Justin Bolton • Barry Hood
• Andrew Cartmell • Chris Skelt •
Nick Lane • Liam Dunford

Point 2 Surveyors LLP
17 Slingsby Place, London WC2E 9AB

tel: 0207 836 5828

41-45 Neal Street

Daylight and Sunlight

Report

Director: Nick Lane

Client: Kennedy Wilson Europe

Date: February 2015

Version: V.1

Project: Neal Street

Contents

Appendices

1 Introduction

1.1 Point 2 Surveyors have been appointed by Kennedy Wilson Europe to undertake a daylight and sunlight study with regards to the proposed redevelopment of their site at 41-45 Neal Street, Covent Garden.

1.2 The proposal includes the renovation and re-cladding of the existing commercial building together with the addition of a roof extension. The resulting design creates a mixed use development including residential, office and retail floor space.

1.3 The calculations contained within this report are based upon the submitted plans, sections and elevations which have been prepared by DSDHA architectural firm.

2 Assessment Criteria Methodology

2.1 When assessing any potential effects on the surrounding properties, the BRE guidelines suggest that only those windows that have a reasonable expectation of daylight or sunlight need to be assessed. In particular the BRE guidelines at paragraph 2.2.2 state:

> *"The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices."*

2.2 Further to the above statement, it is considered that the vast majority of commercial properties do not have a reasonable expectation of daylight or sunlight as they are generally designed to rely on artificial electric lighting rather than natural light and have not been included within this assessment.

Daylighting

2.3 The 2011 BRE Guidelines provides different methods for assessing daylight, for existing and proposed residential accommodation. The methods relevant in this assessment in connection with external receptors are the Vertical Sky Component (VSC) method and the No Sky Line (NSL) method. The relevant methodology for buildings that have a residential component that is yet to be built will consider the Average Daylight Factor (ADF).

2.4 The VSC is a quantified measurement of the amount of skylight falling on a vertical wall or window. This is the ratio of the direct sky luminance falling on a vertical wall at the reference point for the simultaneous horizontal luminance under an unobstructed sky. The Commission International de l'Eclairage (CIE) 'standard' overcast sky is used, the ratio is then expressed as a percentage. The maximum value achievable is approximately 40% for a completely unobstructed vertical wall. The VSC of a window can then be related to the ADF in a room, which is a standard test for the British Standard (BS 8206: Part 2) recommendations on interior daylighting.

2.5 The NSL method of daylight assessment is a measure of the distribution of daylight at the 'working plane' within a room. In houses, the 'working plane' means a horizontal 'desktop' plane of 0.85 metres (m) in height. The NSL divides those areas of working plane in a room which receive direct sky light through the windows from those areas of the working plane which cannot.

2.6 The potential effect of the daylighting distribution in the surrounding existing buildings is established by plotting the NSL in each of the main rooms. For residential dwellings, this includes living rooms, dining rooms and kitchens. Bedrooms are also analysed although they are less important in terms of the amount of daylight received. The 2011 BRE Guidelines state that if the area of a room that does receive direct sky light is reduced to less than 0.8 times its former value, then this would be noticeable to its occupants.

2.7 The ADF method of assessment is defined by the BRE as: *"Ratio of total daylight flux incident on the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE Standard Overcast Sky."* This factor considers interior daylighting to a room and therefore is a more accurate indication of available light in a given room, if details of the room size and use are available.

Sunlighting

2.8 The 2011 BRE Guidelines provide two methods for assessing sunlight, depending on whether the assessment is for an existing neighbouring property or a proposed property/ building. However, the methods are similar and relate to methods of assessing the Annual Probable Sunlight Hours (APSH) at a reference point. The BRE guidelines suggest that:

> *"If this window point can receive more than one quarter of APSH (see section 3.1), including at least 5% of APSH in the winter months between 21st September and 21st March, then the room should still receive enough sunlight."*

2.9 For existing residential properties, the 2011 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."

2.10 Section 3.2.4 continues: "If the main living room to a dwelling has a main window facing within 90° of due north, but a secondary window facing within 90° of due south, sunlight to the secondary window should be checked."

2.11 All windows facing within 90° of due south serving habitable residential rooms within properties surrounding the Cavendish House site have been assessed for sunlight.

3 Surrounding Properties

3.1 Following a site visit and research of the Valuation Office Agency website, we understand that residential accommodation is located at the following addresses;

- 48 Neal Street
- 50 Neal Street
- 52 Neal Street
- 54-56 Neal Street
- 58 Neal Street
- 1-37 Nottingham House

3.2 To facilitate this technical assessment we have created a detailed three dimensional computer model of the site and the neighbouring buildings from the laser scan data we captured during a site inspection in June 2014. The BRE Guidelines state that it is only necessary to consider the potential effects of a development to windows serving main habitable accommodation such as bedrooms, living rooms and kitchens. As such, we have not assessed the impact to the ground floor windows which serve the retail space within all the buildings mentioned above.

3.3 Access to the surrounding properties has not been obtained and there was only limited floor plan information available from publicly available sources. As such we have estimated the size and use of rooms within the neighbouring buildings from our external inspection which is industry standard practice when detailed plans are not available.

3.5 Plan and three dimensional views of the existing site can be seen in drawing numbers P194/01-03 within Appendix 1 of this report. A series of window map drawings highlighting the location of the tested windows are located in Appendix 4 and these can be used to cross-reference the tabular results which are presented within Appendix 2.

3.6 Plan and three dimensional views of the proposed development can be seen in drawing numbers P329/16-18 which are also located in Appendix 1 of this report.

Daylight Results

3.7 We have analysed a total of 67 windows within the neighbouring properties and the results in Appendix 2 show that all 67 comply with the VSC criteria which is an excellent rate of compliance for a scheme within an urban location.

3.8 The minimal impacts in daylight shown by the VSC test are confirmed in the NSL test. The technical results (Appendix 2) show that there is little reduction to the daylight distribution within the rooms of the surrounding properties. With the greatest reduction to any property at 7%, the reductions are substantially below the 20% reduction permitted by the BRE guidance and therefore it may be concluded that the proposal will have a negligible effect upon the daylight amenity enjoyed by the neighbouring properties.

