4 Tavistock Place, London, WC1H 9RA

Rights of Light Report

20th March, 2017

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Daylight & Sunlight Report

Proposed Development

4 Tavistock Place

London

WC1H 9RA

Prepared for:-

Tavis Estates Limited

c/o Marek Wojciechowski Architects

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London, W1W 8SR

Prepared by

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Date

23rd March, 2017

Contents

Appendices

This report is solely for the benefit of **Tavis Estates Limited** and the benefit cannot be transferred to any other party without the express written consent of CHP Surveyors Limited.

CHP Surveyors Limited

CHP Surveyors Limited

1.0 Executive Summary

1.1 This report has been prepared by CHP Surveyors Ltd on behalf of Tavis Estates Limited to accompany the planning application for 4 Tavistock Place and considers the implications the proposals for the site will have on the daylight and sunlight enjoyed by the neighbouring residential properties as well as the level of daylight the proposed accommodation will enjoy.

1.2 To ensure that this assessment has correctly considered the daylight and sunlight enjoyed by the neighbouring residential properties, it has been undertaken in accordance with the Building Research Establishment's publication "*Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice*" (2011) (the "**BRE Guidelines**").

1.3 The standards and tests applied within this assessment are briefly described in Appendix A.

1.4 Our analysis has established that the proposals will have no implications on the neighbouring residential properties daylight and sunlight and meet the aims of the BRE Guidelines.

1.5 Concerning the level of daylight the proposed accommodation we analysed the Average Daylight Factor the habitable rooms at lower ground floor and ground floor will enjoy. The result of this demonstrates that all rooms analysed will exceed the recommended minimum ADF. The proposals therefore achieve the BRE Guidelines and the Mayor of London's Housing SPG.

2.0 Instruction

2.1 We have been instructed by Tavis Estates Limited to establish the implications the proposed redevelopment will have upon the daylight and sunlight amenity of the neighbouring residential properties.

2.2 This report considers the results of the analysis with reference to the criteria set out in the BRE Guidelines.

3.0 Assessment

3.1 To ensure that this assessment has been appropriately considered, daylight and sunlight assessments have been undertaken in accordance with the BRE Guidelines.

3.2 To assist in the understanding of the analysis that has been undertaken as part of this report, a summary of the relevant BRE Guidelines, entitled the "Principles of Daylight and Sunlight", is at Appendix A.

4.0 Information

4.1 We have made reference to the following information:-

Ordnance Survey
Site Plan

Marek Wojciechowski Architects
Drawing numbers 17016_P_01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13 and 14

CHP Surveyors Limited
Site Photographs and online research

5.0 Proposals

5.1 The site is located on the south side of Tavistock Place and the proposal is for a change of use and some alteration to provide office accommodation as indicated on drawing numbers 1971-100, 101, 102 and 103 attached at Appendix B.

5.2 The existing buildings adjacent to the site which provide residential accommodation and therefore considered within this report are listed in the following table.

Adjacent Buildings Summary Table		
Name/Address of Building	**Assumed Use of Building**	**Position in relation to Site**
2 Tavistock Place	Residential	South west
6-8 Tavistock Place	Residential	North east
Thackery House	Residential	South east

6.0 Limitations

6.1 Our assessment is based on the proposed development drawings by Marek Wojciechowski Architects.

6.2 A site inspection was undertaken to record the location of windows within the neighbouring properties. Our site inspection included an external inspection of the existing site and surrounding buildings. Access was not available to the surrounding properties and so reasonable assumptions have therefore been made as to the internal room sizes, layouts and uses.

6.3 We refer you to the drawings set out in clause 4.1 above for a list of the third-party information relied upon which our 3D computer model and resultant analyses are based.

7.0 Methodology

7.1 We refer you to the drawings set out in clause 4.1 above for a list of the third-party information relied upon which our 3D computer model and resultant analyses are based.

7.2 Using a specialist computer programme, we have undertaken the analysis set out in the BRE Guidelines, both in the existing situation, to provide a base line, and following the implementation of the proposals. There is no requirement to consider the implications during the development process as these will be short term.

7.3 As clearly stated within the BRE Guidelines, the aims are to help designers, not constrain them. Therefore, the numerical values contained within this document should be interpreted flexibly since natural light is only one of many factors in site layout design. It also states that the guidelines are for suburban locations and that different target levels may be used in urban locations.

