TEMPLAR HOUSE

DAYLIGHT AND SUNLIGHT ASSESSMENT

JULY 2015

NORTHWOOD INVESTORS

ASTUDIO

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CLIENT: Platform

ISSUE DATE: 16th July 2015

DOCUMENT REFERENCES:

7988-ah-15-0716(DaySun Report)
Principles of Daylight and Sunlight
Existing: 7988-10, 11 & 12 (Rel 02)
Proposed: 7988-13, 14 & 15 (Rel 02)
Daylight and Sunlight Tables of Results: VSC, NSL & APSH (Rel 02)
Window Maps

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1.0 INSTRUCTIONS

You have instructed this Practice to produce a technical Daylight (*VSC and NSL*) and Sunlight (*APSH*) assessment so as to understand the potential alterations that may occur within existing neighbouring residential properties as a consequence of the proposed massing designed by AStudio Limited. This assessment has been run in accordance with the BRE 2011 guidelines.

2.0 INTRODUCTION

DAYLIGHT AND SUNLIGHT

The basis of the technical analysis that has been undertaken are the methodology set down within the Building Research Establishment Guidelines entitled ***'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2011)'*** by PJ Littlefair. The guidelines in question are precisely that; guidelines to inform site design which are not mandatory and are designed to be employed flexibly within the context of all the site constraints:

"*The advice given here is not mandatory and this document should not be seen as a instrument of Planning Policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly…..*" (Page 1 – BRE Guidelines).

The Guidelines themselves on Page 1 also indicate that they should be interpreted flexibly in City Centre and Urban Locations such as this and *"if new developments are to match the height and proportions of existing buildings"*. The Guidelines recognise that they should not form a mandatory set of criteria to which a development must adhere as that would be too restrictive for site development purposes; rather they provide guidance as to what would be a noticeable alteration in the neighbours amenity and what would be a satisfactory level of daylight and sunlight.

However, the guidelines themselves are predicated upon a suburban development model and the values that they set out are based upon a suburban situation i.e. two 2 storey dwellings facing one another across a reasonable width road and the level of light that one would expect in that context.

The reason that this is important is that when one seeks to apply the guidelines in a more urban context, where neighbouring buildings are substantially taller or the scale of massing is generally higher, there is a disjunction between crudely adhering to the recommended criteria and the flexibility that the guidelines themselves recommend. In this area, a degree of interpretation is necessary.

The methodology that have been employed in accordance with the BRE Guidelines is set out below.

The BRE guidelines provide two main methods of calculation for daylight.

The first is known as the Vertical Sky Component (VSC) method which considers the potential for daylight by calculating the angle of vertical sky at the centre of each of the windows serving the residential buildings which look towards the site. This is a more simplistic approach and it could be considered as a "rule of thumb" to highlight whether there are any potential concerns to the amenity serving a particular property. An alteration in VSC daylight of less than 20% is considered by the BRE to be reasonable and likely to be unnoticeable by the occupant.

The second method is the No Sky Line (NSL) or Daylight Distribution method. This simply assesses the change in position of the No Sky Line (NSL) between the existing and proposed situations. It does take into account the number and size of windows to a room, but still does not give any qualitative or quantitative assessment of the light in the room, only where sky can or cannot be seen. An alternation in NSL daylight of less than 20% is considered by the BRE to be reasonable and likely to be unnoticeable to the occupant.

There is a third method of calculating daylight which is the Average Daylight Factor (ADF). This is a more detailed and thus more accurate method which considers not only the amount of sky visibility on the vertical face of the window, but also the window size, room size and room use.

The ADF criteria is the prescribed methodology for evaluating the daylight within proposed accommodation and the values set down within the BRE Guidelines are echoed by the British Standard document BS8206 Part II. It can also forms a useful indicator of adequate lighting for neighbouring properties in conjunction with the VSC and NSL.

The BRE sets down guidance for ADF based upon room usage. This being:

- 2% ADF for a kitchen
- 1.5% ADF for a living room
- 1.0% ADF for a bedroom

In relation to sunlight, the BRE criteria calculates the annual probable sunlight hours (APSH) which evaluates the amount of sun available in both the summer and winter for each given window which faces within 90° of due south. Windows which do not face within 90° of due south are not considered. Summer is considered to be the six months between March 21st and September 21st and winter the remaining months. The BRE prioritises sunlight to living rooms, but also indicates that kitchens and bedrooms should not be ignored.

Alterations in APSH of up to 20% are considered by the BRE to be acceptable on the basis that they are unlikely to be noticeable. Changes beyond that level may be noticeable and require consideration.

3.0 SOURCES OF INFORMATION

In the process of compiling this report, the following sources of information have been used:

GIA
Site Photography

VERTEX MODELLING
3D Photogrammetric model of the site and surrounding areas 7988-m00.dwg

ASTUDIOS LIMITED
Templarhouse.dwg 3D massing model

LONDON BOROUGH OF CAMDEN
Planning Archive
Application numbered 2006-3615/P-79-80HighHolborn
2004/4154/P-71RedLionStreet

4.0 ASSUMPTIONS

1. We have not sought or gained access to any of the properties surrounding the site due to project sensitivities. We have been able to obtain room layout plans for all of the adjoining properties from the Local Planning Authority. Where we have not acquired floor-plans we have made reasonable assumptions as to the internal layouts of the rooms behind the fenestration in accordance with the BRE recommendations.

3. We have made best estimates as to the uses which are carried out legally within the adjoining properties in terms of commercial and residential units. We have estimated these from external observation and where possible from Local Authority records.

4. Floor levels have been assumed for those adjoining properties where drawing information has not been obtained. This dictates the level of the working plane which is relevant for the No Sky Line assessment.

5.0 SIGNIFICANT CRITERIA

Professional judgement has been used to establish whether a potential impact to each of the rooms/windows or property as a whole, would be **beneficial** or **adverse** in nature and be **minor, moderate** or **major** in significance. (*This is explained in more detail below*).

In essence, the BRE Guidance must be interpreted flexibly and should not be used as an instrument of planning policy. The BRE Guidance does not provide mandatory rules but instead guidelines intended to help the designer and planning authority, and should be viewed in the context of other site constraints. In view of the above, the interpretation of the daylight and sunlight results should be considered in terms of the quantum of light lost and retained, not purely upon the percentage of change. The percentage value may well be misleading, particularly where the baseline values are small. In these situations, a small change in the quantum of light could represent a high percentage change in the overall figure, implying that there would be a significant change in daylight and sunlight whereas in reality the difference would be negligible.

In addition, the BRE criterion does not specifically relate to city centre locations, thus a degree of flexibility needs to be applied when assessing the significance of daylight and sunlight impacts in urban locations.

With this in mind and in accordance with the BRE Guidelines, impacts considered **minor** are those which are slight and are localised impacts of no significance.

Where impacts are considered **moderate**, these are limited impacts which may be considered significant. Impacts considered **major** in significance are those which are considerable and of more than local significance, or are in breach of recognised acceptability, legislation, policy or standards.

Where the results show compliance with the 2011 BRE criteria, the impact is considered **negligible** since the BRE Guidelines indicate that the occupants are unlikely to experience any noticeable change to their amenity levels.

6.0 THE SITE

Templar House is currently an office building situated between High Holborn to the south and Eagle Street to the north. There are main frontages on High Holborn and Eagle Street with a central linking section. The site is surrounded by a large office development to the west, residential and commercial properties to the north on Eagle Street, office accommodation and residential accommodation to the east and a mix of hotel and office accommodation to the south on High Holborn.

The existing site can be seen on the attached drawings numbered 7988-10, 11, and 12 at Appendix 02.

The OS map below and Plate 1 shows the existing site with the sensitive residential properties that surround it marked in blue.

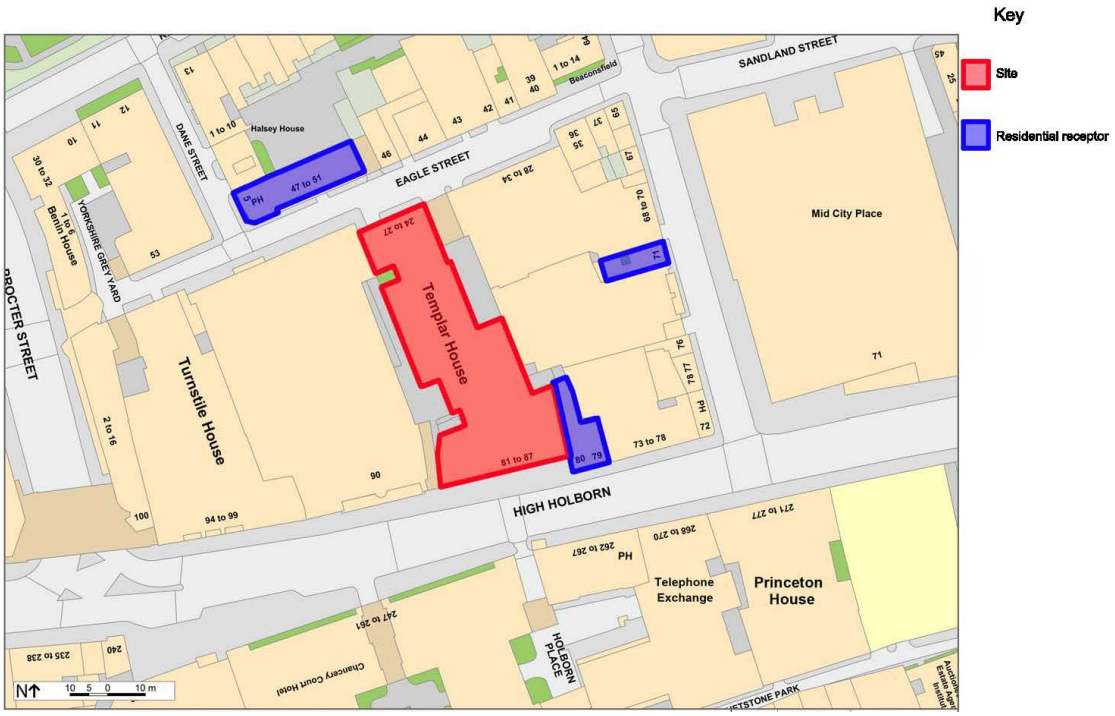


PLATE 1

7.0 THE PROPOSAL

It is intended to demolish the existing buildings on the site and construct a new mixed use scheme comprising of office accommodation on High Holborn and residential accommodation on Eagle Street. The proposals could be seen on attached drawings numbered 7988-13, 14 and 15 at Appendix 02.

8.0 THE SURROUNDING PROPERTIES

It has been possible to create a detailed, three dimensional computer model based upon a 3D photogrammetry model, survey information, and photographic site survey. Where it has not been possible to source architectural floor plans of the surrounding properties, reasonable room assumptions have been used based upon the BRE guidance and through a consideration of building design and architecture, and any external features which might provide an indication as to the usage and dimensions of the room behind the fenestration.

Where neighbouring properties have architectural features such as balconies, projections, privacy screens or recessed elevations which inhibit light penetration and distort their reliance upon light across the development site, we have considered their influence in accordance with the 2011 BRE guidance.

Paragraph 2.2.11 of the BRE Guidelines (*2011 – Site Layout Planning for Daylight and Sunlight – A guide to good practice)* on page 8, states that such features can restrict the sky visibility in the existing scenario making the windows and rooms within sensitive to any new alterations in massing, which should be considered when assessing the alteration in light.

Technical analysis has been undertaken to assess the quality of neighbouring residential properties daylight and sunlight, both before and after the scheme implementation.

There are a number of key neighbouring residential properties within the immediate context of the Site, which have formed the focus of the daylight and sunlight assessments. The tabulated results of this analysis can be found within Appendix 3 of this report.

For clarity, the properties surrounding the site are listed below:

- 47-51 Eagle Street
- 71 Red Lion Street
- 79-80 High Holborn

We have not considered undertaking a shadow assessment due to the fact that there is no surrounding external amenity space that could be affected.

47-51 EAGLE STREET

PLATE 2 – FRONT ELEVATION

This property is located to the north of the site and comprises apartments at each floor level owned by the Local Authority. The ground floor accommodation has not been assessed as this is commercial space and the residential accommodation starts from the first floor. At each floor level there is a living room which is recessed behind a balcony and the remaining windows which are not recessed, we understand serve bedrooms. We have not been able to ascertain the internal layouts as the property is the ownership of the Local Authority and therefore, no records exist on estate agent's websites and no relevant planning applications have been made.

Firstly, with respect to the Vertical Sky Component (VSC), the table at Appendix 3 indicated that towards the windows behind the recess balconies immediately facing the site (next to 44-46 Eagle Street), it can be seen that there is a 100% reduction to the VSC value as a result of the development.

However, it can be seen that the existing VSC values of between 1.5% VSC and 0% VSC are reduced to 0% VSC which explains the large percentage change. This percentage change is misleading because the VSC levels of 1.5% and 0.5% are so low that no meaningful daylight amenity could be perceived from within the rooms. The reduction of between 0.5% VSC and 1.5% VSC would not be perceivable within the room and therefore the effect on these windows serving the living rooms which are recessed behind the balconies would be considered negligible.

With respect to the bedrooms, of the rooms which we know are bedrooms, we have assessed 16 windows. Three of the windows (R3 first, R3 second and R6 second) are fully adherent to the BRE guidance in that they lose less than 20% of the existing VSC value. Of the 13 bedrooms that do not, it can be seen that the absolute change in the reduction to the VSC is between 3% VSC and 8% VSC which we would consider to be a moderate impact as these transgressions fall outside of the BRE guidance. However, where we know the room usage, these losses which are outside the BRE guidance occur to bedrooms where daylight would be considered less sensitive.

With respect to the 13 bedrooms that do not meet the BRE target guidelines, it can be seen that 11 of these rooms will be fully adherent with respect to Daylight Distribution (NSL) which mitigates that loss to the VSC. Although there will be a small notable change to the perceived daylight within the bedrooms, the VSC values that are retained and the retained NSL will be commensurate with an urban environment and we would draw the reader's attention to the fact that this development is city centre located and flexibility must be applied to the guidelines.

With respect to sunlight, we have assessed 47-51 Eagle Street for sunlight as the windows face within 90 degrees of due south. Our analysis indicates that there is one bedroom at each floor level which is not fully adherent to the BRE guidance however, when one considers the fact that the windows serve bedrooms, the guidance clearly states that sunlight to bedrooms is less important. The remaining windows remain fully adherent to the BRE guide.

71 RED LION STREET

This property is located on Red Lion Street with the rear elevation looking down a channel between 70 and 75 Red Lion Street directly at Templar House. We have managed to obtain floor plans from the London Borough of Camden's planning website (application number 2004/4154/P) which contains elevations and floor plans for the buildings. We have assessed the first to fifth floors and the plans obtained indicate that all of the windows serve bedrooms. We have not included the windows at the half landings which clearly served internal staircases.

None of the windows assessed adhere to the BRE guidance with respect to the reduction to the VSC whereby it can be seen that reductions of between 35% and 41% to the existing value are recorded.

However, the existing values are already between 7% VSC and 10% VSC and therefore, the absolute change to the VSC is between 2.5% VSC and 4% VSC which would be considered negligible as these small reductions would be barely perceivable by the occupant. When one considers the Daylight Distribution within the room (NSL), it can be seen that the rooms at second, third and fourth floor levels have reductions to the NSL of between 22% and 28% however, the Daylight Distribution does cover between 56% and 63% of the room areas which would be considered consummate to this particular dense Urban Business District location. The remaining room at third floor level is fully adherent to the BRE guide.

With respect to sunlight, it can be seen that the windows at third and fourth floor levels (top two floors) are fully adherent to the BRE guide. The bedroom windows at first and second floors do show small reductions to the summer APSH values of between 5% APSH and 6% APSH however, given the fact that these rooms are bedrooms, we would consider them to be less sensitive and the effect to the effect to be negligible.

79-80 HIGH HOLBORN

This property has a frontage on High Holborn and is located immediately to the east of the site.

We understand that the lower two floors are in commercial use with the upper floors being converted to residential around 2006/ 2007. We were able to obtain internal floor layouts from the London Borough of Camden's planning website, application number 2006/3615/P. Although we have carried out an assessment of this property, the only window on the rear elevation which could be affected by the proposed development serves a communal stair at each floor level with the main habitable rooms located on the front elevation. There are windows which are recessed on the rear elevation at each level however, due to the fact that it is recessed, it is unable to look over the development site and therefore will remain unaffected.

Our analysis indicates that the VSC assessment does not adhere to the BRE guidance however, due to the fact that the windows at each floor level serve staircases, the effect would be negligible. With respect to sunlight, the windows on the northern elevation do not face within 90 degrees of due south and have therefore, not been assessed. The windows on the High Holborn elevation have been assessed and are fully adherent to the BRE guidance with no loss of sunlight.

9.0 CONCLUSIONS

We have assessed all of the surrounding properties with respect to daylight and sunlight, which are in residential use, i.e. sensitive users.

The results indicate that with respect to 79-80 High Holborn, this building will remain fully adherent to the BRE guidance as a result of the proposals.

With respect to 71 Red Lion Street, minor transgressions away from the BRE guidance were recorded to the bedroom windows on the rear elevation however, given the city centre location and when one assesses the loss to the VSC and the retained levels to the NSL, the effects to this property would be considered negligible, especially given the fact that the absolute changes to the VSC are small. Although this property is not fully adherent with respect to sunlight (APSH), the two windows which recorded minor transgressions do serve bedrooms and therefore would be considered less sensitive to changes to the sunlight.

47-51 Eagle Street, located immediately to the north of the site, does show a degree of non-adherence to the BRE guidance, especially with regards to the Vertical Sky Component (VSC). However, upon closer inspection of the percentage change to the VSC from the existing condition, it can be seen that the main living rooms have existing values of 0.5 and 1.5% VSC resulting in the small absolute changes representing themselves as large percentage changes. We can confirm that the VSC levels to these living rooms are so low that the changes to the absolute VSC values would be unperceivable. A total of 13 out of the 16 bedrooms assessed did not adhere to the BRE guidance with respect to VSC but when one considers the VSC in conjunction with the NSL, it can be seen that 10 of the bedrooms that do not adhere to the VSC fully adhere with respect to NSL.

With respect to sunlight all of the windows were fully adherent to the BRE guidance with the exception of four bedroom windows and we would therefore consider this effect on the bedrooms to be negligible.

When considering the urban context of the site, we would consider that the transgressions to the surrounding residential properties are small and we do not consider that the reductions to daylight and sunlight will materially affect the enjoyment or use of the surrounding properties.

APPENDIX 1

PRINCIPLES OF DAYLIGHT & SUNLIGHT

PRINCIPLES OF DAYLIGHT AND SUNLIGHT

BACKGROUND

The quality of amenity for buildings and open spaces is increasingly becoming the subject of concern and attention for many interested parties.