Sunlight

3.10 With regards to sunlight, it is only those windows which face within 90° of due south which are relevant for assessment. The technical analysis (Appendix 3) shows that all of the windows within the following buildings are able to satisfy the Annual Probable Sunlight Hours criteria and the impacts are therefore acceptable;

- 48 Neal Street
- 50 Neal Street
- 52 Neal Street
- 54-56 Neal Street
- 58 Neal Street
- 1-37 Nottingham House

4 Conclusion

4.1 This report has considered the potential daylight and sunlight effects to the surrounding residential properties as a result of implementing the proposed scheme which has been designed by DSDHA.

4.2 It is clear that the scheme has been sensitively designed and the resultant technical analysis shows that 100% of the windows relevant for assessment are able to satisfy the VSC daylight criteria.

4.3 With regards to sunlight, all the windows meet the BRE criteria and the impacts are acceptable.

4.4 Given the full compliance to both daylight and sunlight tests, the proposed scheme is acceptable at planning.

Appendix 1 – Existing and Proposed Plan and 3D Views

Sources: ORDNANCE SURVEY
Digital Superplan Data

Site Survey - Laser Scan Data

Key:

N

Existing Buildings
Proposed Scheme

Project: Neal Street
London

Title: Site Plan
Existing Buildings

Point 2 Surveyors Ltd,
Centric House,
390 Strand,
London WC2R 0LT,
0207 836 5828
www.point2surveyors.com

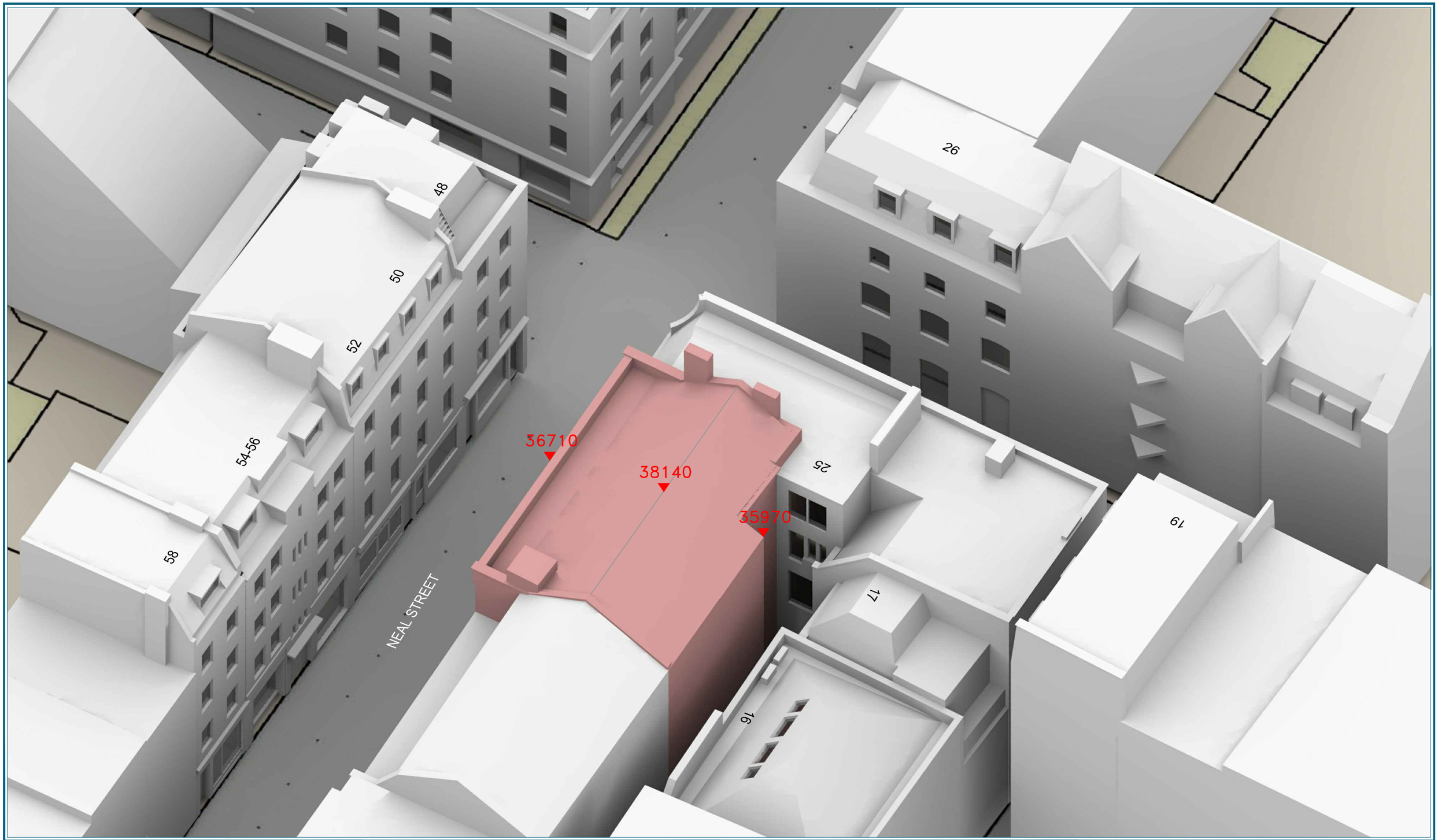
POINT 2 surveyors

Drawn By: DT

Scale: 1:250

Date: 07/14

Dwg No: **P194/01**



Sources: ORDNANCE SURVEY
Digital Superplan Data

Site Survey - Laser Scan Data

Key:

