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Daylight and Sunlight

Report

Overshadowing

Daylight & Sunlight • Light Pollution •
 Solar Glare • Daylight Design

DIRECTOR: NICK LANE

CLIENT: ST JAMES'S PLACE PROPERTY UNIT TRUST

DATE: OCTOBER 2016 VERSION: PLANNING PROJECT: P695

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1 Executive Summary

- 1.1 This reports considers the potential effect of the Buckley Gray Yeoman Architects proposed redevelopment of 75 Farringdon Road in terms of the daylight and sunlight amenity to the existing surrounding residential properties.
- 1.2 There is a full technical analysis contained within this report, however, in summary the effect of the construction of the Proposed Development upon each of the existing surrounding residential properties is considered to be negligible in nature on the basis that the daylight and sunlight amenity alterations, if any, to all of the habitable rooms and windows are fully compliant with BRE guidance. This means that the occupants of these rooms are unlikely to notice any alteration to their levels of daylight and sunlight amenity.
- 1.3 The effects of the Proposed Development in terms of the daylight and sunlight amenity should therefore be considered acceptable.



2 Introduction

- 2.1 St James's Place Property Unit Trust have instructed Point 2 Surveyors to undertake a detailed quantitative daylight and sunlight assessment of the Buckley Gray Yeoman Architects proposed redevelopment of the site at 75 Farringdon Road which is located within the London Borough of Camden ('LBC').
- 2.2 The proposal comprises of a comprehensive refurbishment of the existing building along with a single-storey roof extension to provide high quality commercial office space ('Proposed Development').
- 2.3 The analysis has been based upon the measured survey undertaken by Maltby Land Surveys Limited, supplemented by a site inspection, photographs and research.
- 2.4 To improve the accuracy of the analysis, where available we have obtained floor plans for the surrounding properties via LBC's planning portal or through our own further research and incorporated them into our 3D digital context model of the site and surroundings. Where it has not been possible to obtain floor plans for properties, assumptions have been made as to their probable internal configuration, based upon site observations and incorporating any additional information obtained via our research.
- 2.5 This report will assess the potential daylight and sunlight effects as a result of the Proposed Development on the existing surrounding properties.



3 Methodology

- 3.1 The recognised methodology for undertaking daylight and sunlight assessments is provided by the Building Research Establishment 'Site planning for daylight and sunlight a guide to good practice' (2011); commonly referred to as "the BRE Guidelines".
- 3.2 The BRE Guidelines were construed in relation to a suburban environment and openly acknowledge that they should be interpreted flexibly in other more dense urban locations. As such, the recommendations of the BRE Guidelines should not be perceived as rigid numerical criteria, but should be re-evaluated in the context of each site by considering the relative density and the development context of the surrounding area.
- 3.3 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."

- 3.4 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. This is because they are generally designed to rely on artificial electric lighting rather than natural light, particularly in dense city centre locations such as this.
- 3.5 If a property is considered to have a reasonable expectation of daylight or sunlight the following methodology to assess the impacts has been used:

Daylighting

- 3.6 It is common to consider the local authorities planning policy in order to establish the basis for which consideration in relation to light should be approached. The following can be used as a quick test to assess the likely effect on existing surrounding properties:
 - a) Project a 25 degree line from the centre of the lowest window on the existing building;
 - b) If the whole of your new development is lower than this line then it is unlikely to have a substantial effect on the daylight enjoyed by occupants in the existing building.
- 3.7 The above test is also known as the 25° angle test but has not been used for this assessment as it does not reflect the differing heights and layouts of the buildings in the local area.
- 3.8 More detailed tests can be undertaken to fully assess the loss of daylight in existing buildings, in particular the use of the Vertical Sky Component (VSC) method of assessment.



The Vertical Sky Component is expressed as a ratio of the maximum value of daylight achievable for a completely unobstructed vertical wall. The maximum value is almost 40%. This is because daylight hitting a window can only come from one direction immediately halving the available light. The value is limited further by the angle of the sun. This is why if the VSC is greater than 27% enough sunlight [SIC] should be reaching the existing window. Any reduction below this level should be kept to minimum.

Windows to some existing rooms may already fail to achieve this target under existing conditions. In these circumstances it is possible to accept a reduction to the existing level of daylight to no less than 80% of its former value.

- 3.9 In summary of the above, a room is considered to continue to receive good levels of daylight if the window can receive a VSC of at least 27%. If the window receives a VSC below 27% in the existing scenario a reduction of less than 0.8 times its former value (20%), as a result of the proposed development, is considered acceptable.
- 3.10 In conjunction with the VSC tests, the BRE guidelines and British Standard 8206-Part2:2008 suggest that the distribution of daylight is assessed using the No Sky Line (NSL) test. This test separates those areas of the working plane that can receive direct skylight and those that cannot.
- 3.11 The BRE guidelines suggest that:

"If, following construction of a new development, the no sky line moves so that the area of the existing room, which does receive direct skylight, is reduced to less than 0.8 times its former value this will be noticeable to the occupants, and more of the room will appear poorly lit."

- 3.12 The Average Daylight Factor (ADF) is an additional methodology referenced in the BRE Guidelines, although it is principally designed as an assessment for new-build accommodation and is not typically recommended for assessing existing surrounding buildings.
- 3.13 However, as the ADF is a detailed form of analysis which considers the diffuse levels of daylight internally within accommodation, in some more complex instances it can be a helpful point of reference to understand what levels of daylight amenity are likely to be retained.

Sunlighting

3.14 The amount of direct sunlight a window can enjoy is dependent on its orientation and the extent of any external obstructions. For example a window that faces directly north, no matter what external obstructions are present, will not be able to receive good levels of sunlight throughout the year. However, a window that faces directly south with no obstructions will enjoy very high levels of sunlight throughout the year. As the potential to receive sunlight is dependent on a window's orientation, the BRE guidelines state:

"To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, 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."