Historically the Department of Environment provided guidance of these issues and, in this country, this role has now been taken on by the Building Research Establishment (BRE), the British Standards Institution (BSI) and the Chartered Institute of Building Services Engineers (CIBSE). Fortunately they have collaborated in many areas to provide as much unified advice as possible in these areas.

Further emphasis has been placed on these issues through the European Directive that require Environmental Impact Assessments (EIA's) for large projects. Parts of these assessments include the consideration of the micro-climate around and within a proposal. The EIA requires a developer to advise upon, amongst other matters, the quality of and impact to daylight, sunlight, overshadowing, solar glare and light pollution.

It is also clear, particularly through either adopted or emerging Unitary Development Plans (UDP's), that local Authorities take this matter far more seriously than they previously did. There are many instances of planning applications being refused due to impact on daylight and sunlight to neighbouring properties and proportionately more of these refusals are appealed by applicants.

Where developers are seeking to maximise their development value, it is often in the area of daylight and sunlight issues that they may seek to 'push the boundaries'. Local Authorities vary in their attitude of how flexible they can be with worsening the impact on the amenity enjoyed by neighbouring owners. In city centres, where there is high density, it can be the subject of hot debate as to whether further loss of amenity is material or not. There are many factors that need to be taken into account and therefore each case has to be considered on its own merits. Clearly, though, there are governing principles which direct and inform on the approach that is taken.

These principles are effectively embodied within the UDP's and the guidance they expressly rely upon. For example, in central London, practically all of the Local Authorities expressly state they will not permit or encourage developments which create a material impact to neighbouring buildings or amenity areas. Often the basis on what is constituted as 'material' will be derived specifically from the BRE Guidelines. The guidelines were produced in 1991, as a direct commission from the Department of the Environment, and entitled 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'. In October 2011, the BRE Guidelines were updated and the revised edition states the 2011 BRE "… supersedes the 1991 edition which is now withdrawn".

These guidelines are normally recognised as being the main source for which amenity issues can be considered. The document is used by the majority of local Authorities (adopted within the policy) and consequently they are referred to extensively by designers, consultants and planners. Whilst they are expressly not mandatory and state that they should not be used as an instrument of planning policy, they are heavily relied upon as they advise on the approach, methodology evaluation of impact in daylight and sunlight matters – a key consideration through the planning policy.

THE BRE GUIDELINES

The BRE give criteria and methods for calculating daylight, and sunlight as well as overshadowing and through each approach define what they consider as a material impact. As these different methods of calculation vary in their depth of analysis, it is often arguable as to whether the BRE definition of 'material' is applicable in all locations and furthermore if it holds under the different methods of calculation.

As the majority of the controversial daylight and sunlight issues occur within city centres these explanatory notes focus on the relevant criteria and parts of the Handbook which are applicable in such locations.

In the Introduction of 'Site Layout Planning for Daylight and Sunlight (2011)', Section 1.6 (page 1), states that:-

> *"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 guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design (see Section 5). In special circumstances the developer or Planning Authority may wish to use different target values. For example, in an historic city centre a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".*

Again, the third paragraph of Chapter 2.2 (page 7) of the document states:-

> *'Note that numerical values given here are purely advisory. Different criteria may be used, based on the requirements for daylighting in an area viewed against other site layout constraints'.*

The reason for including these statements in the Report is to appreciate that when quoting the criteria suggested by the BRE, they should not necessarily be considered as appropriate. However, rather than suggest alternative values, consultants in this field often remind local Authorities that this approach is supportable and thus flexibility applied.

MEASUREMENT AND CRITERIA FOR DAYLIGHT & SUNLIGHT

The BRE handbook provides two main methods of measurement for calculating daylight which we use for the assessment in our Reports. In addition, in conjunction with the BSI and CIBSE it provides a further method in Appendix C of the Handbook. In relation to sunlight only one method is offered for calculating sunlight availability for buildings. There is an overshadowing test offered in connection with open spaces.

DAYLIGHT

In the first instance, if a proposed development falls beneath a 25° angle taken from a point two metres above ground level, then the BRE say that no further analysis is required as there will be adequate skylight (i.e. sky visibility) availability.

The two methods for calculating daylight to existing surrounding residential properties are as follows:

- Vertical Sky Component (VSC) and
- No Sky Contours (NSC)

The main method for calculating daylight to proposed residential properties is:

- Average Daylight Factor (ADF)

Each is briefly described below.

(a) Vertical Sky Component

Methodology

This is defined in the Handbook as:-

> *"Ratio of that part of illuminance, at a point on a given vertical plane that is received directly from a CIE standard overcast sky, to illuminate on a horizontal plane due to an unobstructed hemisphere of this sky."*

"Note that numerical values given here are purely advisory. Different criteria may be used, based on the requirements for daylighting in an area viewed against other site layout constraints".

The ratio referred to in the above definition is the percentage of the total unobstructed view that is available, once obstructions, in the form of buildings (trees are excluded) are placed in front of the point of view. The view is always taken from the centre of the outward face of a window.

This statement means, in practice that if one had a totally unobstructed view of the sky, looking in a single direction, then just under 40% of the complete hemisphere would be visible.

The measurement of this vertical sky component is undertaken using two indicators, namely a skylight indicator and a transparent direction finder. Alternatively a further method of measuring the vertical sky component, which is easier to understand both in concept and analysis, is often more precise and can deal with more complex instructions, is that of the Waldram diagram.

The point of reference is the same as for the skylight indicator. Effectively a snap shot is taken from that point of the sky in front of the window, together with all the relevant obstructions to it, i.e. the buildings.

An unobstructed sky from that point of reference would give a vertical sky component of 39.6%, corresponding to 50% of the hemisphere, and therefore the purpose of the diagram is to discover how much sky remains once obstructions exist in front of that point.

The diagram comes on an A4 sheet (landscape) and this sheet represents the unobstructed sky, which in one direction equates to a vertical sky component of 39.6%. The obstructions in front of a point of reference are then plotted onto the diagram and the resultant area remaining is proportional to the vertical sky component from that point.

Criteria

The BRE Handbook provides criteria for:

(a) New Development
(b) Existing Buildings

A summary of the criteria for each of these elements is given and these are repeated below:-

New Development

Summary

In general, a building will retain the potential for good interior diffuse daylighting provided that on all its main faces:-

(a) no obstruction, measured in a vertical section perpendicular to the main face, from a point 2m above ground level, subtends an angle of more than 25 degrees to the horizontal;

(b) If (a) is not satisfied, then all points on the main face on a line 2m above ground level are within 4m (measured sideways) of a point which has a vertical sky component of 27% or more.

Existing Buildings

Summary

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 the lowest window, subtends an angle of more than 25 degree to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:

(a) the vertical sky component measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value;

or

(b) the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.

The VSC calculation has, like the other two methods, both advantages and disadvantages. In fact they are tied together. It is a quick simple test which looks to give an early indication of the potential for light. However, it does not, in any fashion, indicate the quality of actual light within a space. It does not take into account the window size, the room size or room use. It helps by indicating that if there is an appreciable amount of sky visible from a given point there will be a reasonable potential for daylighting.

(b) No Sky Contours

This is the part (b) of the alternative method of analysis which is given under the Vertical Sky Component heading in this Appendix. It is similar to the VSC approach in that a reduction of 0.8 times in the area of sky visibility at the working plane may be deemed to adversely affect daylight. It is however, very dependent upon knowing the actual room layouts or having a reasonable understanding of the likely layouts. The contours are also known as daylight distribution contours. They assist in helping to understand the way the daylight is distributed within a room and the comparisons of existing and limitations of proposed circumstances within neighbouring properties. Like the VSC method, it relates to the amount of visible sky but does not consider the room use in its criteria, it is simply a test to assess the change in position of the No Sky Line, between the existing and proposed situation. It does take into account the number and size of windows to a room, but does not give any quantative or qualitative assessment of the light in the rooms, only where sky can or cannot be seen.

(c) Average Daylight Factor

This is defined in Appendix H of the BRE Document 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.

Criteria

The British Standard, BS8206 Part II gives the following recommendations for the average daylight factor (ADF) in dwellings.

The BRE Handbook provides the formula for calculating the average daylight factor. If the necessary information can be obtained to use the formula then this criteria would be more useful.

Room	**Percentage**
Kitchen	2%
Living Rooms	1.5%
Bedrooms	1%

It is sometimes questioned whether the use of the ADF is valid when assessing the impact on neighbouring buildings. Firstly, it is often the case that room layouts and uses may not have been established with certainty. Additionally this method is not cited in the main body of text in the BRE Guidelines but only in Appendix C of that document. It is however, the principal method used by both the British Standard and CIBSE in their detailed daylight publications with which the BRE guide recommends that it should be read.

The counter-argument to this view is that whilst room uses and layouts may be not definitely established, reasonable assumptions can easily be made to give sufficient understanding of the likely quality of light. Building types and layouts for certain buildings, particularly residential, are often similar. In these circumstances reasonable conclusions can be drawn as to whether a particular room will have sufficient light against the British Standards. In addition, the final result is less sensitive to changes in the room layout than the No Sky Contour method as it is an average and this element represents only one of the input factors. It is in cases where rooms sizes have been assumed a more reliable indicator than the No Sky Line method.

Clearly if a room which is being designed for a new development is deemed to have sufficient light against the British Standards, then it should equally follow for a room assessed in a neighbouring existing building.

The average daylight factor considers the light within the room behind the fenestration which serves it. The latter is therefore likely to be more accurate because it takes into account the following:-

a) All the windows serving the room in question.

b) The room use.

c) The size and layout of the room.

d) The finishes of the room surfaces.

SUMMARY

The VSC (which forms part of the ADF formula) is helpful as an initial first guide, especially where access to the rooms in question is not available. Where the room layouts and uses are established or can be reasonably estimated we consider it appropriate to analyse the average daylight factor as well as the vertical sky component.

SUNLIGHT

(a) Annual Probable Sunlight Hours (APSH) method

Sunlight is measured in the Handbook in a similar manner to the first method given for measuring the VSC. A separate indicator is used which contains 100 spots, each representing 1% of annual probable sunlight hours.

The BRE calculated that where no obstructions exist, the total annual probable sunlight hours would amount to 1486. Therefore, each dot on the indicator equates to 14.86 hours of the total annual probable sunlight. Again, to use this indicator the obstructions need to be scaled down and overlaid onto the sunlight indicator.

Those spots which remain uncovered by the scaled obstructions are counted and this gives the percentage of total annual probable sunlight hours for that particular reference point. Again, like the VSC, the reference point is taken to be the centre of the window.

Criteria

Again, the BRE Handbook gives criteria for:

(a) New Development

(b) Existing Buildings

A summary is given in the Handbook on page 16 and this is as follows:-

New Development

Summary

'In general, a dwelling or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided';-

(a) at least one main window wall faces within 90 degrees of due south; and

(b) the centre of at least one window to a main living room can receive 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21 September and 21 March.

Existing Buildings

Summary (page 17)

> *'If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° 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 affected. This will be the case if a point at the centre of the window;*
>
> - *receives less than 25% of annual probable sunlight hours , or less than 5% of annual probable sunlight hours between 21 September and 21 March;*
> - *receives less than 0.8 times its former sunlight hours during either period; and*
> - *has a reduction in sunlight received over the whole year greater than 4% annual probable sunlight hours.*

It will be noted that the BRE clearly separates summer from winter and indicates that a 20% reduction for either may be material. The Handbook also states that- *"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 90º of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun... A point at the centre of each window on the outside face of the window wall may be taken".*

(b) Area of Permanent Shadow- Sun Hours on Ground

The 2011 BRE Handbook, 'Site Layout Planning for Daylight and Sunlight' (Second edition) also provides criteria for open spaces where sunlight will be required, including; gardens, parks, children's playgrounds, public squares etc.

The BRE Guidance acknowledges that sunlight in the space between buildings has an important effect on the overall appearance and ambience of a development. The worst situation is to have significant areas on which the sun only shines for a limited part of the year.

In summary the BRE document states the following:-

"It is suggested that, for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If, as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive some two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable".

In relation to general overshadowing we often provide, where appropriate, an hourly record for existing and proposed situations, the effect of overshadowing on December 21st, March 21st and June 21st.

For open spaces the sun hours on ground criteria is naturally adopted but this offers limited understanding of how a space will feel or appear generally.

CITY CENTRES

The introduction of the BRE document gives the example of *'historic city centres'* being a case where there is the need for flexibility and altering the target values for criteria when appropriate, to reflect other site and layout constraints.

To explain why it is appropriate to alter these values, one needs to go further into the BRE Handbook to examine how the criteria for the vertical sky component criteria was determined and the reason therefore for varying the criteria in City Centres.

Appendix F of the document is dedicated to the use of alternative values and, it also demonstrates the manner in which the criteria for skylight was determined for the Summary given above, i.e. the need for 27% vertical sky component for adequate daylighting.

This figure of 27% was achieved in the following manner:

A theoretical road was created with two storey terraced houses upon either side, approximately twelve metres apart. The houses have windows at ground and first floor level, and a pitched roof with a central ridge.

Thereafter, a reference point was taken at the centre of a ground floor window of one of the properties and a line was drawn from this point to the central ridge of the property on the other side of the road. The angle of this line equated to 25 degrees (the 25 degrees referred to in the summaries given with reference to the criteria for skylight).

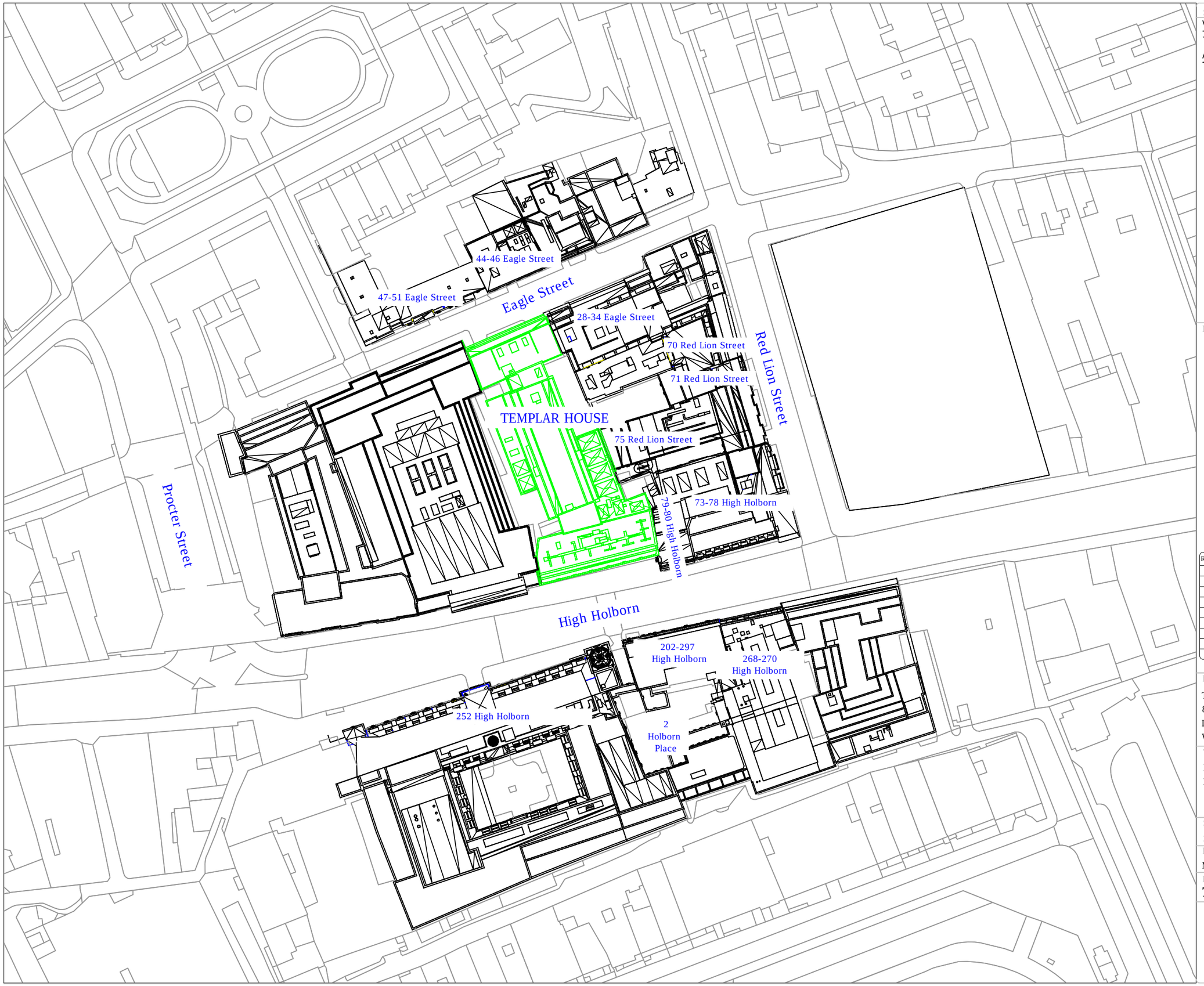
This 25 degrees line obstructs 13% of the totally unobstructed sky available, leaving a resultant figure of 27% which is deemed to give adequate daylighting. This figure of 27% is the recommended criteria referred to earlier in this report. It will be readily appreciated that in a City Centre, this kind of urban form is unlikely and is impractical. It would therefore be inappropriate to consider values for two storey terraced housing in a City Centre.

It is therefore sometimes necessary to apply different target criteria or at least acknowledge that the recommendations in the BRE cannot be achieved.

In addition, it is often the case that residential buildings within city centres are served by balconies. Balconies restrict lighting levels even more and thus if they were to be rigidly taken into account, a neighbouring proposal would be artificially and inappropriately constrained. This view is supported by the BRE and is equally another reason for flexible and sensible interpretation of the guidelines.

