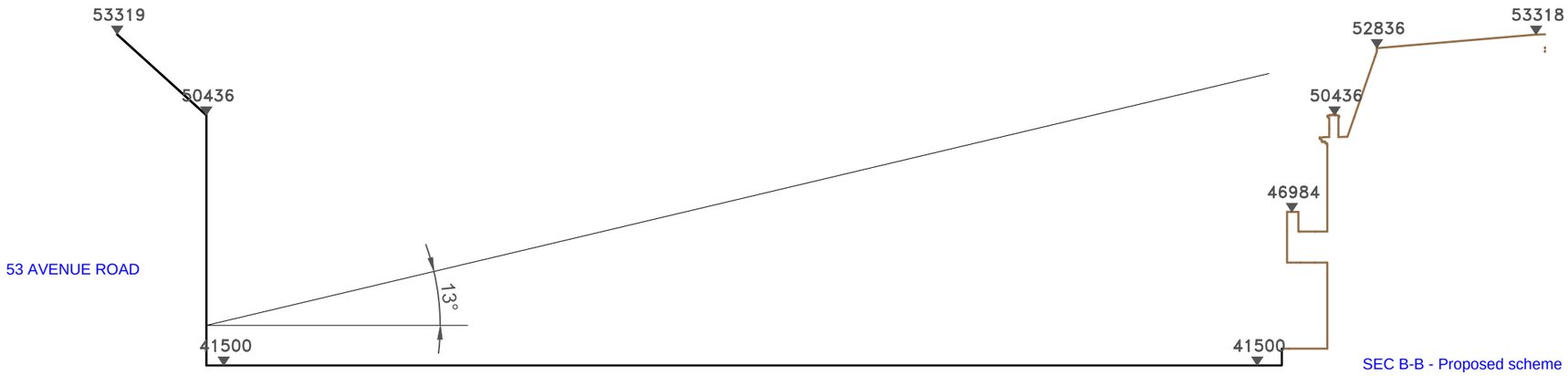
SEC A-A - Existing buildings



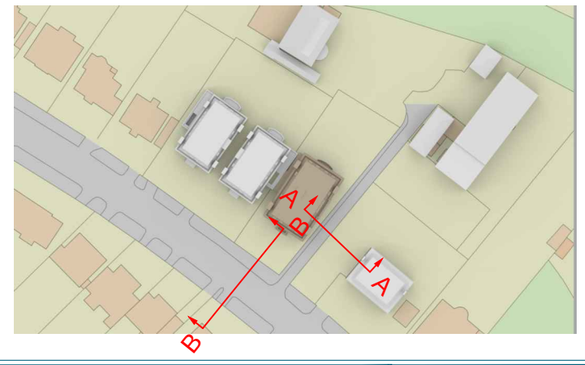
SEC A-A - Proposed scheme



SEC B-B - Existing buildings



SEC B-B - Proposed scheme



Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

Project: 36 AVENUE ROAD
LONDON

Title: SECTIONS

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Scale: 1:200 @ A3

Date: MAY 15

Dwg No: **P524/07**

36 AVANUE ROAD **DAYLIGHT ANALYSIS** **MAY 2015**
LONDON **SCHEME 28/04/15**
EXISTING VS PROPOSED

Room	Room Use	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC
38 AVENUE ROAD						
R1/20	KITCHEN	W1/20	14.92	12.58	2.34	15.68
R1/20	KITCHEN	W2/20	50.66	40.78	9.88	19.50
R1/21	BATHROOM	W1/21	30.24	18.52	11.72	38.76
R1/22	BATHROOM	W1/22	36.12	31.42	4.70	13.01
R2/22	BATHROOM	W2/22	38.56	33.83	4.73	12.27
R3/22	BEDROOM	W3/22	38.63	33.64	4.99	12.92
R4/22	BATHROOM	W4/22	34.51	29.18	5.33	15.44