All Heights in mm AOD

Existing Buildings
Proposed Scheme

Project: Neal Street
London

Title: 3D View
Existing Buildings

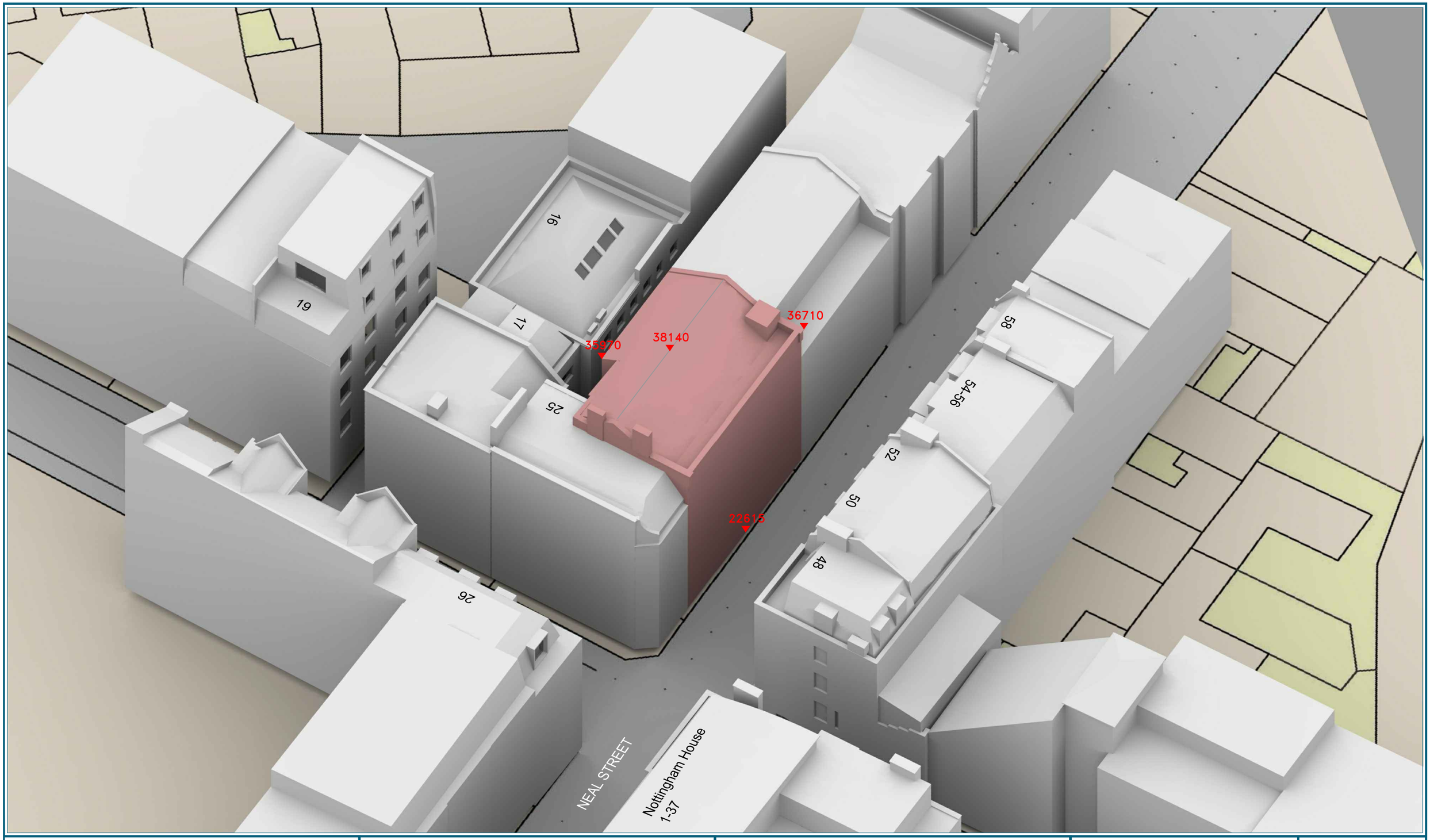
Point 2 Surveyors Ltd,
Centric House,
390 Strand,
London WC2R 0LT,
0207 836 5828
www.point2surveyors.com

Drawn By: DT

Scale: NTS

Date: 07/14

Dwg No: **P194/02**



Sources: ORDNANCE SURVEY
Digital Superplan Data

Site Survey - Laser Scan Data

Key:

All Heights in mm AOD

Existing Buildings
Proposed Scheme

Project: Neal Street
London

Title: 3D View
Existing Buildings

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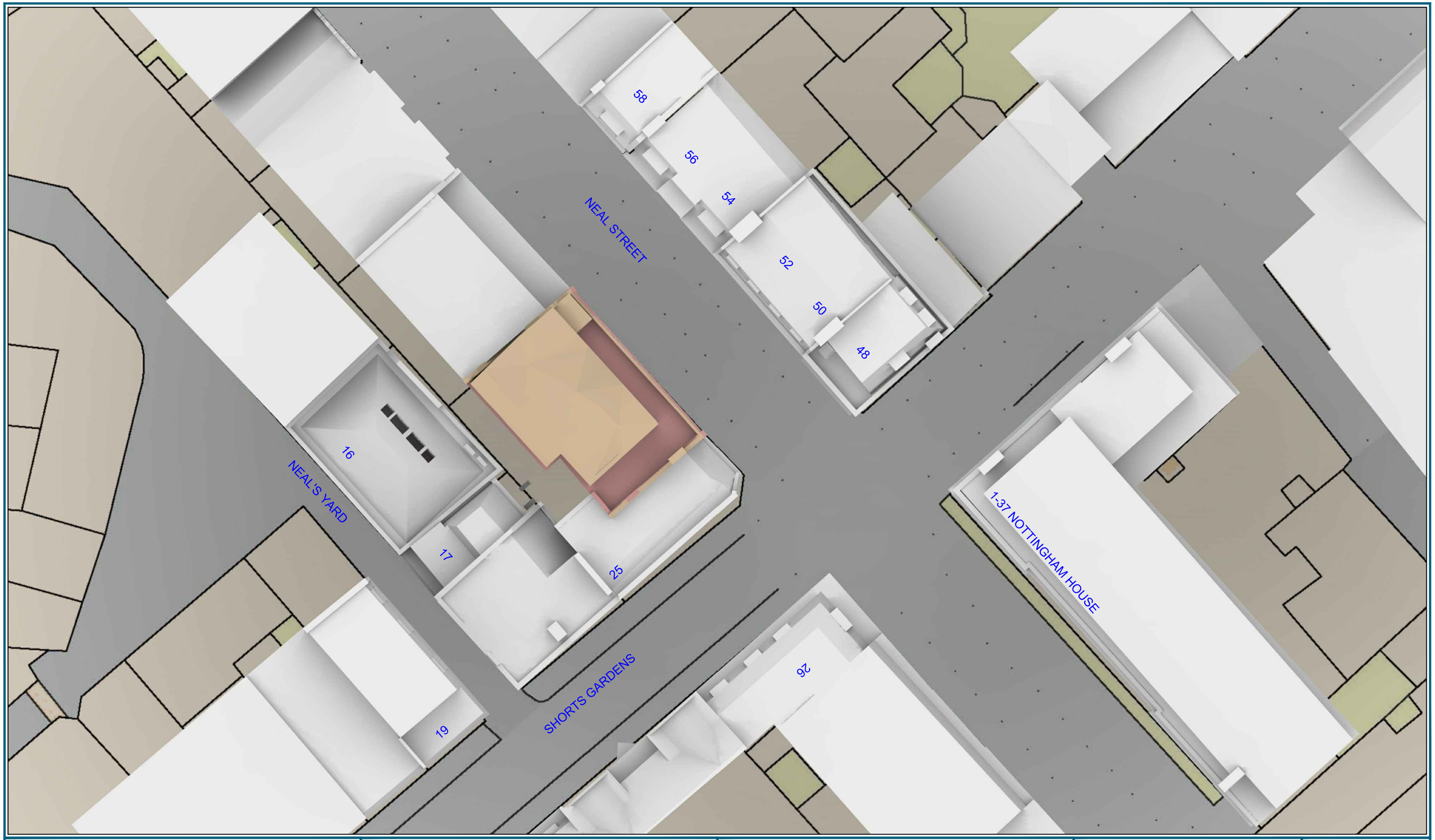
London WC2R 0LT,
0207 836 5828
www.point2surveyors.com

