

DAYLIGHT AND SUNLIGHT REPORT

25 ROSSLYN HILL

Prepared by: GIA
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Principles of Daylight and Sunlight
Drawings: 5108-Rel 01/01,03 & Rel 02/07-08
Daylight and Sunlight Tables of Results
VSC, ADF, No-Sky, APSH

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## 1.0 INSTRUCTIONS

GIA have been instructed to carry out a daylight and sunlight assessment for the side extension at 25 Rosslyn Hill. This work has been carried out in accordance with our standard Terms and Conditions and our fee quote dated 30<sup>th</sup> March 2010.

## 2.0 INTRODUCTION

Daylight and sunlight are planning considerations which are primarily of interest to main habitable rooms in the surrounding properties and in particular 27 Rosslyn Hill.

We have carried out an analysis to provide the 3 dimensional maximum building envelope for the side extension at 25 Rosslyn Hill to determine its impact, if any, on 27 Rosslyn Hill. No other surrounding properties could be impacted by the proposal in terms of material loss of daylight and sunlight.

### ***DAYLIGHT AND SUNLIGHT***

In considering the development potential and the quality of amenity for the surrounding properties once the scheme has been implemented, the analysis is based upon the Building Research Establishment (BRE) guidelines '***Site Layout Planning for Daylight and Sunlight***' which provides the criteria and methodology for calculation in connection with daylight and sunlight. This handbook is the primary authority for this matter and therefore it is not only this Practice, but also the Local Authority, who will be considering your application by reference to these guidelines.

The BRE guidelines provide three 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.

The second method is the No Sky Line or Daylight Distribution method.

This simply assesses the change in position of the No Sky Line 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.

The third method of calculation 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.

Where dimensions of the room to be assessed are available this is the best method of assessment, but even where they are not, it provides a very informative result. It gives guidance as to the qualitative and quantitative change in daylight and is related to the British Standard BS 8206 Part II.

In relation to sunlight, the criteria given calculates the annual probable sunlight hours (APSH) which considers the amount of sun available in both the summer and winter for each given window which faces within 90° of due south. Summer is considered to be the six months between March 21<sup>st</sup> and September 21<sup>st</sup> and winter the remaining months.

### **3.0 SOURCES OF INFORMATION**

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

#### **CHARLTON BROWN :-**

IR01-5108

IR02-5108

IR03-5108

#### **FIND MAPS**

IR04-5108

#### **DMFK ARCHITECTS**

IR05-5108

## 4.0 ASSUMPTIONS

1. Where we have used a base photogrammetric model we will have endeavoured to verify the base level via the use of GPS and altometer equipment.
2. We have not sought or obtained access to any of the adjoining properties and therefore have made reasonable assumptions as to the internal layouts of the rooms behind the fenestration. This is normal practice where access to adjoining properties is undesirable in terms of development confidentiality. Unless the building form dictates otherwise, we assume a standard 4.2m deep room (14ft) for residential properties and the 6m (20ft) deep room for commercial properties.
3. Floor levels have been assumed for adjoining properties as access has not been obtained. This dictates the level of the working plane which is the point at which rights of light assessments are carried out. It is also relevant for the No Sky Line and ADF daylight assessments.
4. We have made best estimates as to the uses which are carried out legally within the adjoining properties in terms of commercial and residential.
5. Transmittance values of the windows within the surrounding properties have been assumed based upon external inspection. Unless otherwise stated glazing within surrounding properties is taken to be single glazing with a transmittance factor of 0.8. Double glazed windows are assumed to have a glazing transmittance of 0.65. The glazing transmittance dictates the degree of daylight which can be transmitted into a room, which affects the results of our ADF assessments.

The internal reflectance within the rooms, used in the calculation of ADF is taken as 0.5, unless specified otherwise. It is difficult to estimate precisely the internal reflectance of a room, however the BRE Guidelines states in Appendix C that 'for fairly light coloured rooms a value of 0.5 can be taken.

## 5.0 THE SITE

The site is located in Hampstead. The existing residential property on site is of four storeys in height with a side extension of one storey in height. The properties immediately surrounding the site are all in residential use.

Our understanding of the existing site is illustrated in green on drawings 5108-01 and 5108-03 in Appendix 2 of this report.

## **6.0 THE PROPOSAL**

The proposed massing changes are limited to the side extension of 25 Rosslyn Hill. The amendments entail a slight extension of the footprint of the existing side extension to the rear of 25 Rosslyn Hill and a partial additional storey at first floor level. The partial additional storey of massing is set back from the neighbouring property at 27 Rosslyn Hill.

Our understanding of the proposal is shown in blue on drawings 5108-06 and 5108-07 in Appendix 2 of this report.