36 AVANUE ROAD **DAYLIGHT DISTRIBUTION ANALYSIS** **MAY 2015**
LONDON **SCHEME 28/04/15**
EXISTING VS PROPOSED

Room/ Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
38 AVENUE ROAD						
R1/20	KITCHEN	398.6	374.7	264.2	110.5	29.5
R1/21	BATHROOM	149.5	146.9	91.5	55.4	37.7
R1/22	BATHROOM	75.9	75.3	75.3	0.0	0.0
R2/22	BATHROOM	55.8	54.9	54.9	0.0	0.0
R3/22	BEDROOM	132.5	122.9	122.9	0.0	0.0
R4/22	BATHROOM	78.8	77.9	77.9	0.0	0.0

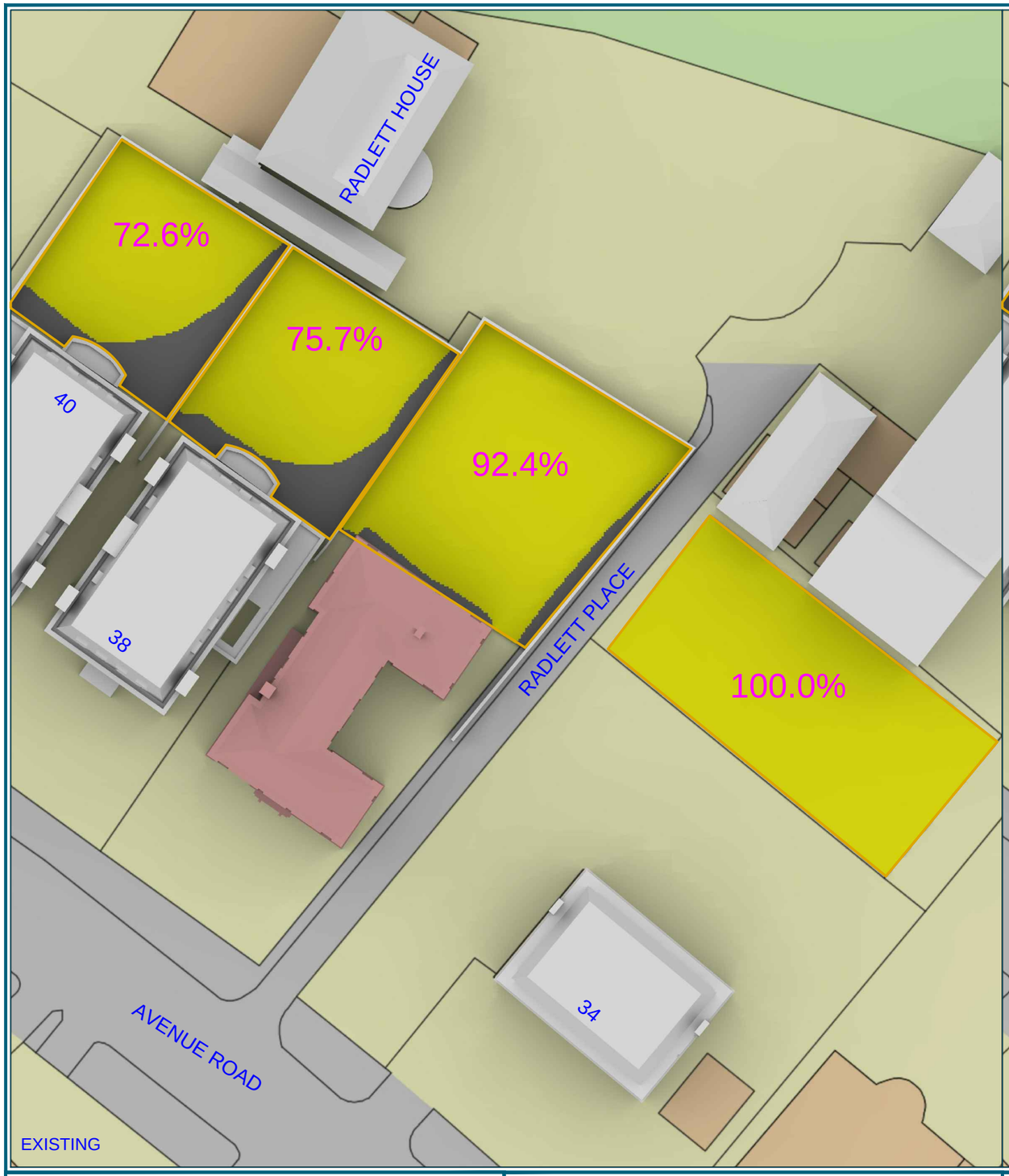
36 AVANUE ROAD
LONDON
EXISTING VS PROPOSED