Daylight

7.4 The BRE Guidelines provide three methods to establish whether proposed developments will have a significant effect on the daylight enjoyed by the neighbouring properties:-

- The Vertical Sky Component (VSC)
- The No Sky Line (NSL)
- The Average Daylight Factor (ADF)

7.5 Each method is described below with a more in-depth description of each found in ***Appendix A***, ***Principles of Daylight and Sunlight.***

Vertical Sky Component

7.6 VSC is a measurement of the amount of skylight that falls on the outside of a window, measured at the window's midpoint. It is calculated by dividing the illuminance on the outside of a window, by the illuminance of on an unobstructed flat roof, under overcast sky conditions. 40% VSC is the maximum value for a completely unobstructed vertical wall.

7.7 The BRE guidance states that, for a room to be adequately lit, a window should receive a VSC of 27%, or if this is not the suffer a significant infringement to its light if the VSC is 0.8 times the original value, following the implementation of a new development.

No Sky Line

7.8 The NSL divides points in a room which can and cannot see the sky. This is measured on a horizontal plane 0.8m above floor level. The guidance states that a significant portion of a room should lie in front of the NSL. If this not achieved and the area of a room falling in front of the no sky line is reduced to less than 0.8 times its former value then this is likely to be a noticeable loss.

Average Daylight Factor

7.9 Where VSC and NSL is not achieved, as set out in the BRE Guidelines, the ADF can be calculated. This a more accurate reflection on the level of daylight each room will enjoy as it takes into account the size of the room, the size of the window and internal reflection. Within the BRE documents they set out the following recommended minimum ADF levels dependent on the room usage:-

- 2% for kitchens
- 1.5% for living rooms
- 1% for bedrooms.

Sunlight

Average Probably Sunlight Hours

7.10 With regards to sunlight, the BRE Guidelines seek that all main windows within 90° of due south achieve 25% of the Average Probable Sunlight Hours (APSH) with at least 5% during the winter months. Where this is not achieved and the difference between the existing and proposed APSH is more than 4%, the BRE Guidelines state that the proposals will not have a noticeable effect on sunlight provided the total APSH, as well as during the winter months, are within 0.8 times the existing.

8.0 Daylight Assessment

8.1 General

8.2 This section provides assessment of the following residential properties: 2 Tavistock Place, 6-8 Tavistock Place and Thackery House. The VSC, NSL and where necessary, ADF has been calculated for all habitable rooms. In accordance with the BRE Guidelines this does not include circulation space, hallways, storeroom, toilets and bathrooms. The detailed results are set out in the table attached at Appendix C. A summary of each property in respect of daylight is given below:

8.3 2 Tavistock Place

8.3.1 This property is located to the south west of the property and provide residential accommodation over 7 floors.

8.3.2 The results of our VSC analysis as set out in the table attached at Appendix C indicate that in all instances there will either be no change or an increase in the level of daylight enjoyed.

8.3.3 With regards to daylight distribution as the VSC results demonstrate that there will be no change or an improvement, the proposals will have no implications on daylight distribution.

8.3.4 The results of our analysis demonstrate that the aims of the BRE Guidelines are achieved and the proposals will not have a significant implication on daylight on this property.

8.4 6-8 Tavistock Street

8.4.1 This property is located to the north east of the property and provides residential properties over five floors.

8.4.2 The results of our VSC analysis are set out in the table attached at Appendix C and demonstrates that in all instances there will either be no change or an increase in the VSC.

8.4.3 With regards to daylight distribution as the VSC results demonstrate that there will be no change or an improvement, the proposals will have no implications on daylight distribution.

8.4.4 The results of our analysis demonstrate that the aims of the BRE Guidelines are achieved and the proposals will not have a significant implication on daylight on this property.

8.5 Thackery House

8.5.1 This property is located to the south east of the site and provides residential accommodation over.

8.5.2 The results of our VSC analysis are set out in the table attached at Appendix C and demonstrates that in all instances there will either be no change in the VSC or within 0.99 times the existing.

8.5.3 We have also considered daylight distribution by plotting the No Sky Line. The results as set out in the table attached at Appendix C demonstrates that in all instances a significant or at least 0.88 times the existing area lies in front of the NSL.

8.5.4 The results of our analysis demonstrate that the aims of the BRE Guidelines are achieved and the proposals will not have a significant implication on daylight on this property.

