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Daylight and Sunlight Report for the Proposed Development at Italian Hospital, 40-41, Queen Square, London WC1N 3AJ – Rev B

Prepared for	**Great Ormond Street Hospital for Children NHS Foundation Trust**
Prepared by	**Stephen Parker Dip Surv**
Date	**27 July 2017**
Reference	**59474/16/SJP/BSC/ev**

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Daylight and Sunlight Report for the Proposed Development at Italian Hospital, 40-41, Queen Square, London WC1N 3AJ
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Contents

Page

1. Executive Summary

1.1 Scope

1.1.1 We have been instructed by Great Ormond Street Hospital for Children NHS Foundation Trust to determine the impact upon the daylight and sunlight amenity of the existing surrounding buildings which might arise from the proposed development(s) at Italian Hospital, 40-41, Queen Square, London, WC1N 3AJ.

1.2 Assessment Criteria

1.2.1 To ensure that this assessment can be appropriately evaluated against London Borough of Camden local authority's planning policy, daylight and sunlight calculations have been undertaken in accordance with the Building Research Establishment Report 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' 2nd Edition, 2011(the "BRE guide") and also British Standard 8206 – 2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting', to which the BRE guide refers. The standards and tests applied within this assessment are briefly described in Appendix A.

1.3 Summary of Effect of Proposed Development on Existing Surrounding Buildings

1.3.1 Daylight

We have undertaken representative tests of all identified residential properties around the site. We identified that 94 windows required assessment and out of those windows all but 2 meet the criteria as defined in the BRE guide. The 2 windows in question are located beneath walkways and adjacent to an external staircase. This suggests that the rooms may not serve habitable space as the levels of existing light are extremely low in this location suggesting that the building is self-obstructing its own light levels.

1.3.2 Therefore, even small reductions in light would receive losses beyond BRE target values in this location and given that the reduction ratios are quite small, the impact created by the development should not be seen as adverse.

1.3.2 Sunlight

We have undertaken representative tests of all identified residential properties around the site. We identified that 44 windows required assessment and out of those windows all met the criteria for daylight as defined in the BRE guide.

1.3.3 Overshadowing

We have undertaken tests to the amenity space identified within 24 Old Gloucester Street (October Gallery). The results indicate that this area will remain adequately lit in terms of the BRE guidance. Mary Ward Centre has not been included in the testing as it does not include amenity space in the central courtyard area facing the Italian Hospital.

1.4 Overall

1.4.1 The results of our assessment indicate that all properties assessed will continue to receive good levels of light with the exception of 2 windows within 24 Old Gloucester Street (October Gallery). It has been demonstrated that these rooms are already compromised and below BRE target values in their existing condition and on that basis the guide should be applied sensibly and flexibly. The scheme proposals should therefore be considered acceptable in daylight and sunlight terms.

2. Introduction

2.1 Scope

2.1.1 We have been instructed by Great Ormond Street Hospital for Children NHS Foundation Trust to determine the impact upon the daylight and sunlight amenity that might arise from the proposed development of Italian Hospital, 40-41, Queen Square, London, WC1N 3AJ in respect of the existing surrounding buildings.

2.2 Planning Policy

2.2.1 Camden Council's Local Development Framework, Development Policy, refers to the following documents as those being used to review adequacy of daylight and sunlight. This Report is therefore based on the following publications which contain the accepted standards for assessing daylight and sunlight:

- Building Research Establishment (BRE) Report "Site Layout Planning for Daylight and Sunlight – a guide to good practice, 2nd Edition, 2011" ("the BRE guide")

2.2.2 Camden Council's Local Development Framework, Development Policy contains the following policy guidance under DP26: Managing the impact of development on occupiers and neighbours:

Visual privacy, overlooking, overshadowing, outlook, sunlight and daylight

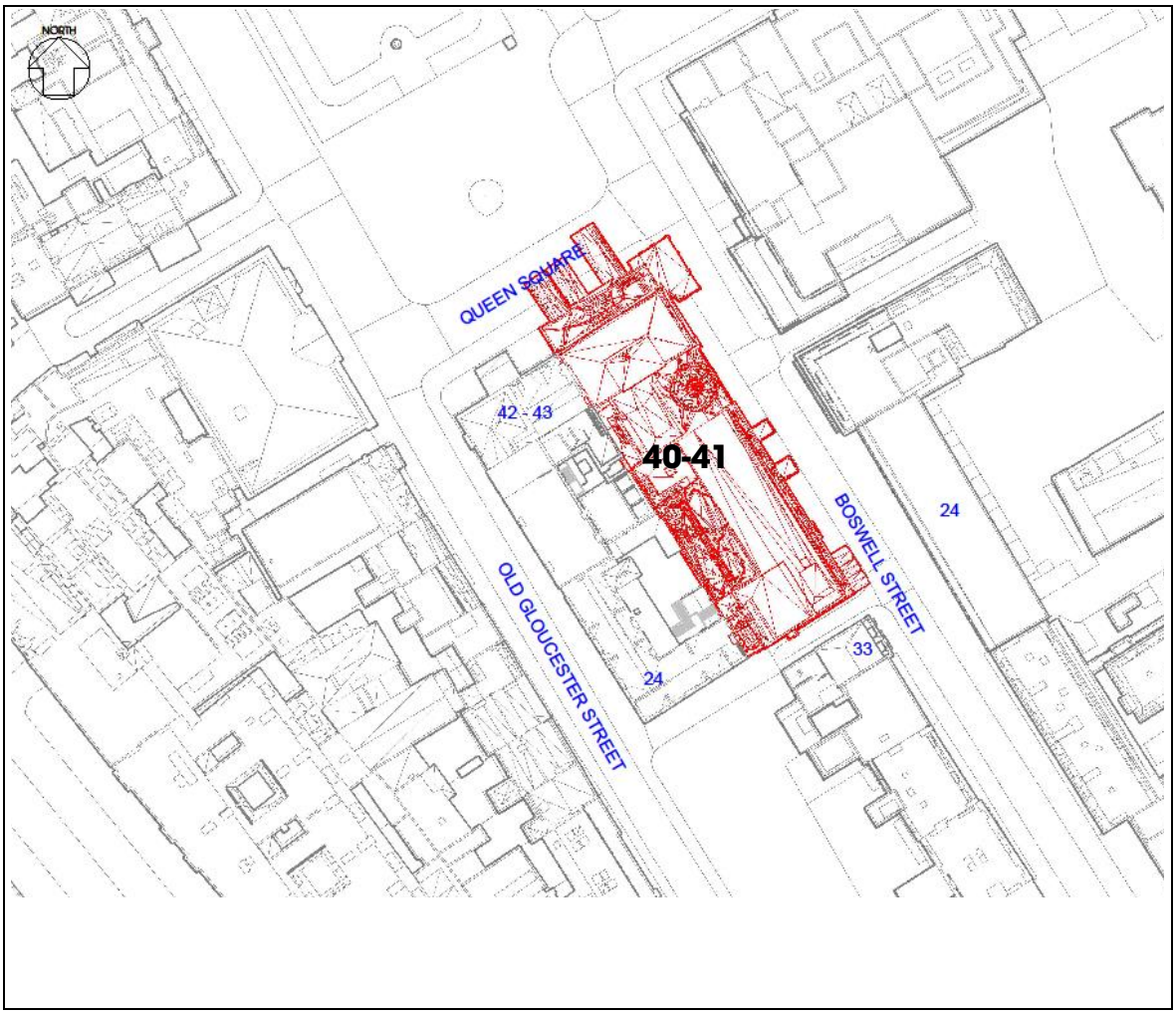
26.3 A development's impact on visual privacy, overlooking, overshadowing, outlook, access to daylight and sunlight and disturbance from artificial light can be influenced by its design and layout, the distance between properties, the vertical levels of onlookers or occupiers and the angle of views. These issues will also affect the amenity of the new occupiers. We will expect that these elements are considered at the design stage of a scheme to prevent potential negative impacts of the development on occupiers and neighbours. To assess whether acceptable levels of daylight and sunlight are available to habitable spaces, the Council will take into account the standards recommended in the British Research Establishment's Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (1991).

2.3 Assessment Criteria

2.3.1 To ensure that this assessment can be appropriately evaluated against Camden Council's planning policy, daylight and sunlight calculations have been undertaken in accordance with the 'BRE guide' and also on BS8206–2: 2008 to which the BRE guide refers. The standards and assessments applied are briefly described in Appendix A.

2.3.2 The existing buildings adjacent to the proposed development site are shown on the Site Plan (see below) and comprise:

Name/Address of Building	Assumed Use	Position in Relation to the Development
24 Old Gloucester Street (October Gallery)	Mixed	Southwest
42 - 43 Queen Square (Mary Ward)	Educational	Northwest
24 Boswell Street	Residential	East
33 Boswell Street	Residential + Commercial	South



2.4 Limitations

2.4.1 Our analysis is based on the scheme drawings provided by Sonnemann Toon Architects and a 3D laser scan model provided by 208 Surveys. The drawings used for the analysis are listed below:

Drawing Number & Title	Date
SONNEMANN TOON ARCHITECTS	
1615-ST-Q1-ZZ-M3-A-0001_P6.DWG	27 June 2017
1615-ST-Q1-ZZ-M3-A-0001_P6_EXISTING.DWG	27 June 2017
208 SURVEYS	
17070_GOSH_ZMAP MEGED.DWG	June 2017
17070_GOSH_REVIT_ADDITIONAL MODEL.DWG	June 2017
PROMAP.CO.UK	
130880253_1 59474 - ITALIAN	10 July 2017
HOSPITAL_070717_SOLIDS.DWG	10 July 2017

2.4.2 A site inspection was also undertaken to record the location of windows within the surrounding buildings.

2.4.3 Access was not available to the neighbouring properties and therefore our assessment has been based on assumptions as to the likely room uses.