## **7.0 DAYLIGHT AND SUNLIGHT ANALYSIS**

The only property surrounding the site with the potential to be impacted by the proposal is 27 Rosslyn Hill, which is immediately to the west of the site. Therefore our daylight and sunlight analysis focuses only on this property.

A planning consent has been obtained in respect of 27 Rosslyn Hill which entails an amendment to the uses and layouts of some of the rooms served by the windows which face over the site. We understand that this planning consent is in the process of being implemented, so we have obtained accurate room layouts to accord with the planning consent and have incorporated these into our analysis.

Tables providing the detailed results of our daylight and sunlight analysis are provided in Appendix 3 of this report. The uses of each of the rooms assessed are included in the tables of results.

### **DAYLIGHT**

Daylight and sunlight are only considered sensitively in relation to habitable residential space. It can be seen from the room uses included in the tables of results in Appendix 3 that the six rooms served by the windows facing the site are of mixed uses. It would appear that three of these spaces, which are stairwells or store rooms, are definitively of non-habitable use. Therefore, the loss of daylight and sunlight to these rooms is not relevant.

### Lower Ground Floor

The consented proposal on the lower ground floor has been designed so that there is almost no direct daylight and sunlight in the existing situation, with natural light only entering through small lightwells covered with metal grill.

Of the other three rooms in 27 Rosslyn Hill, the uses of the two lower ground floor rooms would also suggest spaces which are typically not indicative of habitable use. One of these rooms is in use as gym, and the other is in use as a secondary kitchen and laundry room. Both of these uses would suggest a lower expectation of daylight and sunlight than in normal cases, and in reality the windows serving these rooms are below ground and significantly obstructed. This fact is illustrated in the existing daylight results for these two rooms, which show minimal levels of daylight in the existing situation, well beneath the BRE Guidelines in relation to all three forms of daylight assessment.

It can be seen from the results in Appendix 3 that the proposal has a minimal impact on the levels of daylight within these two rooms, with reductions of less than 1% VSC and less than 0.2% ADF in absolute terms. Such reductions would not be perceivable within these rooms, which clearly have very little realistic expectation of daylight in any case. Therefore, we consider that the daylight impact of the proposal on these two rooms will be negligible and acceptable.

### Ground Floor

The main kitchen of this property is located on the ground floor and has two windows facing over the site. It is clear that of the six rooms with the potential to be impacted by the proposal, this kitchen is the most important. It can be seen from the results in Appendix 3 that the existing levels of daylight within this kitchen are beneath the BRE Guideline recommendations in terms of VSC and ADF.

The proposal has a minimal impact on the daylight to this kitchen. This is shown by reference to all three forms of daylight assessment. In terms of VSC, it can be seen that one of the windows meets the BRE Guideline recommendations and the other window goes fractionally beyond the suggested 20% reduction margin. However, this is a secondary window to the second window which meets the BRE Guidelines VSC criteria, and so following the BRE Guidelines, the room it serves will still retain acceptable levels of daylight. Furthermore, where existing levels of VSC are already low, even small reductions in absolute terms can be expressed disproportionately as a percentage of the low original value.



The absolute reductions to this room are indeed very small, as is expressed by the ADF methodology, which shows a reduction of less than 0.2% ADF to the kitchen. Furthermore, the No Sky Line analysis shows a gain in the area of the total area of the room with sky visibility. Therefore, we consider that the proposal has a negligible daylight impact on this kitchen which is acceptable in planning terms.

All other spaces on this floor with windows facing the proposal are non-habitable and thus will retain acceptable levels of daylight. Thus overall daylight will be acceptable, in accordance with the BRE Guidelines and thus local planning policy.

### **SUNLIGHT**

As discussed above, the rooms in use as stairwells or store rooms are not relevant for sensitive consideration regarding daylight and sunlight.

#### Lower Ground Floor

Again, it would appear obvious from the uses and existing levels of sunlight that there is no realistic expectation of enjoyment of sunlight in the two rooms on this floor.

The proposal results in a fractional reduction of sunlight to the secondary kitchen and laundry room, however this reduction is tiny in absolute terms and is immaterial in the context of this room. Therefore, we consider that the sunlight impact of the proposal on these two rooms is negligible and acceptable.

#### Ground Floor

As in the case of daylight, again it is the case that the existing levels of sunlight in the kitchen on this floor are beneath the BRE Guideline recommendations when each of the windows are considered individually.

The proposal results in a reduction in winter sunlight to one of the windows in this kitchen which goes slightly beyond the BRE Guideline recommendations. However, this slight reduction is offset by the other window serving the kitchen, which gains in terms of winter sunlight and subsequently meets the BRE Guideline recommendations. Consequently, the absolute levels of sunlight in the kitchen will be immaterially affected by the proposal and the room will continue to enjoy reasonable levels of sunlight. Therefore, we consider the sunlight impact of the proposal on the kitchen to be negligible and acceptable.