9.0 Sunlight Analysis

9.1 General

9.1.1 The BRE Guidelines require that all windows within 90° of due south should be considered for sunlight analysis. As a result, we have considered the windows within 2 Tavistock Place and 6-8 Tavistock Place.

9.2 2 Tavistock Place

9.2.1 The results of our analysis set out in the table attached at Appendix D demonstrates that in all instances the implementation of the proposals will not result in a reduction in sunlight enjoyed either throughout the year or specifically during the winter months and that in some instances there will be an improvement.

9.2.2 Our analysis demonstrates that the BRE Guidelines will be met.

9.3 6-8 Tavistock Place

9.3.1 The results of our analysis set out in the table attached at Appendix D demonstrates that in all instances the implementation of the proposals will not result in a reduction in sunlight enjoyed either throughout the year or specifically during the winter months and that in some instances there will be an improvement.

9.3.2 Our analysis demonstrates that the BRE Guidelines will be met.

10.0 Conclusion

10.1 With regards to the implication the proposals will have on the daylight enjoyed by the neighbouring residential properties, the results of our analysis demonstrate that the BRE Guidelines are met in that they will not have a significant affect and in some instances will result in an increase in the level of daylight enjoyed.

10.2 We have also considered the level of sunlight the neighbouring properties will enjoy and our analysis demonstrates that the proposals will have no implications**.**

10.3 The results of our analysis demonstrate that in relation to the neighbouring residential properties the Building Research Establishment publication "*Site Layout Planning for Daylight and Sunlight A guide to good practice."* They also demonstrate that with regards to the proposed accommodation the aims of the Mayor of London's Housing SPG are achieved.

Appendix A

Principles of Daylight and Sunlight

In 2011 the Building Research Establishment (BRE) published a handbook titled "Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice" to provide advice to building designers on site layout planning in order to achieve good daylight and sunlight amenity to the proposed development, the open spaces between the proposed blocks and the existing surrounding properties.

As stated within the Introduction of this document, the aim of these guidelines is:- "*To help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.*"

The application of the BRE Guidelines are suited more to low density suburban development sites where there is a greater flexibility for site layout planning. In dense urban development sites, these are usually constrained often by adjacent buildings and the guidelines state that these should be applied more flexibly in these instances, as contained within the introduction of the BRE Guidelines:- "*The Guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guides, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design…*"

It must therefore be appreciated and as can be seen from the above extracts and which is reiterated throughout, the handbook is for guidance only.

Daylight

Daylight assessments should be undertaken to habitable rooms where the occupants can expect to receive a reasonable amount of daylight.

The first assessment is to establish whether the proposals will subtend an angle of 25° from the centre of the window. If it does not, then it is considered there will be good daylight. The BRE Guidelines advise:- "*If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of a lowest window, subtends an angle of more than 25° to the horizontal may be affected.*"

This assessment is most appropriate for well spaced, low density or low rise, uniform proposed developments. It is not an appropriate assessment for dense urban environments where the existing building on the development site

already subtends at an angle greater than 25º to the horizontal from the subject window. It is for this reason that this 25º assessment is generally dispensed with and the more detailed analysis outlined below is undertaken.

- **Vertical Sky Component (VSC)**

The Vertical Sky Component (VSC) analysis establishes the amount of available daylight received directly from the sky for each individual window. The reference point for the analysis being the centre of the window, on the plane of the outer window wall.

The VSC is the amount of direct sky a window enjoys, expressed as a percentage of the amount of direct sky a horizontal, unobstructed rooflight would receive.

The maximum percentage of direct skylight a vertical window can receive is 40%. The BRE have determined that where a VSC of 27% is achieved, then daylight should reach the window of an existing building.

Where a VSC of less than 27%, is either before the implementation of the proposals enjoyed, or it is enjoyed following the implementation, then the BRE Guidelines state that provided the new value is greater than 0.8 times the existing value, daylight will not be significantly affected.

- **Daylight Distribution**

The Daylight Distribution analysis is undertaken at working plane level, with this set at 0.85m above floor level of a dwelling.

The BRE Guidelines state that provided a significant area of the room, which is considered to be 80% is in front of the No Sky Line (the point behind which at desk top level no sky is visible) or at least 0.8 times the existing area, then the room will enjoy good daylight distribution.