3. Assessment & Results – Impact of New Development on Existing, Surrounding Buildings

3.1 Daylight

3.1.1 In accordance with the BRE guide (see also Appendix A) and our site inspection the following buildings required assessment:

- 24 Old Gloucester Street (October Gallery)
- 42 - 43 Queen Square (Mary Ward Centre)
- 24 Boswell Street
- 33 Boswell Street

3.1.2 We have excluded the following properties from our assessment on the basis that we do not believe they contain habitable residential accommodation:

- 26-27 Boswell Street
- 37 Queen Square

3.1.3 The results of our VSC analysis are shown in full in Appendix D. The following table is a summary of our findings:

Building Address	No. of Windows Analysed	BRE Compliant		Total Percentage BRE Compliant
		Yes	No	
24 Old Gloucester Street (October Gallery)	26	24	2	92
42 - 43 Queens Square (Mary Ward Centre)	28	28	0	100
24 Boswell Street	28	28	0	100
33 Boswell Street	12	12	0	100
Totals	**94**	**92**	**2**	**98**

3.1.4 The results undertaken for the Vertical Sky Component assessment indicate that out of the 94 windows assessed, all but 2 will full comply with the BRE target values.

3.1.5 We comment as follows:

24 Old Gloucester Street (October Gallery)

3.1.6 We have assumed that the 2 windows in question form habitable accommodation. However, it should be noted that these 2 windows are beneath the external walkway and also behind the external stairwell. In addition, 1 window falls just marginally short of the BRE criteria of 0.8 times the former value at 0.76.

3.1.7 Therefore, given that one window is just 0.04 times below the BRE target values we consider this to be acceptable in daylight terms. The other windows falling short is noted to be extremely low in the existing condition. This is because of the self-obstructing nature of the walkways and stair well preventing light coming into the room. Therefore, any small reduction to the proposed environment will likely be beyond the target values as set out in the BRE guidance.

3.1.8 On that basis, and given that it is doubtful that the rooms in question serve habitable accommodation, we consider that the small reductions should be deemed acceptable in this instance.

3.2 Sunlight

3.2.1 In accordance with the BRE Guide, our analysis of the plans provided and our observations on site, a number of the surrounding buildings require Annual Probable Sunlight Hours (APSH) assessment – (see Appendix A):

- 42-43 Queen Square
- 24 Boswell Street
- 33 Boswell Street

3.2.2 The table below shows a summary of the results of the APSH assessment. Full test results are contained in Appendix E.

Building Address	No. of Windows Analysed	BRE Compliant		Total Percentage BRE Compliant
		Yes	No	
42 - 43 Queen Square (Mary Ward Centre)	9	9	0	100
24 Boswell Street	28	28	0	100
33 Boswell Street	7	7	0	100
Totals	**44**	**44**	**0**	**100**

3.2.3 Of the 44 windows tested all will continue to meet the target values as set out in the BRE guidelines.

3.3 Overshadowing

3.3.1 In accordance with the BRE guide we have undertaken overshadowing assessments to the following areas:

- 24 Old Gloucester Street (October Gallery)

3.3.2 A reference plan and the results of the overshadowing analysis are shown in full in Appendix F. The table below summarises the results:

Floor Ref.	Amenity Ref.	Amenity Area		Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
24 Old Gloucester Street (October Gallery)							
Ground	A1	Area m2	104.15	103.9	103.9	1	YES
		Percentage		0.9976	0.9975996		

3.3.3 Our results demonstrate that all of the gardens and amenity areas tested meet or exceed the BRE target criteria for sunlight because at least 50% of their area receives at least two hours of direct sunlight on 21 March, or the reduction in area receiving sun on that date is less than the permitted 20%.

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Appendix A

Tests to be Applied

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Introduction

The main purpose of the guidelines in the Building Research Establishment Report "Site Layout Planning for Daylight and Sunlight – a guide to good practice 2011, 2nd Edition" ("the BRE guide") is to assist in the consideration of the relationship of new and existing buildings to ensure that each retains a potential to achieve good daylighting and sunlighting levels. That is, by following and satisfying the tests contained in the guidelines, new and existing buildings should be sufficiently spaced apart in relation to their relative heights so that both have the potential to achieve good levels of daylight and sunlight. The guidelines have been drafted primarily for use with low density suburban developments and should therefore be used flexibly when dealing with dense urban sites and extensions to existing buildings, a fact recognised by the BRE Report's author in the Introduction where Dr Paul Littlefair says:

'The Guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not been seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design…… In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings…..'

In many cases in low-rise housing, meeting the criteria for daylight and sunlight may mean that the BRE criteria for other amenity considerations such as *privacy* and *sense of enclosure* are also satisfied.

The BRE guide states that recommended minimum privacy distances (in cases where windows of habitable rooms face each other in low-rise residential property), as defined by each individual Local Authority's policies, vary widely, from 18-35m[1]. For two-storey properties a spacing within this range would almost certainly also satisfy the BRE guide's daylighting requirements as it complies with the 25^0 rule and will almost certainly satisfy the 'Three times height' test too (as discussed more fully below). However, the specific context of each development will be taken into account and Local Authorities may relax the stated minimum, for instance, in built-up areas where this would lead to an inefficient use of land. Conversely, greater distances may be required between higher buildings, in order to satisfy daylighting and sunlighting requirements. It is important to recognize also that privacy can also be achieved by other means: design, orientation and screening can all play a key role and may also contribute towards reducing the theoretical 'minimum' distance.

A sense of enclosure is also important as the perceived quality of an outdoor space may be reduced if it is too large in the context of the surrounding buildings. In urban settings the BRE guide suggests a spacing-to-height ratio of 2.5:1 would provide a comfortable environment, whilst not obstructing too much natural light: this ratio also approximates the 25^0 rule.

[1] The commonest minimum privacy distance is 21m (Householder Development Consents Review: Implementation of Recommendations – Department for Communities and Local Government – May 2007)

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Daylight

The criteria for protecting daylight to existing buildings are contained in Section 2.2 and Appendix C of the BRE guide. There are various methods of measuring and assessing daylight and the choice of test depends on the circumstances of each particular window. For example, greater protection should be afforded to windows which serve habitable dwellings and, in particular, those serving living rooms and family kitchens, with a lower requirement required for bedrooms. The BRE guide states that circulation spaces and bathrooms need not be tested as they are not considered to require good levels of daylight. In addition, for rooms with more than one window, secondary windows do not require assessment if it is established that the room is already sufficiently lit through the principal window.

The tests should also be applied to non-domestic uses such as offices and workplaces where such uses will ordinarily have a reasonable expectation of daylight and where the areas may be considered a principal workplace.

The BRE has developed a series of tests to determine whether daylighting levels within new developments and rooms within existing buildings surrounding new developments will satisfy or continue to satisfy a range of daylighting criteria

Note: Not every single window is assessed separately, only a representative sample, from which conclusions may be drawn regarding other nearby dwellings.

Daylighting Tests

'Three times height' test - If the distance of each part of the new development from the existing windows is three or more times its height above the centre of the existing window then loss of light to the existing windows need not be analysed. If the proposed development is taller or closer than this then the 25^0 test will need to be carried out.

25^0 test – a very simple test that should only be used where the proposed development is of a reasonably uniform profile and is directly opposite the existing building. Its use is most appropriate for low density well-spaced developments such as new sub-urban housing schemes and often it is not a particularly useful tool for assessing urban and in-fill sites. In brief, where the new development subtends to an angle of less than 25^0 to the centre of the lowest window of an existing neighbouring building, it is unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing building. Equally, the new development itself is also likely to have the potential for good daylighting. If the angle is more than 25^0 then more detailed tests are required, as outlined below.

VSC Test - the VSC is a unit of measurement that represents the amount of available daylight from the sky, received at a particular window. It is measured on the outside face of the window. The 'unit' is expressed as a percentage as it is the ratio between the amount of sky visible at the given reference point compared to the amount of light that would be available from a totally unobstructed hemisphere of sky. To put this unit of measurement into perspective, the maximum percentage value for a window with a completely unobstructed outlook (i.e. with a totally unobstructed view through 90° in every direction) is 40%.

The target figure for VSC recommended by the BRE is 27%. A VSC of 27% is a relatively good level of daylight and the level we would expect to find for habitable rooms with windows on principal elevations. However, this level is often difficult to achieve on secondary elevations and in built-up urban environments. For comparison, a window receiving 27% VSC is approximately equivalent to a window that would have a continuous obstruction opposite it which subtends an angle of 25° (i.e. the same results as would be found utilising the 25^0 Test).