Drawn By: DT

Scale: NTS

Date: 07/14

Dwg No: **P194/03**



Sources: ORDNANCE SURVEY
Digital Superplan Data

Site Survey - Laser Scan Data

Architect Proposed Scheme
received 20/11/14

Key:
Existing Buildings
Proposed Scheme

N

Project: Neal Street
London

Title: Site Plan
Proposed Scheme dated 22/01/15

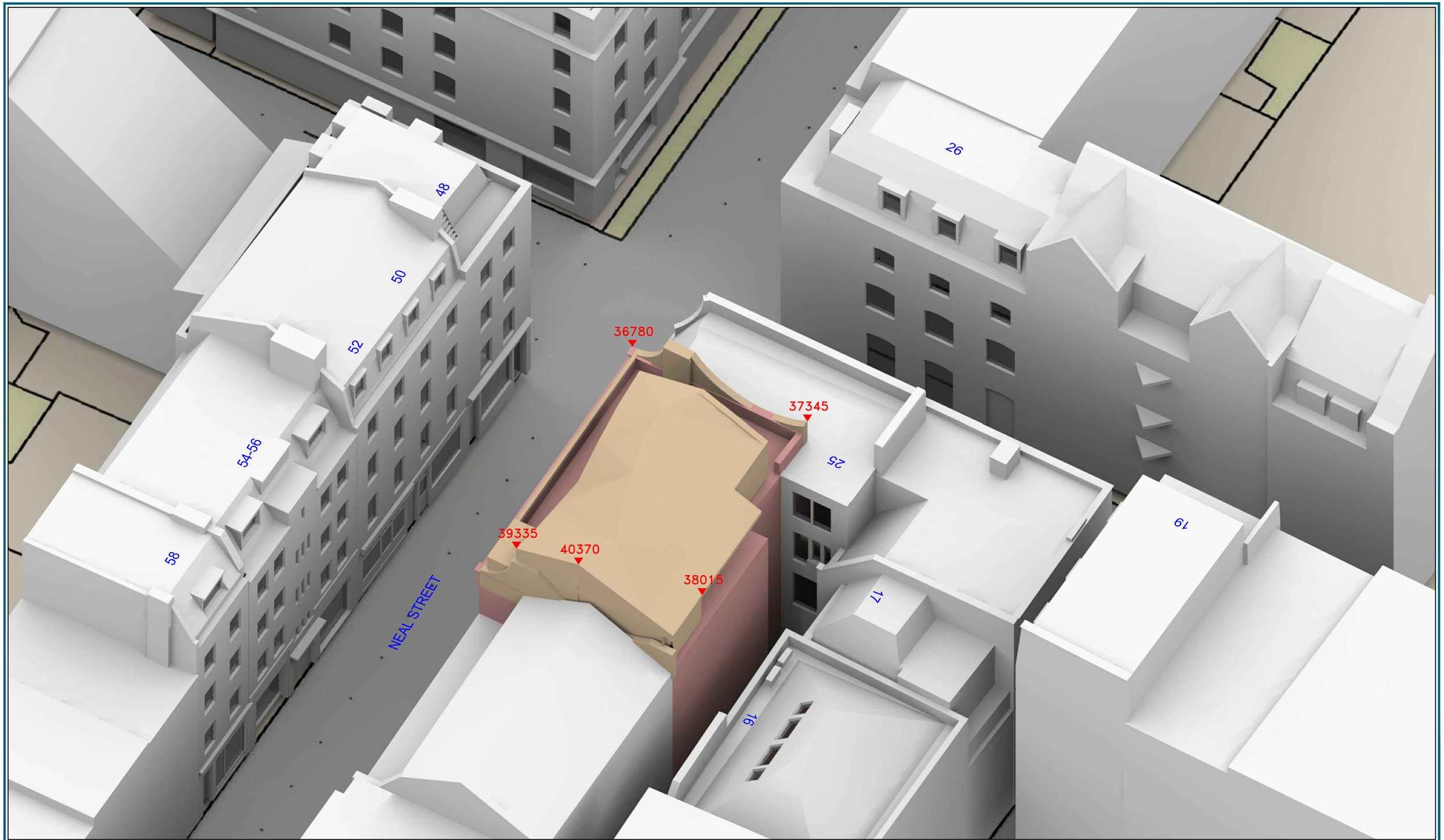
Point 2 Surveyors Ltd,
Centric House,
390 Strand,
London WC2R 0LT,
0207 836 5828
www.point2surveyors.com