APPENDIX 2

EXISTING & PROPOSED DRAWINGS



Sources of Information

Vertex
7988–m00.dwg

Astudio Ltd
TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

N

Indicative Only

ALL HEIGHTS GIVEN IN mm
AOD

EXISTING SHOWN IN GREEN

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

PLAN VIEW
EXISTING

Scale
1:1000 @A3

Date
23.06.15

Drawn
MG

Checked
FO

Drawing No.
7988-10

Rel No.
02

Revision

gia

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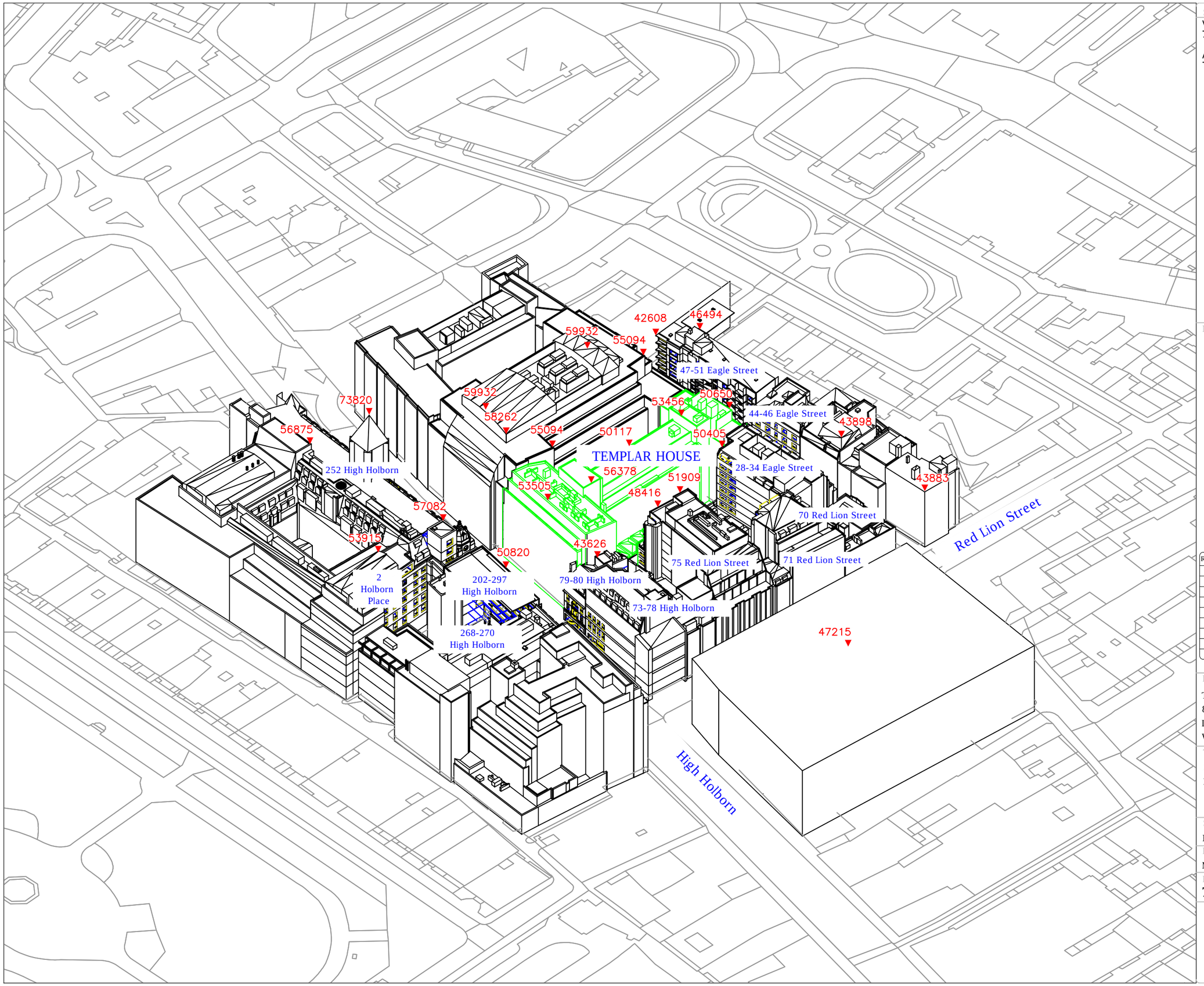

Sources of Information

Vertex
7988–m00.dwg

Astudio Ltd
TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS GIVEN IN mm
AOD

EXISTING SHOWN IN GREEN

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

3D VIEW
EXISTING

Scale	Date
NTS	23.06.15
Drawn	Checked
MG	FO

Drawing No.	Rel No.	Revision
7988-11	02	

gia

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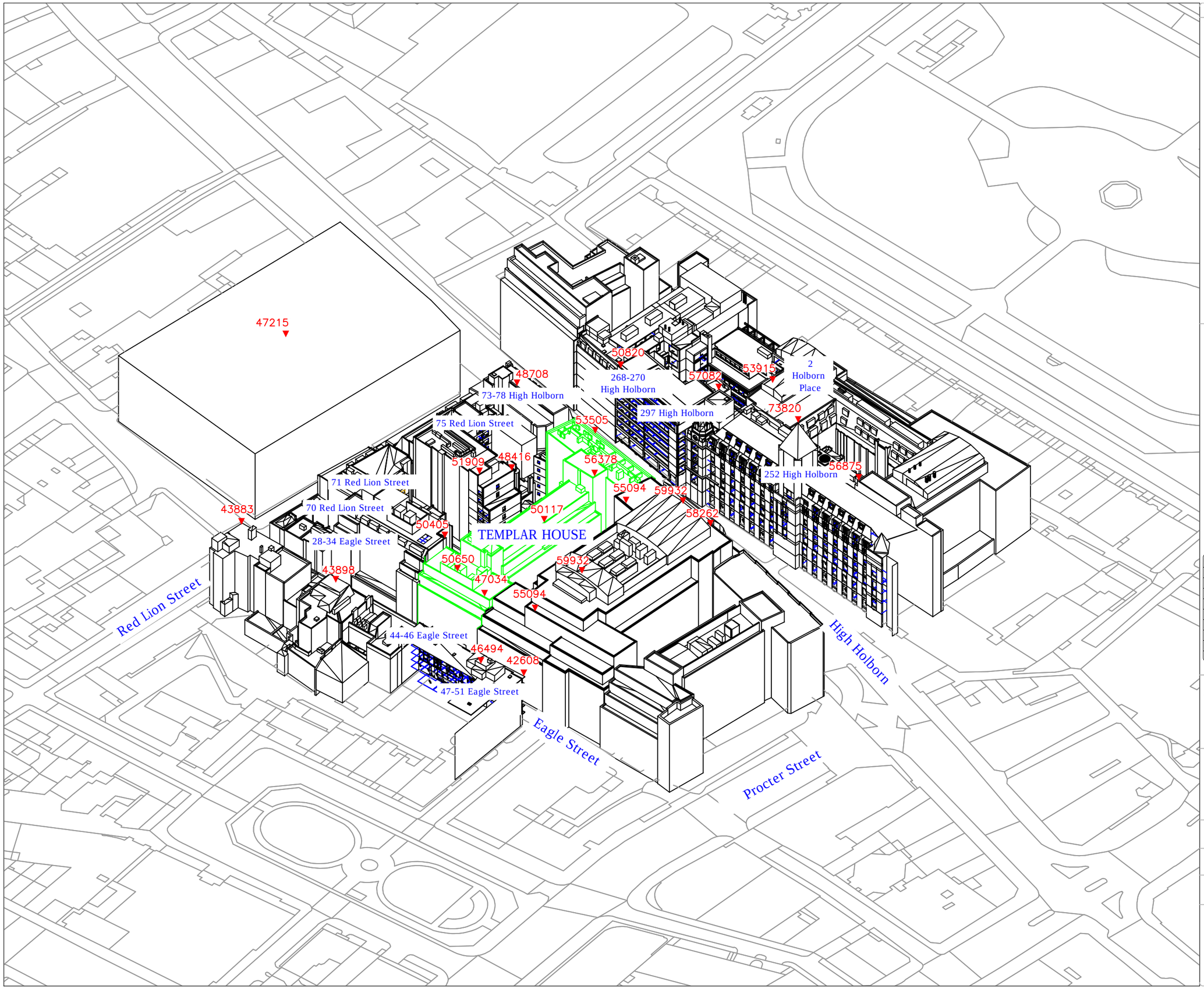

Sources of Information

Vertex
7988–m00.dwg

Astudio Ltd.
TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS GIVEN IN mm
AOD

EXISTING SHOWN IN GREEN

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

3D VIEW
EXISTING

Scale	Date
NTS	23.06.15
Drawn	Checked
MG	FO

Drawing No.	Rel No.	Revision
7988-12	02	

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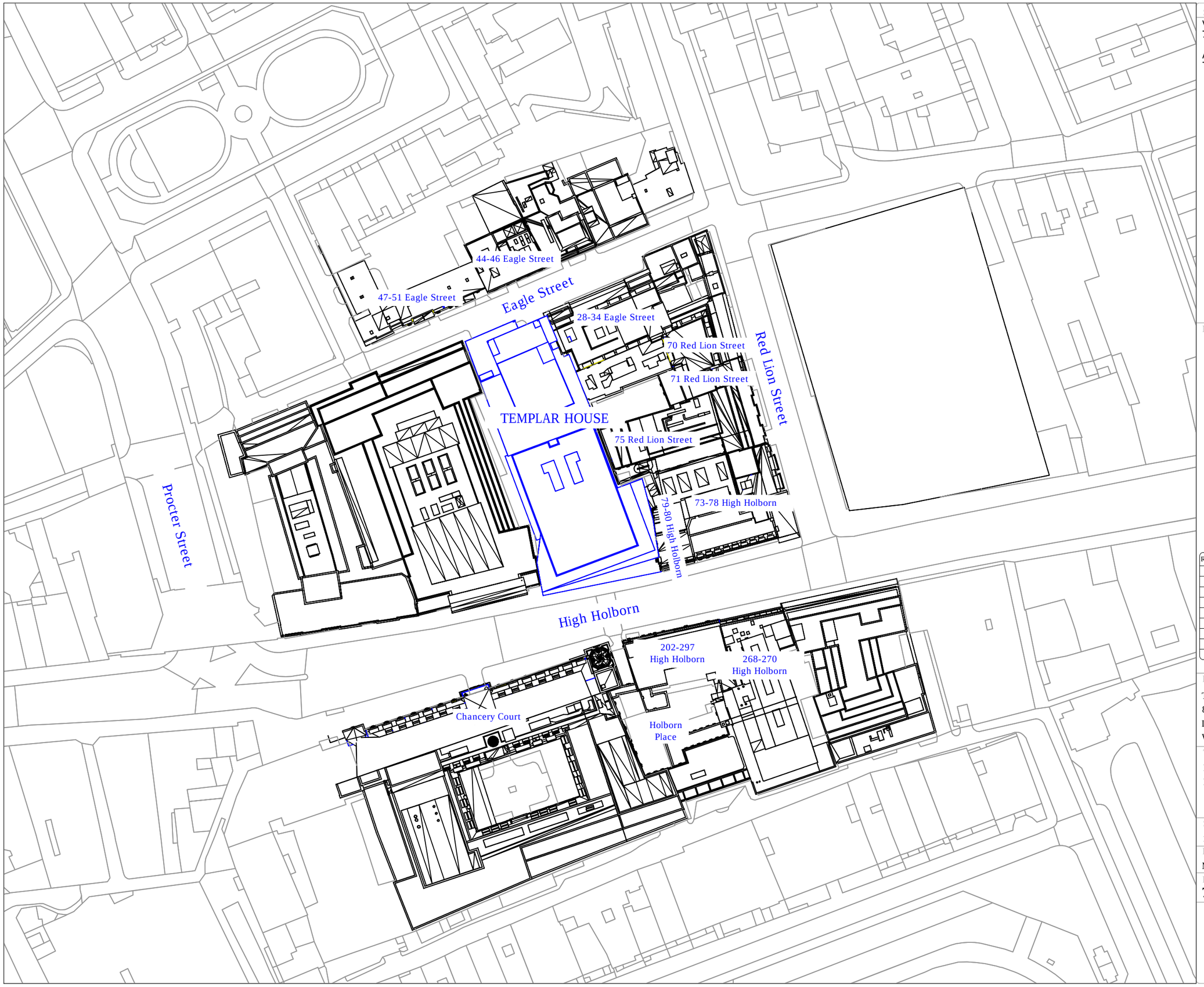
PROPOSED



Sources of Information

Vertex
7988–m00.dwg

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TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

N

Indicative Only

ALL HEIGHTS GIVEN IN mm
AOD

PROPOSED SHOWN IN BLUE

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

PLAN VIEW
PROPOSED SCHEME

Scale
1:1000 @A3

Date
23.06.15

Drawn
MG

Checked
FO

Drawing No.
7988-13

Rel No.
02

Revision

gia

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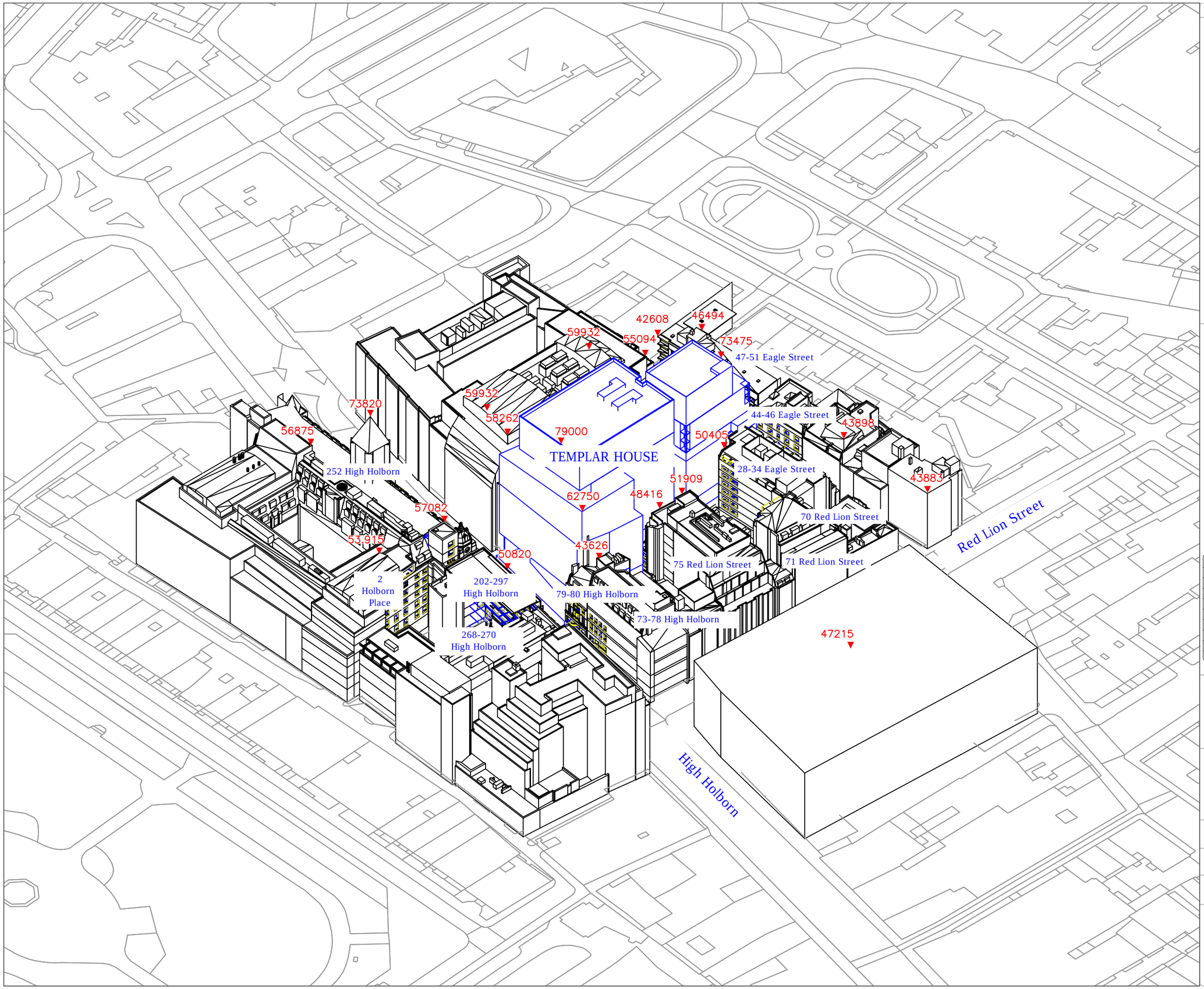

Sources of Information

Vertex
7988–m00.dwg

Astudio Ltd.
TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS GIVEN IN mm AOD

PROPOSED SHOWN IN BLUE

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

3D VIEW
PROPOSED SCHEME

Scale	Date
NTS	23.06.15
Drawn	Checked
MG	FO

Drawing No.	Rel No.	Revision
7988-14	02	

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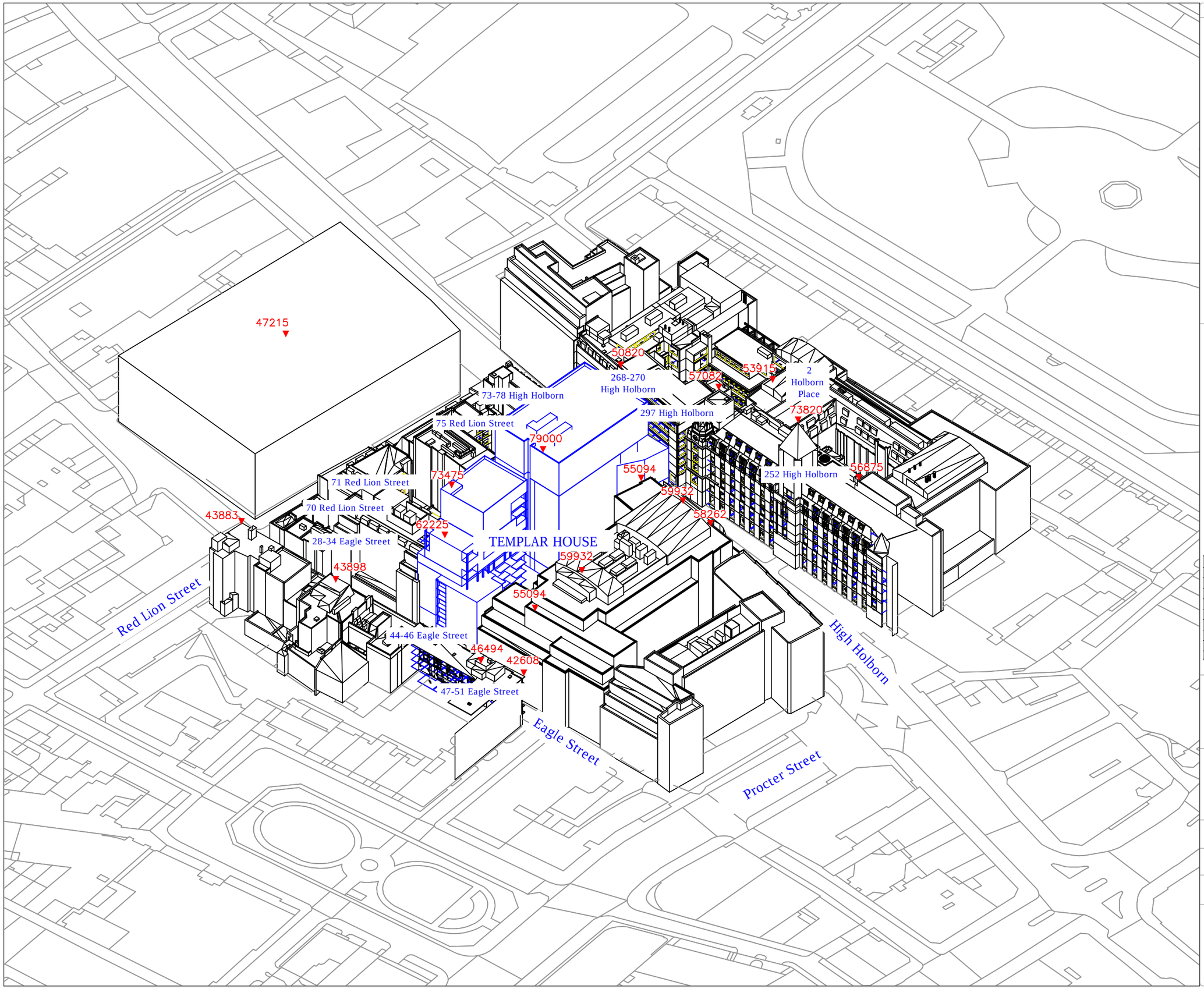