Where tests show that the new development itself meets the 27% VSC target this is a good indication that the development will enjoy good daylighting and further tests can then be carried out to corroborate this (see under).

Through research the BRE have determined that in existing buildings daylight (and sunlight levels) can be reduced by approximately 20% of their original value before the loss is materially noticeable. It is for this reason that they consider that a 20% reduction is permissible in circumstances where the existing VSC value is below the 27% threshold. For existing buildings once this has been established it is then necessary to determine whether the distribution of daylight inside each room meets the required standards (see under).

Daylight Distribution (DD) Test – This test looks at the position of the "No-Sky Line" (NSL) – that is, the line that divides the points on the working plane (0.7m from floor level in offices and 0.85m in dwellings and industrial spaces) which can and cannot see the sky. The BRE guide suggests that areas beyond the NSL may look dark and gloomy compared with the rest of the room and BS8206 states that electric lighting is likely to be needed if a significant part of the working plane (normally no more than 20%) lies beyond it.

In new developments no more than 20% of a room's area should be beyond the NSL. For existing buildings the BRE guide states that if, following the construction of a new development, the NSL moves so that the area beyond the NSL increases by more than 20%, then daylighting is likely to be seriously affected.

The guide suggests that in houses, living rooms, dining rooms and kitchens should be tested: bedrooms are deemed less important, although should nevertheless be analysed. In other buildings each main room where daylight is expected should be investigated.

ADF Test –The ADF (Average Daylight Factor) test takes account of the interior dimensions and surface reflectance within the room being tested as well as the amount of sky visible from the window. For this reason it is considered a more detailed and representative measure of the adequacy of light. The minimum ADF values recommended in BS8206 Part 2 are: 2% for family kitchens (and rooms containing kitchens); 1.5% for living rooms; and 1% for bedrooms. This is a test used in assessing new developments, although, in certain circumstances, it may be used as a supplementary test in the assessment of daylighting in existing buildings, particularly where more than one window serves a room.

Room depth ratio test - This is a test for new developments looking at the relative dimensions of each room (principally its depth) and its window(s) to ensure that the rear half of a room will receive sufficient daylight so as not to appear gloomy.

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Sunlight

Sunlight is an important 'amenity' in both domestic and non-domestic settings. The way in which a building's windows are orientated and the overall position of a building on a site will have an impact on the sunlight it receives but, importantly, will also have an effect on the sunlight neighbouring buildings receive. Unlike daylight, which is non-directional and assumes that light from the sky is uniform, the availability of sunlight is dependent on direction. That is, as the United Kingdom is in the northern hemisphere, we receive virtually all of our sunlight from the south. The availability of sunlight is therefore dependent on the orientation of the window or area of ground being assessed relative to the position of due south.

In new developments the BRE guide suggests that dwellings should aim to have at least one main living room which faces the southern or western parts of the sky so as to ensure that it receives a reasonable amount of sunlight. Where groups of dwellings are planned the Guide states that site layout design should aim to maximise the number of dwellings with a main living room that meet sunlight criteria. Where a window wall faces within 90^0 of due south and no obstruction subtends to angle of more than 25^0 to the horizontal or where the window wall faces within 20^0 of due south and the reference point has a VSC of at least 27% then sunlighting will meet the required standards: failing that the Annual Probable Sunlight Hours (APSH) need to be analysed. APSH means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloud for the location in question. If the APSH tests reveal that the new development will receive at least one quarter of the available APSH, including at least 5% of APSH during the winter months (from 21 September to 21 March), then the requirements are satisfied. It should be noted that if a room has two windows on opposite walls, the APSH due to each can be added together.

The availability of sunlight is also an important factor when looking at the impact of a proposed development on the existing surrounding buildings. APSH tests will be required where one or more of the following are true:

- The 'Three times height' test is failed (see 'Daylight' above);
- The proposed development is situated within 90^0 of due south of an existing building's main window wall and the new building subtends to angle of more than 25^0 to the horizontal;
- The window wall faces within 20^0 of due south and a point at the centre of the window on the outside face of the window wall (the reference point) has a VSC of less than 27%.

Where APSH testing is required it is similar to the test for the proposed development. That is to say that compliance will be demonstrated where a room receives:

- At least 25% of the APSH (including at least 5% in the winter months), or
- At least 0.8 times its former sunlight hours during either period, or
- A reduction of no more than 4% APSH over the year.

The Guide stresses that the target values it gives are purely advisory, especially in circumstances such as: the presence of balconies (which can overhang windows, obstructing light); when an existing building stands unusually close to the common boundary with the new development and; where the new development needs to match the height and proportion of existing nearby buildings. In circumstances like these a larger reduction in sunlight may be necessary.

The sunlight criteria in the BRE guide primarily apply to windows serving living rooms of an existing dwelling. This is in contrast to the daylight criteria which apply to kitchens and bedrooms as well as living rooms. Having said that, the guide goes on to say that care should be taken not to block too much sun from kitchens and bedrooms. Non-domestic buildings which are deemed to have a requirement for sunlight should also be checked.

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Sunlight – Gardens and Open Spaces

As well as ensuring buildings receive a good level of sunlight to their interior spaces, it is also important to ensure that the open spaces between buildings are suitably lit. The recommendations as set out in the BRE guide are meant to ensure that spaces between buildings are not permanently in shade for a large part of the year. Trees and fences over 1.5m tall are also factored into the calculations.

The BRE guidelines state that:

- For a garden or amenity area to appear adequately sunlit throughout the year, at least 50% of the area should receive at least two hours of sunlight on 21 March;

- In addition, if, as result of new development, an existing garden or amenity area does not reach the area target above and the area which can receive two hours of direct sunlight on 21 March is reduced by more than 20% this loss is likely to be noticeable.

Appendix G of the BRE guidelines describes a methodology for calculating sunlight availability for amenity spaces.

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Appendix B

Context Drawings

Existing Site Plan

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

1615-ST-Q1-ZZ-M3-A-0001_P6.DWG
1615-ST-Q1-ZZ-M3-A-0001_P6_EXISTING.DWG

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TITLE

Existing Site Plan

CLIENT

Great Ormond Street Hospital for Children NHS Foundation Trust

PROJECT

Italian Hospital, 40 - 41 Queen Square, London, WC1N 3AJ

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SCALE	DATE
1:500@A3	July 2017