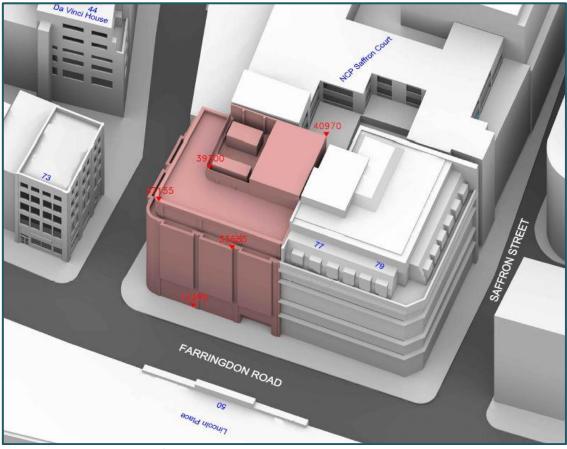


- 3.15 To consider any sunlight effect to the surrounding properties the BRE guidelines suggest calculating the Annual Probable Sunlight Hours (APSH) at the centre of each window on the outside face of the window wall. The BRE guidelines suggest that:
 - "If this window point can receive more than one 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."
- 3.16 If the above criteria is not met, the BRE guidelines suggest calculating the APSH at the window in the existing situation, i.e. before redevelopment. If the reduction of APSH between the existing and proposed situations is less than 0.8 times its former value for either the total APSH or in the winter months; and greater than 4% for the total APSH, then the occupants of the adjoining building are likely to notice the reduction in sunlight.
- 3.17 In assessing the daylight and sunlight to the neighbouring buildings as well as assessing the quality of light within the proposed habitable rooms that make up the residential units, the true existing baseline condition has been observed. This includes all neighbouring buildings and obstructions within the vicinity that could be affected by the scheme proposal and or affect the potential for light entering into the proposed residential rooms within the scheme.



4 The Site and the Surrounding Properties

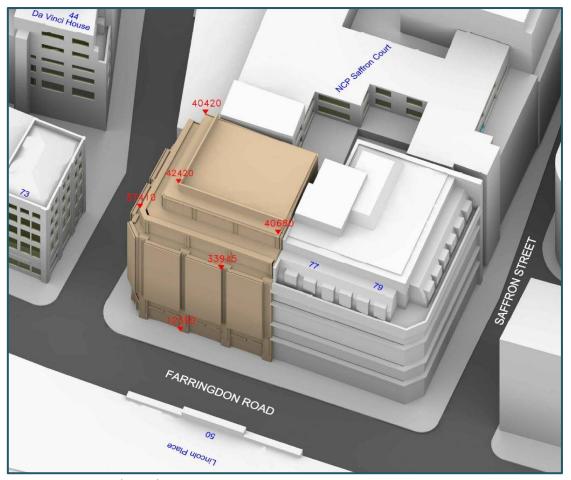
4.1 The development site is situated within the London Borough of Camden and is bound by Farringdon Road to the east and St. Cross Street to the south. Immediately adjoining the site to the north is 77-79 Farringdon Road and to the west is the NCP Car Park and Saffron Court. Our understanding of the site location can be seen within drawings P695/01, 02 & 03 which can be found within Appendix 1 of this report.



3D View – Existing Site Condition

- 4.2 There is a mix of residential and commercial properties in the immediate locality, with the immediately adjoining properties being in commercial office use. The only residential accommodation with a view of the Proposed Development is an apartment at 4th floor level within 73 Farringdon Road to the south and Da Vinci House, a residential apartment block to the south west, both situated on the opposite side of St. Cross Street. The locations of the existing surrounding properties relative to the development site can be identified on the drawings in Appendix 1.
- 4.3 The Proposed Development entails a single-storey rooftop extension and is shown illustrated on drawings P695/07-09 inclusive in Appendix 1.





3D View – Proposed Development

- 4.4 The following residential properties have been assessed in terms of the effect of the proposed rooftop extension upon their daylight and sunlight amenity, due their proximity to the site:
 - 73 Farringdon Road (4th floor flat)
- Da Vinci House, 44 Saffron Hill
- 4.5 All other properties in the vicinity of the site are understood to be non-domestic, commercial uses and therefore do not require detailed assessment.

Sources of information

Point 2 Surveyors

Site Photographs

London Borough of Camden

Online planning records:

73 Farringdon Road -4^{th} floor plan (Planning Application ref: 2012/2215/P) Da Vinci House, 44 Saffron Hill $-5^{th} - 8^{th}$ floor plans (Planning Application ref: 2013/2495/P)

Maltby Land Surveys Limited

Detailed Site Survey

Buckley Gray Yeoman Architects:

Proposed 3D Massing Model and 2D drawings

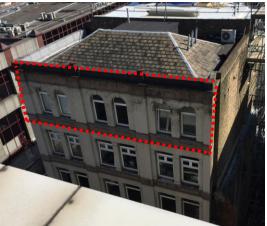
75 Farringdon Road, LondonDaylight & Sunlight Report
October 2016

5 Assessment Results for Impacts to Neighbouring Buildings

- 5.1 A detailed daylight analysis has been undertaken in accordance with the BRE Guidelines methodology in respect of those properties identified above as sensitive receptors. All windows and rooms that could be of habitable use have been assessed to determine the effect of the Proposed Development. However, where rooms can clearly be identified as non-habitable space such as corridors, bathrooms or plant space they have not been included within the assessment.
- 5.2 Due to the location of the Proposed Development being to the north of the existing surrounding residential properties, there are no habitable windows overlooking the site that orientated within 90 degrees of due south. Therefore, in accordance with the BRE guidelines it has not been necessary to assess the effects of the Proposed Development on the sunlight amenity enjoyed by these properties.
- 5.3 The potential daylight effects of the Proposed Development upon the properties identified in Section 4 as sensitive receptors are discussed in detail below. Detailed results are contained within Appendix 2 in accordance with the methodologies outlined in the BRE Guidelines and explained in detail at Section 3 of this report.

