SURVEY BASED ANALYSIS

DAYLIGHT AND SUNLIGHT REPORT

HAVERSTOCK HILL

Prepared by: GIA

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Date: 19 February 2015

CONTENTS PAGE

CLIENT: Carmody Groarke

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5865-bl-15-0213(DaySun Matters)
Principles of Daylight and Sunlight
Existing: 5865/001 & 003 (Rel 01)
Proposed: 5865/008, 013 & 014 (Rel 02)
Daylight and Sunlight Tables of Results: VSC, ADF, NSL and APSH

AUTHOR FOR AND BEHALF OF GIA: Becky Leaman

AUTHORISATION FOR GIA : .....

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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 by Carmody Groarke Architects. 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.

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

F!ND
IR08 – Digital OS Extract

PLOWMAN CRAVEN
IR01- Survey

CARMODY GROARKE
IR04 08.01.15 3D MODEL

4.0 ASSUMPTIONS

1. We have used a base photogrammetric model, supplemented with a full photographic site survey.

   Where neighbouring elevations are not visible from a site inspection (but where it is likely that apertures may be present) we have inserted 'test' windows or estimated the position of apertures. The actual position may differ if closer access becomes possible and therefore technical analysis and risk may differ from that confirmed herein.

   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. Unless the building form dictates otherwise, we assume a standard 4.2m deep room (14ft) for residential properties and the 6m (20ft) deep from for commercial properties.

   Where it has been possible to source accurate floor plans from public records, the 3D context model has been updated accordingly. These properties are identified in the main body of the report.

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, and the uses are identified in the report below.

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 THE SITE

The site is currently occupied by a 2 storey building located on the corner of Haverstock Road and Prince of Wales Road. Our understanding of this existing building and the surrounding context is depicted on GIA drawings 7016/01 and 03 contained within Appendix 2.

6.0 THE PROPOSAL

The proposals are for the demolition of 62a Haverstock Road (the existing building) and construction of 3 apartments. The proposed development will be a single storey raising to 3 storeys at its highest point.

Our analysis is based on the proposed scheme by Carmody Groarke and received on 8th January 2015 and is depicted in GIA drawings 5865/08, 09 and 10 Appendix 2.

7.0 THE SURROUNDING PROPERTIES

A technical analysis has been undertaken upon the neighbouring residential properties to understand the quality of daylight and sunlight, both before and after the scheme is implemented, by reference to the criteria in the BRE.

- 62 Haverstock Hill
- 60 Haverstock Hill
- 200 Prince of Wales Road

62 HAVERSTOCK HILL

This residential property is located to the east of the Proposed Development with windows directly facing the rear of the Proposed Development. GIA are aware of the room configuration for most of this property and room uses are stated within the results in Appendix 3 of this report. 13 windows serving 12 rooms were assessed. Following our technical analysis, it was found that 4 windows will fall below the VSC BRE guidance, while the remaining 9 windows will meet the BRE guidelines.

Of the 4 windows that experience alterations beyond BRE Guidelines and experience reductions between 32-53% VSC. These window are all located at the rear of the property.

One window (W3/100) serves a ground floor living room, which has a low existing value 9.5% VSC and as such, any reduction throws up a disproportionate percentage reduction. One window (W6/102) serves a bedroom and therefore has a lower requirement for daylight than a kitchen for instance.

A further window (W3/103) serves a living room on the third floor. This window serves a room with multiple windows and as such will retain good levels of daylight.

There are 11 rooms of the 12 assessed that achieve BRE compliance in terms of NSL. The 1 remaining room (ground floor living room) experiences a reduction in NSL of 68.6% which is beyond the 20% recommended by the BRE guidelines.

In overall terms, there is a high level of compliance within this property. However, in terms of the ground floor living room the impact is considered moderate significance.

Of the 8 rooms assessed for sunlight (APSH), all will meet the BRE guidelines with none experiencing a reduction over 20% in either winter or annual APSH and as such full APSH compliance is demonstrated.

60 HAVERSTOCK HILL

This residential property is located to the east of the Proposed Development. 9 windows serving 9 rooms were assessed. Following our technical analysis all windows met the BRE guidelines for VSC with the exception of 1 ground floor window (W1/200). This window experiences a 21% reduction and as such only just exceeds the BRE guidelines. Furthermore, in absolute terms the loss is relatively small 3.21% VSC.

Of the 9 rooms assessed for NSL, all will meet the BRE guidelines with the exception of the ground floor room (R1/200). This room will experience a 57% reduction in NSL.

As such, whilst there will be a transgression beyond the BRE to the ground floor room the overall compliance is high and as such the impact is considered acceptable.

None of the windows within this property face within 90 degrees of due south and as such are not relevant for a sunlight (APSH) assessment.

200 PRINCE OF WALES ROAD

This residential property is at the rear of the Proposed Development site. 3 windows serving 2 rooms were assessed.

All rooms within this property meet the VSC and NSL form of assessment and are therefore BRE compliant.

None of the relevant windows in this property face within 90 degrees of due south and as such are not relevant for a sunlight analysis.

8.0 CONCLUSIONS

In total three properties neighbouring the proposed development were assessed to determine the retained levels of VSC, NSL and APSH that would be retained should the Proposed Scheme be implemented.

There is full BRE compliance for 200 Prince of Wales Road and a very high level of compliance for 60 Haverstock Road.

In terms of 62 Haverstock Hill this property will experience VSC transgressions to 4 windows. However, the NSL results show a very high level of compliance and some windows see an improvement in VSC this is shown by a negative value in the result tables in Appendix 3.
In overall terms, although there are some transgressions beyond the BRE guidelines these are in isolated instances. The overall compliance rate is high, as such considered acceptable, and not out of character for an urban environment.

APPENDIX 1

PRINCIPLES OF DAYLIGHT AND 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".

PRINCIPLES OF DAYLIGHT AND SUNLIGHT

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.

PRINCIPLES OF DAYLIGHT AND SUNLIGHT

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 90° 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).