Sources of Information

Vertex
7988–m00.dwg

Astudio Ltd.
TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS GIVEN IN mm
AOD

PROPOSED SHOWN IN BLUE

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

3D VIEW
PROPOSED SCHEME

Scale: NTS
Date: 23.06.15
Drawn: MG
Checked: FO
Drawing No.: 7988-15
Rel No.: 02
Revision:

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APPENDIX 3

DAYLIGHT & SUNLIGHT TABLES OF RESULTS

VERTICAL SKY COMPONENT (VSC)

DAYLIGHT ANALYSIS

Vertical Sky Component						
Room	**Window**	**Room Use**	Existing	Proposed	Loss	**%**
47-51 EAGLE STREET						
R1/Ground	**W1/Ground**	Unknown	6	5	1	16.7
R2/Ground	**W2/Ground**	Unknown	2	1.5	0.5	25.0
R2/Ground	**W3/Ground**	Unknown	3	1.5	1.5	50.0
R3/Ground	**W4/Ground**	Unknown	5.5	3.5	2	36.4
R4/Ground	**W5/Ground**	Unknown	2.5	1.5	1	40.0
R4/Ground	**W6/Ground**	Unknown	3.5	2	1.5	42.9
R1/First	**W1/First**	Unknown	0	0	0	0.0
R2/First	**W2/First**	Unknown	11.5	10	1.5	13.0
R3/First	**W3/First**	Bedroom	12	10	2	16.7
R3/First	**W4/First**	Bedroom	0	0	0	0.0
R5/First	**W5/First**	Living room	0	0	0	0.0
R6/First	**W6/First**	Living room	0	0	0	0.0
R7/First	**W7/First**	Bedroom	0	0	0	0.0
R7/First	**W8/First**	Bedroom	12.5	9.5	3	24.0
R8/First	**W9/First**	Bedroom	12.5	9.5	3	24.0
R9/First	**W10/First**	Living room	0	0	0	0.0
R10/First	**W11/First**	Living room	0	0	0	0.0
R11/First	**W12/First**	Bedroom	9.5	5	4.5	47.4
R1/Second	**W1/Second**	Unknown	0	0	0	0.0
R2/Second	**W2/Second**	Unknown	14.5	12	2.5	17.2
R3/Second	**W3/Second**	Bedroom	15	12	3	20.0
R3/Second	**W4/Second**	Bedroom	0	0	0	0.0
R4/Second	**W5/Second**	Living room	0	0	0	0.0
R5/Second	**W6/Second**	Living room	0	0	0	0.0
R6/Second	**W7/Second**	Bedroom	0	0	0	0.0
R6/Second	**W8/Second**	Bedroom	15	12	3	20.0
R7/Second	**W9/Second**	Bedroom	15	11.5	3.5	23.3
R8/Second	**W10/Second**	Living room	0	0	0	0.0
R9/Second	**W11/Second**	Living room	0	0	0	0.0
R10/Second	**W12/Second**	Bedroom	11.5	6	5.5	47.8
R1/Third	**W1/Third**	Unknown	0.5	0	0.5	100.0
R2/Third	**W2/Third**	Unknown	17	14	3	17.6
R3/Third	**W3/Third**	Bedroom	18	14	4	22.2
R3/Third	**W4/Third**	Bedroom	0	0	0	0.0
R4/Third	**W5/Third**	Living room	0.5	0	0.5	100.0
R5/Third	**W6/Third**	Living room	0.5	0	0.5	100.0
R6/Third	**W7/Third**	Bedroom	0	0	0	0.0
R6/Third	**W8/Third**	Bedroom	18.5	14	4.5	24.3
R7/Third	**W9/Third**	Bedroom	18.5	13.5	5	27.0
R8/Third	**W10/Third**	Living room	0.5	0	0.5	100.0
R9/Third	**W11/Third**	Living room	0.5	0	0.5	100.0
R10/Third	**W12/Third**	Bedroom	14.5	7.5	7	48.3

DAYLIGHT ANALYSIS

R1/Fourth	**W1/Fourth**	Unknown	1	0.5	0.5	50.0
R2/Fourth	**W2/Fourth**	Unknown	20	16.5	3.5	17.5
R3/Fourth	**W3/Fourth**	Bedroom	21.5	16.5	5	23.3
R3/Fourth	**W4/Fourth**	Bedroom	0	0	0	0.0
R4/Fourth	**W5/Fourth**	Living room	1.5	0.5	1	66.7
R5/Fourth	**W6/Fourth**	Living room	2	0.5	1.5	75.0
R6/Fourth	**W7/Fourth**	Bedroom	0	0	0	0.0
R6/Fourth	**W8/Fourth**	Bedroom	22	16.5	5.5	25.0
R7/Fourth	**W9/Fourth**	Bedroom	22	16	6	27.3
R8/Fourth	**W10/Fourth**	Living room	1.5	0.5	1	66.7
R9/Fourth	**W11/Fourth**	Living room	1.5	0	1.5	100.0
R10/Fourth	**W12/Fourth**	Bedroom	18.5	10.5	8	43.2
71 RED LION STREET						
R1/First	**W1/First**	Unknown	6	4	2	33.3
R1/Second	**W1/Second**	Unknown	7	4.5	2.5	35.7
R1/Third	**W1/Third**	Unknown	8.5	5.5	3	35.3
R1/Fifth	**W1/Fifth**	Unknown	8.5	5	3.5	41.2
R1/Sixth	**W1/Sixth**	Unknown	10	6	4	40.0
72-75 RED LION STREET						
R1/Ground	**W1/Ground**	Unknown	7.5	4	3.5	46.7
R2/Ground	**W2/Ground**	Unknown	7	4	3	42.9
R1/First	**W1/First**	Unknown	9	5	4	44.4
R2/First	**W2/First**	Unknown	8.5	4.5	4	47.1
79-80 HIGH HOLBORN						
R1/Ground	**W1/Ground**	Unknown	8	0	8	100.0
R1/Ground	**W2/Ground**	Unknown	1	1	0	0.0
R1/Ground	**W3/Ground**	Unknown	11.5	10.5	1	8.7
R2/Ground	**W4/Ground**	Unknown	10	10	0	0.0
R2/Ground	**W5/Ground**	Unknown	10	10	0	0.0
R2/Ground	**W6/Ground**	Unknown	6	6	0	0.0
R2/Ground	**W7/Ground**	Unknown	0.5	0.5	0	0.0
R2/Ground	**W8/Ground**	Unknown	0	0	0	0.0
R2/Ground	**W9/Ground**	Unknown	0	0	0	0.0
R2/Ground	**W10/Ground**	Unknown	5	5	0	0.0
R2/Ground	**W11/Ground**	Unknown	9.5	9.5	0	0.0
R2/Ground	**W12/Ground**	Unknown	10.5	10.5	0	0.0
R1/First	**W1/First**	Unknown	7.5	2	5.5	73.3
R2/First	**W2/First**	Unknown	12	11	1	8.3
R3/First	**W3/First**	Unknown	13	13	0	0.0
R3/First	**W4/First**	Unknown	13.5	13.5	0	0.0
R3/First	**W5/First**	Unknown	13	13	0	0.0
R3/First	**W6/First**	Unknown	14	14	0	0.0
R3/First	**W7/First**	Unknown	13.5	13.5	0	0.0
R1/Second	**W1/Second**	Unknown	10	3.5	6.5	65.0
R2/Second	**W2/Second**	Unknown	14.5	14.5	0	0.0
R2/Second	**W3/Second**	Unknown	7	7	0	0.0
R2/Second	**W4/Second**	Unknown	10	10	0	0.0
R2/Second	**W5/Second**	Unknown	10	10	0	0.0
R2/Second	**W6/Second**	Unknown	6.5	6.5	0	0.0
R2/Second	**W7/Second**	Unknown	0	0	0	0.0
R2/Second	**W8/Second**	Unknown	15	15	0	0.0
R1/Third	**W1/Third**	Unknown	14	6	8	57.1

DAYLIGHT ANALYSIS

R1/Fourth	**W1/Fourth**	Unknown	18	8	10	55.6
R1/Fifth	**W1/Fifth**	Unknown	22	11	11	50.0
HOLBORN PLACE						
R1/Ground	**W1/Ground**	Commercial	1	0.5	0.5	50.0
R2/Ground	**W2/Ground**	Commercial	3.5	2.5	1	28.6
R3/Ground	**W3/Ground**	Commercial	12.5	9	3.5	28.0
R3/Ground	**W4/Ground**	Commercial	15	11.5	3.5	23.3
R4/Ground	**W5/Ground**	Commercial	15	12.5	2.5	16.7
R4/Ground	**W6/Ground**	Commercial	15.5	13	2.5	16.1
R5/Ground	**W7/Ground**	Commercial	15.5	13.5	2	12.9
R5/Ground	**W8/Ground**	Commercial	15.5	13.5	2	12.9
R6/Ground	**W9/Ground**	Commercial	13.5	11.5	2	14.8
R7/Ground	**W10/Ground**	Commercial	16	15.5	0.5	3.1
R8/Ground	**W11/Ground**	Commercial	18.5	17	1.5	8.1
R8/Ground	**W12/Ground**	Commercial	19	18.5	0.5	2.6
R9/Ground	**W13/Ground**	Commercial	20	19	1	5.0
R9/Ground	**W14/Ground**	Commercial	21	20	1	4.8
R10/Ground	**W15/Ground**	Commercial	21.5	21	0.5	2.3
R10/Ground	**W16/Ground**	Commercial	20	19.5	0.5	2.5
R1/First	**W1/First**	Commercial	6	6	0	0.0
R1/First	**W2/First**	Commercial	7	7	0	0.0
R1/First	**W3/First**	Commercial	7.5	7	0.5	6.7
R2/First	**W4/First**	Commercial	8.5	8.5	0	0.0
R2/First	**W5/First**	Commercial	11	11	0	0.0
R3/First	**W6/First**	Commercial	11.5	11.5	0	0.0
R3/First	**W7/First**	Commercial	10.5	10.5	0	0.0
R4/First	**W8/First**	Commercial	7.5	7.5	0	0.0
R4/First	**W9/First**	Commercial	5	5	0	0.0
R5/First	**W10/First**	Commercial	4	1.5	2.5	62.5
R7/First	**W11/First**	Commercial	1	0.5	0.5	50.0
R8/First	**W12/First**	Commercial	4.5	3.5	1	22.2
R8/First	**W13/First**	Commercial	17.5	11.5	6	34.3
R9/First	**W14/First**	Commercial	15	10	5	33.3
R9/First	**W15/First**	Commercial	17.5	13.5	4	22.9
R10/First	**W16/First**	Commercial	18	14.5	3.5	19.4
R10/First	**W17/First**	Commercial	18.5	15	3.5	18.9
R11/First	**W18/First**	Commercial	18.5	15.5	3	16.2
R11/First	**W19/First**	Commercial	18.5	16	2.5	13.5
R12/First	**W20/First**	Commercial	16.5	14	2.5	15.2
R13/First	**W21/First**	Commercial	18.5	18	0.5	2.7
R14/First	**W22/First**	Commercial	21.5	20	1.5	7.0
R14/First	**W23/First**	Commercial	22	21	1	4.5
R15/First	**W24/First**	Commercial	23	22	1	4.3
R15/First	**W25/First**	Commercial	24	23	1	4.2
R16/First	**W26/First**	Commercial	24.5	23.5	1	4.1
R16/First	**W27/First**	Commercial	23	22	1	4.3
R17/First	**W28/First**	Commercial	27	26.5	0.5	1.9
R1/Second	**W1/Second**	Commercial	10	9.5	0.5	5.0
R1/Second	**W2/Second**	Commercial	11	10.5	0.5	4.5
R1/Second	**W3/Second**	Commercial	10.5	10.5	0	0.0
R2/Second	**W4/Second**	Commercial	14	14	0	0.0
R2/Second	**W5/Second**	Commercial	16.5	16.5	0	0.0

DAYLIGHT ANALYSIS

R3/Second	**W6/Second**	Commercial	16.5	16.5	0	0.0
R3/Second	**W7/Second**	Commercial	14.5	14.5	0	0.0
R4/Second	**W8/Second**	Commercial	10	10	0	0.0
R4/Second	**W9/Second**	Commercial	6.5	6.5	0	0.0
R5/Second	**W10/Second**	Commercial	4.5	2	2.5	55.6
R6/Second	**W11/Second**	Commercial	2.5	1.5	1	40.0
R7/Second	**W12/Second**	Commercial	7	5.5	1.5	21.4
R7/Second	**W13/Second**	Commercial	21	13.5	7.5	35.7
R8/Second	**W14/Second**	Commercial	18.5	12.5	6	32.4
R8/Second	**W15/Second**	Commercial	21	15.5	5.5	26.2
R9/Second	**W16/Second**	Commercial	21.5	17	4.5	20.9
R9/Second	**W17/Second**	Commercial	21.5	17.5	4	18.6
R10/Second	**W18/Second**	Commercial	22	18	4	18.2
R10/Second	**W19/Second**	Commercial	21.5	18.5	3	14.0
R11/Second	**W20/Second**	Commercial	18.5	16	2.5	13.5
R12/Second	**W21/Second**	Commercial	22.5	20	2.5	11.1
R12/Second	**W22/Second**	Commercial	22.5	20.5	2	8.9
R13/Second	**W23/Second**	Commercial	21	20.5	0.5	2.4
R14/Second	**W24/Second**	Commercial	24	22.5	1.5	6.3
R14/Second	**W25/Second**	Commercial	25.5	24	1.5	5.9
R15/Second	**W26/Second**	Commercial	26	25	1	3.8
R15/Second	**W27/Second**	Commercial	27	26	1	3.7
R16/Second	**W28/Second**	Commercial	27	26	1	3.7
R16/Second	**W29/Second**	Commercial	24.5	24	0.5	2.0
R17/Second	**W30/Second**	Commercial	29.5	29	0.5	1.7
R1/Third	**W1/Third**	Commercial	18	17	1	5.6
R1/Third	**W2/Third**	Commercial	16.5	15.5	1	6.1
R1/Third	**W3/Third**	Commercial	14.5	13.5	1	6.9
R2/Third	**W4/Third**	Commercial	19	19	0	0.0
R2/Third	**W5/Third**	Commercial	22	22	0	0.0
R3/Third	**W6/Third**	Commercial	21.5	21.5	0	0.0
R3/Third	**W7/Third**	Commercial	18.5	18.5	0	0.0
R4/Third	**W8/Third**	Commercial	13.5	13.5	0	0.0
R4/Third	**W9/Third**	Commercial	9	9	0	0.0
R5/Third	**W10/Third**	Commercial	6	3	3	50.0
R6/Third	**W11/Third**	Commercial	3.5	2.5	1	28.6
R7/Third	**W12/Third**	Commercial	9	7	2	22.2
R7/Third	**W13/Third**	Commercial	24.5	15	9.5	38.8
R8/Third	**W14/Third**	Commercial	21	13.5	7.5	35.7
R8/Third	**W15/Third**	Commercial	23.5	17.5	6	25.5
R9/Third	**W16/Third**	Commercial	24	19	5	20.8
R9/Third	**W17/Third**	Commercial	24.5	19.5	5	20.4
R10/Third	**W18/Third**	Commercial	24.5	20	4.5	18.4
R10/Third	**W19/Third**	Commercial	24	20.5	3.5	14.6
R11/Third	**W20/Third**	Commercial	21	18	3	14.3
R12/Third	**W21/Third**	Commercial	25	22.5	2.5	10.0
R12/Third	**W22/Third**	Commercial	25	22.5	2.5	10.0
R13/Third	**W23/Third**	Commercial	23.5	22.5	1	4.3
R14/Third	**W24/Third**	Commercial	26.5	25	1.5	5.7
R14/Third	**W25/Third**	Commercial	28	26.5	1.5	5.4
R15/Third	**W26/Third**	Commercial	28.5	27	1.5	5.3
R15/Third	**W27/Third**	Commercial	29	28	1	3.4