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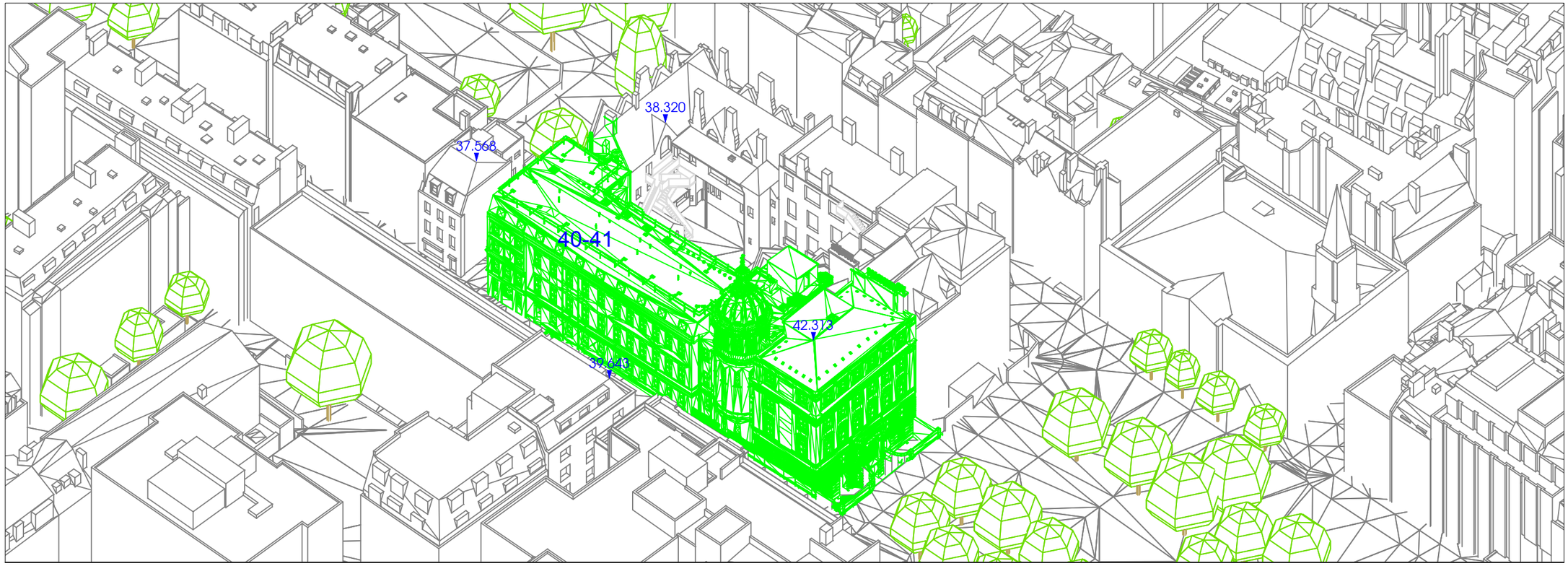
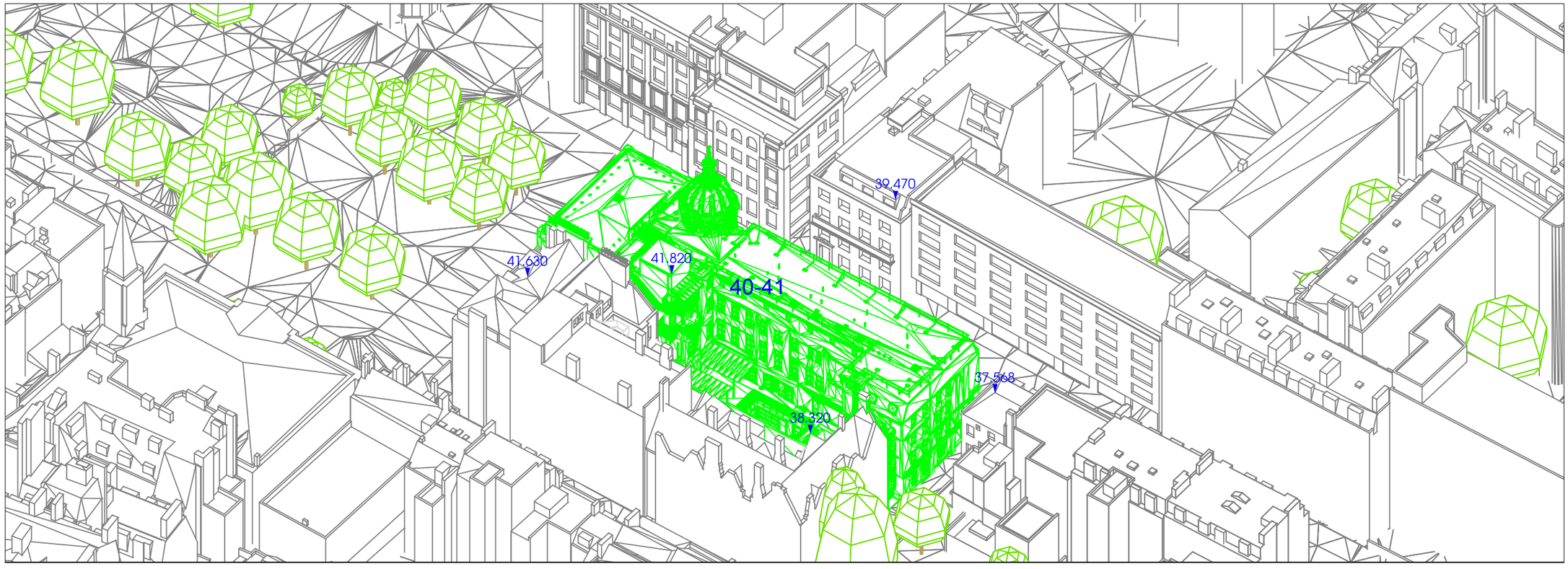


3D Context View - View from North (Existing)



3D Context View - View from South West (Existing)

SOURCES OF INFORMATION:

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3D Views
Existing Site

CLIENT

Great Ormond Street Hospital for Children NHS Foundation Trust

PROJECT

Italian Hospital, 40 - 41 Queen Square, London, WC1N 3AJ

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Proposed Site Plan

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

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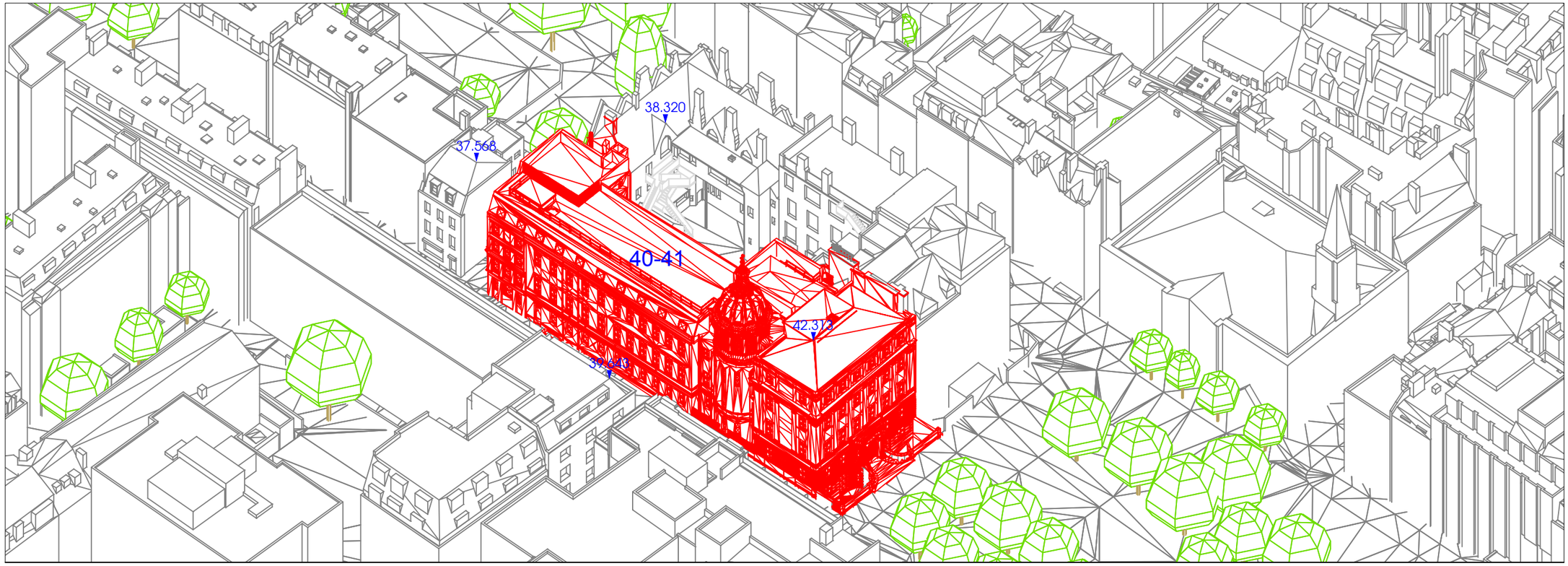
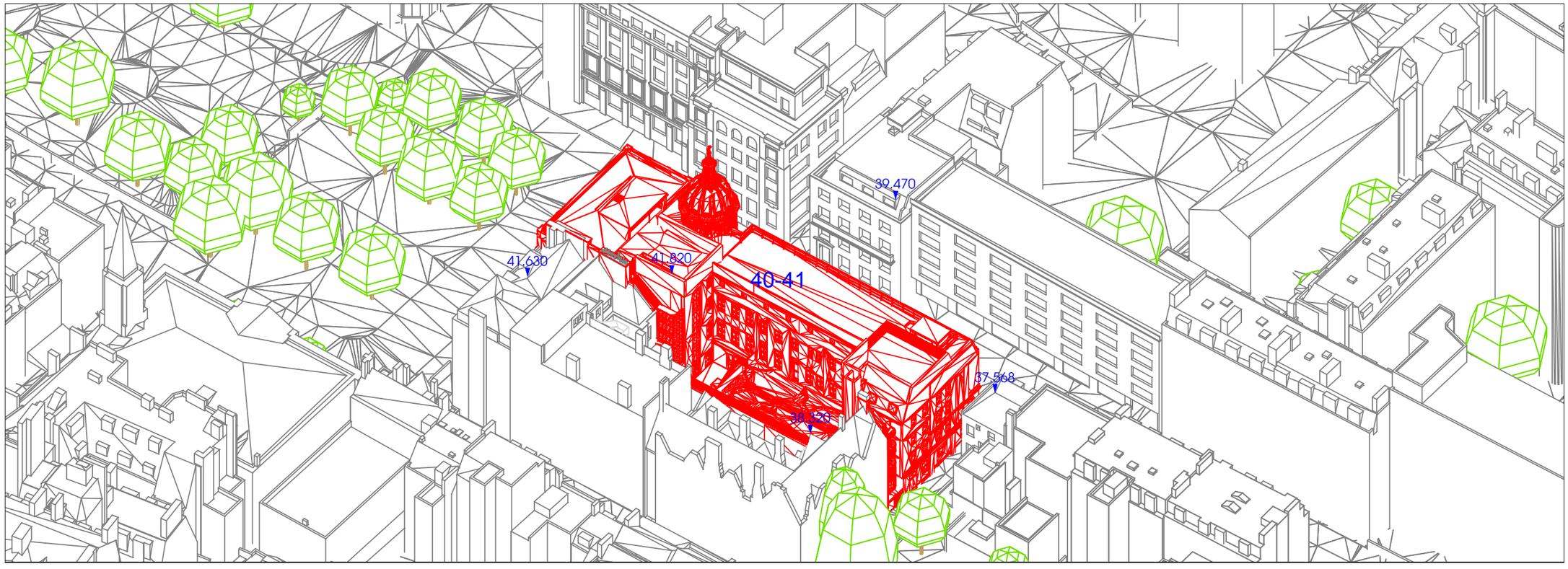