73 Farringdon Road



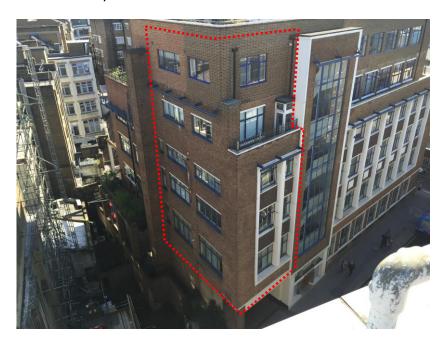


5.4 This is the 4th floor residential apartment situated to the south of the development site and according to the floor plan obtained from LBC's planning archives comprises of an open plan living/kitchen/dining room served by 4 windows facing out onto St. Cross Street and a dual aspect bedroom with 2 windows facing towards the site and 2 windows fronting onto Farringdon Road.



- 5.5 The daylight analysis shows that each of the windows and rooms facing towards the development site will comfortably meet the BRE Guidelines recommendations in relation to both the Vertical Sky Component (VSC) and No Sky Line (NSL) forms of daylight assessment.
- 5.6 As explained earlier, there are no windows overlooking the site that are orientated within 90 degrees of due south and therefore in accordance with the BRE guidelines it has not been necessary to assess this building for sunlight.
- 5.7 It is therefore considered that the Proposed Development will have no noticeable effect on the daylight and sunlight amenity currently enjoyed by 73 Farringdon Road.

Da Vinci House, 44 Saffron Hill



- 5.8 This is the residential block located to the south west of the site and we have assessed a total of 21 windows serving 14 rooms which have some view of the site across the 1st to 5th floor levels. Where floor plans were available at 5th floor level these have been utilised, with the layouts assumed for the lower floors where plans were not available. For completeness, we have assessed each of the windows highlighted on the site photograph above due to the lack of information on the current usage of the rooms behind them.
- 5.9 The daylight analysis shows that all of the windows and rooms tested will comfortably meet the BRE Guidelines recommendations in relation to both the Vertical Sky Component (VSC) and No Sky Line (NSL) forms of daylight assessment. Furthermore, the results confirm that each of the rooms will experience no alteration to their existing daylit area as a result of the Proposed Development.
- 5.10 Again, there are no windows overlooking the site that are orientated within 90 degrees of due south and therefore in accordance with the BRE guidelines it has not been necessary to assess this building for sunlight.
- 5.11 It is therefore considered that the Proposed Development will have no noticeable effect on the daylight and sunlight amenity currently enjoyed by these properties.