## 8.0 CONCLUSIONS

GIA have undertaken a daylight and sunlight assessment of the impact of the proposed side extension of 25 Rosslyn Hill on the neighbouring residential property at 27 Rosslyn Hill. Our analysis incorporates the revised room layouts and uses in 27 Rosslyn Hill as per the recent planning consent, which we understand is being implemented.

Out of the six spaces with windows facing over the site, three are definitively not relevant for daylight and sunlight consideration, and two would appear to have very low expectation of daylight and sunlight. The room of primary interest is the kitchen at ground floor level.

In daylight terms, the reductions which any of the rooms experience as a result of the proposal are tiny in absolute terms. It is only when the reductions are considered as a percentage of their very low existing value that they can appear disproportionately high. None of the habitable rooms experience an absolute reduction in terms of ADF beyond 0.17% ADF, which would not even be perceivable in the room. The main kitchen still meets the BRE Guidelines in relation to VSC for one window, and even experiences gains in terms of the No Sky Line assessment. Therefore, we consider the daylight impact of the proposal on 27 Rosslyn Hill to be negligible and acceptable.

There is a similar situation in sunlight terms. Those rooms which could be considered to be of habitable use experience very small reductions in terms of absolute sunlight levels. Furthermore, the main kitchen at ground floor level does not experience a material change in sunlight amenity when the effect of the proposal on both windows is considered together. Therefore, we consider the sunlight impact of the proposal in 27 Rosslyn Hill to be negligible and acceptable.

The proposal therefore is in accordance with the BRE Guidelines and thus local planning policy in relation to daylight and sunlight.

# APPENDIX 1

PRINCIPLES OF DAYLIGHT AND SUNLIGHT

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## PRINCIPLES OF DAYLIGHT AND SUNLIGHT

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### 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. Part 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'.

These guidelines are normally the only official document used by local Authorities 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.

## **THE BRE GUIDELINES**

The BRE give criteria and methods for calculating daylight, and sunlight and to some degree overshadowing and through that 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' it 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 second paragraph of Chapter 2.2 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 three methods for calculating daylight are as follows:

- (a) Vertical Sky Component (VSC)
- (b) No Sky Contours (NSC)
- (c) Average Daylight Factor (ADF)

Each are 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 quantitative 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.

| <b>Room</b>  | <b>Percentage</b> |
|--------------|-------------------|
| 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 12 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 that:*

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

*and*

- (b) *on this window wall, all points on a line 2m above ground level are within 4m (measured sideways) of a point which receives at least a quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months, between 21 September and 21 March.*

### Existing Buildings

#### *Summary*

*If a living room of an existing dwelling has a main window facing within 90 degrees of due south, and any part of a new development subtends an angle of more than 25 degrees 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, in the plane of the inner window wall, receives in the year less than one quarter of annual probable sunlight hours including at least 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.8 times its former sunlight hours during either period.*

It will be noted that the BRE clearly separate summer from winter and indicate that a 20% reduction for either may be material. The Handbook also states that *“To find out whether an existing building still receives enough sunlight, the British Standard can be used. 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 ..... The British Standard recommends that a ‘window reference point’, at the centre of each window on the plane of the inside surface of the wall, should be used for the calculations”* and thus this practice gives greater consideration to the effect on the main window of a living room.

#### **(b) Area of Permanent Shadow**

The BRE Handbook, ‘Site Layout Planning for Daylight and Sunlight’ also provides criteria for open spaces.

In particular it gives guidance for calculating any areas of open space that may be in permanent shadow on 21 March. There is no criteria for the overshadowing of buildings.

In summary the BRE document states the following:-

*“It is suggested that, for it to appear adequately sunlit throughout the year, no more than two-fifths and preferably no more than a quarter of any garden or amenity area should be prevented by buildings from*

*receiving any sun at all on 21 March. If, as a result of new development, an existing garden or amenity area does not meet these guidelines, and the area which can receive some 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 21<sup>st</sup>, March 21<sup>st</sup> and June 21<sup>st</sup>.

