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Daylight and Sunlight Assessment

On the proposed Development at:

**Mews,
Wells Court,
Oriell Place,
London,
NW3 1QN**

Customer:

Matthew Brumby of Pennington Phillips
16 Spectrum House,
32-34 Gordon House Road,
London
NW5 1LP

Prepared By:

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Date of Report: 12th June 2017

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1 LOCATION

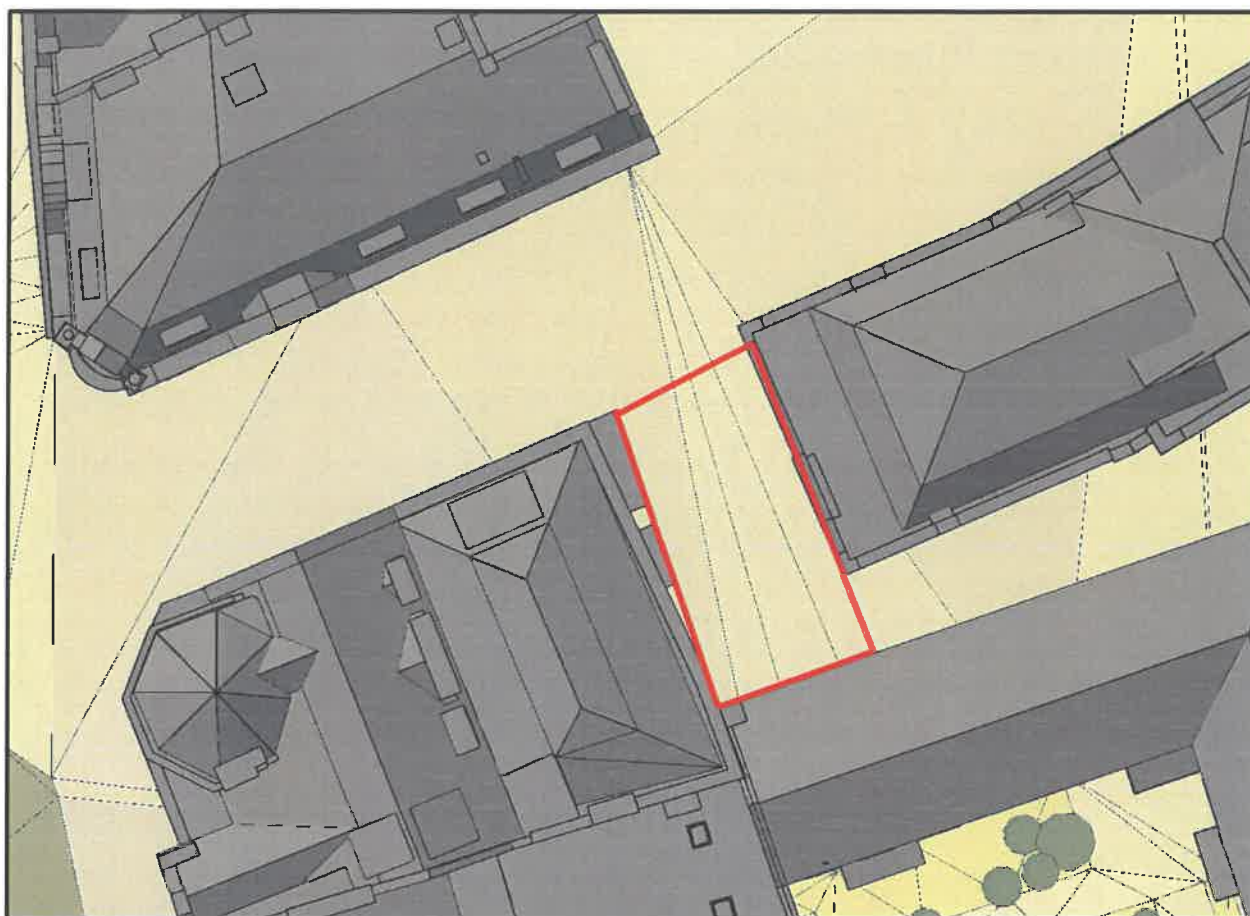


Figure 1 – The development site highlighted in red.

EXISTING SITE

The site is a section of land adjacent to Wells Court. Wells Court is a five-storey block of apartments.

SURROUNDING SITE

The surrounding buildings are mostly made up of period properties, including Victorian terraced buildings. The surrounding area is a mixture between commercial and residential uses. We understand that our plans to extend the roof of Wells Court.