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R16/Third	**W28/Third**	Commercial	29.5	28.5	1	3.4
R16/Third	**W29/Third**	Commercial	27	26	1	3.7
R17/Third	**W30/Third**	Commercial	31.5	31	0.5	1.6
R1/Fourth	**W1/Fourth**	Commercial	22.5	21	1.5	6.7
R1/Fourth	**W2/Fourth**	Commercial	20	19	1	5.0
R1/Fourth	**W3/Fourth**	Commercial	17.5	16	1.5	8.6
R2/Fourth	**W4/Fourth**	Commercial	22.5	22.5	0	0.0
R2/Fourth	**W5/Fourth**	Commercial	26.5	26	0.5	1.9
R3/Fourth	**W6/Fourth**	Commercial	26	26	0	0.0
R3/Fourth	**W7/Fourth**	Commercial	23.5	23.5	0	0.0
R4/Fourth	**W8/Fourth**	Commercial	18.5	18.5	0	0.0
R4/Fourth	**W9/Fourth**	Commercial	13	13	0	0.0
R5/Fourth	**W10/Fourth**	Commercial	7.5	4	3.5	46.7
R6/Fourth	**W11/Fourth**	Commercial	7	6	1	14.3
R7/Fourth	**W12/Fourth**	Commercial	11.5	10	1.5	13.0
R7/Fourth	**W13/Fourth**	Commercial	26.5	15	11.5	43.4
R8/Fourth	**W14/Fourth**	Commercial	23.5	15	8.5	36.2
R8/Fourth	**W15/Fourth**	Commercial	27	19.5	7.5	27.8
R9/Fourth	**W16/Fourth**	Commercial	28	21.5	6.5	23.2
R9/Fourth	**W17/Fourth**	Commercial	28	22	6	21.4
R10/Fourth	**W18/Fourth**	Commercial	28	23	5	17.9
R10/Fourth	**W19/Fourth**	Commercial	27.5	23.5	4	14.5
R11/Fourth	**W20/Fourth**	Commercial	24.5	20.5	4	16.3
R12/Fourth	**W21/Fourth**	Commercial	28.5	25	3.5	12.3
R12/Fourth	**W22/Fourth**	Commercial	28.5	25.5	3	10.5
R12/Fourth	**W23/Fourth**	Commercial	28.5	26	2.5	8.8
R12/Fourth	**W24/Fourth**	Commercial	29	26	3	10.3
R13/Fourth	**W25/Fourth**	Commercial	26.5	25.5	1	3.8
R14/Fourth	**W26/Fourth**	Commercial	30	28	2	6.7
R14/Fourth	**W27/Fourth**	Commercial	31	29.5	1.5	4.8
R15/Fourth	**W28/Fourth**	Commercial	31.5	30	1.5	4.8
R15/Fourth	**W29/Fourth**	Commercial	32	31	1	3.1
R16/Fourth	**W30/Fourth**	Commercial	32.5	31	1.5	4.6
R16/Fourth	**W31/Fourth**	Commercial	29.5	28.5	1	3.4
R17/Fourth	**W32/Fourth**	Commercial	34	33.5	0.5	1.5
R1/Fifth	**W1/Fifth**	Commercial	27.5	25.5	2	7.3
R1/Fifth	**W2/Fifth**	Commercial	25	23	2	8.0
R1/Fifth	**W3/Fifth**	Commercial	21	19	2	9.5
R2/Fifth	**W4/Fifth**	Commercial	26.5	26	0.5	1.9
R2/Fifth	**W5/Fifth**	Commercial	31	30.5	0.5	1.6
R3/Fifth	**W6/Fifth**	Commercial	31.5	31	0.5	1.6
R3/Fifth	**W7/Fifth**	Commercial	30	29.5	0.5	1.7
R4/Fifth	**W8/Fifth**	Commercial	26	26	0	0.0
R4/Fifth	**W9/Fifth**	Commercial	20	20	0	0.0
R5/Fifth	**W10/Fifth**	Commercial	10	6	4	40.0
R6/Fifth	**W11/Fifth**	Commercial	18.5	17	1.5	8.1
R6/Fifth	**W12/Fifth**	Commercial	18.5	17.5	1	5.4
R6/Fifth	**W13/Fifth**	Commercial	19	17.5	1.5	7.9
R7/Fifth	**W14/Fifth**	Commercial	24.5	22.5	2	8.2
R7/Fifth	**W15/Fifth**	Commercial	31	18.5	12.5	40.3
R8/Fifth	**W16/Fifth**	Commercial	30	20	10	33.3
R8/Fifth	**W17/Fifth**	Commercial	31	21.5	9.5	30.6
R8/Fifth	**W18/Fifth**	Commercial	32	23	9	28.1
R8/Fifth	**W19/Fifth**	Commercial	32	23.5	8.5	26.6
R8/Fifth	**W20/Fifth**	Commercial	32	23.5	8.5	26.6

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R9/Fifth	**W21/Fifth**	Commercial	32	24.5	7.5	23.4
R9/Fifth	**W22/Fifth**	Commercial	32	24.5	7.5	23.4
R9/Fifth	**W23/Fifth**	Commercial	32	25	7	21.9
R9/Fifth	**W24/Fifth**	Commercial	32	25	7	21.9
R9/Fifth	**W25/Fifth**	Commercial	32	25.5	6.5	20.3
R9/Fifth	**W26/Fifth**	Commercial	32	25.5	6.5	20.3
R10/Fifth	**W27/Fifth**	Commercial	32	26	6	18.8
R10/Fifth	**W28/Fifth**	Commercial	32	26	6	18.8
R10/Fifth	**W29/Fifth**	Commercial	32	26.5	5.5	17.2
R10/Fifth	**W30/Fifth**	Commercial	31.5	26.5	5	15.9
R10/Fifth	**W31/Fifth**	Commercial	31.5	26.5	5	15.9
R10/Fifth	**W32/Fifth**	Commercial	31.5	26.5	5	15.9
R11/Fifth	**W33/Fifth**	Commercial	30	25.5	4.5	15.0
R11/Fifth	**W34/Fifth**	Commercial	28.5	24.5	4	14.0
R11/Fifth	**W35/Fifth**	Commercial	25.5	21	4.5	17.6
R12/Fifth	**W36/Fifth**	Commercial	32.5	29	3.5	10.8
R13/Fifth	**W37/Fifth**	Commercial	27	27	0	0.0
R13/Fifth	**W38/Fifth**	Commercial	30.5	29	1.5	4.9
R13/Fifth	**W39/Fifth**	Commercial	32	30	2	6.3
R14/Fifth	**W40/Fifth**	Commercial	33.5	31	2.5	7.5
R14/Fifth	**W41/Fifth**	Commercial	34	31.5	2.5	7.4
R14/Fifth	**W42/Fifth**	Commercial	34	32	2	5.9
R14/Fifth	**W43/Fifth**	Commercial	34.5	32.5	2	5.8
R14/Fifth	**W44/Fifth**	Commercial	34.5	32.5	2	5.8
R14/Fifth	**W45/Fifth**	Commercial	34.5	33	1.5	4.3
R15/Fifth	**W46/Fifth**	Commercial	35	33.5	1.5	4.3
R15/Fifth	**W47/Fifth**	Commercial	35	33.5	1.5	4.3
R15/Fifth	**W48/Fifth**	Commercial	35	33.5	1.5	4.3
R15/Fifth	**W49/Fifth**	Commercial	35.5	34	1.5	4.2
R15/Fifth	**W50/Fifth**	Commercial	35.5	34	1.5	4.2
R15/Fifth	**W51/Fifth**	Commercial	35.5	34	1.5	4.2
R16/Fifth	**W52/Fifth**	Commercial	35.5	34	1.5	4.2
R16/Fifth	**W53/Fifth**	Commercial	35.5	34	1.5	4.2
R16/Fifth	**W54/Fifth**	Commercial	35.5	34	1.5	4.2
R16/Fifth	**W55/Fifth**	Commercial	34	33	1	2.9
R16/Fifth	**W56/Fifth**	Commercial	32.5	31.5	1	3.1
R16/Fifth	**W57/Fifth**	Commercial	29	28	1	3.4
R1/Sixth	**W1/Sixth**	Commercial	32	29.5	2.5	7.8
R2/Sixth	**W2/Sixth**	Commercial	32	31.5	0.5	1.6
R3/Sixth	**W3/Sixth**	Commercial	36	35.5	0.5	1.4
R4/Sixth	**W4/Sixth**	Commercial	36	35.5	0.5	1.4
R5/Sixth	**W5/Sixth**	Commercial	36.5	34.5	2	5.5
R6/Sixth	**W6/Sixth**	Commercial	34	23.5	10.5	30.9
R6/Sixth	**W7/Sixth**	Commercial	34	25	9	26.5
R6/Sixth	**W8/Sixth**	Commercial	34	25.5	8.5	25.0
R7/Sixth	**W9/Sixth**	Commercial	34	26.5	7.5	22.1
R7/Sixth	**W10/Sixth**	Commercial	34	26.5	7.5	22.1
R7/Sixth	**W11/Sixth**	Commercial	34	27	7	20.6
R7/Sixth	**W12/Sixth**	Commercial	34	27.5	6.5	19.1
R8/Sixth	**W13/Sixth**	Commercial	34	28	6	17.6
R8/Sixth	**W14/Sixth**	Commercial	34	28	6	17.6
R8/Sixth	**W15/Sixth**	Commercial	34	28.5	5.5	16.2
R8/Sixth	**W16/Sixth**	Commercial	34	28.5	5.5	16.2
R9/Sixth	**W17/Sixth**	Commercial	33	28.5	4.5	13.6
R10/Sixth	**W18/Sixth**	Commercial	32.5	29	3.5	10.8
R11/Sixth	**W19/Sixth**	Commercial	34.5	32.5	2	5.8
R12/Sixth	**W20/Sixth**	Commercial	35.5	33.5	2	5.6
R12/Sixth	**W21/Sixth**	Commercial	36	33.5	2.5	6.9
R12/Sixth	**W22/Sixth**	Commercial	36	34	2	5.6
R12/Sixth	**W23/Sixth**	Commercial	36.5	34.5	2	5.5
R13/Sixth	**W24/Sixth**	Commercial	36.5	35	1.5	4.1

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R13/Sixth	**W25/Sixth**	Commercial	36.5	35	1.5	4.1
R13/Sixth	**W26/Sixth**	Commercial	37	35.5	1.5	4.1
R13/Sixth	**W27/Sixth**	Commercial	37	35.5	1.5	4.1
R14/Sixth	**W28/Sixth**	Commercial	37	35.5	1.5	4.1
R14/Sixth	**W29/Sixth**	Commercial	37	36	1	2.7
R14/Sixth	**W30/Sixth**	Commercial	36	35	1	2.8
R14/Sixth	**W31/Sixth**	Commercial	34.5	33.5	1	2.9
R1/Seventh	**W1/Seventh**	Commercial	39	37.5	1.5	3.8
R2/Seventh	**W2/Seventh**	Commercial	36.5	28.5	8	21.9
R2/Seventh	**W3/Seventh**	Commercial	36.5	29.5	7	19.2
R3/Seventh	**W4/Seventh**	Commercial	36.5	30	6.5	17.8
R3/Seventh	**W5/Seventh**	Commercial	36	30	6	16.7
R4/Seventh	**W6/Seventh**	Commercial	35.5	30	5.5	15.5
R4/Seventh	**W7/Seventh**	Commercial	32	27	5	15.6
R5/Seventh	**W8/Seventh**	Commercial	32.5	31	1.5	4.6
R5/Seventh	**W9/Seventh**	Commercial	36	34	2	5.6
R6/Seventh	**W10/Seventh**	Commercial	37.5	35	2.5	6.7
R6/Seventh	**W11/Seventh**	Commercial	38	36	2	5.3
R7/Seventh	**W12/Seventh**	Commercial	38	36.5	1.5	3.9
R7/Seventh	**W13/Seventh**	Commercial	38	36.5	1.5	3.9

DAYLIGHT DISTRIBUTION ANALYSIS

Room/ Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Prev	%New
47-51 EAGLE STREET							
R1/Ground	Unknown	224.63	46.19	46.15	0.04	20.56	20.55
R2/Ground	Unknown	263.40	49.91	42.50	7.41	18.95	16.13
R3/Ground	Unknown	302.27	62.83	78.39	-15.56	20.79	25.93
R4/Ground	Unknown	259.29	34.64	31.95	2.69	13.36	12.32
R1/First	Unknown	158.71	29.75	27.03	2.72	18.74	17.03
R2/First	Unknown	200.49	67.03	66.24	0.79	33.43	33.04
R3/First	Bedroom	128.97	44.26	40.93	3.33	34.32	31.73
R5/First	Living room	142.64	0.00	0.00	0.00	0.00	0.00
R6/First	Living room	142.33	0.22	0.00	0.22	0.15	0.00
R7/First	Bedroom	137.70	47.46	46.90	0.56	34.47	34.06
R8/First	Bedroom	125.06	43.17	59.83	-16.65	34.52	47.84
R9/First	Living room	136.22	0.00	0.00	0.00	0.00	0.00
R10/First	Living room	136.93	0.00	0.00	0.00	0.00	0.00
R11/First	Bedroom	135.72	46.46	39.10	7.36	34.23	28.81
R1/Second	Unknown	158.71	40.11	33.98	6.14	25.28	21.41
R2/Second	Unknown	200.49	79.56	69.08	10.48	39.68	34.46
R3/Second	Bedroom	128.97	53.06	50.31	2.76	41.14	39.01
R4/Second	Living room	142.64	3.21	2.58	0.63	2.25	1.81
R5/Second	Living room	142.33	3.56	2.03	1.53	2.50	1.43
R6/Second	Bedroom	137.70	56.08	55.42	0.67	40.73	40.25
R7/Second	Bedroom	125.06	52.09	65.14	-13.06	41.65	52.09
R8/Second	Living room	136.22	2.22	2.06	0.16	1.63	1.51
R9/Second	Living room	136.93	2.66	2.18	0.48	1.94	1.59
R10/Second	Bedroom	135.72	57.24	44.88	12.36	42.18	33.07
R1/Third	Unknown	158.71	52.02	41.50	10.52	32.77	26.15
R2/Third	Unknown	200.49	99.65	74.85	24.80	49.71	37.33
R3/Third	Bedroom	128.97	69.45	62.85	6.60	53.85	48.73
R4/Third	Living room	142.64	9.27	8.96	0.31	6.50	6.28
R5/Third	Living room	142.33	9.14	8.44	0.70	6.42	5.93
R6/Third	Bedroom	137.70	73.44	72.23	1.21	53.34	52.46
R7/Third	Bedroom	125.06	68.02	74.07	-6.06	54.39	59.23
R8/Third	Living room	136.22	9.23	7.14	2.10	6.78	5.24
R9/Third	Living room	136.93	8.82	6.28	2.54	6.44	4.59
R10/Third	Bedroom	135.72	74.07	50.81	23.26	54.58	37.44
R1/Fourth	Unknown	158.71	73.93	53.53	20.40	46.58	33.73
R2/Fourth	Unknown	200.49	133.10	91.08	42.02	66.39	45.43
R3/Fourth	Bedroom	128.97	91.64	75.86	15.78	71.05	58.82
R4/Fourth	Living room	142.64	27.80	22.89	4.91	19.49	16.05
R5/Fourth	Living room	142.33	23.53	22.51	1.02	16.53	15.81
R6/Fourth	Bedroom	137.70	100.51	97.52	2.99	72.99	70.82
R7/Fourth	Bedroom	125.06	92.66	88.43	4.23	74.09	70.71
R8/Fourth	Living room	136.22	22.24	16.15	6.09	16.32	11.85
R9/Fourth	Living room	136.93	25.75	12.50	13.25	18.81	9.13
R10/Fourth	Bedroom	135.72	99.06	58.30	40.76	72.99	42.96
71 RED LION STREET							
R1/First	Unknown	125.97	74.47	62.44	12.03	59.12	49.57
R1/Second	Unknown	125.97	92.55	71.97	20.58	73.47	57.13
R1/Third	Unknown	125.97	109.13	78.03	31.10	86.63	61.94
R1/Fifth	Unknown	124.52	83.73	70.29	13.44	67.24	56.45
R1/Sixth	Unknown	124.52	104.12	78.97	25.16	83.62	63.42
72-75 RED LION STREET							
R1/Ground	Unknown	296.30	95.12	118.28	-23.17	32.10	39.92
R2/Ground	Unknown	250.83	71.60	82.89	-11.30	28.54	33.05
R1/First	Unknown	296.30	110.02	137.40	-27.38	37.13	46.37
R2/First	Unknown	250.83	85.44	97.81	-12.37	34.06	39.00
79-80 HIGH HOLBORN							
R1/Ground	Unknown	41.69	26.33	14.47	11.85	63.15	34.72
R2/Ground	Unknown	474.18	160.61	160.61	0.00	33.87	33.87
R1/First	Unknown	161.23	31.91	7.03	24.88	19.79	4.36
R2/First	Unknown	41.69	33.33	30.40	2.93	79.95	72.93
R3/First	Unknown	500.34	204.94	204.94	0.00	40.96	40.96
R1/Second	Unknown	161.23	37.29	10.94	26.35	23.13	6.79
R2/Second	Unknown	485.54	196.50	196.50	0.00	40.47	40.47
R1/Third	Unknown	161.23	47.39	17.29	30.10	29.40	10.72
R1/Fourth	Unknown	161.23	62.47	26.79	35.68	38.75	16.62
R1/Fifth	Unknown	161.23	74.85	43.67	31.18	46.43	27.09
HOLBORN PLACE							
R1/Ground	Commercial	366.88	44.63	30.41	14.23	12.17	8.29
R2/Ground	Commercial	372.99	211.67	208.87	2.79	56.75	56.00