If in the existing situation this is not the case, the BRE Guidelines state that provided that the area following the implementation of the proposals is at least 0.8 times the existing area, there will not be a significant affect.

Sunlight

This analysis is undertaken in a similar method to calculating VSC. Within residential accommodation the analysis for a sunlight analysis relates to the main windows that are within 90º of due south. It is considered that sunlight to kitchens and bedrooms is less important, although care should be taken not to block out too much.

Within commercial or non-domestic buildings, the use of the building will determine whether a sunlight assessment is required.

In relation to neighbouring residential buildings, if a window is facing within 90º of due south and overlooking any part of the proposals subtends an angle of more than 25º to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlight of the existing dwelling may be affected.

- **Annual Probable Sunlight Hours (APSH)**

  The 'Probable Sunlight Hours' can be defined as the total number of hours in the year that sun is expected to shine.

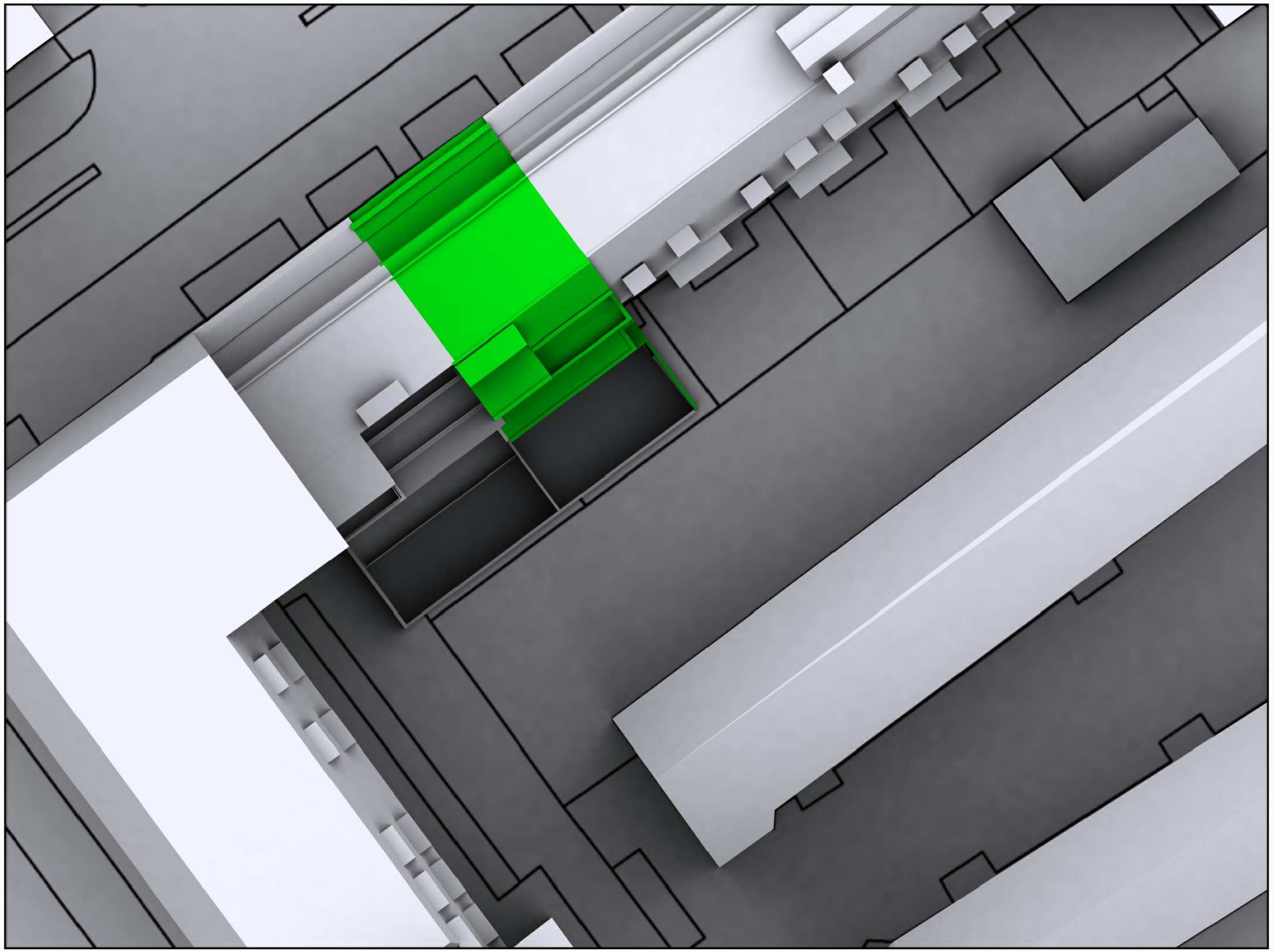
  The APSH assessment is undertaken to the main window of residential buildings, where the window faces 90º of due south. Within the BRE Guidelines it sets out the criteria for this assessment:-