2 EXECUTIVE SUMMARY

This report assesses the impact of the proposed development at the site west of Wells Court, Oriol place, London. This report has assessed the impact of the proposed development in respects of the daylight, sunlight and overshadowing of the surrounding property, 1 Oriol Court London, and of the daylight and sunlight to the development itself.

Analysis was carried out in accordance with the criteria set out for national discretionary guidance in the publication Site Layout Planning for Daylight and Sunlight published by the Building Research Establishment in 2011 (the BRE Report). The British Standard upon which this guidance is based is BS 8206-2:1992.

The British Standard current for this subject is BS 8206-2:2008 – Lighting for buildings. Code of practice for daylighting which superseded BS 8206-2:1992. Both Standards have been considered with superseded items having been substituted where appropriate.

The BRE Report states that the numerical values are advisory only and failure to meet the guideline criteria should not be used by Local Councils as an indicator as to whether a development is acceptable.

SURROUNDING PROPERTIES

The results show that there will be a nominal effect on the daylight and sunlight of the surrounding residential properties following the proposed development known as Mews, Wells Court, Oriol Place, London.

We have assessed the proposed Vertical Sky Component, No Sky Line and Annual Probable Sunlight Hour results and all figures fall in line with the criteria as set out in the national *BRE; Site Layout Planning for Daylight and Sunlight good practice guide*, having regard to the site context.

PROPOSED DEVELOPMENT: Mews, Wells Court, Oriol Place, London, NW3 1QN

All habitable rooms pass the Average Daylight Factor test and will fall in line with the *BRE; Site Layout Planning for Daylight and Sunlight good practice guide* and the rooms receive on average double the required value.

The current proposed design will produce well-lit rooms.

3 INTRODUCTION

Anderson Wilde and Harris has been instructed by Matthew Brumby of Pennington Phillips on the 21st April 2017. The instruction was to assess the impact of the mews development on Oriel Place in respects of daylight, sunlight and overshadowing, for the proposed development and surrounding residential properties.

A site visit was undertaken on the 24th April 2017. During which we obtained measurements and photographs of the proposed site and the surrounding area. We have not been able to inspect inside any of the neighbouring properties. Internal room layouts have been modelled using floor plans where available on the internet. Floorplans which have not been located have been assumed to be like the neighbouring properties and have been based and adapted on this.

It has been identified that the proposed development has the potential to affect the levels of daylight and sunlight to the surrounding homes.

It should be noted that this assessment does not consider Rights of Light, as it is not a material planning consideration and therefore, this issue has not been assessed as part of this report.

4 SCOPE OF THIS REPORT

This report considers the daylight and sunlight issues against the criteria set out for national discretionary guidance in the publication Site Layout Planning for Daylight and Sunlight published by the Building Research Establishment in 2011 (The BRE Report).

The guide is intended for building designers and their clients, consultants and planning officials. The advice is not mandatory and the report should not be part 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 light is only one of the many factors in site layout design.

It is noted that the guidelines are national guidelines; therefore, they should be applied flexibly having regard to site specific context. In certain circumstances the planning authority may wish to use alternative target values.

For example, in a city centre, or urban location, a high degree of obstruction may be unavoidable if new developments are to match the height and proportions of the existing buildings, and development sites are to be optimised for much needed housing delivery.

Government policy has emphasised the efficient use of brownfield land and the need to boost significantly the supply of housing, since the BRE Report was published in 2011. The British Standard current for this subject is BS 8206-2:2008 – Lighting for buildings. Code of practice for daylighting which superseded BS 8206-2:1992. The new British Standard has not altered the levels put forward in 1992, merely enhanced the methods by which light is calculated. The BRE report applies nationally and therefore it will be more difficult to obtain the required levels in urban areas compared to rural locations.

In the absence of other levels, this report relates to daylighting and sunlight levels to those of the BRE Report. For the reasons given in this paragraph and within the BRE Report, these levels should be seen as references and not as limiting values.

This report considers the effect the proposed development has on the surrounding residential buildings and the development itself.

Daylight and sunlight to non-residential units are not generally considered as they are not generally town-planning issues. Daylight to non-residential units has not been considered in this report.

The analyses used in this chapter are:

For daylight: The principles set out in Section 2 of the BRE Report – Light from the sky. i.e. the combined impacts of all direct sunlight and indirect skylight during the daytime

SCOPE OF THIS REPORT

For sunlight: The principles set out in Section 3 of the BRE Report – Sunlighting i.e. the impacts of only the direct sunlight

For internal daylighting: The principles set out in Appendix C of the BRE Report – Interior Daylighting Recommendations.