3D Context View - View from North (Proposed)



3D Context View - View from South West (Proposed)

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

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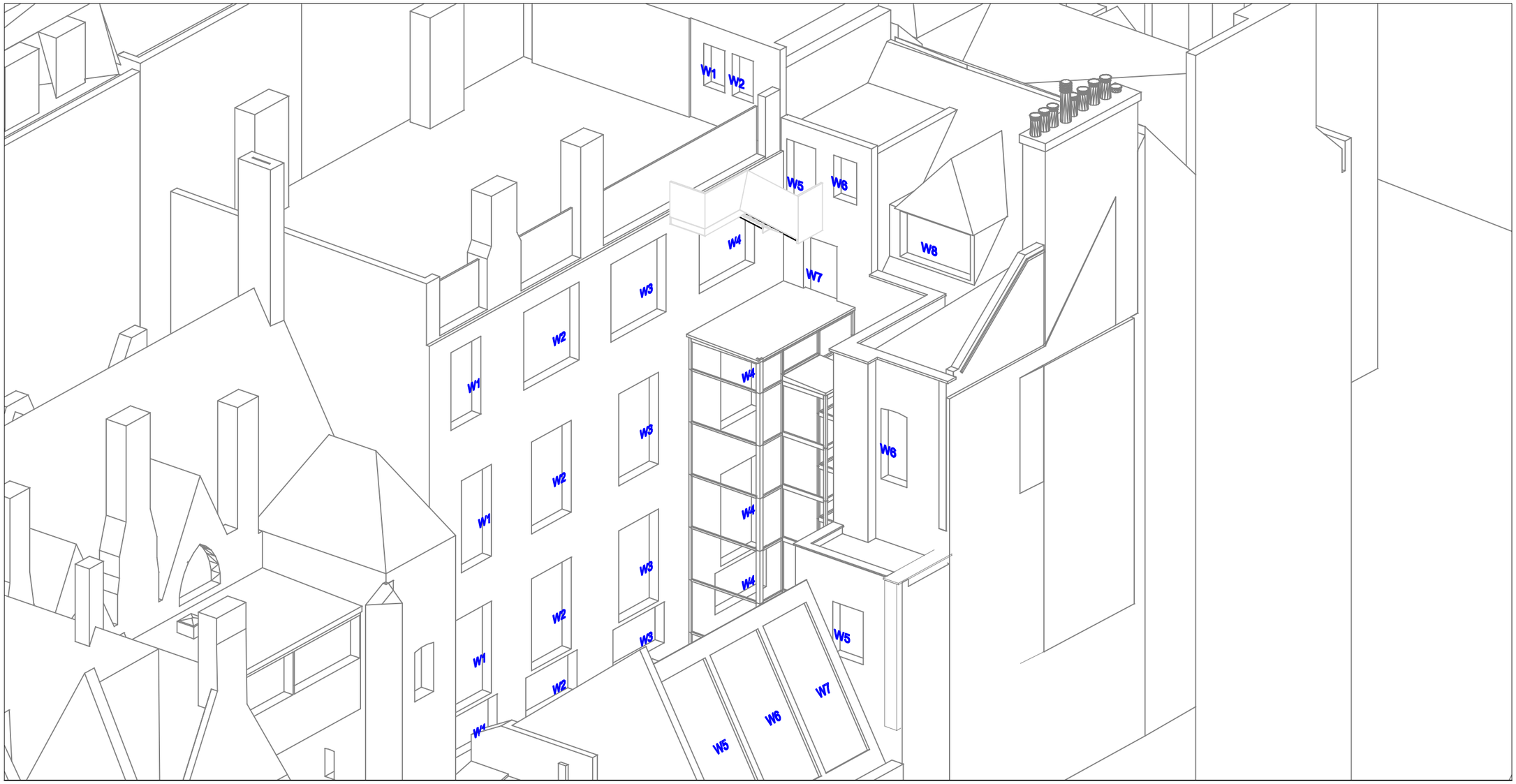
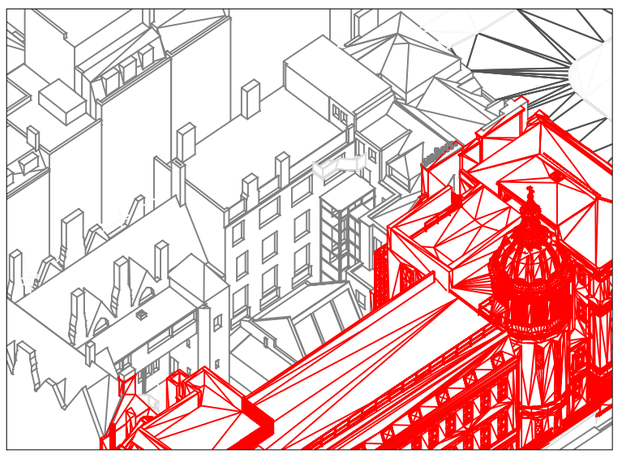
Appendix C

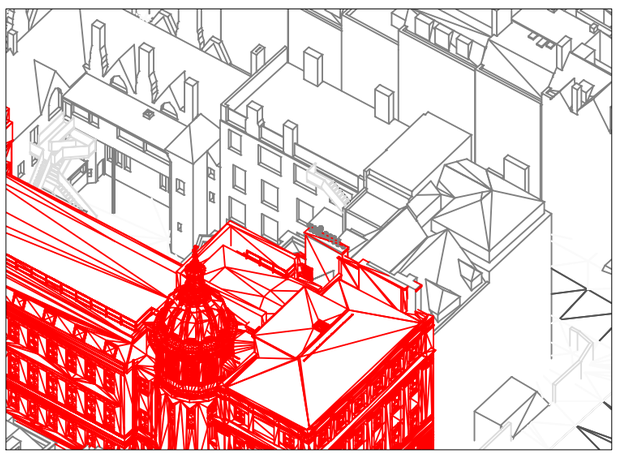
Window/Room Reference Drawings



42 - 43 Queen Square (Mary Ward Centre)



3D Context View - East



3D Context View - North

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

1615-ST-Q1-ZZ-M3-A-0001_P6.DWG
1615-ST-Q1-ZZ-M3-A-0001_P6_EXISTING.DWG

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Rev.	Date	Amendments	Initial

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TITLE

Window Referencing Diagrams
42 - 43 Queen Square
(Mary Ward Centre)

CLIENT

Great Ormond Street Hospital for Children NHS Foundation Trust

PROJECT

Italian Hospital, 40 - 41 Queen Square, London, WC1N 3AJ

DRAWN BY	CHECKED
SM	SP
SCALE	DATE
NTS@A3	July 2017

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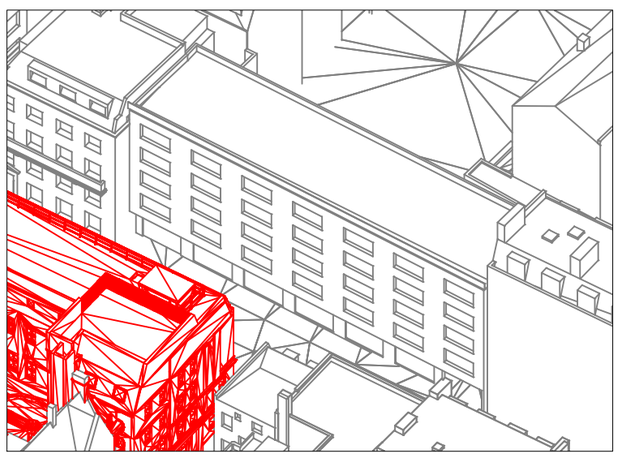
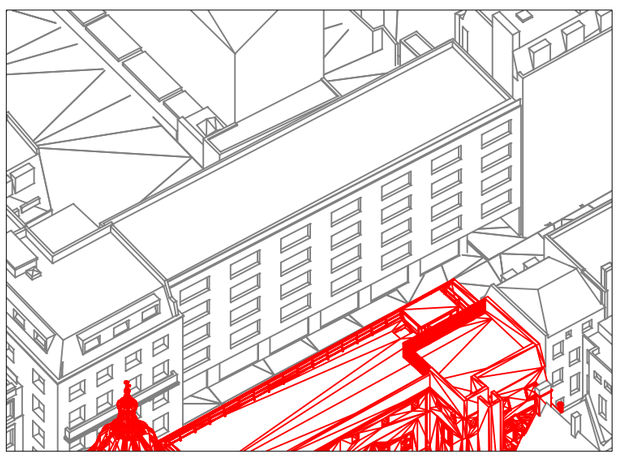
24 Boswell Street



3D Context View - South West



3D Context View - West

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

1615-ST-Q1-ZZ-M3-A-0001_P6.DWG
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TITLE