SUNLIGHT ANALYSIS
SCHEME 28/04/15

MAY 2015

			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
38 AVENUE ROAD														
R1/20	**W1/20**	KITCHEN	9	27	7	18	22.2	33.3						
R1/20	**W2/20**	KITCHEN	9	43	5	21	44.4	51.2	11	47	7	26	36.4	44.7
R1/21	**W1/21**	BATHROOM	17	59	8	35	52.9	40.7	17	59	8	35	52.9	40.7
R1/22	**W1/22**	BATHROOM	14	58	12	55	14.3	5.2	14	58	12	55	14.3	5.2
R2/22	**W2/22**	BATHROOM	22	67	20	65	9.1	3.0	22	67	20	65	9.1	3.0
R3/22	**W3/22**	BEDROOM	23	68	21	65	8.7	4.4	23	68	21	65	8.7	4.4
R4/22	**W4/22**	BATHROOM	23	65	21	62	8.7	4.6	23	65	21	62	8.7	4.6

Appendix C – Overshadowing Results



Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

N

AREA ANALYSED

AREA WITH MORE THAN 2 HOURS OF DIRECT SUNLIGHT

AREA WITH LESS THAN 2 HOURS OF DIRECT SUNLIGHT

% OF AREA WITH MORE THAN 2 HOURS OF DIRECT SUNLIGHT

Project: 36 AVENUE ROAD
LONDON

Title: BRE 2 HOURS SUNLIGHT TEST
MARCH 21ST
PROPOSED SCHEME DATED 28/04/15

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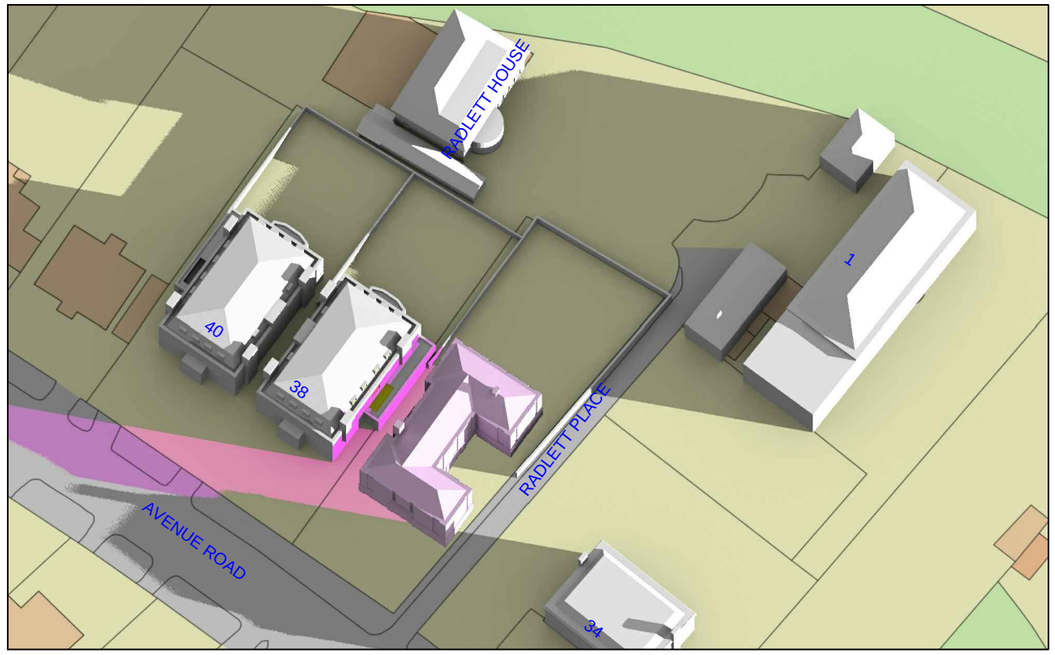
Scale: 1:450 @ A3