4.1 Daylight

The BRE Report advises that the diffuse daylighting to a building may be adversely affected by a development if, following that development, either:

- **The vertical sky component (VSC) at the centre of an existing main window is reduced to less than 27% or less than 0.8 times its former value; or**
- **The area of the working plane in a room that can receive direct skylight is reduced to less than 0.8 times its former value.**

This assessment is required for windows serving rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms.

According to the BRE Report, windows to bathrooms, toilets, store rooms, circulation areas and garages need not be assessed.

When assessing daylight, the numerical criteria must be viewed flexibly and should be considered against other site layout constraints. In addition, it is important to consider whether the adjoining building is itself a good neighbour, standing a reasonable distance from the boundary and not taking more than its fair share of light.

4.2 Sunlight

The BRE Report advises that the levels of Sunlighting to the rooms within a new development will appear reasonably sunlit provided:

- **The windows can receive at least 25% of annual probable sunlight hours (APSH) including 5% during winter months; and**
- **Have at least one main window wall facing within 90° of due south.**

The BRE Report states that all main living rooms within 90° of due south should be assessed. It states that bedrooms are less important, although care should be taken not to block out too much sun.

SCOPE OF THIS REPORT

The BRE Report guidelines refer to the method set out in BS 8206-2:1992 as the appropriate method to calculate sunlight.

The BRE Report specifically warns local planning authorities to exercise care when using this method of assessment in the existing building situation particularly when development has been historically undertaken close to the common boundary.

It is important to understand that people like and appreciate sunlight, although it is not an essential requirement of a dwelling, unlike daylight availability or access to a quiet noise environment. Therefore, larger reductions in sunlight may be acceptable if a new development is to match the height and proportion of the existing buildings nearby.

The BRE Report emphasises that the existing building section of the guide is “purely advisory” and that “Planning authorities may wish to use criteria based on the requirements for sunlight in particular types of development in particular areas”.

4.3 INTERNAL DAYLIGHTING DISTRIBUTION

The BRE Report advises that for the whole of a room to look adequately daylit, the following three criteria must be met:

(a) **Average Daylight Factor (ADF)**

The Average Daylight Factor calculation (ADF) enables a more accurate assessment of daylighting conditions as it assesses the internal illuminance within a room based on the average daylight factor, window size, and reflectance of internal surfaces enabling a more accurate assessment of daylight conditions.

The ADF methodology is generally not recommended for use to surrounding buildings however in some circumstances this is acceptable. More information on this can be found in the BRE guidance.

The BRE Report advises that where supplementary electric lighting is available, the recommended daylight factor levels for dwellings are 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. Additionally, for non-residential it specifies a minimum of 5% where no supplementary electric lighting is provided and 2% where electric lighting has been provided.

SCOPE OF THIS REPORT

The average daylight factor is calculated using the following formula:

$$df \text{ (ADF)} = \frac{T A_w \Theta}{A (1-R^2)} \quad \%$$

Where T is the diffuse visible transmittance of the glazing.

A_w is the net glazed area of the window (m²)

A is the total area of room surfaces: ceiling, floor, walls and windows (m²)

R is their average reflectance

Θ is the angle of visible sky in degrees

(b) Room Depth

If a daylit room is lit by windows in one wall only, the depth of the room should not exceed the limiting value given by:

$$\frac{L}{W} + \frac{L}{H} \leq \frac{2}{1 - R_b}$$

Where L is the depth of the room.

W is the room width

H is the window-head height above floor level

R_b is the average reflectance of surfaces in the rear half of the room (away from the windows)

(c) Position of the no-sky line

If a significant area of the working plane lies beyond the no-sky line (i.e. it receives no direct sunlight), then the distribution of daylight in the room will look poor and supplementary electric lighting will be required.

However if an adjoining building contains rooms that are greater than 5 metres deep and lit only from one side then greater movement of the no sky line is unavoidable.

SCOPE OF THIS REPORT

4.4 DETERMINING SIGNIFICANCE

The BRE Report states on Page 1: The advice given here is not mandatory and the guide should not be an instrument of planning policy; its aim is to help rather than constrain the designer.

Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design.

The BRE Report states that the numerical values are advisory only and failure to meet the guideline criteria should not be used by Local Councils as an indicator as to whether a development is acceptable.