Window Referencing Diagrams
24 Boswell Street

CLIENT

Great Ormond Street Hospital for Children NHS Foundation Trust

PROJECT

Italian Hospital, 40 - 41 Queen Square, London, WC1N 3AJ

DRAWN BY	CHECKED
SM	SP

SCALE	DATE
NTS@A3	July 2017

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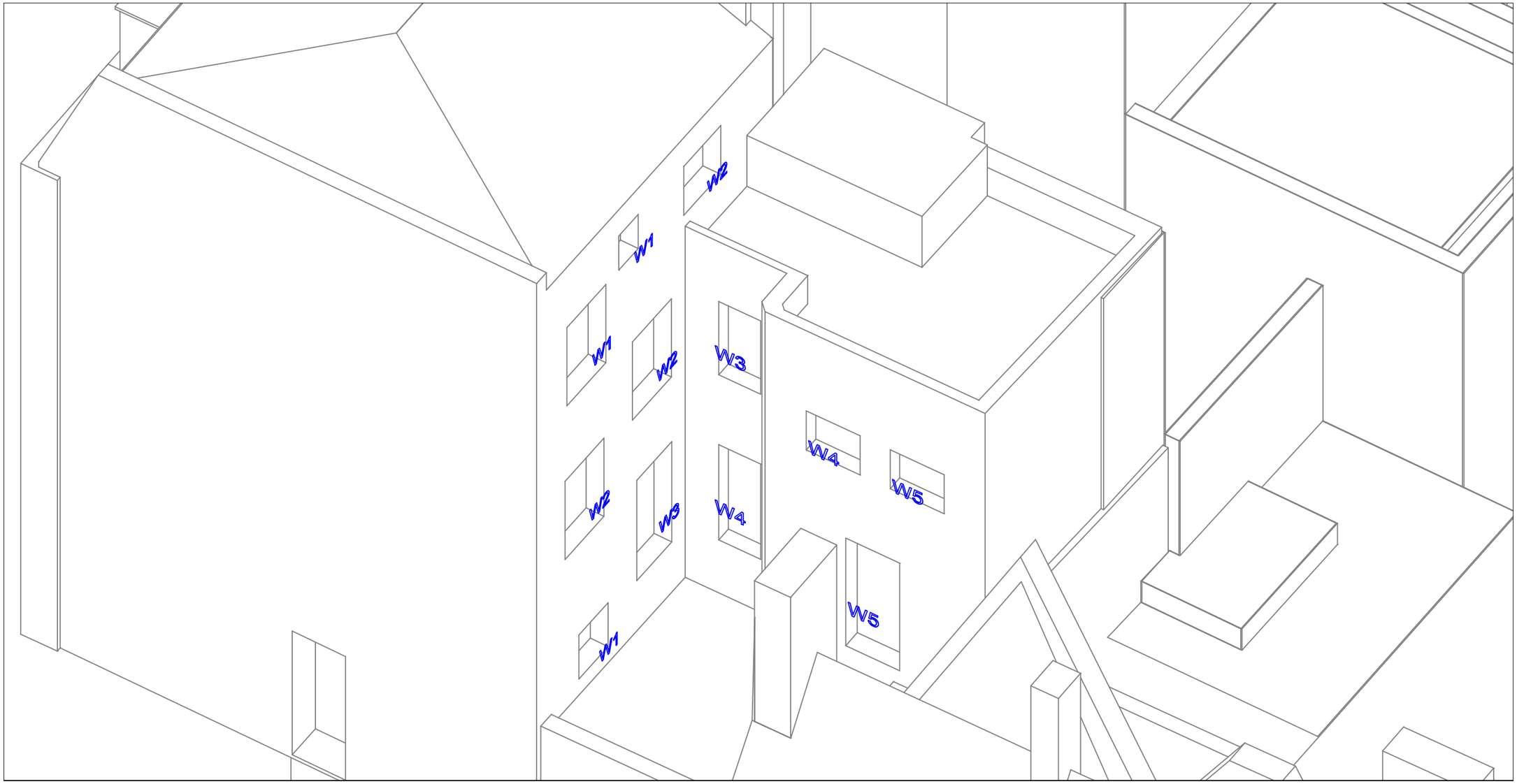
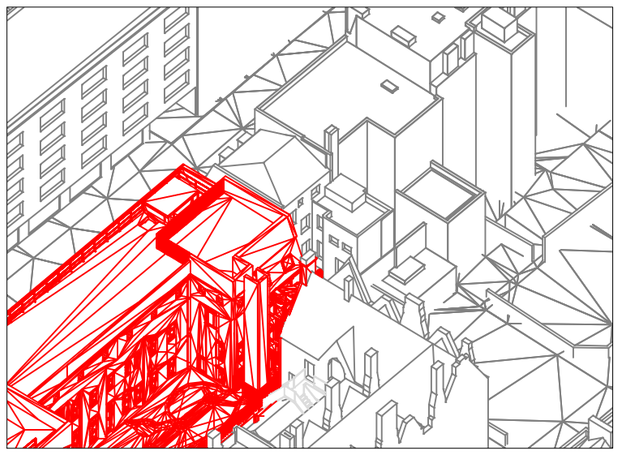
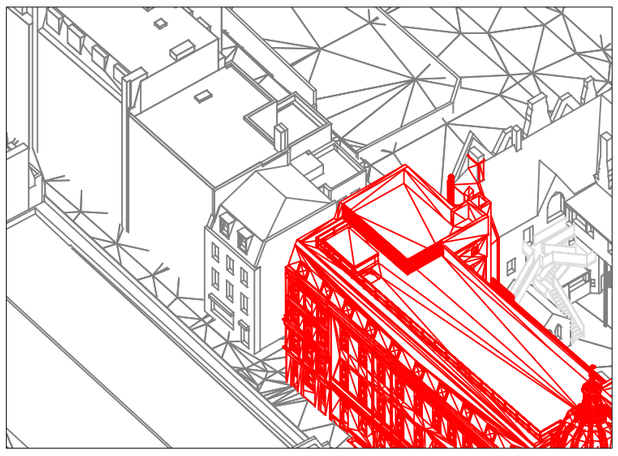
DRAWING NO.	RELEASE NO.
59474_WR_02	1



33 Boswell Street



3D Context View - West



3D Context View - West

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

1615-ST-Q1-ZZ-M3-A-0001_P6.DWG
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Window Referencing Diagrams
33 Boswell Street

CLIENT

Great Ormond Street Hospital for Children NHS Foundation Trust

PROJECT

Italian Hospital, 40 - 41 Queen Square, London, WC1N 3AJ

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SCALE	**DATE**
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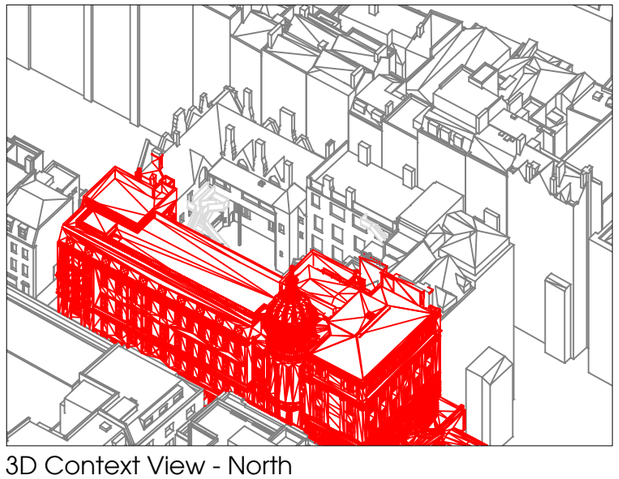
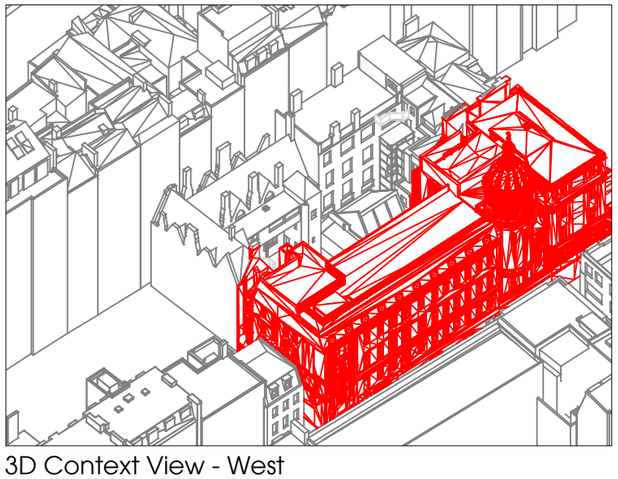
24 Old Gloucester Street (October Gallery)



3D Context View - North



3D Context View - West

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

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TITLE

Window Referencing Diagrams
24 Old Gloucester Street (October Gallery)

CLIENT

Great Ormond Street Hospital for Children NHS Foundation Trust

PROJECT

Italian Hospital, 40 - 41 Queen Square, London, WC1N 3AJ

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SM	SP
SCALE	**DATE**
NTS@A3	July 2017