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R3/Ground	Commercial	586.72	307.04	295.39	11.65	52.33	50.35
R4/Ground	Commercial	503.10	292.55	289.02	3.53	58.15	57.45
R5/Ground	Commercial	481.96	294.75	294.10	0.66	61.16	61.02
R6/Ground	Commercial	320.86	174.43	167.07	7.36	54.36	52.07
R7/Ground	Commercial	199.50	179.48	179.46	0.01	89.96	89.96
R8/Ground	Commercial	348.60	339.09	339.09	0.00	97.27	97.27
R9/Ground	Commercial	363.96	358.75	358.74	0.01	98.57	98.57
R10/Ground	Commercial	376.65	373.45	373.43	0.03	99.15	99.14
R1/First	Commercial	452.03	277.68	246.58	31.09	61.43	54.55
R2/First	Commercial	579.90	389.42	389.40	0.02	67.15	67.15
R3/First	Commercial	497.29	380.16	380.16	0.00	76.45	76.45
R4/First	Commercial	464.11	220.88	220.88	0.00	47.59	47.59
R5/First	Commercial	74.48	59.07	59.01	0.05	79.31	79.24
R7/First	Commercial	366.88	34.08	20.62	13.47	9.29	5.62
R8/First	Commercial	382.33	380.34	350.45	29.89	99.48	91.66
R9/First	Commercial	586.72	286.02	268.70	17.32	48.75	45.80
R10/First	Commercial	503.10	275.08	272.25	2.82	54.68	54.12
R11/First	Commercial	481.96	277.91	277.04	0.87	57.66	57.48
R12/First	Commercial	320.86	161.86	148.77	13.09	50.45	46.37
R13/First	Commercial	199.50	167.88	167.86	0.02	84.15	84.14
R14/First	Commercial	348.60	331.28	331.28	0.00	95.03	95.03
R15/First	Commercial	363.96	354.67	354.66	0.01	97.45	97.44
R16/First	Commercial	376.65	370.37	370.31	0.06	98.33	98.32
R17/First	Commercial	256.24	241.87	241.66	0.21	94.39	94.31
R1/Second	Commercial	452.03	369.84	289.36	80.48	81.82	64.01
R2/Second	Commercial	579.90	540.55	539.17	1.38	93.21	92.98
R3/Second	Commercial	497.29	481.57	481.57	0.00	96.84	96.84
R4/Second	Commercial	464.11	281.43	281.43	0.00	60.64	60.64
R5/Second	Commercial	74.48	45.76	35.66	10.10	61.45	47.88
R6/Second	Commercial	336.44	62.51	60.67	1.85	18.58	18.03
R7/Second	Commercial	324.77	321.97	309.93	12.04	99.14	95.43
R8/Second	Commercial	560.24	350.22	333.06	17.16	62.51	59.45
R9/Second	Commercial	503.10	343.65	336.22	7.43	68.31	66.83
R10/Second	Commercial	481.96	353.88	350.04	3.84	73.43	72.63
R11/Second	Commercial	320.86	199.82	190.53	9.29	62.28	59.38
R12/Second	Commercial	362.69	309.33	283.45	25.88	85.29	78.15
R13/Second	Commercial	199.50	192.21	192.17	0.05	96.35	96.32
R14/Second	Commercial	348.60	346.72	346.71	0.01	99.46	99.46
R15/Second	Commercial	363.96	361.95	361.94	0.01	99.45	99.44
R16/Second	Commercial	531.27	510.80	510.78	0.02	96.15	96.14
R17/Second	Commercial	256.24	252.29	252.18	0.10	98.46	98.42
R1/Third	Commercial	452.03	359.76	276.86	82.90	79.59	61.25
R2/Third	Commercial	579.90	517.39	511.31	6.08	89.22	88.17
R3/Third	Commercial	497.29	434.31	434.13	0.18	87.34	87.30
R4/Third	Commercial	464.11	257.23	257.23	0.00	55.43	55.43
R5/Third	Commercial	74.48	52.67	23.73	28.94	70.72	31.86
R6/Third	Commercial	336.44	65.77	58.86	6.91	19.55	17.49
R7/Third	Commercial	324.77	321.98	308.88	13.10	99.14	95.11
R8/Third	Commercial	560.24	347.25	325.01	22.25	61.98	58.01
R9/Third	Commercial	503.10	343.42	334.05	9.37	68.26	66.40
R10/Third	Commercial	481.96	356.18	353.12	3.06	73.90	73.27
R11/Third	Commercial	320.86	195.95	180.49	15.45	61.07	56.25
R12/Third	Commercial	361.36	304.68	272.08	32.60	84.31	75.29
R13/Third	Commercial	199.50	190.16	189.97	0.19	95.32	95.22
R14/Third	Commercial	348.60	346.71	346.70	0.01	99.46	99.46
R15/Third	Commercial	363.96	361.94	361.92	0.02	99.44	99.44
R16/Third	Commercial	376.65	373.93	373.89	0.04	99.28	99.27
R17/Third	Commercial	256.24	251.77	251.55	0.22	98.26	98.17
R1/Fourth	Commercial	452.03	447.49	371.92	75.57	99.00	82.28
R2/Fourth	Commercial	579.90	574.66	569.65	5.01	99.10	98.23
R3/Fourth	Commercial	497.29	496.35	496.17	0.18	99.81	99.77
R4/Fourth	Commercial	464.11	321.75	321.75	0.00	69.33	69.33
R5/Fourth	Commercial	74.48	54.02	24.96	29.06	72.53	33.51
R6/Fourth	Commercial	336.44	103.13	98.97	4.16	30.65	29.42
R7/Fourth	Commercial	324.77	323.49	318.34	5.15	99.60	98.02
R8/Fourth	Commercial	560.24	395.57	325.14	70.43	70.61	58.04
R9/Fourth	Commercial	503.10	379.28	342.95	36.34	75.39	68.17
R10/Fourth	Commercial	481.96	391.74	376.20	15.53	81.28	78.06
R11/Fourth	Commercial	320.86	198.04	170.17	27.87	61.72	53.04
R12/Fourth	Commercial	367.37	323.67	289.56	34.11	88.11	78.82
R13/Fourth	Commercial	199.50	187.08	187.07	0.01	93.77	93.77
R14/Fourth	Commercial	348.60	344.78	344.75	0.03	98.91	98.90
R15/Fourth	Commercial	363.96	358.98	358.95	0.03	98.63	98.62
R16/Fourth	Commercial	376.65	368.73	368.53	0.20	97.90	97.84
R17/Fourth	Commercial	256.24	251.18	251.17	0.01	98.03	98.02
R1/Fifth	Commercial	452.03	451.49	421.53	29.96	99.88	93.25
R2/Fifth	Commercial	579.90	576.15	572.11	4.04	99.35	98.66
R3/Fifth	Commercial	497.29	496.99	496.89	0.10	99.94	99.92
R4/Fifth	Commercial	464.11	416.68	416.02	0.66	89.78	89.64
R5/Fifth	Commercial	74.48	56.98	36.37	20.62	76.51	48.83
R6/Fifth	Commercial	320.52	104.26	100.27	3.98	32.53	31.28
R7/Fifth	Commercial	324.77	320.81	313.28	7.53	98.78	96.46

DAYLIGHT DISTRIBUTION ANALYSIS

R8/Fifth	Commercial	560.24	373.65	317.50	56.15	66.69	56.67
R9/Fifth	Commercial	503.10	389.96	346.71	43.25	77.51	68.91
R10/Fifth	Commercial	481.96	408.38	388.72	19.66	84.73	80.65
R11/Fifth	Commercial	320.86	219.82	188.21	31.61	68.51	58.66
R12/Fifth	Commercial	361.81	84.97	78.37	6.60	23.48	21.66
R13/Fifth	Commercial	199.50	195.14	195.13	0.00	97.81	97.81
R14/Fifth	Commercial	348.60	346.75	346.71	0.03	99.47	99.46
R15/Fifth	Commercial	363.96	362.10	361.98	0.13	99.49	99.45
R16/Fifth	Commercial	376.65	373.28	373.26	0.03	99.11	99.10
R1/Sixth	Commercial	452.07	452.06	452.06	0.00	100.00	100.00
R2/Sixth	Commercial	409.53	409.51	409.51	0.00	100.00	100.00
R3/Sixth	Commercial	388.66	388.65	388.65	0.00	100.00	100.00
R4/Sixth	Commercial	418.13	418.13	418.13	0.00	100.00	100.00
R5/Sixth	Commercial	37.89	37.89	37.89	0.00	99.99	99.99
R6/Sixth	Commercial	558.73	508.45	448.09	60.37	91.00	80.20
R7/Sixth	Commercial	503.10	496.20	467.25	28.95	98.63	92.87
R8/Sixth	Commercial	481.96	476.48	452.33	24.15	98.86	93.85
R9/Sixth	Commercial	320.86	0.00	0.00	0.00	0.00	0.00
R10/Sixth	Commercial	352.44	0.00	0.00	0.00	0.00	0.00
R11/Sixth	Commercial	199.50	0.00	0.00	0.00	0.00	0.00
R12/Sixth	Commercial	348.60	342.70	342.60	0.09	98.31	98.28
R13/Sixth	Commercial	363.96	356.41	356.19	0.22	97.92	97.86
R14/Sixth	Commercial	529.84	519.78	519.72	0.07	98.10	98.09
R1/Seventh	Commercial	37.89	37.89	37.89	0.00	100.00	100.00
R2/Seventh	Commercial	396.06	389.12	386.20	2.92	98.25	97.51
R3/Seventh	Commercial	349.89	346.65	346.45	0.20	99.07	99.02
R4/Seventh	Commercial	376.87	368.42	366.81	1.61	97.76	97.33
R5/Seventh	Commercial	401.16	387.64	387.57	0.07	96.63	96.61
R6/Seventh	Commercial	356.85	352.81	352.78	0.03	98.87	98.86
R7/Seventh	Commercial	423.49	412.63	408.66	3.97	97.44	96.50

ANNUAL PROBABLE SUNLIGHT HOURS (APSH)

SUNLIGHT ANALYSIS

Room	Window	Room Use	Existing Winter APSH	Existing Annual APSH	Proposed Winter APSH	Proposed Annual APSH	Winter Loss	Annual Loss	Winter %Loss	Annual %Loss
47-51 EAGLE STREET										
R1/Ground	W1/Ground	Unknown	0	10	0	10	-	0	-	0.00
R2/Ground	W2/Ground	Unknown	0	14	0	12	-	2	-	14.29
R2/Ground	W3/Ground	Unknown	0	10	0	8	-	2	-	20.00
R3/Ground	W4/Ground	Unknown	0	15	0	14	-	1	-	6.67
R4/Ground	W5/Ground	Unknown	0	13	0	10	-	3	-	23.08
R4/Ground	W6/Ground	Unknown	0	9	0	5	-	4	-	44.44
R1/First	W1/First	Unknown	0	0	0	0	-	-	-	-
R2/First	W2/First	Unknown	1	29	1	24	0	5	0.00	17.24
R3/First	W3/First	Bedroom	1	28	1	23	0	5	0.00	17.86
R3/First	W4/First	Bedroom	0	0	0	0	-	-	-	-
R5/First	W5/First	Living room	0	0	0	0	-	-	-	-
R6/First	W6/First	Living room	0	0	0	0	-	-	-	-
R7/First	W7/First	Bedroom	0	0	0	0	-	-	-	-
R7/First	W8/First	Bedroom	0	29	0	25	-	4	-	13.79
R8/First	W9/First	Bedroom	1	30	1	24	0	6	0.00	20.00
R9/First	W10/First	Living room	0	0	0	0	-	-	-	-
R10/First	W11/First	Living room	0	0	0	0	-	-	-	-
R11/First	W12/First	Bedroom	0	20	0	8	-	12	-	60.00
R1/Second	W1/Second	Unknown	0	0	0	0	-	-	-	-
R2/Second	W2/Second	Unknown	1	39	1	29	0	10	0.00	25.64
R3/Second	W3/Second	Bedroom	1	41	1	31	0	10	0.00	24.39
R3/Second	W4/Second	Bedroom	0	0	0	0	-	-	-	-
R4/Second	W5/Second	Living room	0	0	0	0	-	-	-	-
R5/Second	W6/Second	Living room	0	0	0	0	-	-	-	-
R6/Second	W7/Second	Bedroom	0	0	0	0	-	-	-	-
R6/Second	W8/Second	Bedroom	0	39	0	30	-	9	-	23.08
R7/Second	W9/Second	Bedroom	1	39	1	29	0	10	0.00	25.64
R8/Second	W10/Second	Living room	0	0	0	0	-	-	-	-
R9/Second	W11/Second	Living room	0	0	0	0	-	-	-	-
R10/Second	W12/Second	Bedroom	0	25	0	10	-	15	-	60.00
R1/Third	W1/Third	Unknown	1	1	1	1	0	0	0.00	0.00
R2/Third	W2/Third	Unknown	3	47	3	37	0	10	0.00	21.28
R3/Third	W3/Third	Bedroom	3	50	3	36	0	14	0.00	28.00
R3/Third	W4/Third	Bedroom	0	0	0	0	-	-	-	-
R4/Third	W5/Third	Living room	0	1	0	0	-	1	-	100.00
R5/Third	W6/Third	Living room	0	1	0	0	-	1	-	100.00
R6/Third	W7/Third	Bedroom	0	0	0	0	-	-	-	-

SUNLIGHT ANALYSIS

R6/Third	W8/Third	Bedroom	2	47	2	32	0	15	0.00	31.91
R7/Third	W9/Third	Bedroom	4	49	4	34	0	15	0.00	30.61
R8/Third	W10/Third	Living room	1	1	0	0	1	1	100.00	100.00
R9/Third	W11/Third	Living room	1	1	0	0	1	1	100.00	100.00
R10/Third	W12/Third	Bedroom	4	33	1	13	3	20	75.00	60.61
R1/Fourth	W1/Fourth	Unknown	1	2	1	1	0	1	0.00	50.00
R2/Fourth	W2/Fourth	Unknown	5	53	4	41	1	12	20.00	22.64
R3/Fourth	W3/Fourth	Bedroom	6	57	5	41	1	16	16.67	28.07
R3/Fourth	W4/Fourth	Bedroom	1	1	0	0	1	1	100.00	100.00
R4/Fourth	W5/Fourth	Living room	3	4	2	2	1	2	33.33	50.00
R5/Fourth	W6/Fourth	Living room	2	3	2	2	0	1	0.00	33.33
R6/Fourth	W7/Fourth	Bedroom	0	0	0	0	-	-	-	-
R6/Fourth	W8/Fourth	Bedroom	5	56	4	38	1	18	20.00	32.14
R7/Fourth	W9/Fourth	Bedroom	8	57	6	41	2	16	25.00	28.07
R8/Fourth	W10/Fourth	Living room	5	5	1	1	4	4	80.00	80.00
R9/Fourth	W11/Fourth	Living room	3	3	0	0	3	3	100.00	100.00
R10/Fourth	W12/Fourth	Bedroom	5	39	1	17	4	22	80.00	56.41
71 RED LION STREET										
R1/First	W1/First	Unknown	0	7	0	2	-	5	-	71.43
R1/Second	W1/Second	Unknown	0	8	0	3	-	5	-	62.50
R1/Third	W1/Third	Unknown	0	10	0	4	-	6	-	60.00
R1/Fifth	W1/Fifth	Unknown	0	6	0	3	-	3	-	50.00
R1/Sixth	W1/Sixth	Unknown	0	7	0	3	-	4	-	57.14
72-75 RED LION STREET										
R1/Ground	W1/Ground	Unknown	0	4	0	2	-	2	-	50.00
R2/Ground	W2/Ground	Unknown	0	2	0	2	-	0	-	0.00
R1/First	W1/First	Unknown	0	6	0	2	-	4	-	66.67
R2/First	W2/First	Unknown	0	3	0	2	-	1	-	33.33
79-80 HIGH HOLBORN										
R1/Ground	W1/Ground	Unknown	2	12	0	0	2	12	100.00	100.00
R1/Ground	W2/Ground	Unknown	2	2	2	2	0	0	0.00	0.00
R1/Ground	W3/Ground	Unknown	2	22	2	22	0	0	0.00	0.00
R2/Ground	W4/Ground	Unknown	1	29	1	29	0	0	0.00	0.00
R2/Ground	W5/Ground	Unknown	0	23	0	23	-	0	-	0.00
R2/Ground	W6/Ground	Unknown	0	17	0	17	-	0	-	0.00
R2/Ground	W7/Ground	Unknown	0	0	0	0	-	-	-	-
R2/Ground	W8/Ground	Unknown	0	0	0	0	-	-	-	-
R2/Ground	W9/Ground	Unknown	0	0	0	0	-	-	-	-
R2/Ground	W10/Ground	Unknown	1	15	1	15	0	0	0.00	0.00
R2/Ground	W11/Ground	Unknown	2	24	2	24	0	0	0.00	0.00
R2/Ground	W12/Ground	Unknown	2	28	2	28	0	0	0.00	0.00
R1/First	W1/First	Unknown	0	0	0	0	-	-	-	-

SUNLIGHT ANALYSIS

R2/First	W2/First	Unknown	2	25	2	25	0	0	0.00	0.00
R3/First	W3/First	Unknown	2	38	2	38	0	0	0.00	0.00
R3/First	W4/First	Unknown	2	36	2	36	0	0	0.00	0.00
R3/First	W5/First	Unknown	2	39	2	39	0	0	0.00	0.00
R3/First	W6/First	Unknown	0	33	0	33	-	0	-	0.00
R3/First	W7/First	Unknown	1	38	1	38	0	0	0.00	0.00
R1/Second	W1/Second	Unknown	0	0	0	0	-	-	-	-
R2/Second	W2/Second	Unknown	3	49	3	49	0	0	0.00	0.00
R2/Second	W3/Second	Unknown	0	21	0	21	-	0	-	0.00
R2/Second	W4/Second	Unknown	0	30	0	30	-	0	-	0.00
R2/Second	W5/Second	Unknown	1	31	1	31	0	0	0.00	0.00
R2/Second	W6/Second	Unknown	1	23	1	23	0	0	0.00	0.00
R2/Second	W7/Second	Unknown	0	0	0	0	-	-	-	-
R2/Second	W8/Second	Unknown	3	50	3	50	0	0	0.00	0.00
R1/Third	W1/Third	Unknown	0	0	0	0	-	-	-	-
R1/Fourth	W1/Fourth	Unknown	0	0	0	0	-	-	-	-
R1/Fifth	W1/Fifth	Unknown	0	0	0	0	-	-	-	-
HOLBORN PLACE										
R1/Ground	W1/Ground	Commercial	0	0	0	0	-	-	-	-
R2/Ground	W2/Ground	Commercial	0	0	0	0	-	-	-	-
R3/Ground	W3/Ground	Commercial	0	6	0	6	-	0	-	0.00
R3/Ground	W4/Ground	Commercial	0	6	0	6	-	0	-	0.00
R4/Ground	W5/Ground	Commercial	0	7	0	7	-	0	-	0.00
R4/Ground	W6/Ground	Commercial	0	7	0	7	-	0	-	0.00
R5/Ground	W7/Ground	Commercial	0	6	0	6	-	0	-	0.00
R5/Ground	W8/Ground	Commercial	0	6	0	6	-	0	-	0.00
R6/Ground	W9/Ground	Commercial	0	0	0	0	-	-	-	-
R7/Ground	W10/Ground	Commercial	0	9	0	9	-	0	-	0.00
R8/Ground	W11/Ground	Commercial	0	9	0	9	-	0	-	0.00
R8/Ground	W12/Ground	Commercial	0	8	0	8	-	0	-	0.00
R9/Ground	W13/Ground	Commercial	0	9	0	9	-	0	-	0.00
R9/Ground	W14/Ground	Commercial	0	8	0	8	-	0	-	0.00
R10/Ground	W15/Ground	Commercial	0	8	0	8	-	0	-	0.00
R10/Ground	W16/Ground	Commercial	0	2	0	2	-	0	-	0.00
R1/First	W1/First	Commercial	0	0	0	0	-	-	-	-
R1/First	W2/First	Commercial	0	0	0	0	-	-	-	-
R1/First	W3/First	Commercial	0	0	0	0	-	-	-	-
R2/First	W4/First	Commercial	0	0	0	0	-	-	-	-
R2/First	W5/First	Commercial	0	0	0	0	-	-	-	-
R3/First	W6/First	Commercial	0	3	0	3	-	0	-	0.00
R3/First	W7/First	Commercial	0	12	0	12	-	0	-	0.00
R4/First	W8/First	Commercial	0	14	0	14	-	0	-	0.00
R4/First	W9/First	Commercial	0	16	0	16	-	0	-	0.00
R5/First	W10/First	Commercial	0	0	0	0	-	-	-	-
R7/First	W11/First	Commercial	0	0	0	0	-	-	-	-
R8/First	W12/First	Commercial	0	0	0	0	-	-	-	-
R8/First	W13/First	Commercial	0	6	0	6	-	0	-	0.00