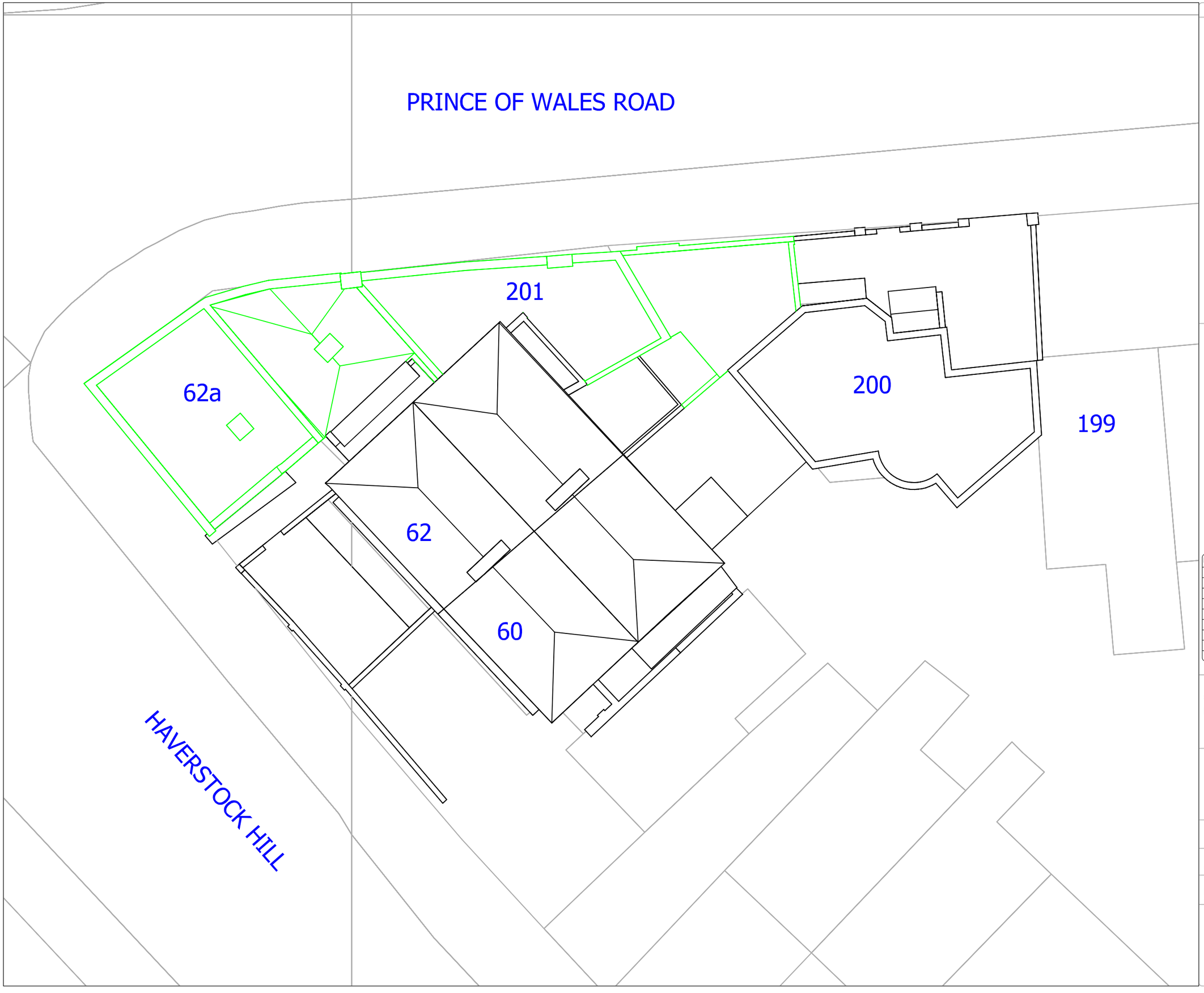
This 25 degrees line obstructs 13% of the totally unobstructed sky available, leaving a resultant figure of 27% which is deemed to give adequate daylighting. This figure of 27% is the recommended criteria referred to earlier in this report. It will be readily appreciated that in a City Centre, this kind 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 AND PROPOSED DRAWINGS
WINDOW MAPS



Sources of Information

PLOWMAN CRAVEN
IR01-5865 - SITE SURVEY

F!ND
IR02-5865 - ORDNANCE SITE PLAN

GIA
VARIOUS SITE PHOTOGRAPHS

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

N

Indicative Only

ALL HEIGHTS GIVEN IN mm AOD

Rev	Date	Description	Initials
A	AUG'11	Initial Issue	GF

Project

62a HAVERSTOCK HILL
LONDON

Title

SITE PLAN
EXISTING

Scale: 1:150@A3
Date: AUG '11
Drawn: GF
Checked:
Drawing No.: 5865-01
Rel No.: 01
Revision: A

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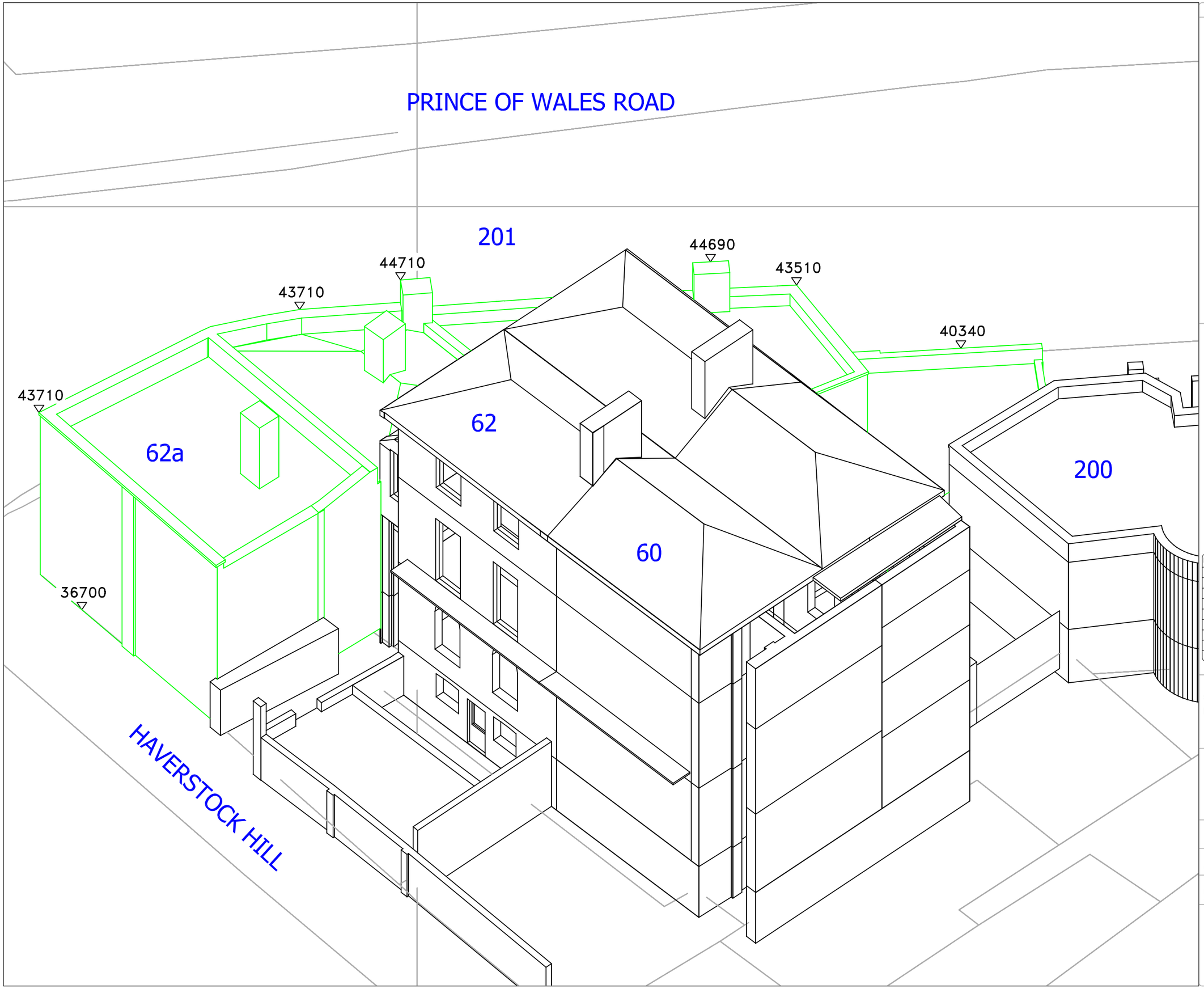