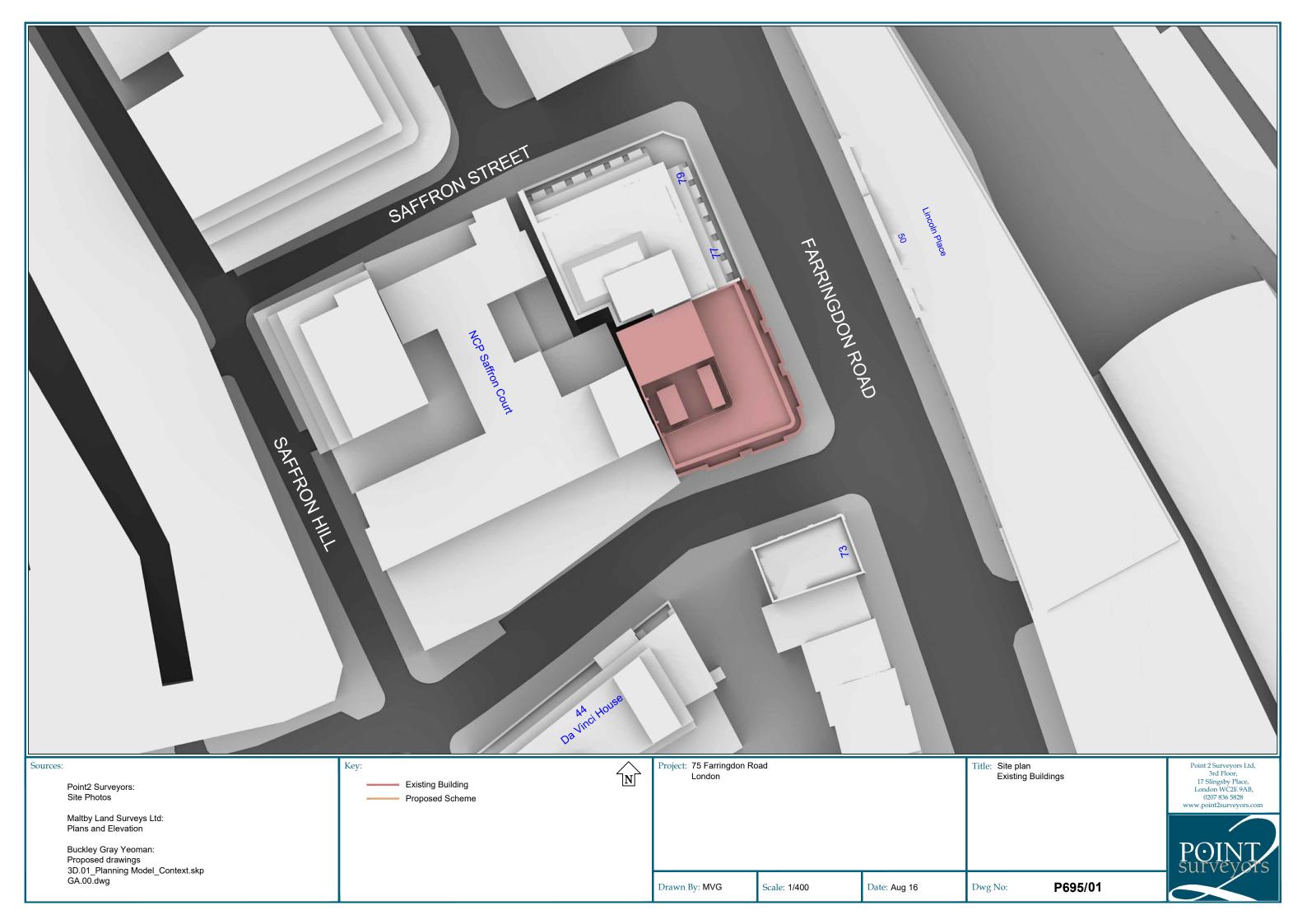
6 Conclusion

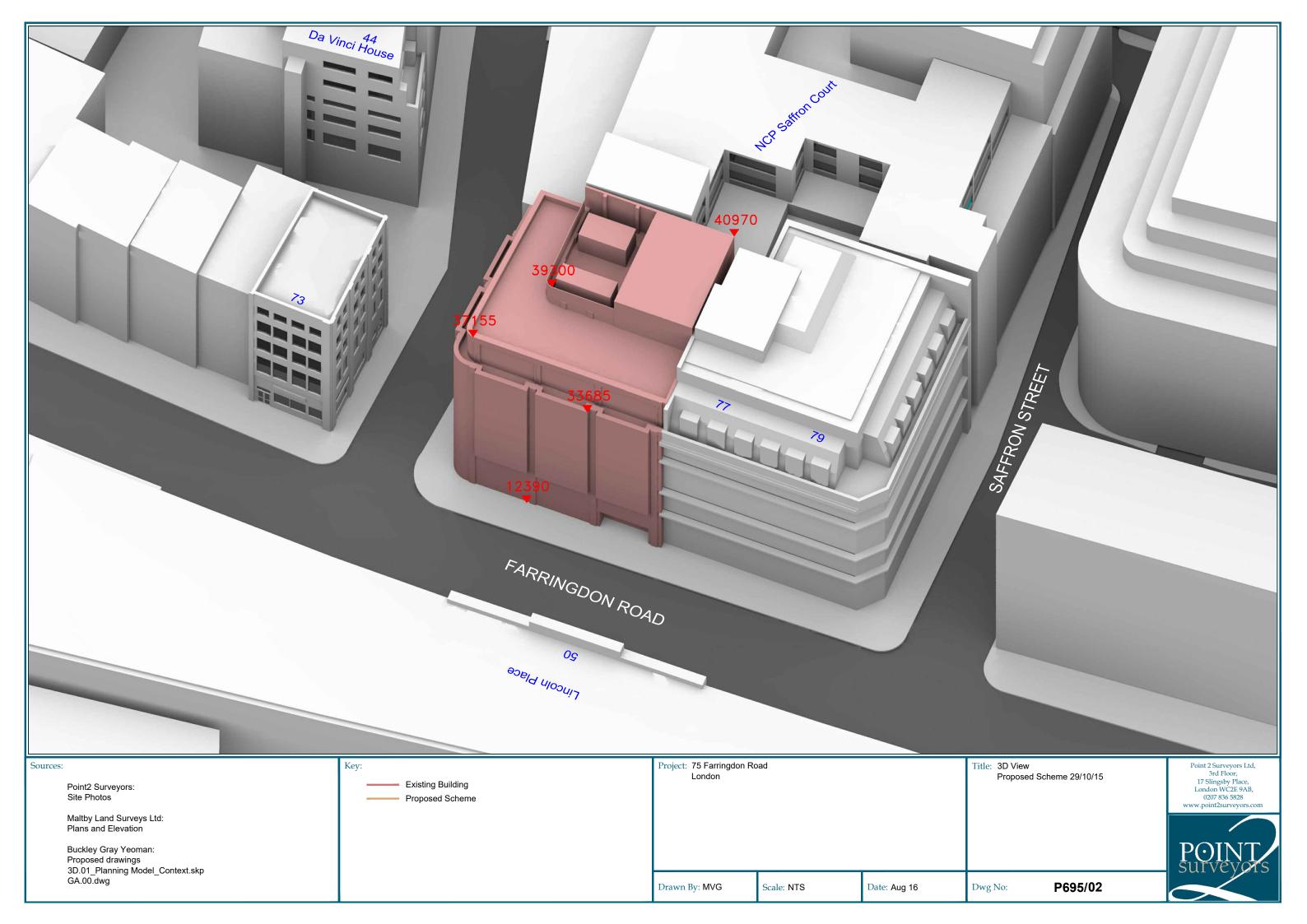
- 6.1 Point 2 Surveyors have undertaken a detailed technical analysis to quantify the effect of the construction of the Buckley Gray Yeoman Architects proposed redevelopment of 75 Farringdon Road upon the daylight and sunlight amenity of the existing neighbouring residential properties.
- 6.2 The effect of the Proposed Development upon each of the existing residential properties analysed is considered to be negligible in nature on the basis that the VSC and NSL alterations, if any, to all of the habitable rooms and windows tested are fully compliant with BRE guidance. This means that the occupants of these rooms are unlikely to notice any alteration to their levels of daylight as a result of the Proposed Development.
- 6.3 In terms of the sunlight position, in accordance with the BRE guidelines it has not been necessary to undertake a detailed technical assessment of the surrounding residential properties given the fact that there are no habitable windows overlooking the site that are orientated within 90 degrees of due south.
- 6.4 Following a detailed technical assessment, the overall daylight and sunlight impacts of the Proposed Development upon the existing neighbouring residential properties follows the guidance and recommendations set out in the BRE Guidelines and should therefore be considered to be acceptable.