SUNLIGHT ANALYSIS

R9/First	W14/First	Commercial	0	8	0	8	-	0	-	0.00
R9/First	W15/First	Commercial	0	8	0	8	-	0	-	0.00
R10/First	W16/First	Commercial	0	7	0	7	-	0	-	0.00
R10/First	W17/First	Commercial	0	7	0	7	-	0	-	0.00
R11/First	W18/First	Commercial	0	6	0	6	-	0	-	0.00
R11/First	W19/First	Commercial	0	6	0	6	-	0	-	0.00
R12/First	W20/First	Commercial	0	0	0	0	-	-	-	-
R13/First	W21/First	Commercial	0	9	0	9	-	0	-	0.00
R14/First	W22/First	Commercial	0	9	0	9	-	0	-	0.00
R14/First	W23/First	Commercial	0	8	0	8	-	0	-	0.00
R15/First	W24/First	Commercial	0	9	0	9	-	0	-	0.00
R15/First	W25/First	Commercial	0	8	0	8	-	0	-	0.00
R16/First	W26/First	Commercial	0	8	0	8	-	0	-	0.00
R16/First	W27/First	Commercial	0	2	0	2	-	0	-	0.00
R17/First	W28/First	Commercial	0	10	0	10	-	0	-	0.00
R1/Second	W1/Second	Commercial	0	0	0	0	-	-	-	-
R1/Second	W2/Second	Commercial	0	0	0	0	-	-	-	-
R1/Second	W3/Second	Commercial	0	0	0	0	-	-	-	-
R2/Second	W4/Second	Commercial	0	0	0	0	-	-	-	-
R2/Second	W5/Second	Commercial	0	5	0	5	-	0	-	0.00
R3/Second	W6/Second	Commercial	0	11	0	11	-	0	-	0.00
R3/Second	W7/Second	Commercial	0	18	0	18	-	0	-	0.00
R4/Second	W8/Second	Commercial	2	23	2	23	0	0	0.00	0.00
R4/Second	W9/Second	Commercial	2	18	2	18	0	0	0.00	0.00
R5/Second	W10/Second	Commercial	0	0	0	0	-	-	-	-
R6/Second	W11/Second	Commercial	0	0	0	0	-	-	-	-
R7/Second	W12/Second	Commercial	0	1	0	1	-	0	-	0.00
R7/Second	W13/Second	Commercial	0	6	0	6	-	0	-	0.00
R8/Second	W14/Second	Commercial	0	8	0	8	-	0	-	0.00
R8/Second	W15/Second	Commercial	0	7	0	7	-	0	-	0.00
R9/Second	W16/Second	Commercial	0	7	0	7	-	0	-	0.00
R9/Second	W17/Second	Commercial	0	6	0	6	-	0	-	0.00
R10/Second	W18/Second	Commercial	0	6	0	6	-	0	-	0.00
R10/Second	W19/Second	Commercial	0	6	0	6	-	0	-	0.00
R11/Second	W20/Second	Commercial	0	0	0	0	-	-	-	-
R12/Second	W21/Second	Commercial	0	8	0	8	-	0	-	0.00
R12/Second	W22/Second	Commercial	0	8	0	8	-	0	-	0.00
R13/Second	W23/Second	Commercial	0	9	0	9	-	0	-	0.00
R14/Second	W24/Second	Commercial	0	8	0	8	-	0	-	0.00
R14/Second	W25/Second	Commercial	0	8	0	8	-	0	-	0.00
R15/Second	W26/Second	Commercial	0	9	0	9	-	0	-	0.00
R15/Second	W27/Second	Commercial	0	8	0	8	-	0	-	0.00
R16/Second	W28/Second	Commercial	0	8	0	8	-	0	-	0.00
R16/Second	W29/Second	Commercial	0	1	0	1	-	0	-	0.00
R17/Second	W30/Second	Commercial	0	10	0	10	-	0	-	0.00
R1/Third	W1/Third	Commercial	0	0	0	0	-	-	-	-

SUNLIGHT ANALYSIS

R1/Third	W2/Third	Commercial	0	0	0	0	-	-	-	-
R1/Third	W3/Third	Commercial	0	0	0	0	-	-	-	-
R2/Third	W4/Third	Commercial	0	2	0	2	-	0	-	0.00
R2/Third	W5/Third	Commercial	0	10	0	10	-	0	-	0.00
R3/Third	W6/Third	Commercial	1	16	1	16	0	0	0.00	0.00
R3/Third	W7/Third	Commercial	2	21	2	21	0	0	0.00	0.00
R4/Third	W8/Third	Commercial	2	24	2	24	0	0	0.00	0.00
R4/Third	W9/Third	Commercial	2	19	2	19	0	0	0.00	0.00
R5/Third	W10/Third	Commercial	0	0	0	0	-	-	-	-
R6/Third	W11/Third	Commercial	0	0	0	0	-	-	-	-
R7/Third	W12/Third	Commercial	0	4	0	4	-	0	-	0.00
R7/Third	W13/Third	Commercial	0	7	0	7	-	0	-	0.00
R8/Third	W14/Third	Commercial	0	9	0	9	-	0	-	0.00
R8/Third	W15/Third	Commercial	0	8	0	8	-	0	-	0.00
R9/Third	W16/Third	Commercial	0	8	0	8	-	0	-	0.00
R9/Third	W17/Third	Commercial	0	7	0	7	-	0	-	0.00
R10/Third	W18/Third	Commercial	0	7	0	7	-	0	-	0.00
R10/Third	W19/Third	Commercial	0	7	0	7	-	0	-	0.00
R11/Third	W20/Third	Commercial	0	0	0	0	-	-	-	-
R12/Third	W21/Third	Commercial	0	9	0	9	-	0	-	0.00
R12/Third	W22/Third	Commercial	0	9	0	9	-	0	-	0.00
R13/Third	W23/Third	Commercial	0	9	0	9	-	0	-	0.00
R14/Third	W24/Third	Commercial	0	8	0	8	-	0	-	0.00
R14/Third	W25/Third	Commercial	0	8	0	8	-	0	-	0.00
R15/Third	W26/Third	Commercial	0	9	0	9	-	0	-	0.00
R15/Third	W27/Third	Commercial	0	8	0	8	-	0	-	0.00
R16/Third	W28/Third	Commercial	0	9	0	9	-	0	-	0.00
R16/Third	W29/Third	Commercial	0	2	0	1	-	1	-	50.00
R17/Third	W30/Third	Commercial	0	10	0	10	-	0	-	0.00
R1/Fourth	W1/Fourth	Commercial	0	0	0	0	-	-	-	-
R1/Fourth	W2/Fourth	Commercial	0	0	0	0	-	-	-	-
R1/Fourth	W3/Fourth	Commercial	0	0	0	0	-	-	-	-
R2/Fourth	W4/Fourth	Commercial	0	4	0	4	-	0	-	0.00
R2/Fourth	W5/Fourth	Commercial	2	18	2	18	0	0	0.00	0.00
R3/Fourth	W6/Fourth	Commercial	3	27	3	27	0	0	0.00	0.00
R3/Fourth	W7/Fourth	Commercial	3	28	3	28	0	0	0.00	0.00
R4/Fourth	W8/Fourth	Commercial	5	29	5	29	0	0	0.00	0.00
R4/Fourth	W9/Fourth	Commercial	6	23	6	23	0	0	0.00	0.00
R5/Fourth	W10/Fourth	Commercial	0	0	0	0	-	-	-	-
R6/Fourth	W11/Fourth	Commercial	0	3	0	3	-	0	-	0.00
R7/Fourth	W12/Fourth	Commercial	0	4	0	4	-	0	-	0.00
R7/Fourth	W13/Fourth	Commercial	0	8	0	8	-	0	-	0.00
R8/Fourth	W14/Fourth	Commercial	0	9	0	9	-	0	-	0.00
R8/Fourth	W15/Fourth	Commercial	0	9	0	9	-	0	-	0.00
R9/Fourth	W16/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R9/Fourth	W17/Fourth	Commercial	0	9	0	9	-	0	-	0.00

SUNLIGHT ANALYSIS

R10/Fourth	W18/Fourth	Commercial	0	8	0	8	-	0	-	0.00
R10/Fourth	W19/Fourth	Commercial	0	8	0	8	-	0	-	0.00
R11/Fourth	W20/Fourth	Commercial	0	1	0	1	-	0	-	0.00
R12/Fourth	W21/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R12/Fourth	W22/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R12/Fourth	W23/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R12/Fourth	W24/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R13/Fourth	W25/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R14/Fourth	W26/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R14/Fourth	W27/Fourth	Commercial	0	11	0	11	-	0	-	0.00
R15/Fourth	W28/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R15/Fourth	W29/Fourth	Commercial	0	9	0	9	-	0	-	0.00
R16/Fourth	W30/Fourth	Commercial	0	9	0	9	-	0	-	0.00
R16/Fourth	W31/Fourth	Commercial	0	2	0	2	-	0	-	0.00
R17/Fourth	W32/Fourth	Commercial	0	10	0	10	-	0	-	0.00
R1/Fifth	W1/Fifth	Commercial	0	0	0	0	-	-	-	-
R1/Fifth	W2/Fifth	Commercial	0	0	0	0	-	-	-	-
R1/Fifth	W3/Fifth	Commercial	0	0	0	0	-	-	-	-
R2/Fifth	W4/Fifth	Commercial	0	6	0	6	-	0	-	0.00
R2/Fifth	W5/Fifth	Commercial	2	23	2	23	0	0	0.00	0.00
R3/Fifth	W6/Fifth	Commercial	3	29	3	29	0	0	0.00	0.00
R3/Fifth	W7/Fifth	Commercial	5	32	5	32	0	0	0.00	0.00
R4/Fifth	W8/Fifth	Commercial	7	31	7	31	0	0	0.00	0.00
R4/Fifth	W9/Fifth	Commercial	8	30	8	30	0	0	0.00	0.00
R5/Fifth	W10/Fifth	Commercial	0	0	0	0	-	-	-	-
R6/Fifth	W11/Fifth	Commercial	3	18	3	18	0	0	0.00	0.00
R6/Fifth	W12/Fifth	Commercial	5	19	5	19	0	0	0.00	0.00
R6/Fifth	W13/Fifth	Commercial	6	20	6	20	0	0	0.00	0.00
R7/Fifth	W14/Fifth	Commercial	3	20	3	20	0	0	0.00	0.00
R7/Fifth	W15/Fifth	Commercial	0	7	0	7	-	0	-	0.00
R8/Fifth	W16/Fifth	Commercial	0	9	0	9	-	0	-	0.00
R8/Fifth	W17/Fifth	Commercial	0	9	0	9	-	0	-	0.00
R8/Fifth	W18/Fifth	Commercial	0	9	0	9	-	0	-	0.00
R8/Fifth	W19/Fifth	Commercial	0	9	0	9	-	0	-	0.00
R8/Fifth	W20/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R9/Fifth	W21/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R9/Fifth	W22/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R9/Fifth	W23/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R9/Fifth	W24/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R9/Fifth	W25/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R9/Fifth	W26/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R10/Fifth	W27/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R10/Fifth	W28/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R10/Fifth	W29/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R10/Fifth	W30/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R10/Fifth	W31/Fifth	Commercial	0	9	0	9	-	0	-	0.00
R10/Fifth	W32/Fifth	Commercial	0	8	0	8	-	0	-	0.00
R11/Fifth	W33/Fifth	Commercial	0	3	0	3	-	0	-	0.00
R11/Fifth	W34/Fifth	Commercial	0	2	0	2	-	0	-	0.00
R11/Fifth	W35/Fifth	Commercial	0	1	0	1	-	0	-	0.00
R12/Fifth	W36/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R13/Fifth	W37/Fifth	Commercial	0	10	0	10	-	0	-	0.00

SUNLIGHT ANALYSIS

R13/Fifth	W38/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R13/Fifth	W39/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R14/Fifth	W40/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R14/Fifth	W41/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R14/Fifth	W42/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R14/Fifth	W43/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R14/Fifth	W44/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R14/Fifth	W45/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R15/Fifth	W46/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R15/Fifth	W47/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R15/Fifth	W48/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R15/Fifth	W49/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R15/Fifth	W50/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R15/Fifth	W51/Fifth	Commercial	0	11	0	11	-	0	-	0.00
R16/Fifth	W52/Fifth	Commercial	0	10	0	10	-	0	-	0.00
R16/Fifth	W53/Fifth	Commercial	0	9	0	9	-	0	-	0.00
R16/Fifth	W54/Fifth	Commercial	0	8	0	8	-	0	-	0.00
R16/Fifth	W55/Fifth	Commercial	0	4	0	4	-	0	-	0.00
R16/Fifth	W56/Fifth	Commercial	0	2	0	2	-	0	-	0.00
R16/Fifth	W57/Fifth	Commercial	0	1	0	1	-	0	-	0.00
R1/Sixth	W1/Sixth	Commercial	0	3	0	3	-	0	-	0.00
R2/Sixth	W2/Sixth	Commercial	0	18	0	18	-	0	-	0.00
R3/Sixth	W3/Sixth	Commercial	5	33	5	33	0	0	0.00	0.00
R4/Sixth	W4/Sixth	Commercial	8	36	8	36	0	0	0.00	0.00
R5/Sixth	W5/Sixth	Commercial	9	38	9	38	0	0	0.00	0.00
R6/Sixth	W6/Sixth	Commercial	0	9	0	9	-	0	-	0.00
R6/Sixth	W7/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R6/Sixth	W8/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R7/Sixth	W9/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R7/Sixth	W10/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R7/Sixth	W11/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R7/Sixth	W12/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R8/Sixth	W13/Sixth	Commercial	0	10	0	10	-	0	-	0.00
R8/Sixth	W14/Sixth	Commercial	0	10	0	10	-	0	-	0.00
R8/Sixth	W15/Sixth	Commercial	0	10	0	10	-	0	-	0.00
R8/Sixth	W16/Sixth	Commercial	0	9	0	9	-	0	-	0.00
R9/Sixth	W17/Sixth	Commercial	0	6	0	6	-	0	-	0.00
R10/Sixth	W18/Sixth	Commercial	0	6	0	6	-	0	-	0.00
R11/Sixth	W19/Sixth	Commercial	0	10	0	10	-	0	-	0.00
R12/Sixth	W20/Sixth	Commercial	0	10	0	10	-	0	-	0.00
R12/Sixth	W21/Sixth	Commercial	0	10	0	10	-	0	-	0.00
R12/Sixth	W22/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R12/Sixth	W23/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R13/Sixth	W24/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R13/Sixth	W25/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R13/Sixth	W26/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R13/Sixth	W27/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R14/Sixth	W28/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R14/Sixth	W29/Sixth	Commercial	0	11	0	11	-	0	-	0.00
R14/Sixth	W30/Sixth	Commercial	0	5	0	5	-	0	-	0.00
R14/Sixth	W31/Sixth	Commercial	0	2	0	2	-	0	-	0.00
R1/Seventh	W1/Seventh	Commercial	9	39	9	39	0	0	0.00	0.00
R2/Seventh	W2/Seventh	Commercial	0	9	0	9	-	0	-	0.00

SUNLIGHT ANALYSIS

R2/Seventh	W3/Seventh	Commercial	0	9	0	9	-	0	-	0.00
R3/Seventh	W4/Seventh	Commercial	0	9	0	9	-	0	-	0.00
R3/Seventh	W5/Seventh	Commercial	0	9	0	9	-	0	-	0.00
R4/Seventh	W6/Seventh	Commercial	0	6	0	6	-	0	-	0.00
R4/Seventh	W7/Seventh	Commercial	0	2	0	2	-	0	-	0.00
R5/Seventh	W8/Seventh	Commercial	0	10	0	10	-	0	-	0.00
R5/Seventh	W9/Seventh	Commercial	0	10	0	10	-	0	-	0.00
R6/Seventh	W10/Seventh	Commercial	0	10	0	10	-	0	-	0.00
R6/Seventh	W11/Seventh	Commercial	0	11	0	11	-	0	-	0.00
R7/Seventh	W12/Seventh	Commercial	0	11	0	11	-	0	-	0.00
R7/Seventh	W13/Seventh	Commercial	0	11	0	11	-	0	-	0.00

Appendix 4

Window Maps

Sources of Information

Vertex
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Astudio Ltd.
TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
47-51 EAGLE STREET

Scale: NTS
Date: 15.07.15
Drawn: FM
Checked: LS
Drawing No.: 7988-16
Rel No.: 02
Revision:

gia
The Whitehouse
Belvedere Road
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f 020 7202 1401
mail@gia.uk.com
www.gia.uk.com

47-51 EAGLE STREET

Sources of Information

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Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
47-51 EAGLE STREET

Scale	Date
NTS	15.07.15
Drawn	Checked
FM	LS

Drawing No.	Rel No.	Revision
7988-17	02	

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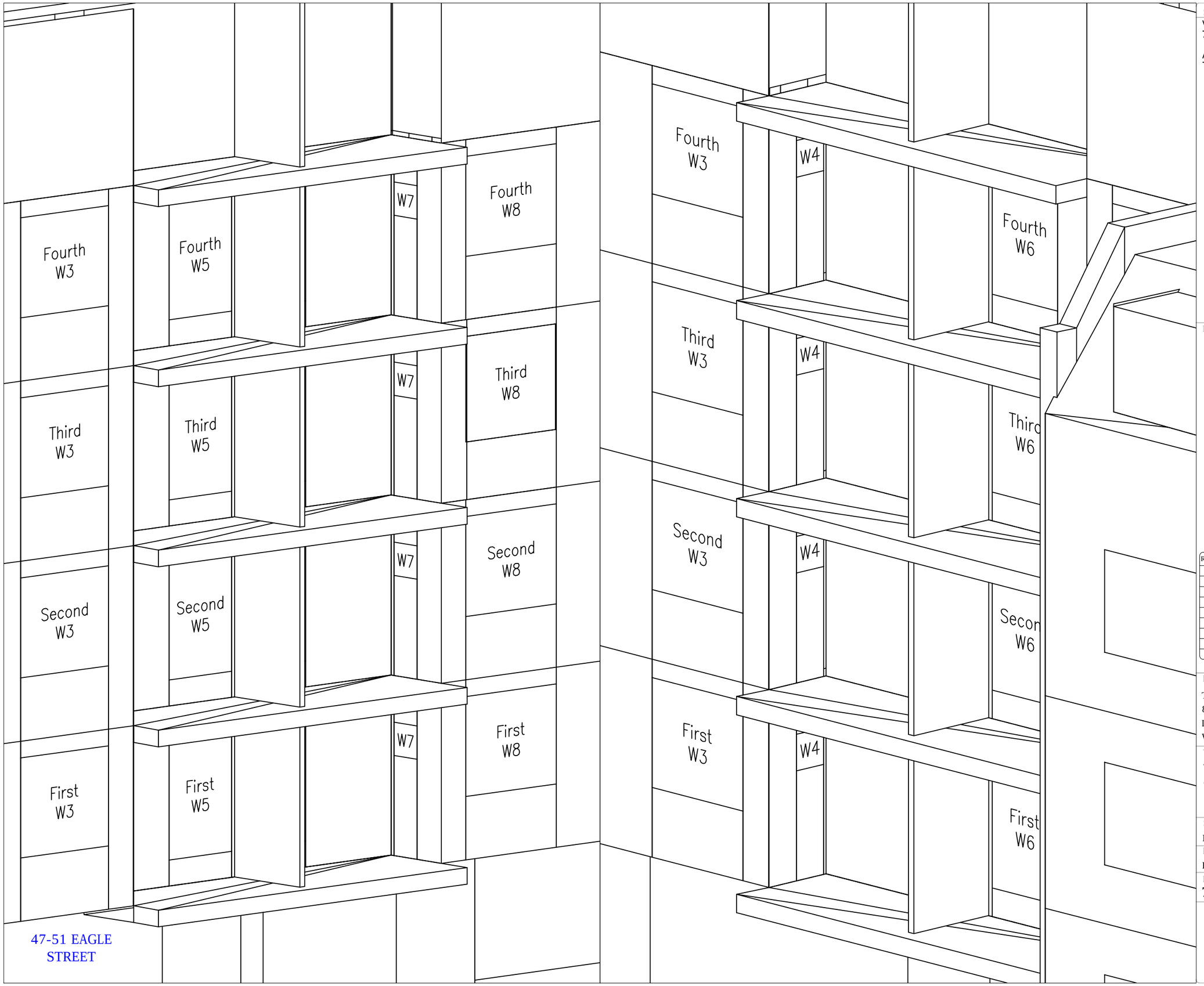