Sources of Information

PLOWMAN CRAVEN
IR01-5865 - SITE SURVEY

F!ND
IR02-5865 - ORDNANCE SITE PLAN

GIA
VARIOUS SITE PHOTOGRAPHS

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS GIVEN IN mm AOD

Rev	Date	Description	Initials
A	AUG'11	Initial Issue	GF

Project

62a HAVERSTOCK HILL
LONDON

Title

3D VIEW
EXISTING SITE

Scale	Date
NTS	AUG '11
Drawn	Checked
GF	

Drawing No.	Rel No.	Revision
5865-03	01	A

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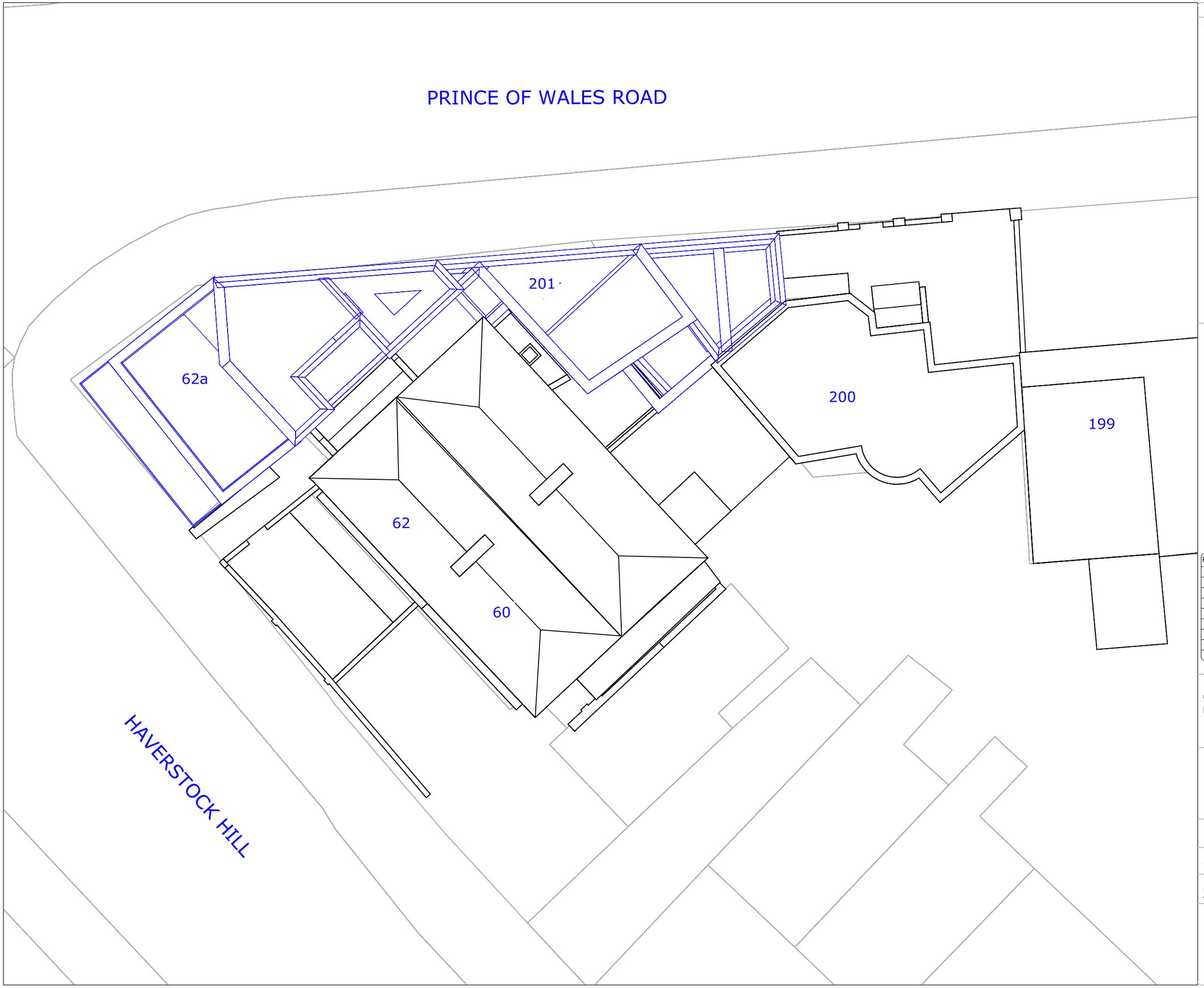
PROPOSED