For open spaces the permanent shadow 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 G 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

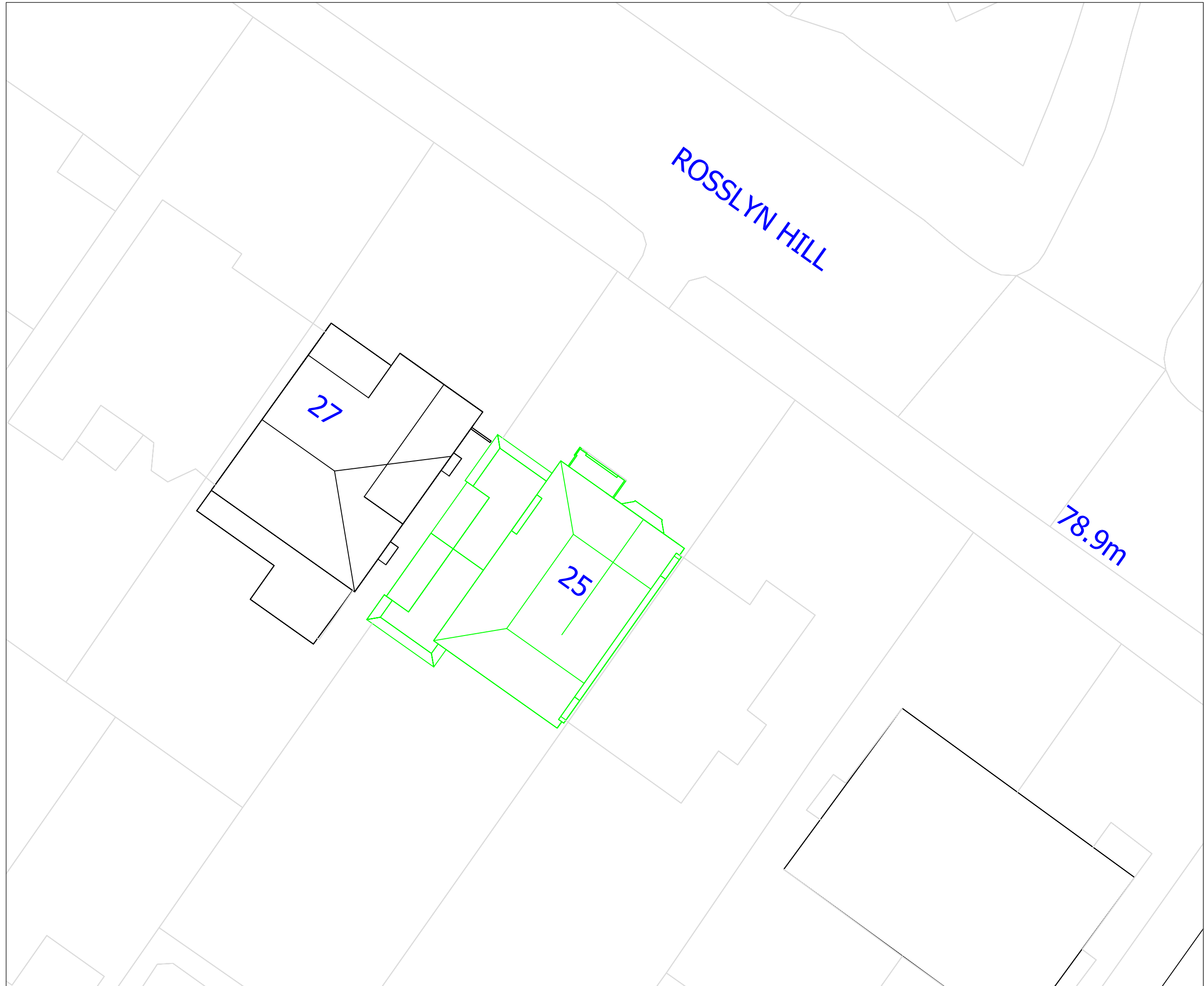
impractical. It would therefore be inappropriate to consider values for two storey terraced housing in a City Centre.

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

DRAWINGS



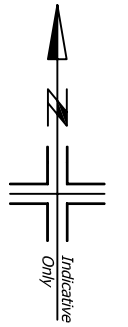
Sources of Information

CHARLTON BROWN (received 29.09.09):-  
 PLANNING SURVEY SEPT 091 to 093.pdf  
 20 FRONT 01.jpg  
 20 FRONT 11.jpg  
 22 SIDE 05.jpg  
 22 SIDE 06.jpg  
 22 SIDE 16.jpg  
 22 SIDE 27.jpg

CHARLTON BROWN (received 24.11.09):-  
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 EXISTING DRAWING-2679718.pdf  
 PROPOSED.pdf

ORDNANCE SURVEY DIGITAL EXTRACT

Key



EXISTING SCENARIO SHOWN IN GREEN

| Rev | Description | Date |
|-----|-------------|------|
|-----|-------------|------|