Date: MAY 15

Dwg No: **P524/S/01**



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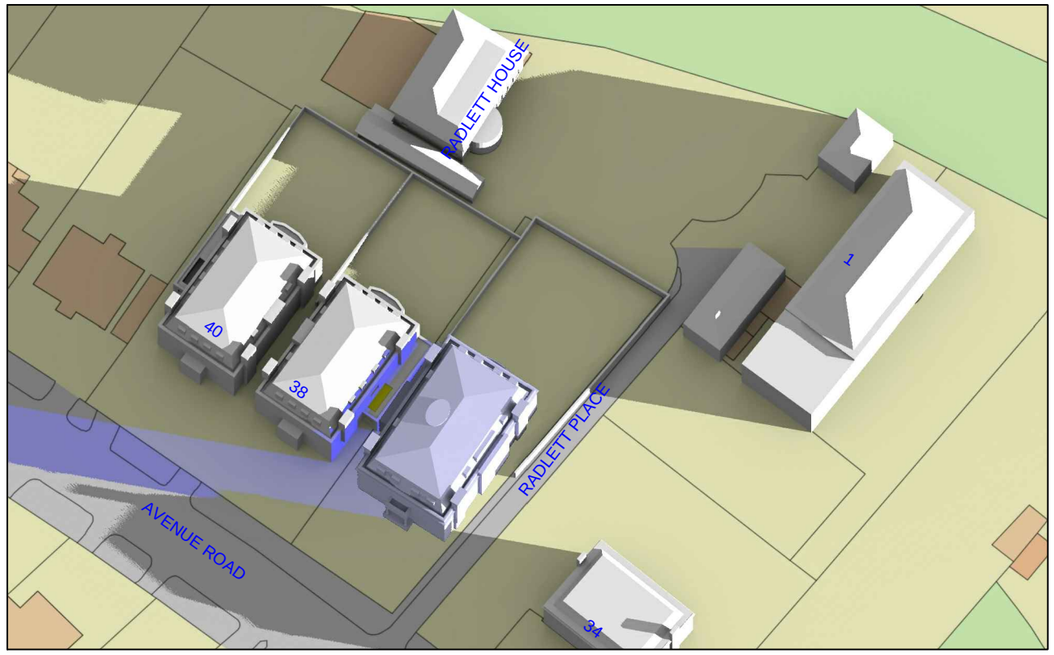
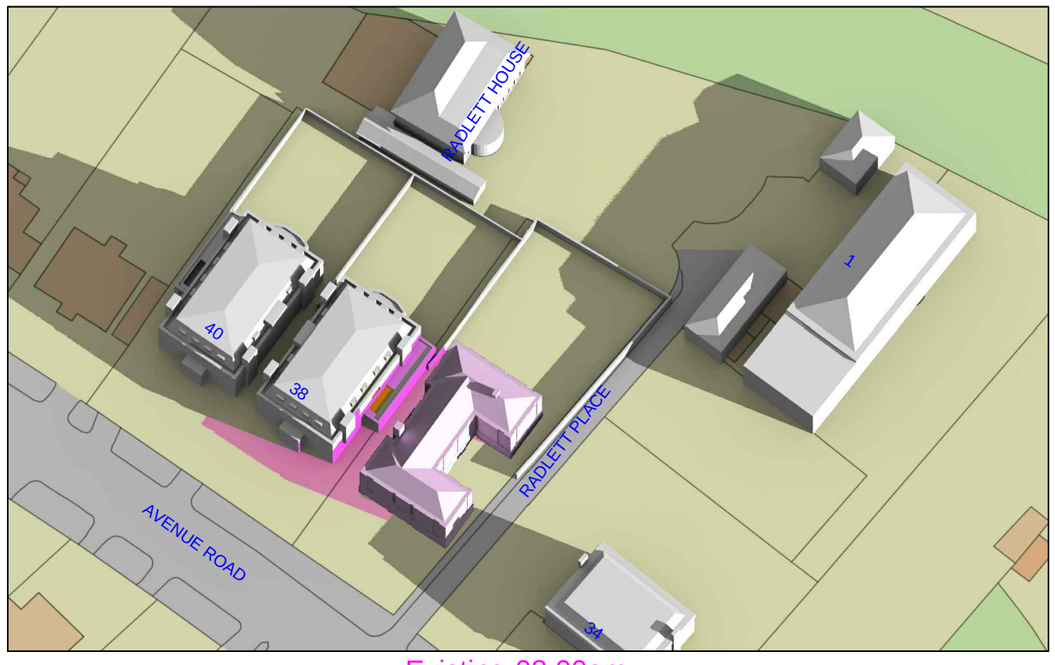
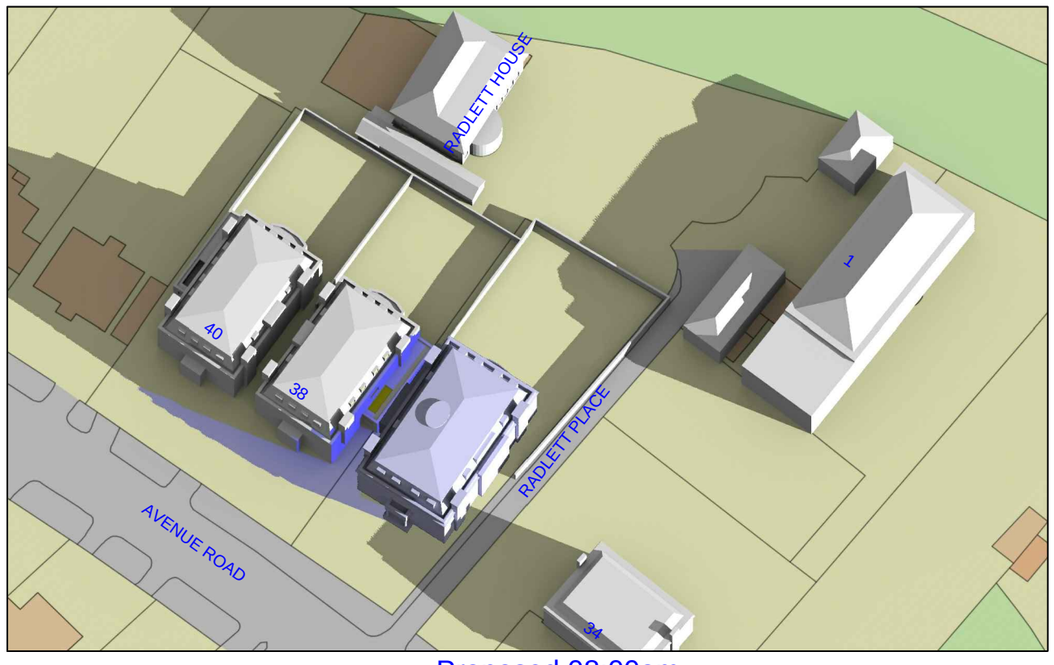