Sources of Information

PLOWMAN CRAVEN
IR1-5865 SITE SURVEY

F!ND
IR2-5865 OS MAP

GIA
SITE PHOTOGRAPHS

CARMODY GROARKE
3D MODEL
IR4-5865 08.01.2015

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

N

Indicative Only

PROPOSED SCHEME SHOWN IN BLUE

Rev	Date	Description	Initials
A		Initial Issue	

Project

62a HAVERSTOCK HILL
LONDON

Title

PLAN VIEW
PROPOSED SCHEME

Scale: 1:150@A3
Date: 27.01.15
Drawn: IM
Checked:
Drawing No.: 5865-08
Rel No.: 02
Revision: A

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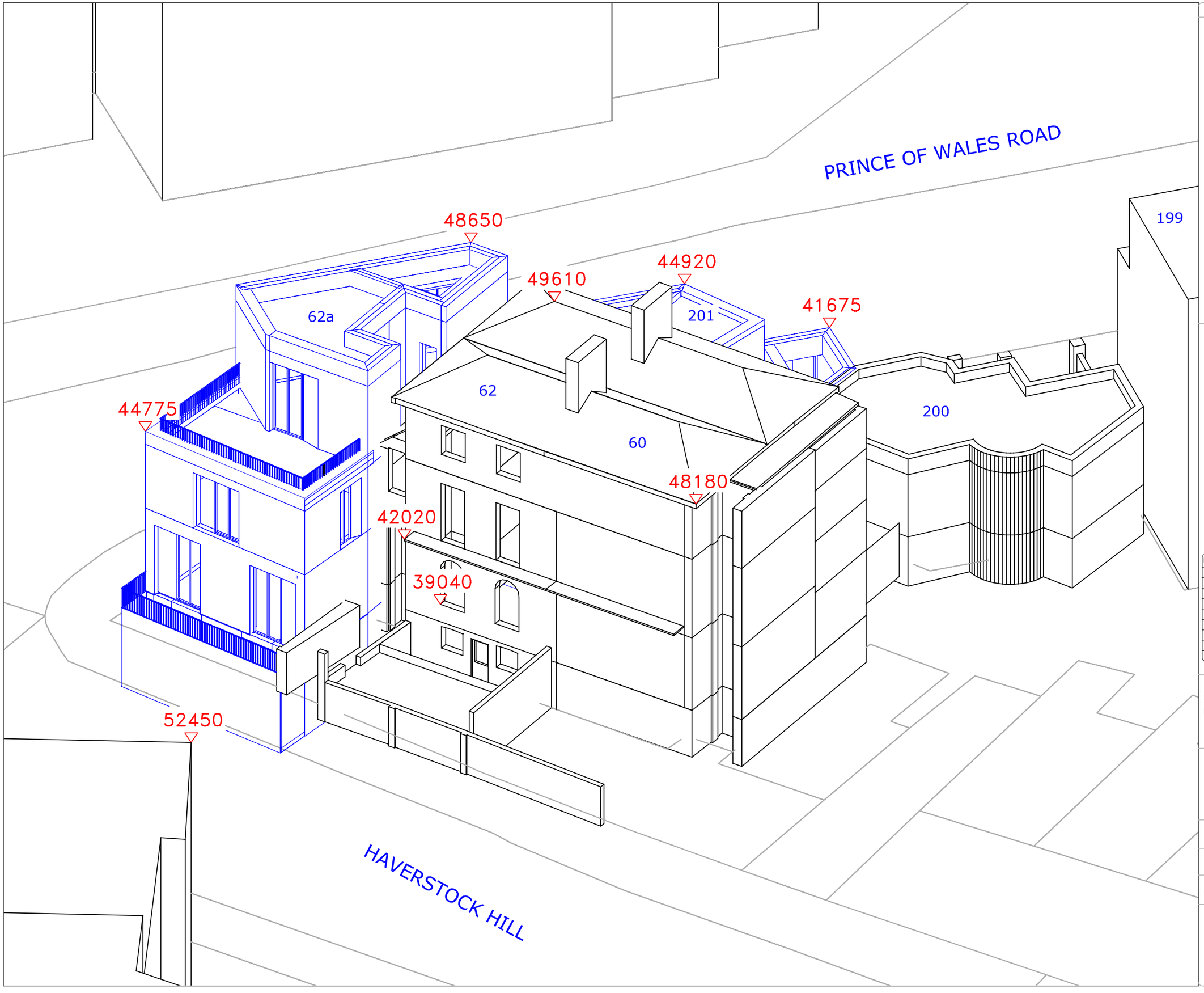

Sources of Information

PLOWMAN CRAVEN
IR1-5865 SITE SURVEY

F!ND
IR2-5865 OS MAP

GIA
SITE PHOTOGRAPHS

CARMODY GROARKE
3D MODEL
IR4-5865 08.01.2015

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS GIVEN IN mm AOD

PROPOSED SCHEME SHOWN IN BLUE

Rev	Date	Description	Initials
A		Initial Issue	

Project

62a HAVERSTOCK HILL
LONDON

Title

3D VIEW
PROPOSED SCHEME

Scale: NTS
Date: 03.02.15
Drawn: IM
Checked:
Drawing No.: 5865-09
Rel No.: 02
Revision: A