Sources of Information

Vertex
7988–m00.dwg

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TEMPLAR HOUSE.DWG

Notes

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Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
47-51 EAGLE STREET

Scale
NTS

Date
15.07.15

Drawn
FM

Checked
LS

Drawing No.
7988-18

Rel No.
02

Revision

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Sources of Information

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Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
71 RED LION STREET

Scale	Date
NTS	15.07.15
Drawn	Checked
FM	LS

Drawing No.	Rel No.	Revision
7988-19	02	

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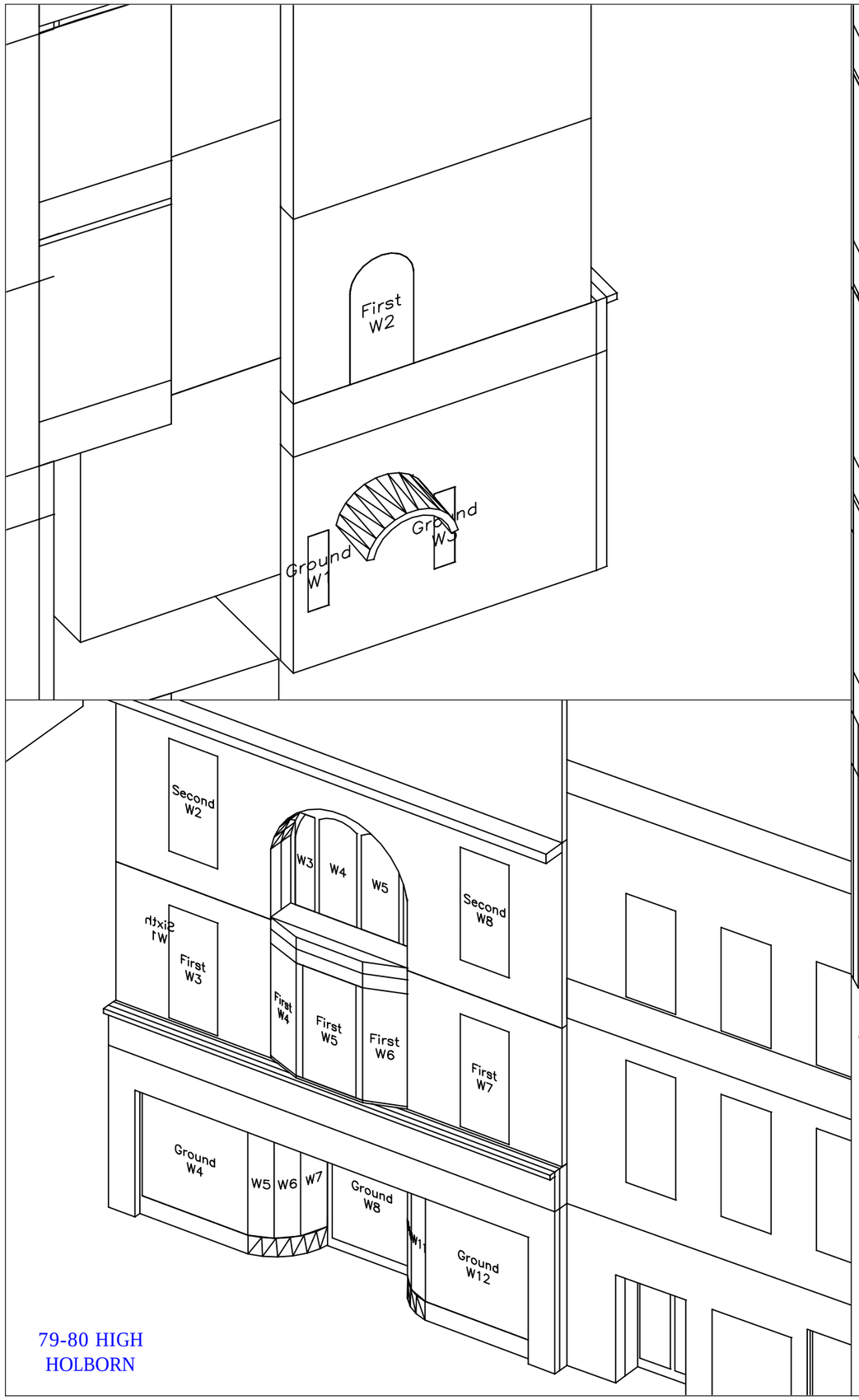

79-80 HIGH
HOLBORN

Sources of Information

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Notes

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Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
79-80 HIGH HOLBORN

Scale	Date
NTS	15.07.15
Drawn	Checked
FM	LS

Drawing No.	Rel No.	Revision
7988-20	02	

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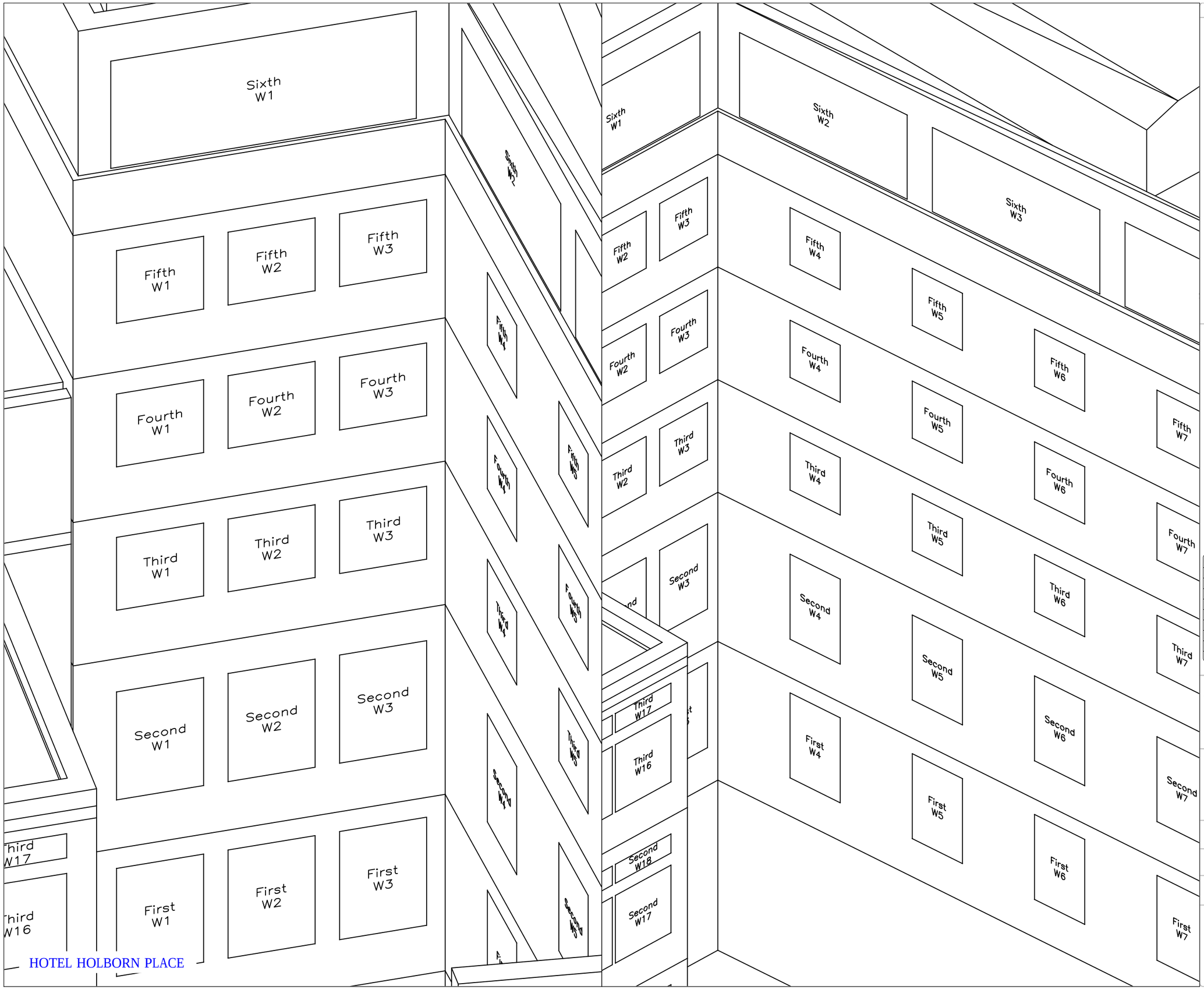

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Project

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81-87 HIGH HOLBORN
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WC1V 6NU

Title

WINDOW MAPS
HOTEL HOLBORN PLACE

Scale: NTS
Date: 15.07.15
Drawn: FM
Checked: LS
Drawing No.: 7988-21
Rel No.: 02
Revision:

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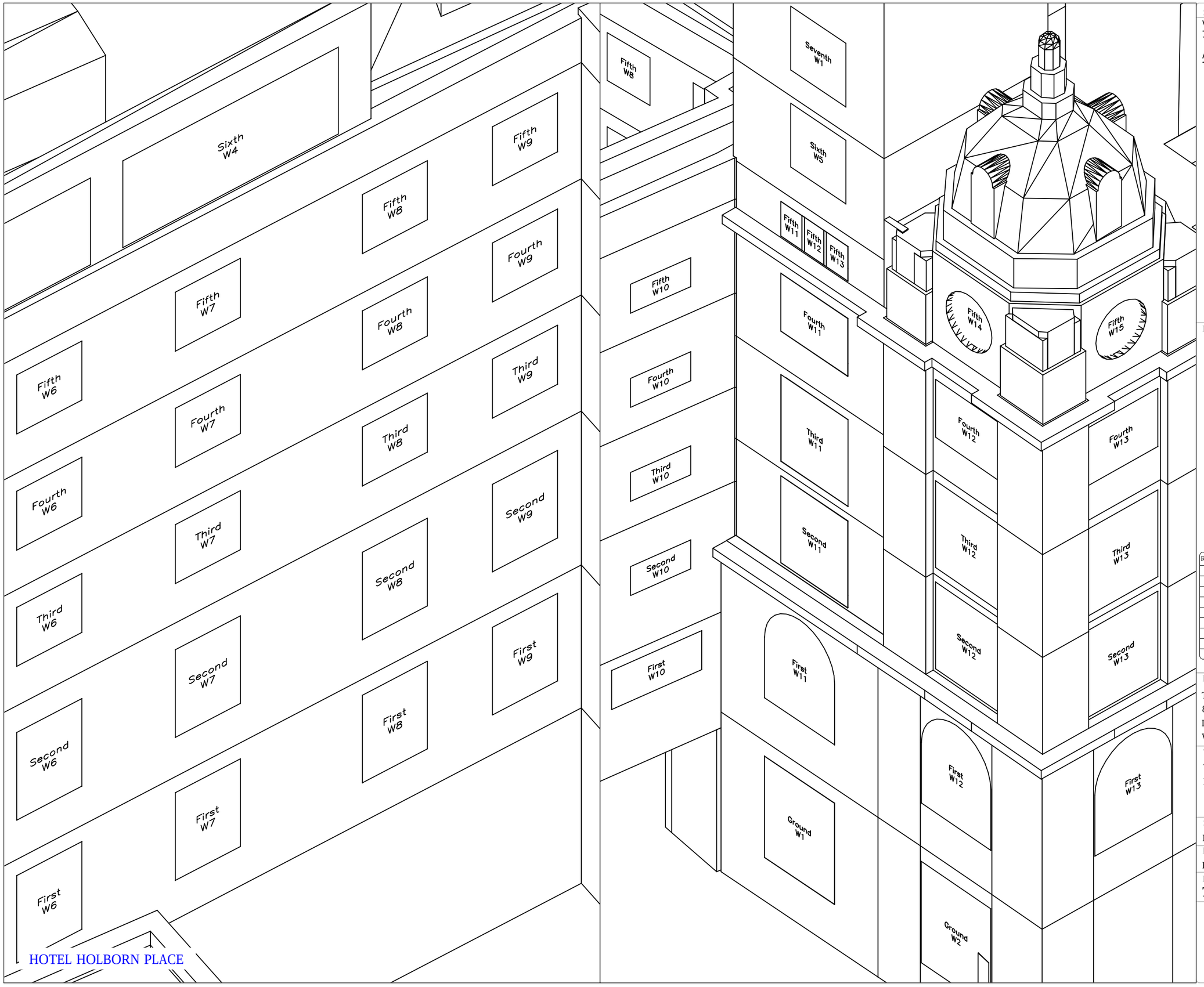

Sources of Information

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Notes

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Rev	Date	Description	Initials

Project

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81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
HOTEL HOLBORN PLACE

Scale: NTS
Date: 15.07.15
Drawn: FM
Checked: LS
Drawing No.: 7988-22
Rel No.: 02
Revision:

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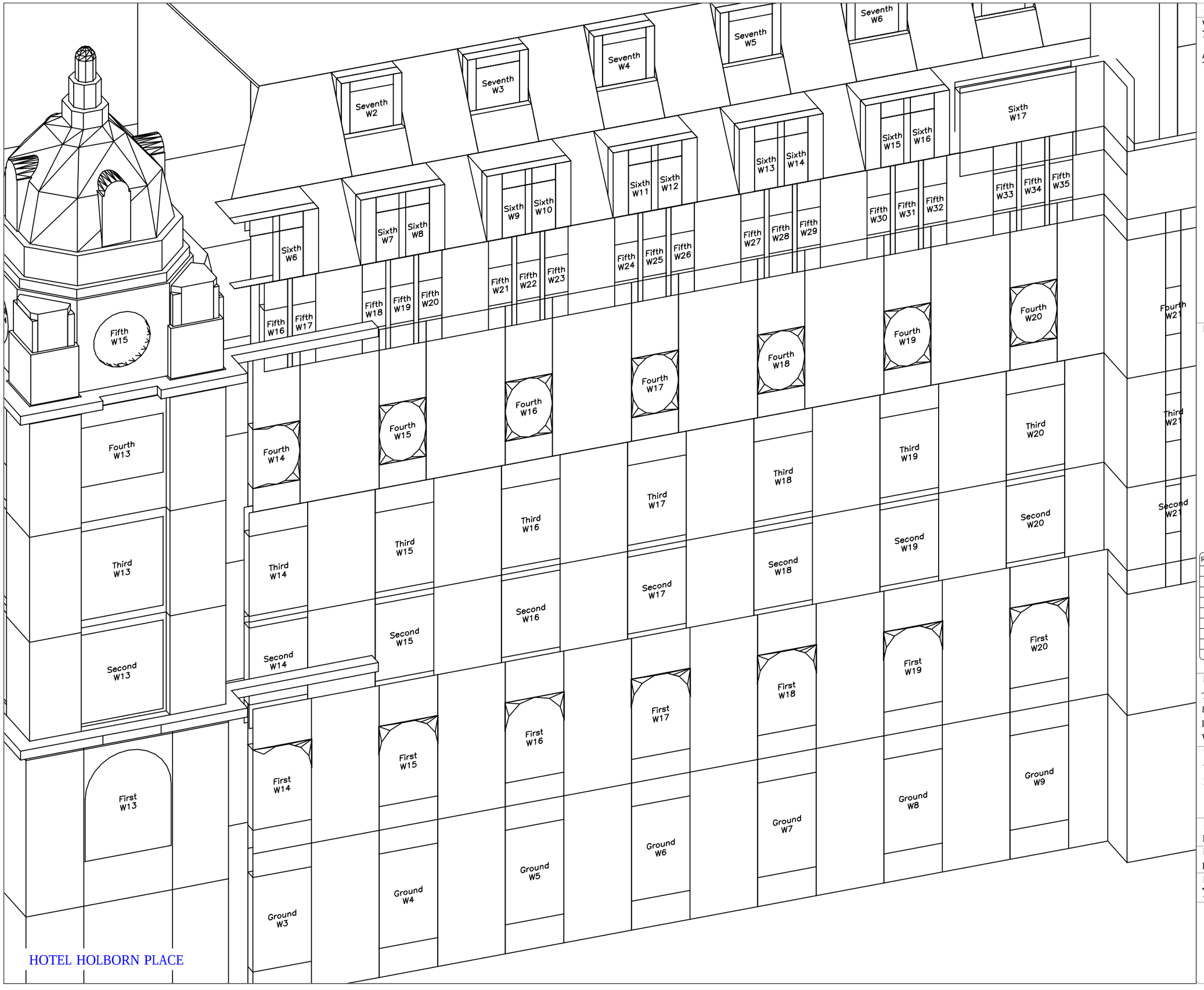

HOTEL HOLBORN PLACE

Sources of Information

Vertex
7988–m00.dwg

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Notes

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Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
HOTEL HOLBORN PLACE

Scale	Date
NTS	15.07.15
Drawn	Checked
FM	LS

Drawing No.	Rel No.	Revision
7988-23	02	

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HOTEL HOLBORN PLACE

Sources of Information

Vertex
7988–m00.dwg

Astudio Ltd.
TEMPLAR HOUSE.DWG

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

Rev	Date	Description	Initials

Project

TEMPLAR HOUSE
81-87 HIGH HOLBORN
LONDON
WC1V 6NU

Title

WINDOW MAPS
HOTEL HOLBORN PLACE

Scale	Date
NTS	15.07.15
Drawn	Checked
FM	LS

Drawing No.	Rel No.	Revision
7988-24	02	

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Scale	Date
NTS	15.07.15
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Drawing No.	Rel No.	Revision
7988-25	02	

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