  "*If a living room of an existing dwelling has a main window facing within 90º of due south, and any part of a new development subtends an angle of more than 25º to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely effected. This will be the case if a point at the centre of the window, in the plane of the inner window wall, received in the year less than one quarter (25%) of annual probable sunlight hours including at least 5% of annual probable sunlight hours between 21 September and 21 March, and less than 0.8 times its former sunlight hours during either period.*"

  In summary, if it does not achieve the specific numerical values, the sunlight to an existing building may be reduced by 20% in either the annual or winter periods before that loss becomes noticeable as a result of a proposed development.

Appendix B

Sources



KEY

CHP Surveyors Ltd
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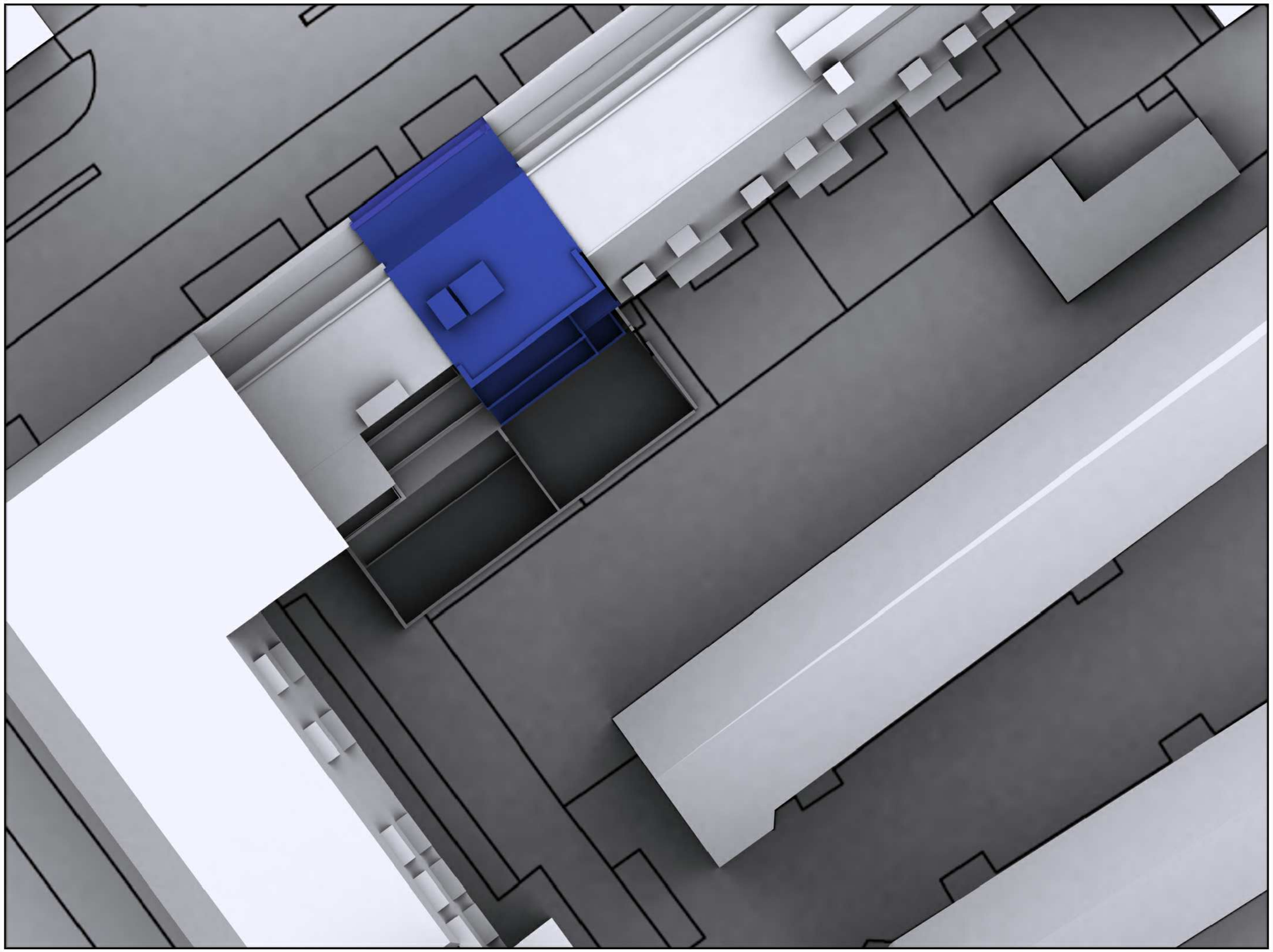
PROJECT TITLE
Tavistock Place