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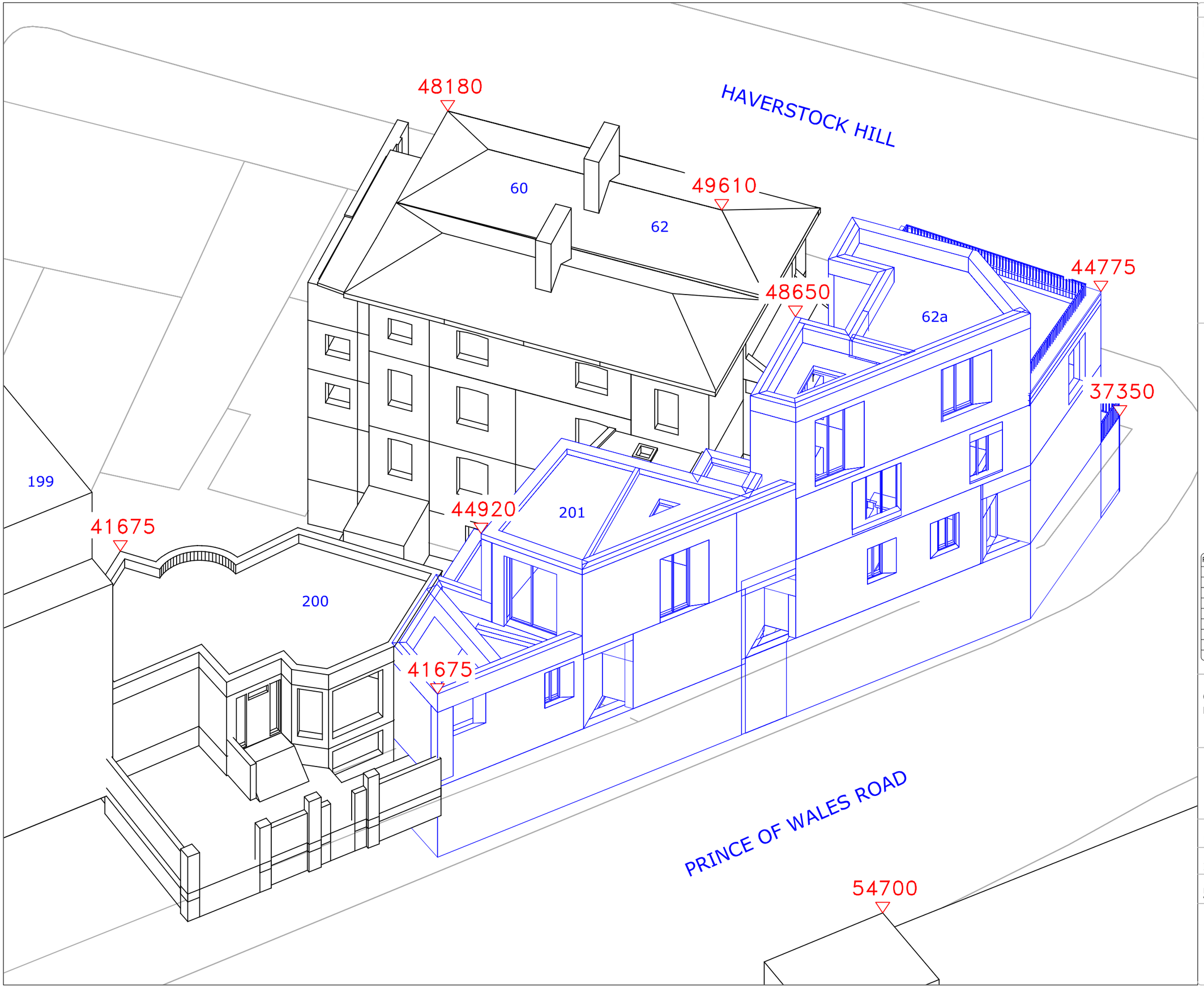

Sources of Information

PLOWMAN CRAVEN
IR1-5865 SITE SURVEY

F!ND
IR2-5865 OS MAP

GIA
SITE PHOTOGRAPHS

CARMODY GROARKE
3D MODEL
IR4-5865 08.01.2015

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

ALL HEIGHTS GIVEN IN mm AOD
PROPOSED SCHEME SHOWN IN BLUE

Rev	Date	Description	Initials
A		Initial Issue	

Project

62a HAVERSTOCK HILL
LONDON

Title

3D VIEW
PROPOSED SCHEME

Scale	Date
NTS	03.02.15
Drawn	Checked
IM	

Drawing No.	Rel No.	Revision
5865-10	02	A

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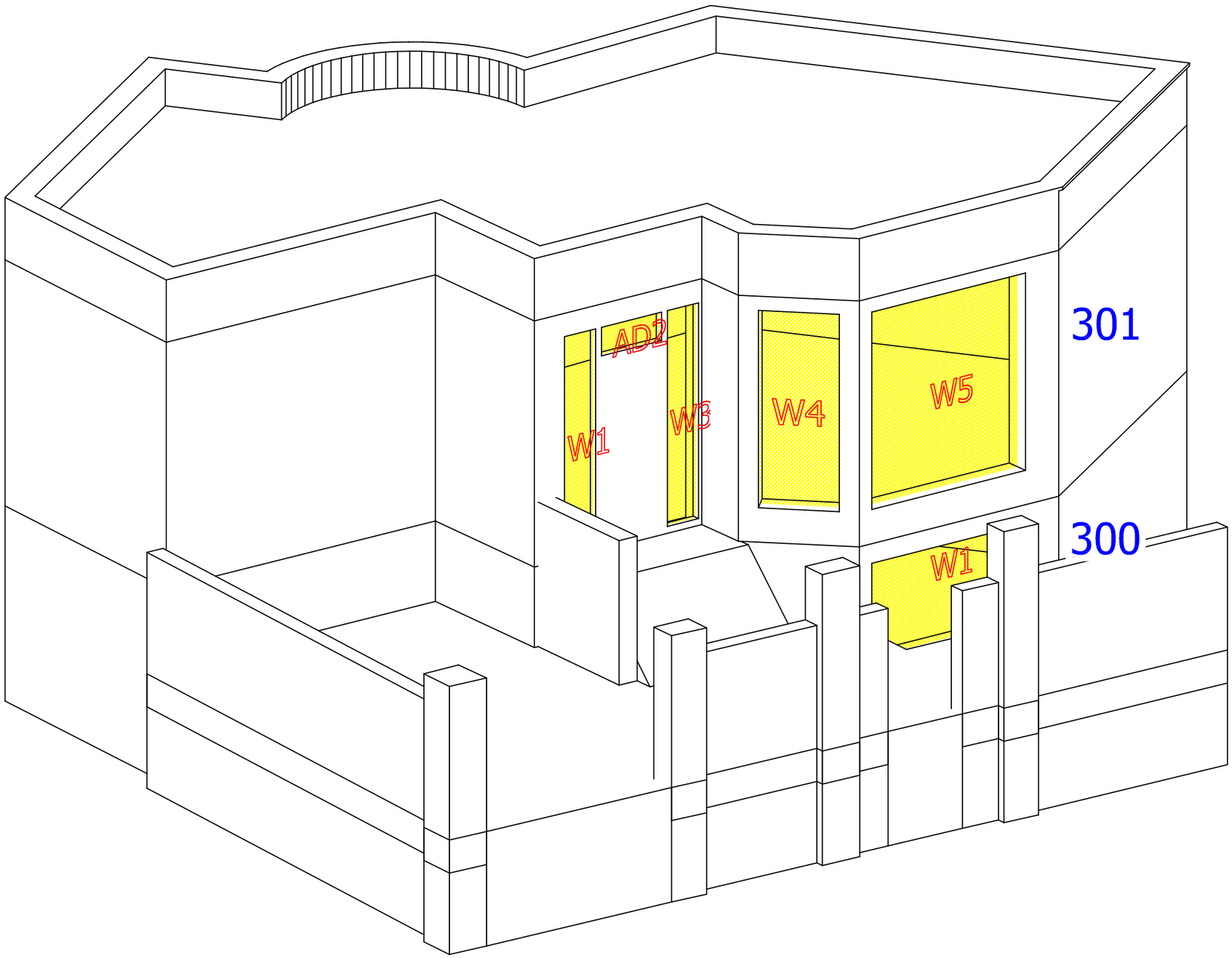
Window Map Drawings