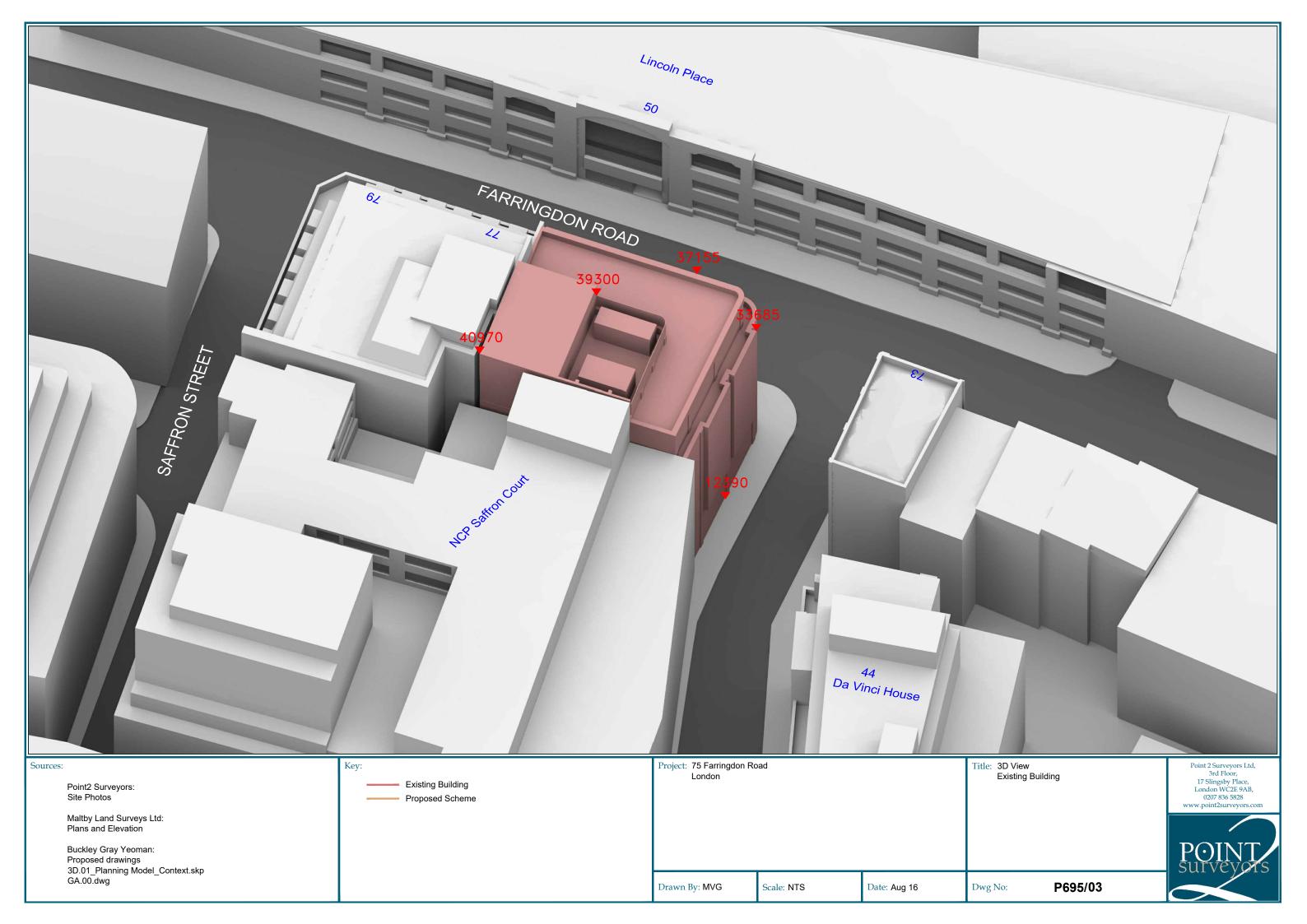


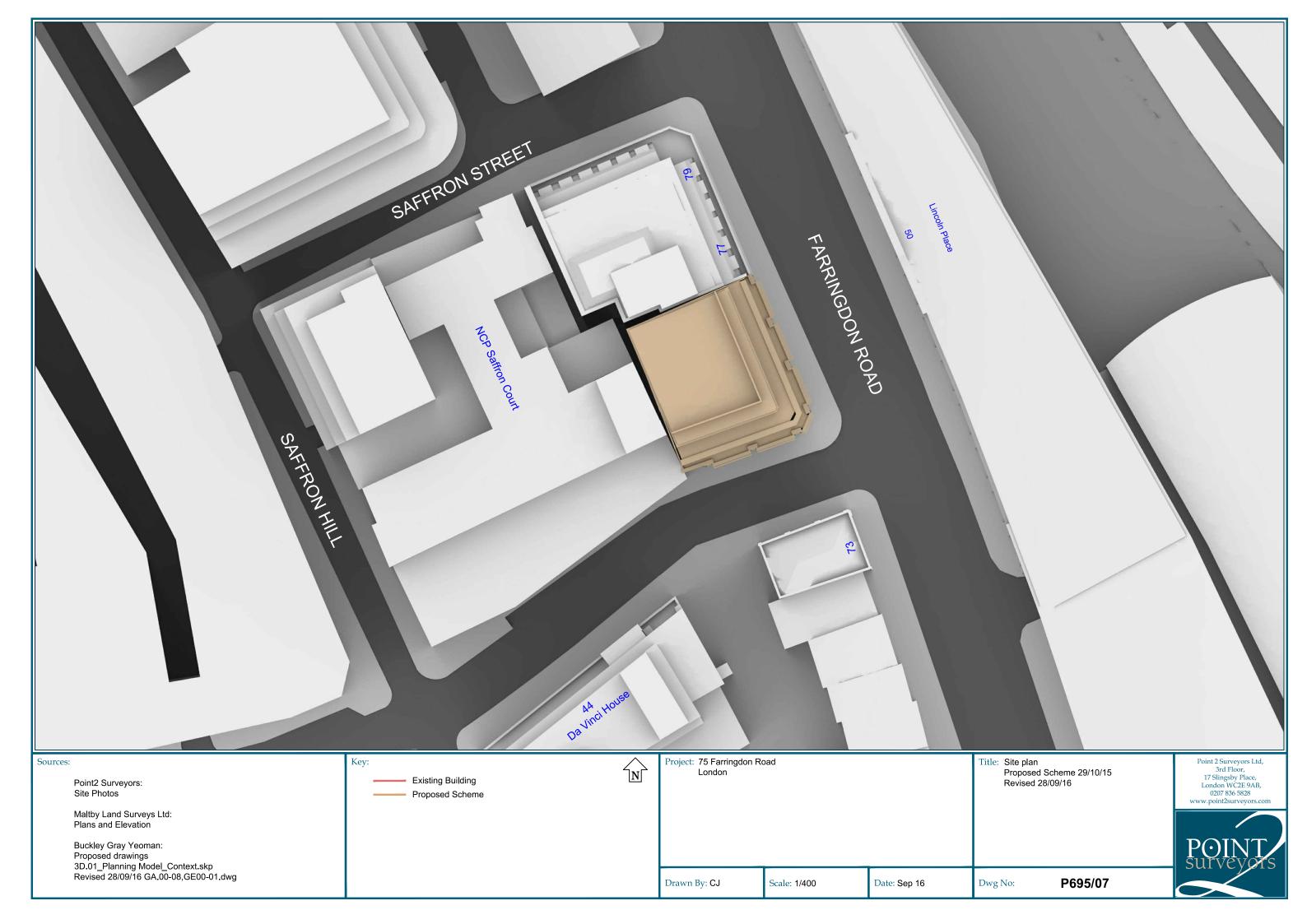
Appendix 1 – Site Plan and 3D Drawings

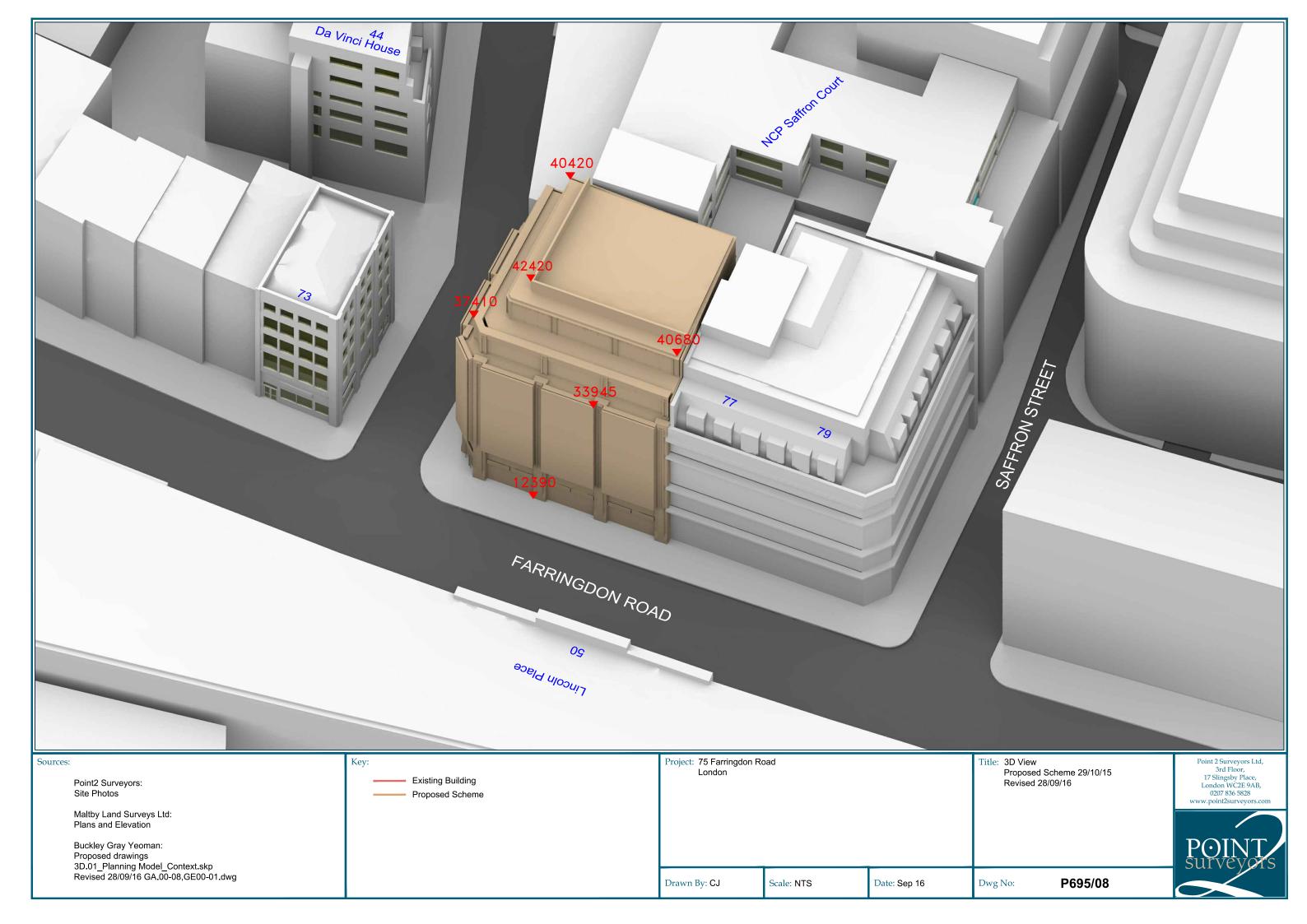


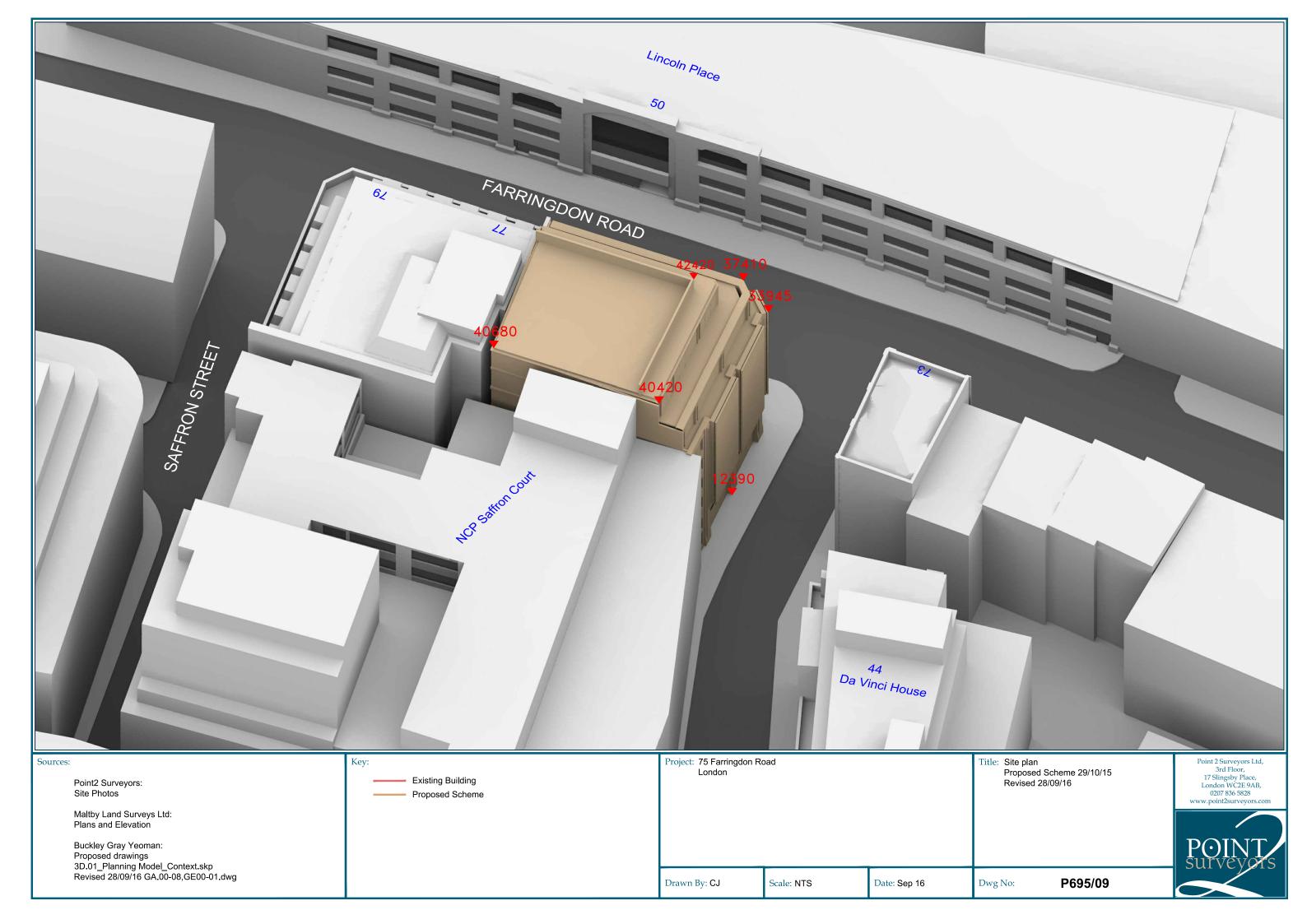












Appendix 2 - Daylight Results



			EVICTING	DDADAGE	D I 000	0/1-000				EVIO	TING	DDA	DOSER -	TOTAL	0/ L OCC -
Room	Room Use	Window	EXISTING VSC	PROPOSE VSC	VSC	%LOSS VSC	Room	Room Use	Window	EXIS [*] ADF	TOTAL		POSED TOTAL	TOTAL LOSS	%LOSS ADF
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Da Vinci House, 44 Saffron Hill Da Vinci House, 44 Saffron Hill															
R1/11	ASSUMED	W3/11	17.67	17.34	0.33	1.87	R1/11	HABITABLE	W3/11	1.90		1.87			
R1/11	ASSUMED	W4/11	13.19	13.04	0.15	1.14	R1/11	HABITABLE	W4/11	1.09		1.08			
R1/11	ASSUMED	W5/11	12.60	12.45	0.15	1.19	R1/11	HABITABLE	W5/11	0.55	3.54	0.55	3.50	0.04	1.05
R2/11	ASSUMED	W2/11	15.35	15.09	0.26	1.69	R2/11	BATHROOM?	W2/11	3.10	3.10	3.07	3.07	0.04	1.13
R3/11	ASSUMED	W1/11	9.65	9.39	0.26	2.69	R3/11	HABITABLE	W1/11	0.58	0.58	0.58	0.58	0.00	0.51