Proposed 07:00am

March 21st (GMT)



Existing 08:00am



Proposed 08:00am

Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

Grey shadows are those caused by buidings which are not on the site under development.

Magenta shadows are those caused specifically by the existing buildings on the site.

Blue shadows are those caused specifically by the proposed development.

Project: 36 AVENUE ROAD
LONDON

Title: TRANSIENT OVERSHADOWING

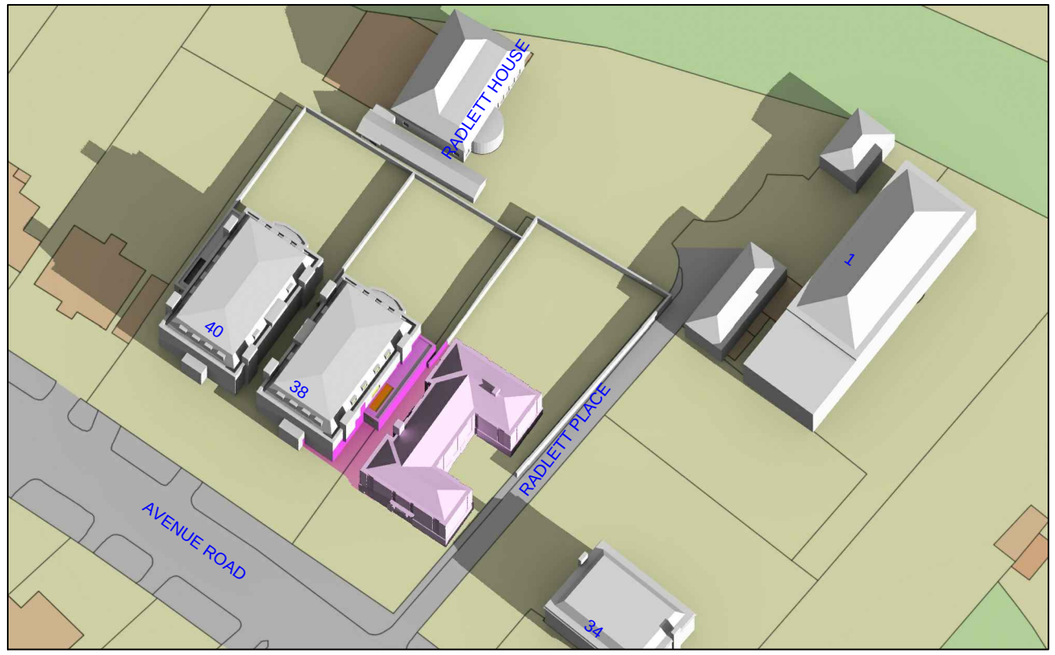
Drawn By: SFB

Scale: NTS

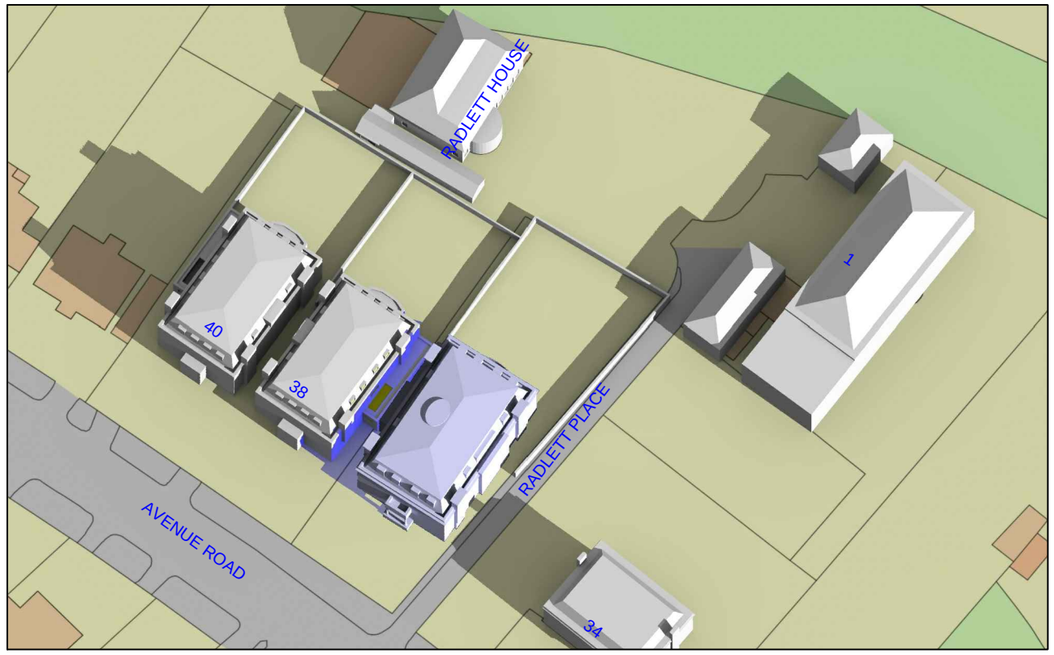
Date: MAY 15

Dwg No: **P524/MAR1/01**

Point 2 Surveyors Ltd,
3rd Floor,
17 Slingsby Place,
London WC2E 9AB,
0207 836 5828
www.point2surveyors.com