Sources of Information

PLOWMAN CRAVEN
IR1-5865 SITE SURVEY

F!ND
IR2-5865 OS MAP

GIA
SITE PHOTOGRAPHS

CARMODY GROARKE
3D MODEL
IR4-5865 08.01.2015

Notes

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Rev	Date	Description	Initials
A		Initial Issue	

Project

62 HAVERSTOCK HILL
LONDON

Title

WINDOW MAP
200 PRINCE OF WALES ROAD

Scale: NTS
Date: 17.02.15
Drawn: IM
Checked:
Drawing No.: 5865-11
Rel No.: 02
Revision: A

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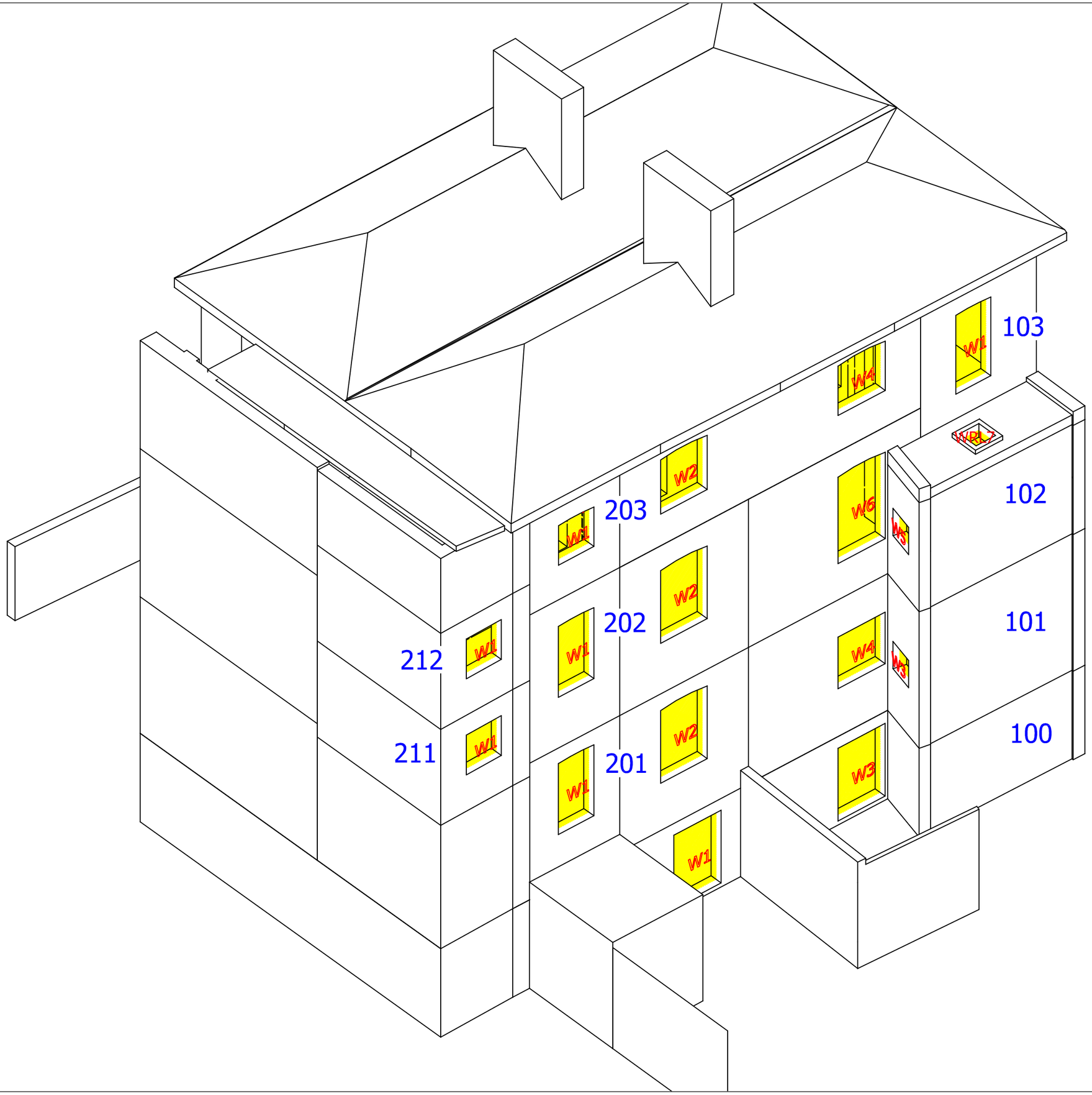

Sources of Information

PLOWMAN CRAVEN
IR1-5865 SITE SURVEY

F!ND
IR2-5865 OS MAP

GIA
SITE PHOTOGRAPHS

CARMODY GROARKE
3D MODEL
IR4-5865 08.01.2015

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

Rev	Date	Description	Initials
A		Initial Issue	

Project

62 HAVERSTOCK HILL
LONDON

Title

WINDOW MAP
60-62 HAVERSTOCK HILL

Scale	Date
NTS	17.02.15
Drawn	Checked
IM	
Drawing No.	Rel No. / Revision
5865-12	02 / A