Project

25 ROSSLYN HILL  
 LONDON NW3

Title

PLAN VIEW SHOWING  
 EXISTING SCENARIO

| Scale | Date |
|-------|------|
|-------|------|

|       |         |
|-------|---------|
| 1:200 | DEC '09 |
|-------|---------|

| Drawn | Checked |
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|    |  |
|----|--|
| MF |  |
|----|--|

| Drawing No. | Rel No. | Revision |
|-------------|---------|----------|
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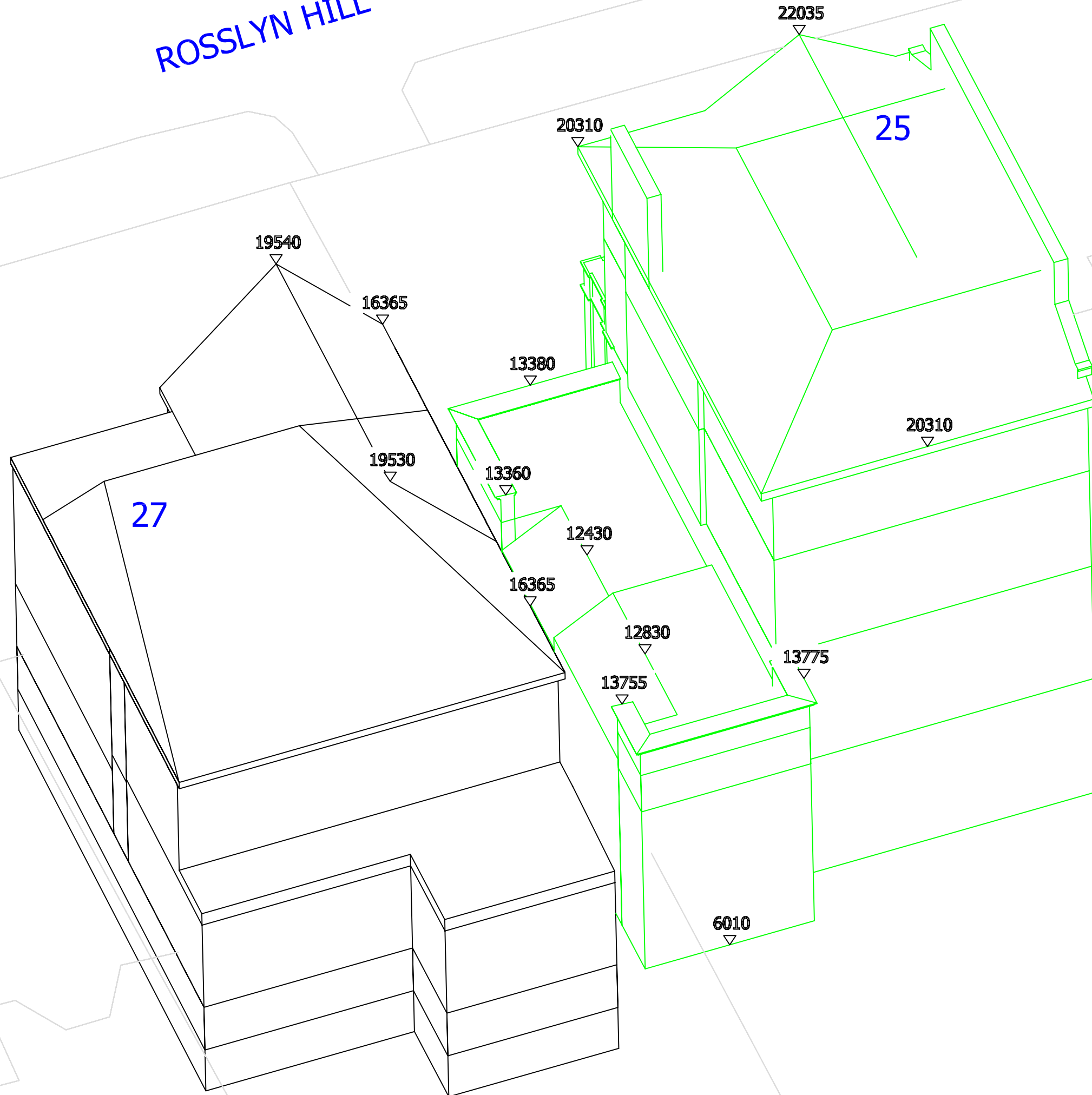
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|---------|---|--|
| 5108/01 | 1 |  |
|---------|---|--|



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ROSSLYN HILL



Sources of Information

CHARLTON BROWN (received 29.09.09):-  
 PLANNING SURVEY SEPT 091 to 093.pdf  
 20 FRONT 01.jpg  
 20 FRONT 11.jpg  
 22 SIDE 05.jpg  
 22 SIDE 06.jpg  
 22 SIDE 16.jpg  
 22 SIDE 27.jpg

CHARLTON BROWN (received 24.11.09):-  
 09094\_02.dwg  
 EXISTING DRAWING-2679718.pdf  
 PROPOSED.pdf

ORDNANCE SURVEY DIGITAL EXTRACT

Key

ALL DATUM HEIGHTS SHOWN ARE IN MM AOD  
 EXISTING SCENARIO SHOWN IN GREEN

| Rev | Description | Date |
|-----|-------------|------|
|-----|-------------|------|