Drawn By: CJ

Scale: 1:250

Date: JAN 15

Dwg No: **P194/16**



Sources: ORDNANCE SURVEY
Digital Superplan Data

Site Survey - Laser Scan Data

Architect Proposed Scheme
received 20/11/14

Key:
- Existing Buildings
- Proposed Scheme
- All Heights in mm AOD

Project: Neal Street
London

Title: 3D View
Proposed Scheme dated 22/01/15

Drawn By: CJ

Scale: NTS

Date: JAN 15

Dwg No: **P194/17**

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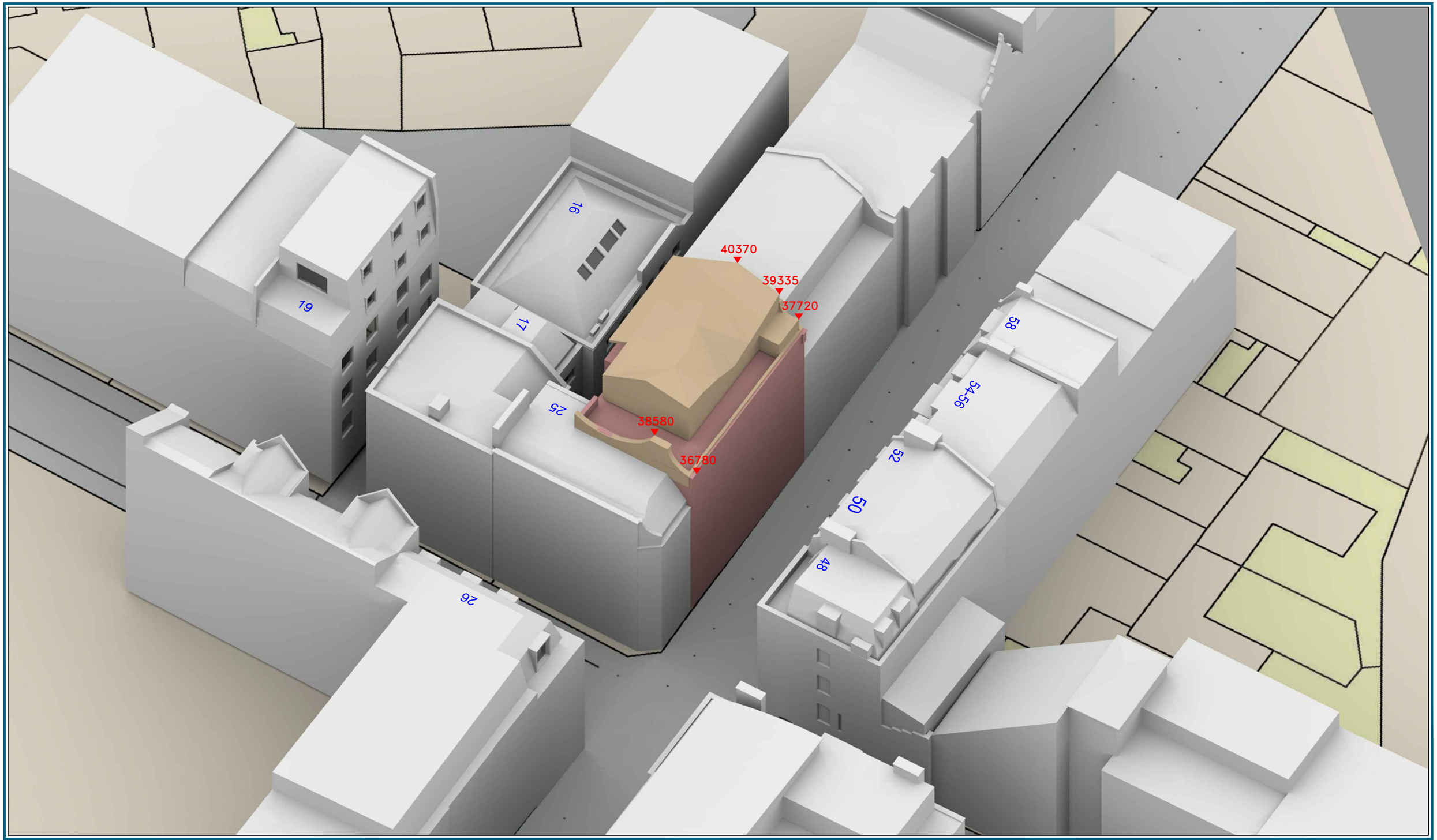
Centric House,
390 Strand,
London WC2R 0LT,
0207 836 5828
www.point2surveyors.com



Sources: ORDNANCE SURVEY
Digital Superplan Data

Site Survey - Laser Scan Data

Architect Proposed Scheme
received 20/11/14

Key:
Existing Buildings
Proposed Scheme
All Heights in mm AOD

Project: Neal Street
London

Title: 3D View
Proposed Scheme dated 22/01/15

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0207 836 5828
www.point2surveyors.com