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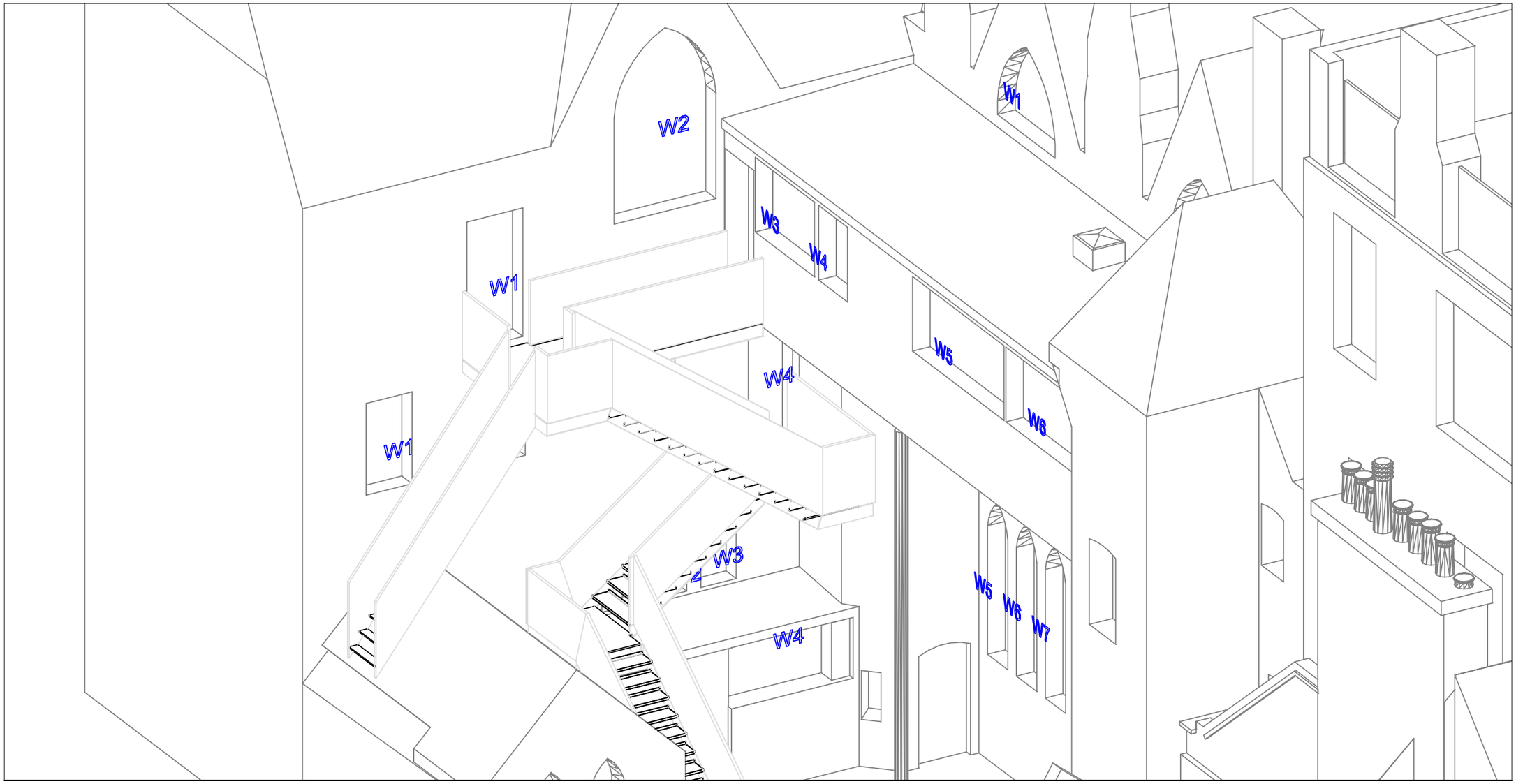
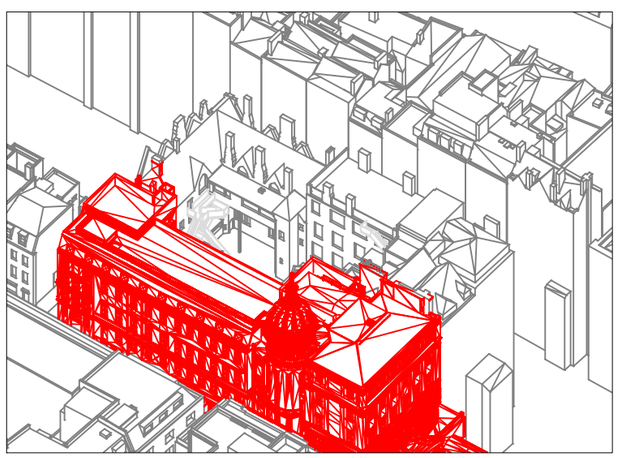
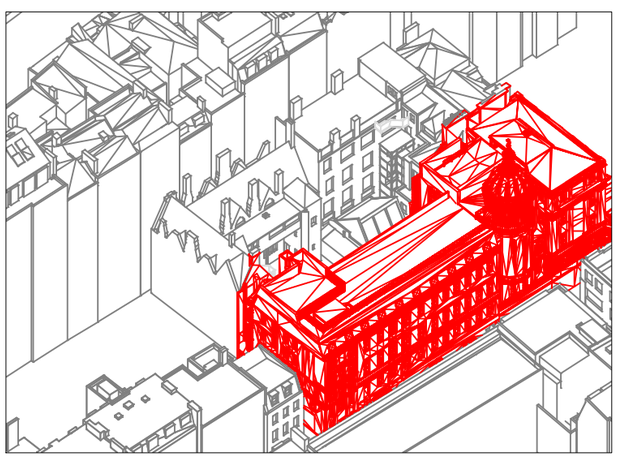
59474_WR_04	1



24 Old Gloucester Street (October Gallery)



3D Context View - North



3D Context View - West

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

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1615-ST-Q1-ZZ-M3-A-0001_P6_EXISTING.DWG

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24 Old Gloucester Street
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CLIENT

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Appendix D

Daylight Study

Floor Ref.	Window Ref.	Existing VSC	Proposed VSC	Times Former Value	BRE Compliant
24 Old Gloucester Street (October Gallery)					
Ground	W1	0	0	0	Yes
Ground	W2	0.22	0.04	0.17	No
Ground	W3	0.83	0.83	1	Yes
Ground	W4	7.69	7.25	0.94	Yes
Ground	W5	4.56	3.89	0.85	Yes
Ground	W6	5.45	4.55	0.83	Yes
Ground	W7	6.16	5.12	0.83	Yes
Ground	W8	6.86	5.65	0.82	Yes
Ground	W9	6.65	5.42	0.81	Yes
Ground	W10	5.9	4.77	0.81	Yes
First	W1	15.88	15.15	0.95	Yes
First	W2	1.04	0.79	0.76	No
First	W3	1.18	1.18	1	Yes
First	W4	2.84	2.52	0.89	Yes
First	W5	0	0	0	Yes
First	W6	0	0	0	Yes
First	W7	0	0	0	Yes
First	W8	0	0	0	Yes
Second	W1	24.05	23.22	0.97	Yes
Second	W2	26.29	25.65	0.98	Yes
Second	W3	20.65	18.51	0.9	Yes
Second	W4	23.01	20.7	0.9	Yes
Second	W5	25.49	22.98	0.9	Yes
Second	W6	25.18	22.72	0.9	Yes
Third	W1	28.67	27.3	0.95	Yes
Third	W2	29.64	28.25	0.95	Yes
42 - 43 Queens Square (Mary Ward Centre)					
Ground	W1	15.54	13.96	0.9	Yes
Ground	W2	15.3	13.8	0.9	Yes
Ground	W3	12.28	11.16	0.91	Yes
Ground	W4	5.26	5	0.95	Yes
Ground	W5	10.47	8.63	0.82	Yes
Ground	W6	9.36	7.75	0.83	Yes
Ground	W7	7.81	6.6	0.85	Yes
First	W1	18.91	17.1	0.9	Yes
First	W2	18.72	16.94	0.91	Yes
First	W3	15.14	13.79	0.91	Yes
First	W4	6.18	5.71	0.92	Yes
First	W5	19.47	18.43	0.95	Yes
Second	W1	27.19	25.35	0.93	Yes
Second	W2	26.55	24.7	0.93	Yes
Second	W3	23.37	21.69	0.93	Yes
Second	W4	3.93	3.33	0.85	Yes
Second	W5	12.98	12.94	1	Yes
Second	W6	25.67	22.99	0.9	Yes
Third	W1	34.13	33.55	0.98	Yes
Third	W2	33.17	32.66	0.98	Yes
Third	W3	29.14	28.57	0.98	Yes
Third	W4	11.2	10.45	0.93	Yes
Third	W5	20.84	20.81	1	Yes
Third	W6	31.25	31.02	0.99	Yes
Third	W7	17.14	16.58	0.97	Yes