The BRE Report suggests alternative targets can be used:

- Where the site already has an extant planning permission that the development want to vary, the VSC and APSH (annual probably sunlight hours) of the permitted scheme may be used as alternative benchmarks.
- In a historic city centre environment, it is often not possible to achieve 27% VSC, therefore it is sensible to use a target value consistent with levels of daylight typically experienced in the street.
- Where an existing building has windows that are unusually close to the site boundary and taking more than their fair share of light, to ensure that new development matches the height and proportions of existing buildings, the VSC and APSH targets for these windows could be set to those for a "mirror-image" building of the same height and size, and equal distance away on the other side of the boundary.

The BRE Report provides guidance on a semantic scale which can be used to describe the impact. This is summarised on the next page.

SCOPE OF THIS REPORT

Criteria	Impact Magnitude
<p>Where the decrease in daylight or sunlight fails to meet the guidelines and one or more the of the following scenarios applies:</p> <ul style="list-style-type: none"> • A large number of windows or large area of open space is affected • The loss of light is substantially outside the guidelines • All windows in a particular property are affected • The affected building or outdoor space has a particularly strong requirement for light, e.g. a living room in a dwelling or a children’s playground. 	Major Adverse
<p>Where the decrease in daylight or sunlight fails to meet the guidelines and a large number of windows or open space are affected;</p> <p>Or</p> <p>Here the decrease in daylight or sunlight fails to meet the guidelines, but one or more of the following scenarios applies:</p> <ul style="list-style-type: none"> • Only a small number of windows or limited area of open space is affected • The loss of light is only just outside the guidelines • An affected room has other sources of light • The affected building or outdoor space has a low level requirement for light. 	Minor Adverse
<p>Where the increase/decrease in daylight or sunlight fully meets the guidelines and only a small number of windows are affected</p> <p>And</p> <p>If there is an increase in daylight or sunlight, the increase is “tiny”.</p>	Negligible
<p>Where the increase in daylight or sunlight is small and/or the number of affected windows or area of open space affected is small.</p>	Minor Beneficial
<p>Where the increase in daylight or sunlight is large and/or the number of affected windows or area of open space affected is large.</p>	Major Beneficial

Note: Appendix I of the BRE report also suggests the use of “moderate adverse” and “moderate beneficial” impacts. However, there is no guidance on how to designate moderate impacts, although the guidance suggests that judgement should be use when classifying impact magnitude.

5 SOURCES OF INFORMATION

5.1 PROPOSED SITE

ARCHITECTS DRAWINGS

All Architect drawings have been provided by Mr. Matthew Brumby of Pennington Phillips.

The proposed development at Wells Court have been modelled using PDF provided by the Architect. The PDF are attached in Appendix 1.

TITLE	DRAWING No	DATE
Proposed Site Plan	5871/39	21.04.17
Proposed Floor Plan	5871/40	21.04.17
Proposed Sections	5871/41	20.04.17
Proposed Front and Rear Elevations	5871/42	21.04.17

5.2 SURROUNDING SITE

PROMAP

A Promap OS detail was downloaded. Promap has an accuracy level of +/- 1000mm.

VERTEX MODELLING

We instructed Vertex Modelling to provide us a 3D model of the existing site and the surrounding built environment. Vertex Modelling have an accuracy level of +/- 150mm.

ESTATE AGENT FLOOR PLANS

Floor plans have been used to construct internal layouts of the surrounding properties.

5.3 SITE VISIT

We inspected site on 24th April 2017. The site visit was to improve the accuracy of the modelled environment, provided by the Vertex modelling. Measurements and photographs were taken during this inspection.

6 SCHEME

EXISTING SITE

A site adjacent Wells Court, Oriel Place, London, NW3 1QN.

PROPOSED SITE

comprises of the following:

- Construction of a residential property with two flats: (1xStudio) and (1xBed Flat)
- The proposed development is 3 storeys, with a sloping roof to the rear.

It has been identified that the proposed development has the potential to affect the levels of daylight and sunlight to the surrounding homes.

It should be noted that this assessment does not consider Rights of Light, as it is not a material planning consideration and therefore, this issue has not been assessed as part of this report.