Project  
 25 ROSSLYN HILL  
 LONDON NW3

Title  
 3D VIEW SHOWING  
 EXISTING SCENARIO

| Scale | Date    |
|-------|---------|
| 1:100 | DEC '09 |
| Drawn | Checked |
| MF    |         |

| Drawing No. | Rel No. | Revision |
|-------------|---------|----------|
| 5108/03     |         | 1        |



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Sources of Information

CHARLTON BROWN  
IR01-5108  
IR02-5108  
IR03-5108

FIND MAPS  
IR04-5108

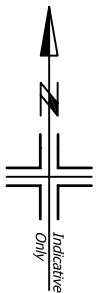
DMFK ARCHITECTS  
IR05-5108

ROSSLYN HILL

DRAFT

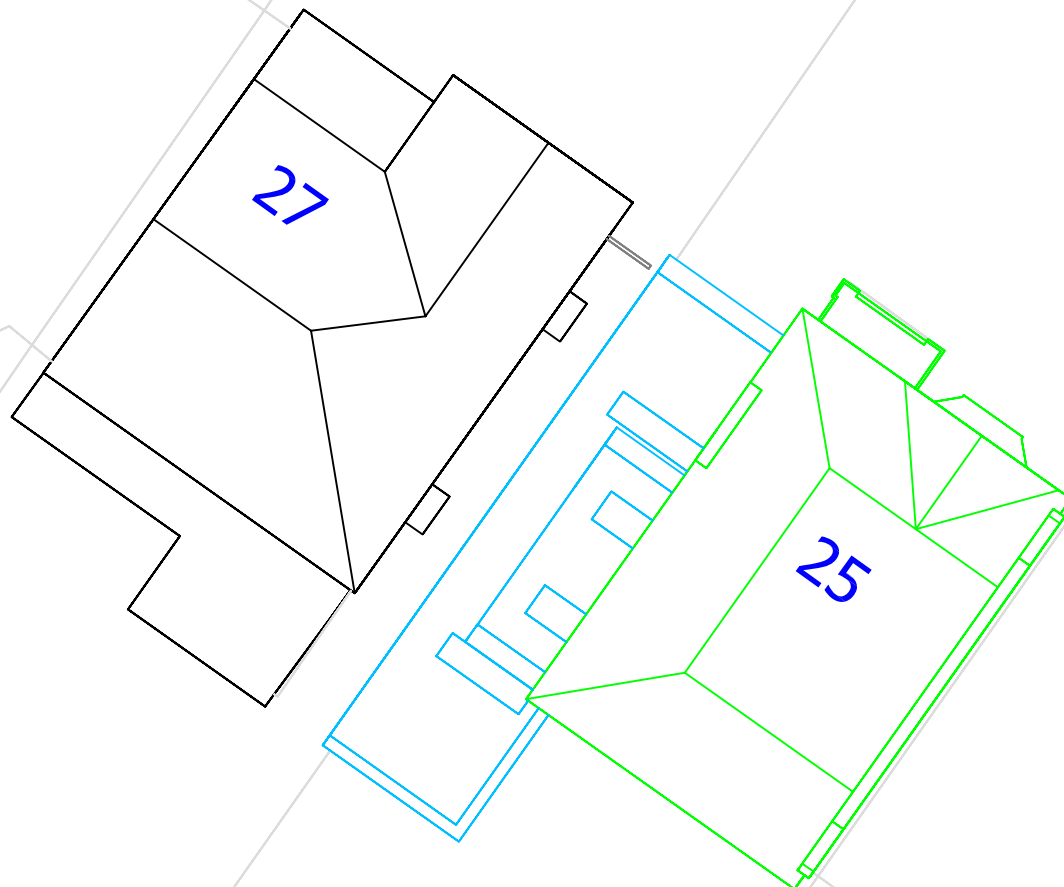
Key

N.B. DO NOT SCALE OFF THIS DRAWING



PROPOSAL SHOWN IN BLUE  
EXISTING RETAINED SHOWN IN GREEN  
ALL HEIGHTS GIVEN IN mm AOD

78.9m



| Rev | Description     | Date       |
|-----|-----------------|------------|
| A   | Initial release | April 2010 |

Project  
25 ROSSLYN HILL  
LONDON NW3

Title  
PLAN VIEW SHOWING  
EXISTING RETAINED &  
PROPOSED DEVELOPMENT  
(Prop100330)