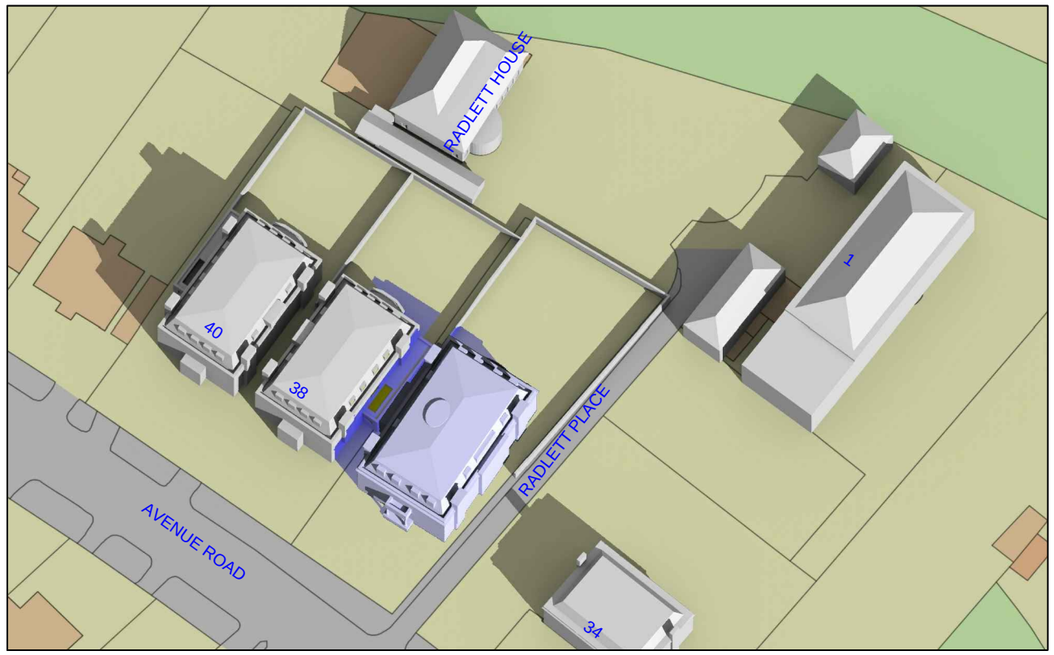
Existing 09:00am



Proposed 09:00am

March 21st (GMT)

Existing 10:00am



Proposed 10:00am

Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

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Project: 36 AVENUE ROAD
LONDON