R1/12	ASSUMED	W3/12	24.47	23.98	0.49	2.00	R1/12	HABITABLE	W3/12	1.61		1.59			
R1/12	ASSUMED	W4/12	18.18	17.86	0.32	1.76	R1/12	HABITABLE	W4/12	1.22		1.21			
R1/12	ASSUMED	W5/12	17.63	17.34	0.29	1.64	R1/12	HABITABLE	W5/12	0.64	3.47	0.63	3.43	0.05	1.35
R2/12	ASSUMED	W2/12	22.80	22.41	0.39	1.71	R2/12	BATHROOM?	W2/12	2.79	2.79	2.75	2.75	0.04	1.29
R3/12	ASSUMED	W1/12	14.43	14.07	0.36	2.49	R3/12	HABITABLE	W1/12	0.69	0.69	0.69	0.69	0.00	0.43
R1/13	ASSUMED	W3/13	30.41	29.79	0.62	2.04	R1/13	HABITABLE	W3/13	1.27		1.25			
R1/13	ASSUMED	W4/13	24.56	24.07	0.49	2.00	R1/13	HABITABLE	W4/13	1.33		1.31			
R1/13	ASSUMED	W5/13	24.06	23.65	0.41	1.70	R1/13	HABITABLE	W5/13	0.73	3.33	0.72	3.28	0.05	1.50
R2/13	ASSUMED	W2/13	29.46	28.98	0.48	1.63	R2/13	BATHROOM?	W2/13	2.27	2.27	2.24	2.24	0.03	1.45
R3/13	ASSUMED	W1/13	19.39	18.98	0.41	2.11	R3/13	HABITABLE	W1/13	0.45	0.45	0.44	0.44	0.00	0.45
R1/14	ASSUMED	W2/14	36.27	35.55	0.72	1.99	R1/14	BEDROOM_AS	25/1/2/1/	2.03		2.00			
R1/14	ASSUMED	W2/14 W3/14	27.48	26.86	0.72	2.26	R1/14	BEDROOM_AS		2.37	4.40	2.33	4.33	0.07	1.66
								_							