Third	W8	28.07	27.47	0.98	Yes
Fourth	W1	36.3	36.3	1	Yes
Fourth	W2	36.52	36.52	1	Yes
24 Boswell Street					
First	W1	17.29	16.98	0.98	Yes
First	W2	19.87	19.55	0.98	Yes
First	W3	20.82	20.53	0.99	Yes
First	W4	22.38	22.16	0.99	Yes
First	W5	22.63	22.35	0.99	Yes
First	W6	21.55	21.33	0.99	Yes
First	W7	20.51	20.37	0.99	Yes
Second	W1	21.84	21.36	0.98	Yes
Second	W2	24.69	24.18	0.98	Yes
Second	W3	25.62	25.13	0.98	Yes
Second	W4	26.94	26.56	0.99	Yes
Second	W5	27.36	26.97	0.99	Yes
Second	W6	26.67	26.36	0.99	Yes
Second	W7	25.55	25.3	0.99	Yes
Third	W1	27.32	26.63	0.98	Yes
Third	W2	30.04	29.32	0.98	Yes
Third	W3	30.65	29.95	0.98	Yes
Third	W4	31.6	31.04	0.98	Yes
Third	W5	32.18	31.7	0.98	Yes
Third	W6	31.82	31.45	0.99	Yes
Third	W7	30.88	30.6	0.99	Yes
Fourth	W1	33.79	33.26	0.98	Yes
Fourth	W2	35.02	34.41	0.98	Yes
Fourth	W3	35.19	34.48	0.98	Yes
Fourth	W4	35.34	34.74	0.98	Yes
Fourth	W5	35.5	35.05	0.99	Yes
Fourth	W6	35.46	35.14	0.99	Yes
Fourth	W7	35.08	34.91	1	Yes
33 Boswell Street					
First	W1	11.67	11.53	0.99	Yes
First	W2	16.98	16.69	0.98	Yes
First	W3	9.7	9.53	0.98	Yes
First	W4	4.5	3.84	0.85	Yes
First	W5	9.2	8.32	0.9	Yes
Second	W1	27.68	27.02	0.98	Yes
Second	W2	15.21	14.87	0.98	Yes
Second	W3	8.34	7.05	0.85	Yes
Second	W4	13.97	12.37	0.89	Yes
Second	W5	15.84	14.28	0.9	Yes
Third	W1	30.4	29.7	0.98	Yes
Third	W2	31.13	30.7	0.99	Yes

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Appendix E

Sunlight Study

Floor Ref.	Window Ref.	Existing		Proposed		Annual Times Former Value	Winter Times Former Value	BRE Compliant
		Winter %	Annual %	Winter %	Annual %			
42 - 43 Queens Square (Mary Ward Centre)								
First	W5	7	35	6	33	0.94	0.86	YES
Second	W5	5	21	5	21	1	1	YES
Second	W6	13	50	12	43	0.86	0.92	YES
Third	W5	4	39	4	39	1	1	YES
Third	W6	16	64	16	64	1	1	YES
Third	W7	5	27	5	27	1	1	YES
Third	W8	14	52	14	50	0.96	1	YES
Fourth	W1	27	80	27	80	1	1	YES
Fourth	W2	27	81	27	81	1	1	YES
24 Boswell Street								
First	W1	10	37	10	36	0.97	1	YES
First	W2	11	38	11	37	0.97	1	YES
First	W3	12	38	12	38	1	1	YES
First	W4	13	40	13	40	1	1	YES
First	W5	10	41	10	41	1	1	YES
First	W6	9	41	9	41	1	1	YES
First	W7	8	38	8	38	1	1	YES
Second	W1	13	47	14	46	0.98	1.08	YES
Second	W2	15	48	15	47	0.98	1	YES
Second	W3	15	48	15	46	0.96	1	YES
Second	W4	15	48	15	48	1	1	YES
Second	W5	16	50	16	49	0.98	1	YES
Second	W6	13	49	13	49	1	1	YES
Second	W7	10	46	10	46	1	1	YES
Third	W1	19	57	17	54	0.95	0.89	YES
Third	W2	18	57	19	57	1	1.06	YES
Third	W3	18	57	18	56	0.98	1	YES
Third	W4	20	59	20	58	0.98	1	YES
Third	W5	19	58	18	57	0.98	0.95	YES
Third	W6	18	56	18	57	1.02	1	YES
Third	W7	17	57	17	55	0.96	1	YES
Fourth	W1	22	62	21	61	0.98	0.95	YES
Fourth	W2	22	63	21	61	0.97	0.95	YES
Fourth	W3	22	62	22	63	1.02	1	YES
Fourth	W4	22	64	22	64	1	1	YES
Fourth	W5	21	62	21	62	1	1	YES
Fourth	W6	22	64	22	63	0.98	1	YES
Fourth	W7	22	64	22	64	1	1	YES
33 Boswell Street								
First	W1	1	14	1	14	1	1	YES
First	W2	3	29	3	29	1	1	YES
First	W3	0	7	0	7	1	0	YES
Second	W1	18	53	18	53	1	1	YES
Second	W2	1	13	1	13	1	1	YES
Third	W1	18	55	18	55	1	1	YES
Third	W2	18	55	18	55	1	1	YES

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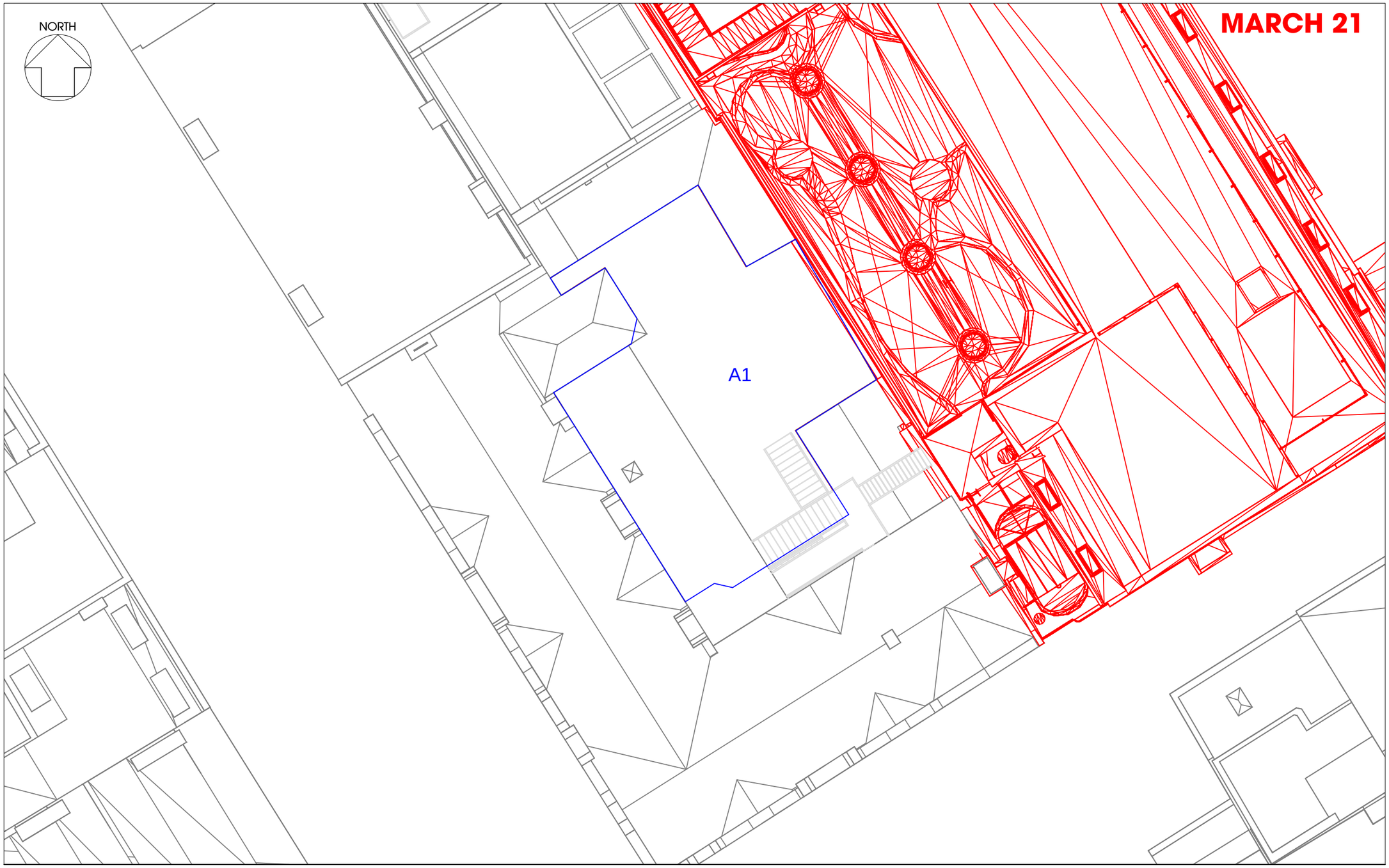
Appendix F

Overshadowing

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
24 Old Gloucester Street (October Gallery)							
Ground	A1	Area m2	104.15	103.9	103.9	1.00	YES
		Percentage		100%	100%		



24 Old Gloucester Street - Courtyard

KEY

- **Existing area receiving over 2 hours of Sun**
- **Proposed area receiving over 2 hours of Sun**
- **Area of loss/gain**
- **Amenity area**

SOURCES OF INFORMATION:

SONNEMANN TOON ARCHITECTS

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TITLE

Existing & Proposed 2hr Sun Contours March 21st

CLIENT

Great Ormond Street Hospital for Children NHS Foundation Trust

PROJECT

Italian Hospital, 40 - 41 Queen Square, London, WC1N 3AJ

DRAWN BY	CHECKED
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SCALE	DATE
NTS@A3	July 2017

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