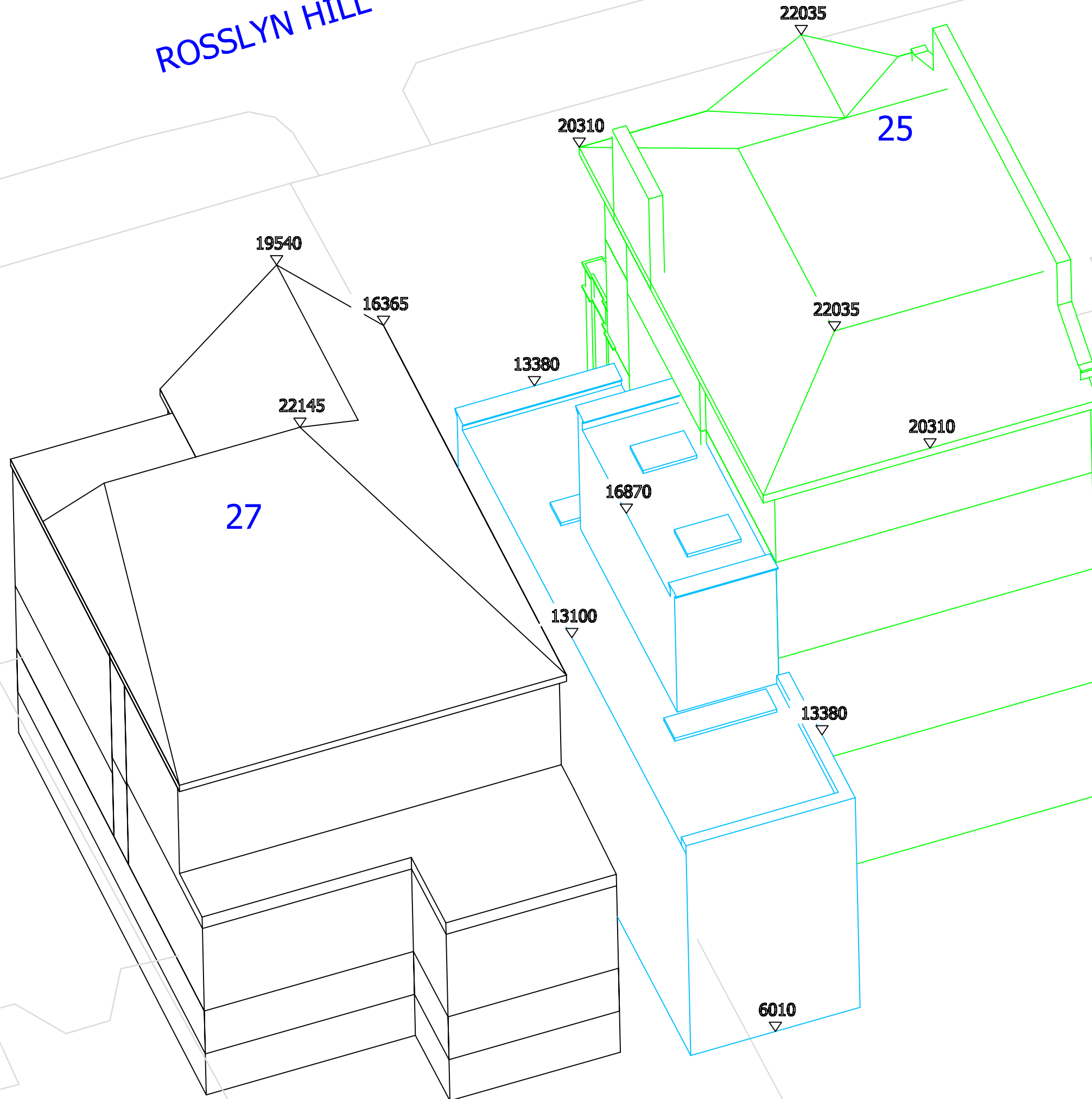
| Scale       | Date          |
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| 1:200 @A3   | APRIL '10     |
| Drawn<br>MF | Checked<br>GF |

| Drawing No. | Rel No. | Revision |
|-------------|---------|----------|
| 5108/07     | 2       | A        |



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ROSSLYN HILL



Sources of Information

CHARLTON BROWN  
 IR01-5108  
 IR02-5108  
 IR03-5108

FIND MAPS  
 IR04-5108

DMFK ARCHITECTS  
 IR05-5108

DRAFT

Key

N.B. DO NOT SCALE OFF THIS DRAWING

PROPOSAL SHOWN IN BLUE  
 EXISTING RETAINED SHOWN IN GREEN  
 ALL HEIGHTS GIVEN IN mm AOD

| Rev | Description     | Date       |
|-----|-----------------|------------|
| A   | Initial release | April 2010 |

Project

25 ROSSLYN HILL  
 LONDON NW3

Title

3D VIEW SHOWING  
 EXISTING RETAINED &  
 PROPOSED DEVELOPMENT  
 (Prop100330)

| Scale       | Date      |          |
|-------------|-----------|----------|
| NTS         | APRIL '10 |          |
| Drawn       | Checked   |          |
| MF          | GF        |          |
| Drawing No. | Rel No.   | Revision |