DRAWING TITLE
Existing Plan View

SCALE	DATE	ISSUE
NTS	17-03-2017	-

DWG NO	REV
1971_100	

Sources



KEY

CHP Surveyors Ltd
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PROJECT TITLE
Tavistock Place

DRAWING TITLE
Proposed Plan View

SCALE	DATE	ISSUE
NTS	17-03-2017	-

DWG NO	REV
1971_101	

Sources

KEY

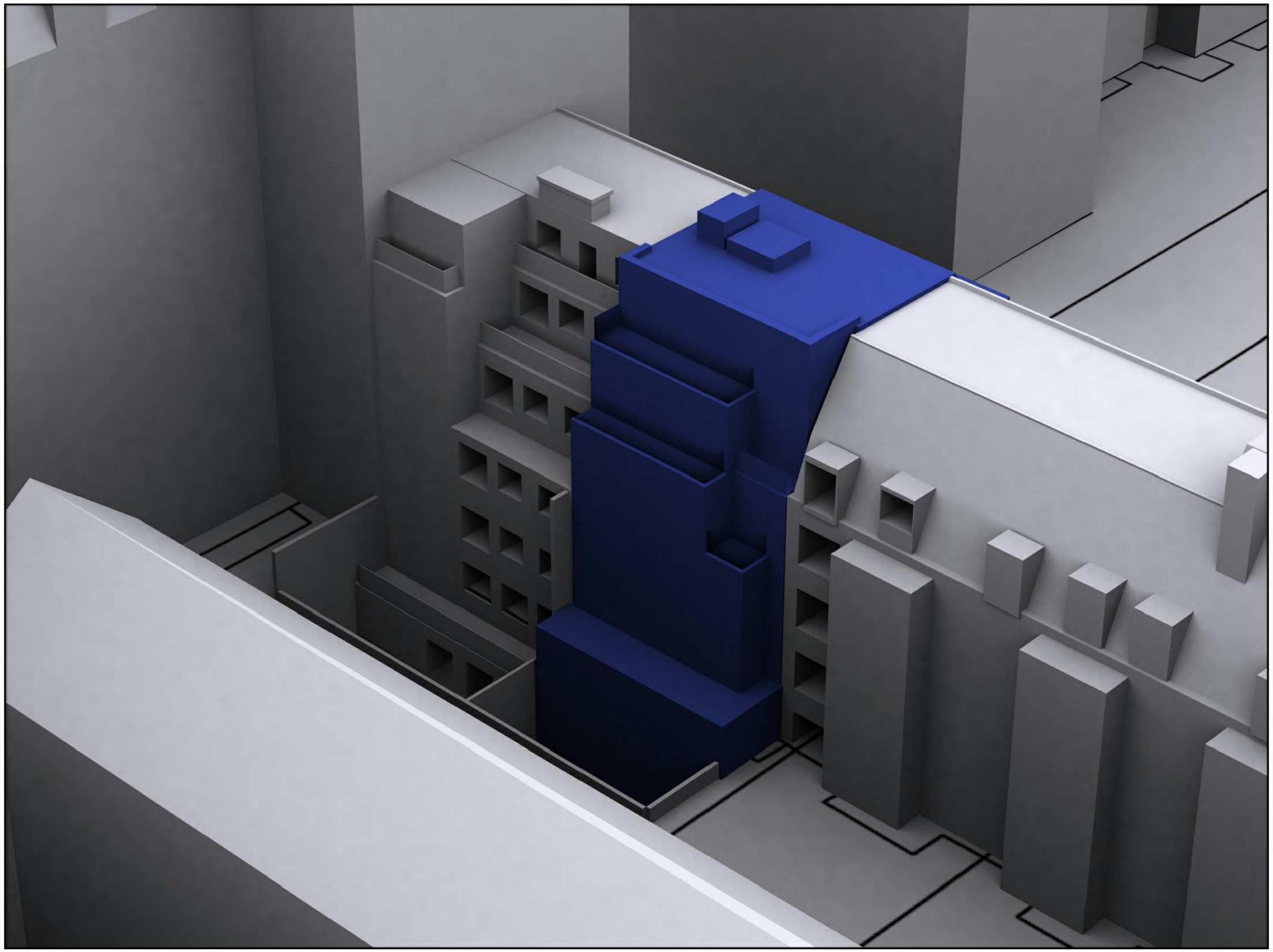
CHP Surveyors Ltd
2-6 Boundary Row, London, SE1 8HP www.chp.gb.com