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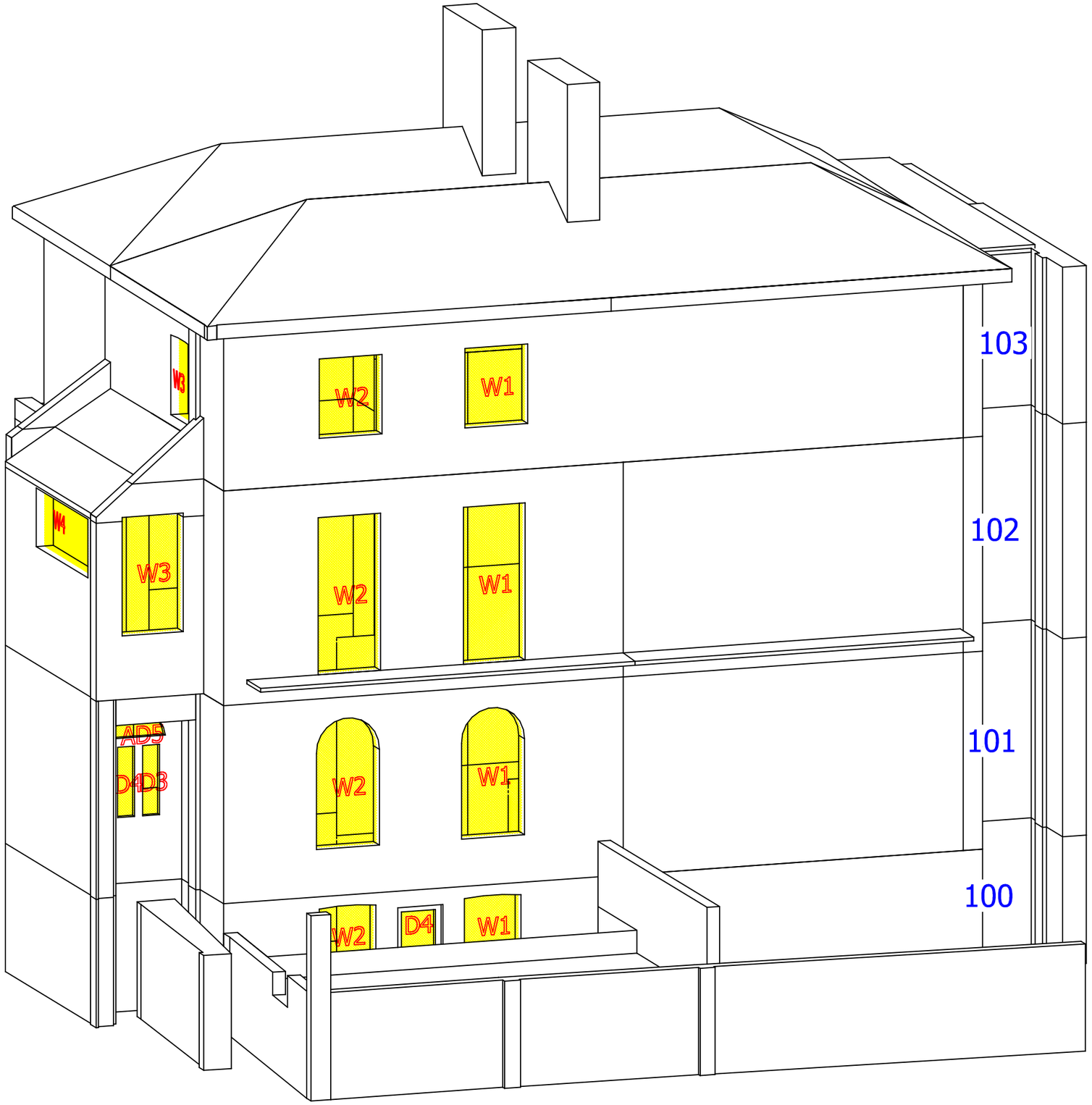

Sources of Information

PLOWMAN CRAVEN
IR1-5865 SITE SURVEY

F!ND
IR2-5865 OS MAP

GIA
SITE PHOTOGRAPHS

CARMODY GROARKE
3D MODEL
IR4-5865 08.01.2015

Notes

N.B. DO NOT SCALE OFF THIS DRAWING

Rev	Date	Description	Initials
A		Initial Issue	

Project

62 HAVERSTOCK HILL
LONDON

Title

WINDOW MAP
60-62 HAVERSTOCK HILL

Scale	Date
NTS	17.02.15
Drawn	Checked
IM	

Drawing No.	Rel No.	Revision
5865-13	02	A

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APPENDIX 3

DAYLIGHT AND SUNLIGHT TABLES OF RESULTS

Vertical Sky Component (VSC)