5108/08      2      A



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# APPENDIX 3

DAYLIGHT AND SUNLIGHT TABLES OF RESULTS

## VERTICAL SKY COMPONENT (VSC) AND AVERAGE DAYLIGHT FACTOR (ADF)

| Room                          | Window | Room Use        | Vertical Sky Component |          |      |       | Average Daylight Factor |       |          |       |      |       |
|-------------------------------|--------|-----------------|------------------------|----------|------|-------|-------------------------|-------|----------|-------|------|-------|
|                               |        |                 | Existing               | Proposed | Loss | %     | Existing                |       | Proposed |       | Loss | %     |
|                               |        |                 |                        |          |      |       | ADF                     | Total | ADF      | Total |      |       |
| <b><u>27 Rosslyn Hill</u></b> |        |                 |                        |          |      |       |                         |       |          |       |      |       |
| R1/200                        | W2/200 | Gym             | 2.73                   | 2.58     | 0.15 | 5.49  | 0.16                    | 0.16  | 0.08     | 0.08  | 0.07 | 44.59 |
| R2/200                        | W1/200 | Kitchen/Laundry | 3.36                   | 2.63     | 0.73 | 21.73 | 0.21                    | 0.21  | 0.06     | 0.06  | 0.15 | 71.09 |
| R1/201                        | W1/201 | Stairwell       | 10.39                  | 8.65     | 1.74 | 16.75 | 1.04                    | 1.04  | 0.70     | 0.70  | 0.33 | 31.85 |
| R1/202                        | W1/202 | Stairwell       | 15.81                  | 14.31    | 1.50 | 9.49  | 1.78                    | 1.78  | 1.63     | 1.63  | 0.15 | 8.43  |
| R1/210                        | W1/210 | Stores          | 11.57                  | 8.69     | 2.88 | 24.89 | 0.41                    | 0.41  | 0.00     | 0.00  | 0.41 | 99.51 |
| R1/220                        | W1/220 | Kitchen         | 18.36                  | 13.96    | 4.40 | 23.97 | 0.99                    |       | 0.84     |       |      |       |
| R1/220                        | W2/220 | Kitchen         | 12.87                  | 12.30    | 0.57 | 4.43  | 0.88                    | 1.87  | 0.87     | 1.71  | 0.17 | 9.07  |



| Room/<br>Floor                | Whole<br>Room | Prev<br>sq ft | New<br>sq ft | Loss<br>sq ft | %Loss |
|-------------------------------|---------------|---------------|--------------|---------------|-------|
| <b><u>27 Rosslyn Hill</u></b> |               |               |              |               |       |
| R1/200                        | 111.9         | 12.1          | 11.0         | 1.1           | 9.1   |
| R2/200                        | 139.0         | 18.7          | 6.2          | 12.5          | 66.8  |
| R1/201                        | 27.9          | 21.4          | 17.0         | 4.4           | 20.6  |
| R1/202                        | 27.9          | 25.1          | 25.1         | 0.0           | 0.0   |
| R1/210                        | 22.5          | 4.2           | 2.8          | 1.4           | 33.3  |
| R1/220                        | 196.4         | 176.1         | 177.9        | -1.8          | -1.0  |



## ANNUAL PROBABLE SUNLIGHT HOURS (APSH)

| Position               | Existing |        |       | Proposed |        |       | % Loss |        |
|------------------------|----------|--------|-------|----------|--------|-------|--------|--------|
|                        | Summer   | Winter | Total | Summer   | Winter | Total | Winter | Total  |
| <u>27 Rosslyn Hill</u> |          |        |       |          |        |       |        |        |
| W1/200                 | 2.00     | 0.00   | 2.00  | 0.00     | 0.00   | 0.00  | 0.00   | 100.00 |
| W2/200                 | 0.00     | 0.00   | 0.00  | 0.00     | 0.00   | 0.00  | 0.00   | 0.00   |
| W1/201                 | 1.00     | 4.00   | 5.00  | 0.00     | 1.00   | 1.00  | 75.00  | 80.00  |
| W1/202                 | 9.00     | 9.00   | 18.00 | 9.00     | 6.00   | 15.00 | 33.33  | 16.67  |
| W1/210                 | 3.00     | 2.00   | 5.00  | 0.00     | 1.00   | 1.00  | 50.00  | 80.00  |
| W1/220                 | 13.00    | 11.00  | 24.00 | 17.00    | 3.00   | 20.00 | 72.73  | 16.67  |
| W2/220                 | 15.00    | 4.00   | 19.00 | 13.00    | 5.00   | 18.00 | -25.00 | 5.26   |