R2/14	ASSUMED	W1/14	35.60	35.08	0.52	1.46	R2/14	BATHROOM_A	ASW1/14	3.32	3.32	3.27	3.27	0.05	1.39
R1/15	ASSUMED	W2/15	38.36	37.65	0.71	1.85	R1/15	BEDROOM	W2/15	2.34		2.30			
R1/15	ASSUMED	W3/15	33.30	32.69	0.61	1.83	R1/15	BEDROOM	W3/15	2.52	4.86	2.48	4.78	0.08	1.69
R2/15	ASSUMED	W1/15	38.67	38.17	0.50	1.29	R2/15	BATHROOM	W1/15	3.92	3.92	3.87	3.87	0.05	1.33
						-									
73 Farringdon Road 73 Farringdon Road															
R1/24	BEDROOM	W3/24	39.60	39.60	0.00	0.00	R1/24	BEDROOM	W3/24	1.58		1.58			
R1/24	BEDROOM	W4/24	39.40	39.40	0.00	0.00	R1/24	BEDROOM	W4/24	1.49		1.49			
R1/24	BEDROOM	W9/24	29.60	28.15	1.45	4.90	R1/24	BEDROOM	W9/24	1.17		1.12			
R1/24	BEDROOM	W10/24	30.63	29.30	1.33	4.34	R1/24	BEDROOM	W10/24	1.20	5.44	1.15	5.35	0.09	1.71
R2/24	BEDROOM	W1/24	39.49	39.49	0.00	0.00	R2/24	BEDROOM	W1/24	1.39		1.39			
R2/24 R2/24	BEDROOM	W 1/24 W2/24	39.49 39.60	39.49	0.00	0.00	R2/24 R2/24	BEDROOM	W 1/24 W2/24	1.50	2.90	1.50	2.90	0.00	0.00
R3/24	LIVINGROOM	W5/24	25.67	23.89	1.78	6.93	R3/24	LIVINGROOM	W5/24	0.49		0.46			