Drawn By: CJ

Scale: NTS

Date: JAN 15

Dwg No: **P194/18**

Appendix 2 – Daylight Results

Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC
48 NEAL STREET					
R1/201	W6/201	22.10	21.95	0.15	0.68
R1/201	W7/201	20.24	20.08	0.16	0.79
R1/202	W5/202	27.75	27.27	0.48	1.73
R1/202	W6/202	26.38	25.80	0.58	2.20
R1/203	W5/203	33.62	32.59	1.03	3.06
R1/203	W6/203	33.13	31.83	1.30	3.92
50 NEAL STREET					
R3/201	W2/201	18.45	18.24	0.21	1.14
R3/201	W3/201	17.72	17.48	0.24	1.35
R3/202	W2/202	25.07	24.26	0.81	3.23
R3/202	W3/202	24.38	23.45	0.93	3.81
R2/203	W2/203	32.68	30.89	1.79	5.48
R2/203	W3/203	32.24	30.07	2.17	6.73
R2/204	W1/204	37.10	35.40	1.70	4.58
R2/204	W4/204	37.17	35.69	1.48	3.98
52 NEAL STREET					
R4/201	W1/201	17.27	17.01	0.26	1.51
R4/201	W5/201	17.16	16.90	0.26	1.52
R4/202	W1/202	24.01	22.96	1.05	4.37
R4/202	W4/202	23.95	22.88	1.07	4.47
R3/203	W1/203	31.95	29.42	2.53	7.92
R3/203	W4/203	31.85	29.21	2.64	8.29
R3/204	W2/204	36.99	35.09	1.90	5.14
R3/204	W3/204	36.96	34.91	2.05	5.55
54-56 NEAL STREET					
R1/171	W1/171	18.11	17.81	0.30	1.66
R1/171	W2/171	17.90	17.65	0.25	1.40
R3/171	W3/171	17.13	16.90	0.23	1.34
R3/171	W4/171	16.93	16.70	0.23	1.36
R1/172	W1/172	24.26	23.57	0.69	2.84
R1/172	W2/172	24.00	23.33	0.67	2.79
R3/172	W3/172	23.09	22.32	0.77	3.33

Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC
R3/172	W4/172	22.85	22.03	0.82	3.59
R1/173	W1/173	30.80	29.51	1.29	4.19
R1/173	W2/173	30.64	29.21	1.43	4.67
R3/173	W3/173	30.18	28.20	1.98	6.56
R3/173	W4/173	30.08	27.93	2.15	7.15
R1/174	W1/174	36.10	34.93	1.17	3.24
R3/174	W2/174	35.65	33.73	1.92	5.39
58 NEAL STREET					
R2/151	W1/151	18.47	18.13	0.34	1.84
R2/151	W2/151	18.41	18.07	0.34	1.85
R2/152	W1/152	24.98	24.38	0.60	2.40
R2/152	W2/152	24.83	24.16	0.67	2.70
R2/153	W1/153	31.42	30.58	0.84	2.67
R2/153	W2/153	31.16	30.11	1.05	3.37
R2/154	W1/154	36.99	36.16	0.83	2.24
1-37 Nottingham House					
R1/251	W5/251	18.25	18.08	0.17	0.93
R1/251	W6/251	20.81	20.73	0.08	0.38
R1/251	W7/251	20.11	20.05	0.06	0.30
R2/251	W3/251	20.07	20.06	0.01	0.05
R2/251	W4/251	19.38	19.31	0.07	0.36
R3/251	W2/251	19.85	19.86	-0.01	-0.05
R1/252	W5/252	23.33	23.07	0.26	1.11
R1/252	W6/252	26.08	25.93	0.15	0.58
R1/252	W7/252	25.53	25.43	0.10	0.39
R2/252	W3/252	26.72	26.71	0.01	0.04
R2/252	W4/252	25.37	25.30	0.07	0.28
R3/252	W2/252	26.37	26.39	-0.02	-0.08
R1/253	W5/253	28.98	28.63	0.35	1.21
R1/253	W6/253	31.19	31.01	0.18	0.58
R1/253	W7/253	30.83	30.69	0.14	0.45
R2/253	W3/253	31.37	31.35	0.02	0.06
R2/253	W4/253	30.74	30.66	0.08	0.26

Room	Window	EXISTING VSC	PROPOSED VSC	LOSS VSC	%LOSS VSC
R3/253	W2/253	31.55	31.55	0.00	0.00
R1/254	W5/254	35.42	35.09	0.33	0.93
R1/254	W6/254	36.70	36.53	0.17	0.46
R1/254	W7/254	36.71	36.57	0.14	0.38
R2/254	W3/254	36.24	36.13	0.11	0.30
R2/254	W4/254	36.03	35.83	0.20	0.56
R3/254	W2/254	36.29	36.23	0.06	0.17

Room/ Floor	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
48 NEAL STREET					
R1/201	192.9	172.0	171.3	0.7	0.4
R1/202	192.9	188.0	188.0	0.0	0.0
R1/203	175.4	170.7	170.7	0.0	0.0
50 NEAL STREET					
R3/201	222.1	160.4	160.4	0.0	0.0
R3/202	222.1	201.6	200.9	0.7	0.3
R2/203	148.2	145.1	144.8	0.3	0.2
R2/204	120.2	114.9	114.9	0.0	0.0
52 NEAL STREET					
R4/201	183.6	108.1	108.1	0.0	0.0
R4/202	183.6	149.3	148.7	0.6	0.4
R3/203	198.0	194.7	194.2	0.4	0.2
R3/204	174.4	163.2	163.2	0.0	0.0
54-56 NEAL STREET					
R1/171	157.1	60.4	60.3	0.1	0.2
R3/171	160.0	61.2	61.2	0.0	0.0
R1/172	157.1	98.5	98.4	0.1	0.1
R3/172	160.0	91.6	91.4	0.2	0.2
R1/173	157.1	156.1	156.1	0.0	0.0
R3/173	160.0	158.7	147.1	11.6	7.3
R1/174	113.1	107.8	107.8	0.0	0.0
R3/174	118.2	112.4	112.4	0.0	0.0
58 NEAL STREET					
R2/151	190.5	71.7	71.7	0.0	0.0
R2/152	190.5	125.6	125.6	0.0	0.0
R2/153	190.5	188.4	188.4	0.0	0.0
R2/154	171.4	167.6	167.6	0.0	0.0
1-37 Nottingham House					
R1/251	376.8	277.9	275.2	2.7	1.0
R2/251	273.7	236.6	236.6	0.0	0.0
R3/251	184.9	127.2	127.2	0.0	0.0
R1/252	376.8	352.5	349.5	2.9	0.8
R2/252	273.7	267.4	267.4	0.0	0.0
R3/252	184.9	164.7	164.7	0.0	0.0
R1/253	376.8	369.0	369.0	0.0	0.0