Title: TRANSIENT OVERSHADOWING

Drawn By: SFB

Scale: NTS

Date: MAY 15

Dwg No: **P524/MAR1/02**

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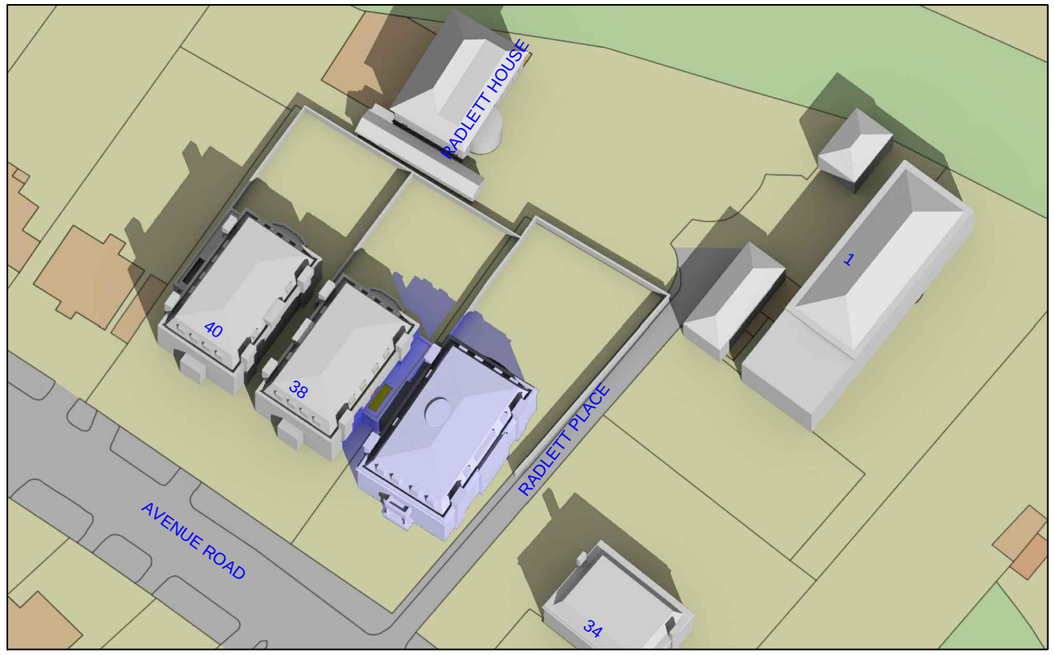
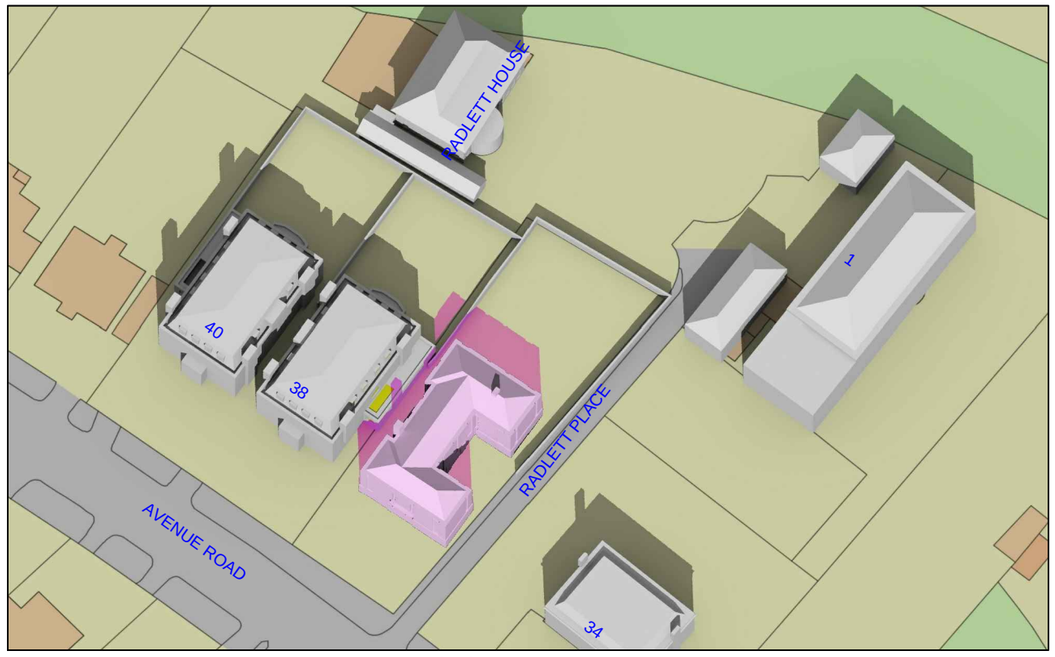
Existing 11:00am



Proposed 11:00am

March 21st (GMT)



Existing 12:00pm

Proposed 12:00pm

Sources: ORDNANCE SURVEY
Osmap

POINT2 SURVEYORS
Site Photo

KSR ARCHITECTS
Proposed scheme dated 28/04/15

Key:

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Project: 36 AVENUE ROAD
LONDON

Title: TRANSIENT OVERSHADOWING

Drawn By: SFB

Scale: NTS

Date: MAY 15

Dwg No: **P524/MAR1/03**

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