PROJECT TITLE
Tavistock Place

DRAWING TITLE
Existing 3d View

SCALE	DATE	ISSUE
NTS	17-03-2017	-

DWG NO	REV
1971_102	



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CHP Surveyors Ltd
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PROJECT TITLE
Tavistock Place

DRAWING TITLE
Proposed 3d View

SCALE	DATE	ISSUE
NTS	17-03-2017	-

DWG NO	REV
1971_103	

Appendix C

4 Tavistock Place, London, WC1H 9RA

Daylight Results

LEVEL	WINDOW	ROOM	VSC				NOSKY	
			EXISTING	PROPOSED	LOSS	% LOSS	EXISTING	PROPOSED
2 Tavistock Place								
Basement	W1	R1	10.8	10.4	0.4	4.1	81%	81%
	W2	R2	10.3	10.3	0.0	0.0	79%	79%
	W3	R3	8.0	8.0	0.0	0.0	76%	76%
Ground	W4	R1	15.8	15.8	-0.1	-0.4	100%	100%
	W5	R2	15.3	15.5	-0.1	-0.9	97%	97%
	W6	R3	12.3	12.3	0.0	-0.2	97%	97%
First	W7	R1	18.3	18.3	-0.1	-0.3	100%	100%
	W8	R2	18.3	18.4	-0.1	-0.3	81%	81%
	W9	R3	14.6	14.6	0.0	0.0	62%	62%
Second	W10	R1	21.1	21.1	0.0	-0.1	100%	100%
	W11	R2	21.6	21.6	0.0	-0.1	93%	93%
	W12	R3	18.7	18.6	0.0	0.1	72%	72%
Third	W13	R1	22.8	22.8	0.0	0.0	100%	100%
	W14	R2	24.4	24.5	-0.1	-0.3	98%	98%
	W15	R3	20.6	20.5	0.1	0.5	95%	94%
Fourth	W16	R1	24.2	24.0	0.2	0.9	100%	100%
	W17	R2	27.0	26.2	0.8	2.8	98%	98%
	W18	R3	21.9	19.6	2.3	10.4	95%	94%
Fifth	W19	R1	28.0	27.9	0.1	0.3	100%	100%
	W20	R2	27.9	27.6	0.3	1.2	100%	100%
	W21	R3	24.7	23.8	1.0	3.9	100%	100%
6-8 Tavistock Place								
Ground	W1	R1	13.8	14.3	-0.6	-4.0	70%	70%
First	W2	R1	16.5	17.1	-0.6	-3.4	87%	87%
Second	W3	R1	20.5	21.3	-0.9	-4.3	100%	100%
Third	W4	R1	25.4	26.1	-0.7	-2.9	100%	100%
Fourth	W5	R1	31.8	31.8	0.0	0.0	100%	100%
	W6	R2	32.8	32.8	0.0	0.0	100%	100%
2 Thackery House								
Ground	W1	R1	17.8	17.5	0.3	1.7	57%	56%
	W2	R2	17.5	17.2	0.3	1.8	58%	57%
	W3	R2	17.3	17.0	0.3	1.9		
	W4	R3	16.9	16.6	0.3	2.0	56%	55%
	W5	R4	16.4	16.0	0.3	2.1	57%	56%
	W6	R5	15.8	15.5	0.3	2.0	48%	48%
	W7	R6	14.9	14.6	0.3	1.9	58%	57%
	W8	R6	14.4	14.2	0.3	1.8		
First	W9	R7	21.0	20.7	0.3	1.5	75%	72%
	W10	R8	20.7	20.4	0.3	1.6	75%	74%
	W11	R8	20.5	20.1	0.3	1.7		
	W12	R9	20.0	19.6	0.3	1.8	73%	70%
	W13	R10	19.4	19.0	0.4	1.8	74%	72%
	W14	R11	18.7	18.4	0.3	1.8	63%	62%
	W15	R12	17.6	17.3	0.3	1.7	74%	74%
	W16	R12	17.1	16.8	0.3	1.6		
Second	W17	R13	24.5	24.2	0.3	1.2	98%	97%