Project No: 5865 (rel_02)
EXISTING V PROPOSED

62 HAVERSTOCK HILL
IR04-5865 (Carmody Groarke) RECEIVED 08/01/2015
DAYLIGHT ANALYSIS

FEB 2015

Vertical Sky Component							Average Daylight Factor							
										Existing		Proposed			
Room	Window	Room Use	Existing	Proposed	Loss	%	Room	Window	Room Use	ADF	Total	ADF	Total	Loss	%
HAVERSTOCK HILL,62							**HAVERSTOCK HILL,62**								
R1/100	**W1/100**	BEDROOM	24.01	24.45	-0.44	-1.83	**R1/100**	**W1/100**	BEDROOM	0.73	0.73	0.75	0.75	-0.02	-2.05
R3/100	**W2/100**	BEDROOM	23.99	24.57	-0.58	-2.42	**R3/100**	**W2/100**	BEDROOM	0.90	0.90	0.92	0.92	-0.03	-3.02
R4/100	**W3/100**	LIVINGROOM	9.51	4.45	5.06	53.21	**R4/100**	**W3/100**	LIVINGROOM	0.63	0.63	0.38	0.38	0.25	40.10
R1/101	**W1/101**		26.36	26.34	0.02	0.08	**R1/101**	**W1/101**		1.28	1.28	1.29	1.29	-0.01	-0.62
R2/101	**W2/101**		24.92	24.58	0.34	1.36	**R2/101**	**W2/101**		1.47	1.47	1.46	1.46	0.01	0.34
R5/101	**W4/101**		14.73	9.19	5.54	37.61	**R5/101**	**W4/101**		0.55	0.55	0.42	0.42	0.14	24.46
R1/102	**W1/102**		32.92	32.71	0.21	0.64	**R1/102**	**W1/102**		1.65	1.65	1.65	1.65	0.00	0.06
R2/102	**W2/102**	LKD	32.87	32.09	0.78	2.37	**R2/102**	**W2/102**	LKD	1.30	1.30	1.29	1.29	0.01	0.69
R4/102	**W6/102**	BEDROOM	25.23	17.11	8.12	32.18	**R4/102**	**W6/102**	BEDROOM	1.34	1.34	1.11	1.11	0.24	17.50
R1/103	**W1/103**		32.97	32.97	0.00	0.00	**R1/103**	**W1/103**		1.07	1.07	1.07	1.07	0.00	0.00
R2/103	**W2/103**	LIVINGROOM	33.07	33.07	0.00	0.00	**R2/103**	**W2/103**	LIVINGROOM	1.17		1.17			
R2/103	**W3/103**	LIVINGROOM	33.76	17.02	16.74	49.59	**R2/103**	**W3/103**	LIVINGROOM	1.21	2.38	0.77	1.94	0.44	18.59
R3/103	**W4/103**	BEDROOM	33.96	33.95	0.01	0.03	**R3/103**	**W4/103**	BEDROOM	1.12	1.12	1.12	1.12	0.00	0.00
HAVERSTOCK HILL,60							**HAVERSTOCK HILL,60**								
R1/200	**W1/200**	TESTWINDOW	14.70	11.49	3.21	21.84	**R1/200**	**W1/200**	TESTWINDOW	1.00	1.00	0.85	0.85	0.15	15.32
R1/201	**W1/201**		29.50	28.05	1.45	4.92	**R1/201**	**W1/201**		1.26	1.26	1.22	1.22	0.03	2.47
R2/201	**W2/201**		29.11	25.03	4.08	14.02	**R2/201**	**W2/201**		1.57	1.57	1.41	1.41	0.16	10.26
R1/202	**W1/202**		34.27	34.16	0.11	0.32	**R1/202**	**W1/202**		1.32	1.32	1.32	1.32	0.00	0.23
R2/202	**W2/202**		34.56	33.91	0.65	1.88	**R2/202**	**W2/202**		1.68	1.68	1.65	1.65	0.03	1.61
R1/203	**W1/203**		34.51	34.51	0.00	0.00	**R1/203**	**W1/203**		0.91	0.91	0.91	0.91	0.00	0.00
R2/203	**W2/203**		34.27	34.27	0.00	0.00	**R2/203**	**W2/203**		1.48	1.48	1.48	1.48	0.00	0.00
R1/211	**W1/211**		33.01	32.79	0.22	0.67	**R1/211**	**W1/211**		1.33	1.33	1.33	1.33	0.01	0.45
R1/212	**W1/212**		34.98	34.98	0.00	0.00	**R1/212**	**W1/212**		1.41	1.41	1.41	1.41	0.00	0.00
PRINCE OF WALES ROAD,200							**PRINCE OF WALES ROAD,200**								
R1/300	**W1/300**		20.88	19.41	1.47	7.04	**R1/300**	**W1/300**		1.30	1.30	1.25	1.25	0.05	3.85
R1/301	**W4/301**		32.19	32.18	0.01	0.03	**R1/301**	**W4/301**		1.22		1.22			
R1/301	**W5/301**		31.81	26.65	5.16	16.22	**R1/301**	**W5/301**		2.95	4.17	2.61	3.83	0.34	8.25

Room / Floor	Room Use	Whole Room	Prev sq ft	New sq ft	Loss sq ft	%Loss
HAVERSTOCK HILL,62						
R1/100	BEDROOM	153.2	98.2	100.5	-2.3	-2.3
R3/100	BEDROOM	113.8	84.3	84.3	0.0	0.0
R4/100	LIVINGROOM	185.3	70.7	22.2	48.5	68.6
R1/101		181.9	176.4	175.4	1.0	0.6
R2/101		144.4	140.9	140.7	0.2	0.1
R5/101		185.3	92.5	75.7	16.7	18.1
R1/102		187.6	182.0	182.0	0.0	0.0
R2/102	LKD	250.3	235.1	235.1	0.0	0.0
R4/102	BEDROOM	185.3	174.0	174.0	0.0	0.0
R1/103		187.6	182.0	182.0	0.0	0.0
R2/103	LIVINGROOM	164.6	163.5	163.5	0.0	0.0
R3/103	BEDROOM	185.3	174.0	174.0	0.0	0.0
HAVERSTOCK HILL,60						
R1/200	TESTWINDOWS	144.4	75.9	32.3	43.6	57.4
R1/201		115.4	112.8	112.8	0.0	0.0
R2/201		144.4	141.6	141.6	0.0	0.0
R1/202		115.4	112.8	112.8	0.0	0.0
R2/202		144.4	141.5	141.5	0.0	0.0
R1/203		115.4	112.8	112.8	0.0	0.0
R2/203		144.4	142.0	142.0	0.0	0.0
R1/211		65.4	61.9	61.9	0.0	0.0
R1/212		65.4	63.7	63.7	0.0	0.0
PRINCE OF WALES ROAD,200						
R1/300		218.8	204.8	203.7	1.1	0.5
R1/301		218.8	218.8	218.8	0.0	0.0

ANNUAL PROBABLE SUNLIGHT HOURS (APSH)

Project No: 5865 (rel_02)
EXISTING V PROPOSED

62 HAVERSTOCK HILL
IR04-5865 (Carmody Groarke) RECEIVED 08/01/2015
SUNLIGHT ANALYSIS

FEB 2015

			Window						Room					
			Existing		Proposed				Existing		Proposed			
Room	Window	Room Use	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss	Winter APSH	Annual APSH	Winter APSH	Annual APSH	Winter %Loss	Annual %Loss
HAVERSTOCK HILL,62														
R1/100	**W1/100**	BEDROOM	8	35	8	36	0.0	-2.9	8	35	8	36	0.0	-2.9
R3/100	**W2/100**	BEDROOM	11	35	11	37	0.0	-5.7	11	35	11	37	0.0	-5.7
R1/101	**W1/101**		15	45	15	45	0.0	0.0	15	45	15	45	0.0	0.0
R2/101	**W2/101**		15	41	15	42	0.0	-2.4	15	41	15	42	0.0	-2.4
R1/102	**W1/102**		16	51	16	51	0.0	0.0	16	51	16	51	0.0	0.0
R2/102	**W2/102**	LKD	16	51	16	50	0.0	2.0	16	51	16	50	0.0	2.0
R1/103	**W1/103**		17	50	17	50	0.0	0.0	17	50	17	50	0.0	0.0
R2/103	**W2/103**	LIVINGROOM	17	50	17	50	0.0	0.0						
R2/103	**W3/103**	LIVINGROOM	0	9	0	4	-	55.6	17	51	17	50	0.0	2.0

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