R3/24	LIVINGROOM	W6/24	26.03	24.23	1.80	6.92	R3/24	LIVINGROOM	W6/24	0.49		0.46			
R3/24	LIVINGROOM	W7/24	27.27	25.48	1.79	6.56	R3/24	LIVINGROOM	W7/24	0.54		0.51			
R3/24	LIVINGROOM	W8/24	28.01	26.29	1.72	6.14	R3/24	LIVINGROOM	W8/24	0.55	2.07	0.53	1.96	0.11	5.50

Room/ Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss				
Da Vinci House, 44 Saffron Hill										
R1/11	ASSUMED	262.3	261.6	261.6	0.0	0.0				
R2/11	ASSUMED	105.9	103.6	103.6	0.0	0.0				
R3/11	ASSUMED	91.2	49.2	49.2	0.0	0.0				
R1/12	ASSUMED	262.3	260.2	260.2	0.0	0.0				
R2/12	ASSUMED	105.9	101.5	101.5	0.0	0.0				
R3/12	ASSUMED	91.2	87.3	87.3	0.0	0.0				
R1/13	ASSUMED	262.3	261.7	261.7	0.0	0.0				
R2/13	ASSUMED	105.9	105.1	105.1	0.0	0.0				
R3/13	ASSUMED	91.2	86.1	86.1	0.0	0.0				
R1/14	ASSUMED	149.5	149.4	149.4	0.0	0.0				
R2/14	ASSUMED	105.9	105.3	105.3	0.0	0.0				
R1/15	ASSUMED	149.5	149.4	149.4	0.0	0.0				
R2/15	ASSUMED	105.9	105.7	105.7	0.0	0.0				
73 Farringdon Road										
R1/24	BEDROOM	150.6	150.4	150.4	0.0	0.0				
R2/24	BEDROOM	156.3	155.9	155.9	0.0	0.0				
R3/24	LIVINGROOM		353.2	352.5	0.7	0.2				