Room/ Floor	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
R2/253	273.7	267.4	267.4	0.0	0.0
R3/253	184.9	178.1	178.1	0.0	0.0
R1/254	376.8	374.1	374.1	0.0	0.0
R2/254	273.7	267.4	267.4	0.0	0.0
R3/254	184.9	178.1	178.1	0.0	0.0

Appendix 3 – Sunlight Results

NEAL STREET
LONDON

SUNLIGHT ANALYSIS
PROPOSED SCHEME RECEIVED 22/01/15

JAN 2015

Room	Window	Room Use	Window Existing Winter APSH	Window Existing Annual APSH	Window Proposed Winter APSH	Window Proposed Annual APSH	Window Winter %Loss	Window Annual %Loss	Room Existing Winter APSH	Room Existing Annual APSH	Room Proposed Winter APSH	Room Proposed Annual APSH	Room Winter %Loss	Room Annual %Loss
48 NEAL STREET														
R1/201	W6/201		12	40	12	40	0.0	0.0						
R1/201	W7/201		12	38	12	37	0.0	2.6	13	41	13	41	0.0	0.0
R1/202	W5/202		18	53	18	51	0.0	3.8						
R1/202	W6/202		16	51	16	49	0.0	3.9	18	53	18	51	0.0	3.8
R1/203	W5/203		22	65	22	63	0.0	3.1						
R1/203	W6/203		21	64	21	62	0.0	3.1	22	65	22	63	0.0	3.1
50 NEAL STREET														
R3/201	W2/201		10	34	10	33	0.0	2.9						
R3/201	W3/201		9	32	9	32	0.0	0.0	10	34	10	34	0.0	0.0
R3/202	W2/202		15	50	15	47	0.0	6.0						
R3/202	W3/202		16	52	16	48	0.0	7.7	16	52	16	49	0.0	5.8
R2/203	W2/203		20	63	20	61	0.0	3.2						
R2/203	W3/203		20	63	19	60	5.0	4.8	21	64	21	62	0.0	3.1
R2/204	W1/204		23	67	22	66	4.3	1.5						
R2/204	W4/204		23	67	21	64	8.7	4.5	24	68	22	66	8.3	2.9
52 NEAL STREET														
R4/201	W1/201		9	32	9	31	0.0	3.1						
R4/201	W5/201		7	31	7	29	0.0	6.5	9	33	9	33	0.0	0.0
R4/202	W1/202		14	51	14	48	0.0	5.9						
R4/202	W4/202		13	50	12	47	7.7	6.0	14	51	14	49	0.0	3.9
R3/203	W1/203		20	63	17	59	15.0	6.3						

NEAL STREET
LONDON

SUNLIGHT ANALYSIS
PROPOSED SCHEME RECEIVED 22/01/15

JAN 2015

Room	Window	Room Use	Window Existing Winter APSH	Window Existing Annual APSH	Window Proposed Winter APSH	Window Proposed Annual APSH	Winter %Loss	Annual %Loss	Room Existing Winter APSH	Room Existing Annual APSH	Room Proposed Winter APSH	Room Proposed Annual APSH	Winter %Loss	Annual %Loss
R3/203	W4/203		20	63	17	59	15.0	6.3	20	63	18	60	10.0	4.8
R3/204	W2/204		24	68	21	65	12.5	4.4						
R3/204	W3/204		23	67	21	65	8.7	3.0	24	68	21	65	12.5	4.4
54-56 NEAL STREET														
R1/171	W1/171		6	34	6	33	0.0	2.9						
R1/171	W2/171		6	34	6	33	0.0	2.9	7	35	7	34	0.0	2.9
R3/171	W3/171		7	33	7	33	0.0	0.0						
R3/171	W4/171		7	32	7	31	0.0	3.1	7	33	7	33	0.0	0.0
R1/172	W1/172		10	47	9	46	10.0	2.1						
R1/172	W2/172		10	47	9	46	10.0	2.1	10	47	9	46	10.0	2.1
R3/172	W3/172		11	46	11	44	0.0	4.3						
R3/172	W4/172		12	47	12	45	0.0	4.3	12	47	12	45	0.0	4.3
R1/173	W1/173		18	61	17	60	5.6	1.6						
R1/173	W2/173		18	61	16	59	11.1	3.3	18	61	17	60	5.6	1.6
R3/173	W3/173		16	58	15	57	6.3	1.7						
R3/173	W4/173		17	58	14	55	17.6	5.2	17	59	15	57	11.8	3.4
R1/174	W1/174		23	65	22	64	4.3	1.5	23	65	22	64	4.3	1.5
R3/174	W2/174		20	62	19	61	5.0	1.6	20	62	19	61	5.0	1.6
58 NEAL STREET														
R2/151	W1/151		5	34	5	34	0.0	0.0						
R2/151	W2/151		5	33	5	33	0.0	0.0	5	34	5	34	0.0	0.0
R2/152	W1/152		12	50	11	49	8.3	2.0						