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Daylight Results

	W18	R14	24.2	23.9	0.3	1.3	99%	99%
	W19	R14	23.9	23.6	0.3	1.4		
	W20	R15	23.4	23.1	0.3	1.5	98%	93%
	W21	R16	22.7	22.4	0.3	1.5	99%	95%
	W22	R17	21.9	21.6	0.3	1.5	87%	86%
	W23	R18	20.7	20.4	0.3	1.4	99%	99%
	W24	R18	20.1	19.8	0.3	1.3		
Third	W25	R19	28.1	28.0	0.2	0.6	98%	98%
	W26	R20	27.8	27.6	0.2	0.8	99%	99%
	W27	R20	27.5	27.3	0.2	0.8		
	W28	R21	26.9	26.7	0.3	1.0	98%	98%
	W29	R22	26.2	25.9	0.3	1.2	99%	99%
	W30	R23	25.4	25.1	0.3	1.1	98%	98%
	W31	R24	24.0	23.8	0.3	1.0	99%	99%
	W32	R24	23.3	23.1	0.2	1.0		

Appendix D

4 Tavistock Place, London, WC1H 9RA

Sunlight Results

		EXISTING			PROPOSED			% LOSS	
LEVEL	WINDOW	SUMMER	WINTER	TOTAL	SUMMER	WINTER	TOTAL	WINTER	TOTAL
2 Tavistock Place									
Basement	R1	10%	0%	10%	10%	0%	10%	0.00	0.00
	R2	12%	0%	12%	12%	0%	12%	0.00	0.00
	R3	13%	0%	13%	13%	0%	13%	0.00	0.00
Ground	R1	25%	2%	27%	25%	2%	27%	0.00	0.00
	R2	27%	2%	29%	27%	2%	29%	0.00	0.00
	R3	20%	1%	21%	20%	1%	21%	0.00	0.00
First	R1	31%	2%	33%	31%	2%	33%	0.00	0.00
	R2	32%	3%	35%	32%	3%	35%	0.00	0.00
	R3	27%	2%	29%	27%	2%	29%	0.00	0.00
Second	R1	36%	5%	41%	36%	5%	41%	0.00	0.00
	R2	38%	4%	42%	38%	4%	42%	0.00	0.00
	R3	29%	3%	32%	29%	3%	32%	0.00	0.00
Third	R1	34%	7%	41%	34%	7%	41%	0.00	0.00
	R2	40%	7%	47%	38%	7%	45%	0.00	4.26
	R3	33%	8%	41%	32%	8%	40%	0.00	2.44
Fourth	R1	32%	8%	40%	31%	8%	39%	0.00	2.50
	R2	41%	9%	50%	38%	9%	47%	0.00	6.00
	R3	33%	8%	41%	27%	8%	35%	0.00	14.63
Fifth	R1	38%	10%	48%	38%	10%	48%	0.00	0.00
	R2	38%	9%	47%	37%	9%	46%	0.00	2.13
	R3	29%	13%	42%	29%	13%	42%	0.00	0.00
6-8 Tavistock Place									
Ground	R1	25%	1%	26%	28%	1%	29%	0.00	-11.54
First	R1	30%	4%	34%	32%	4%	36%	0.00	-5.88
Second	R1	33%	7%	40%	36%	7%	43%	0.00	-7.50
Third	R1	38%	12%	50%	41%	12%	53%	0.00	-6.00
Fourth	R1	46%	16%	62%	46%	16%	62%	0.00	0.00
	R2	46%	18%	64%	46%	18%	64%	0.00	0.00