NEAL STREET
LONDON

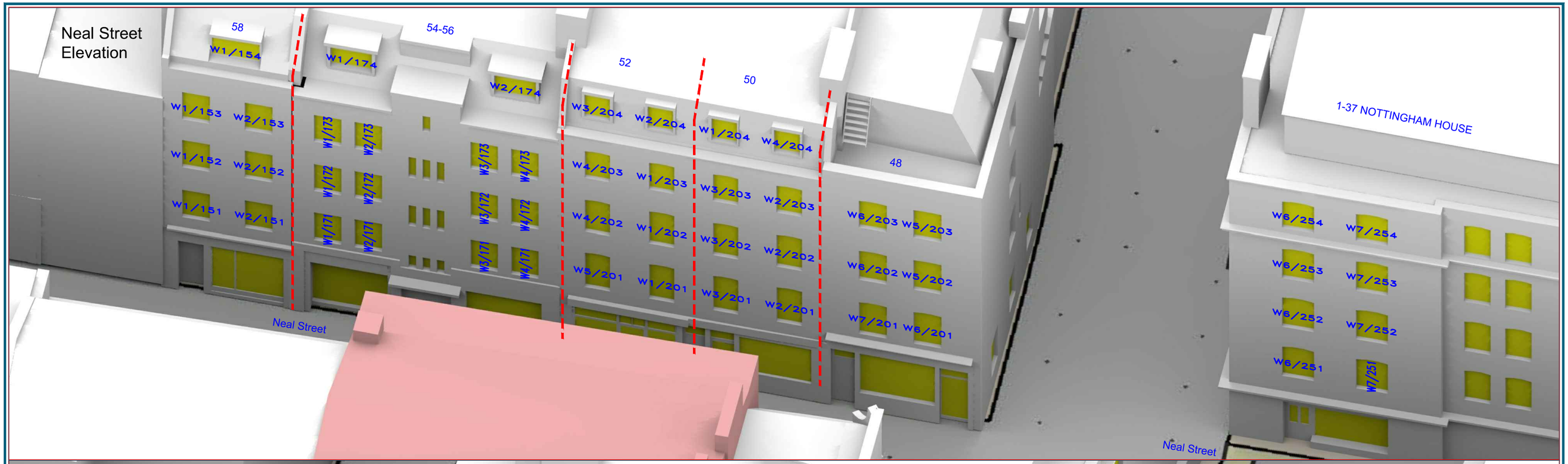
SUNLIGHT ANALYSIS
PROPOSED SCHEME RECEIVED 22/01/15

JAN 2015

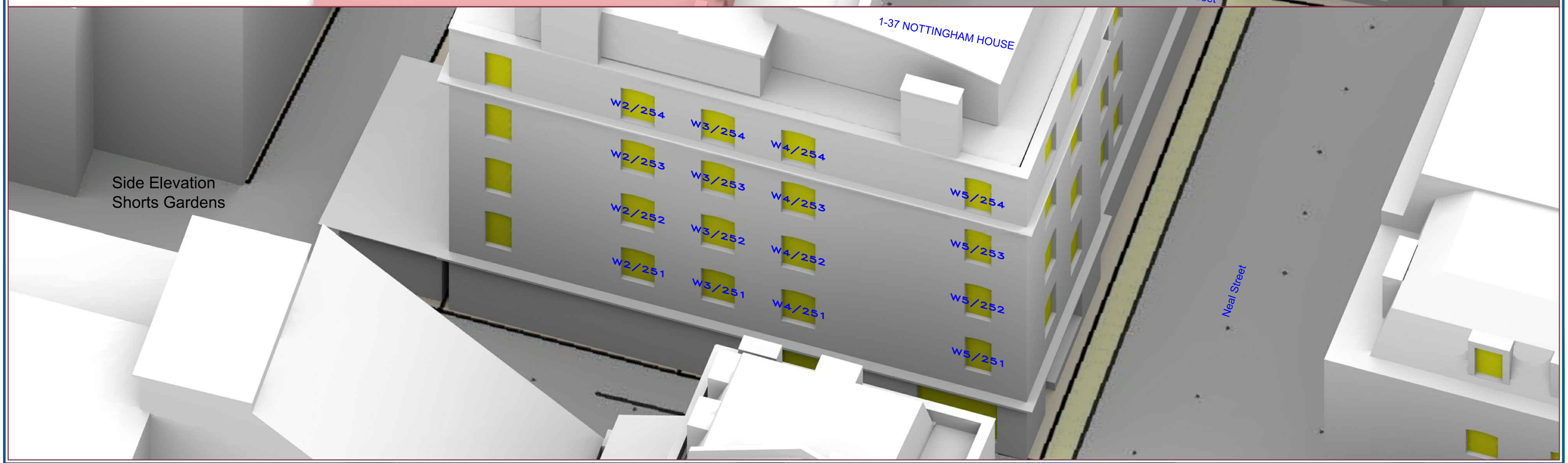
Room	Window	Room Use	Window Existing Winter APSH	Window Existing Annual APSH	Window Proposed Winter APSH	Window Proposed Annual APSH	Window Winter %Loss	Window Annual %Loss	Room Existing Winter APSH	Room Existing Annual APSH	Room Proposed Winter APSH	Room Proposed Annual APSH	Room Winter %Loss	Room Annual %Loss
R2/152	W2/152		12	51	10	49	16.7	3.9	12	51	11	50	8.3	2.0
R2/153	W1/153		19	60	18	59	5.3	1.7						
R2/153	W2/153		19	61	17	59	10.5	3.3	20	62	19	61	5.0	1.6
R2/154	W1/154		24	68	24	68	0.0	0.0	24	68	24	68	0.0	0.0
1-37 Nottingham House														
R1/251	W5/251		0	11	0	11	0.0	0.0						
R1/251	W6/251		8	41	8	41	0.0	0.0						
R1/251	W7/251		8	40	8	40	0.0	0.0	8	43	8	43	0.0	0.0
R1/252	W5/252		1	16	1	15	0.0	6.3						
R1/252	W6/252		13	53	13	51	0.0	3.8						
R1/252	W7/252		13	52	13	52	0.0	0.0	14	54	14	54	0.0	0.0
R1/253	W5/253		1	18	1	17	0.0	5.6						
R1/253	W6/253		19	60	19	58	0.0	3.3						
R1/253	W7/253		18	60	18	58	0.0	3.3	19	61	19	61	0.0	0.0
R1/254	W5/254		2	22	2	21	0.0	4.5						
R1/254	W6/254		23	67	23	67	0.0	0.0						
R1/254	W7/254		23	67	23	67	0.0	0.0	23	67	23	67	0.0	0.0

Appendix 4 – Window Maps

Neal Street
Elevation



Side Elevation
Shorts Gardens



Sources: ORDNANCE SURVEY Digital Superplan Data Site Survey - Laser Scan Data Architect Proposed Scheme received 20/11/14	Key:	Project: Neal Street London	Title: Window Layouts Surrounding Buildings	Point 2 Surveyors Ltd, 3rd Floor, 17 Slingsby Place, London WC2E 9AB, 0207 836 5828 www.point2surveyors.com
		Drawn By: CJ / Scale: NTS / Date: FEB 15	Dwg No: **P194/W/01**	POINT surveyors