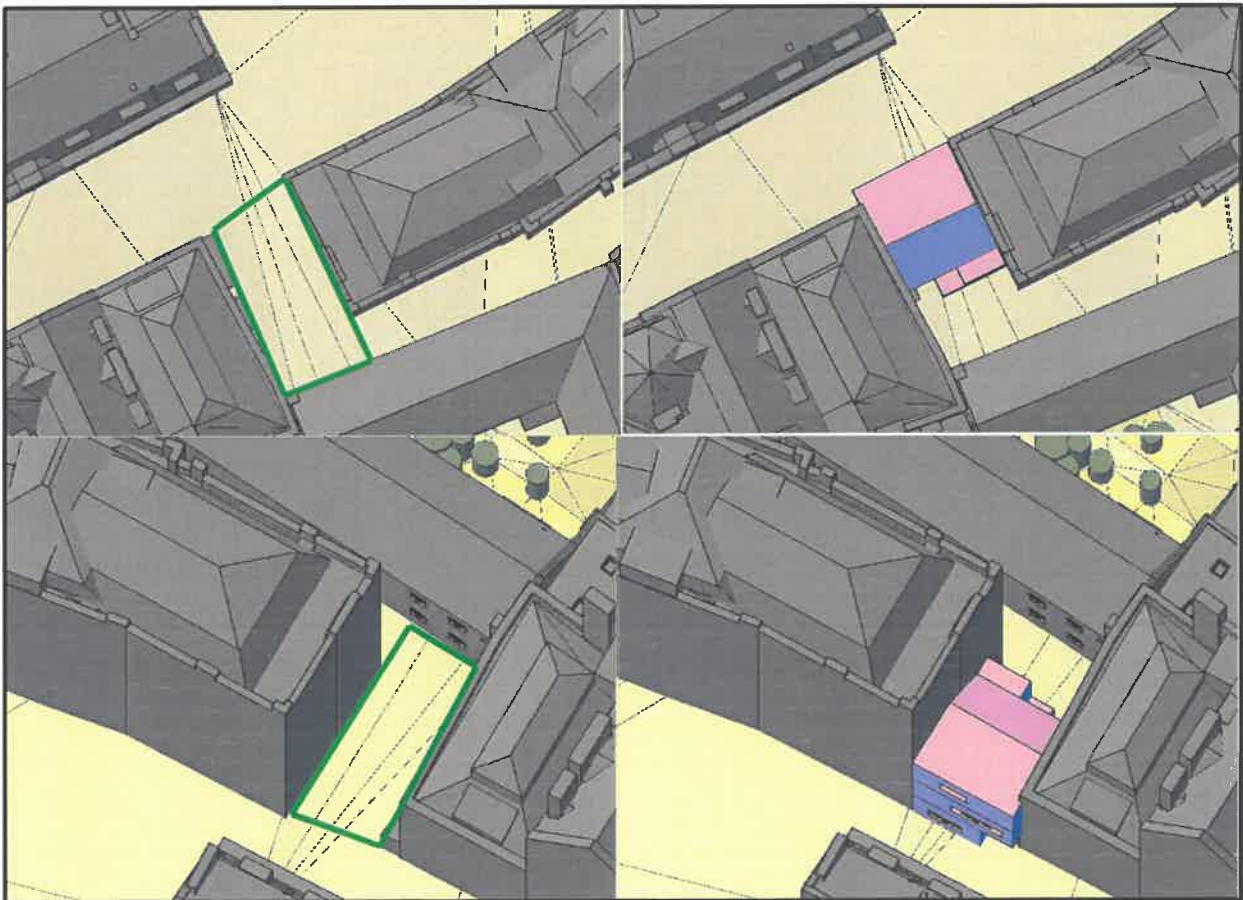


Figure 2 – Existing Site defined in Green and Proposed Development in Pink

7 RESULTS

7.1 SURROUNDING PROPERTIES

ORIEL COURT

The VSC to No1 Oriel Court was assessed. This is the most reliable assessment when looking at surrounding properties, when internal layouts are being assumed. All windows to No1 Oriel Court facing the proposed development will receive adequate light levels. No windows facing the development will be less than 27% or lower than 0.8 times their original values. It is thought that internal rooms are served by windows from the front and rear, therefore mitigating light will keep the room well lit.

7.2 PROPOSED DEVELOPMENT

The average daylight factor has been used to assess the quantity of light entering proposed rooms.

The results show that all rooms to the first and second floor will achieve the required values as detailed in the BRE guidance.

The ground floor is very slightly underachieving its required value of daylight. This is only very slight and we believe this to be sufficient for its purpose. The BRE guidance details for a living/kitchen/diner to achieve the required value of 2. R1 has a level of 1.99. Simply painting the internal wall surfaces white and/or using a pale or reflective floor covering will ensure the surface reflectance is increased and result in the ADF to 2.

RESULTS

7.3 OUTPUTS

VERTICAL SKY COMPONENT INC. ANNUAL PROBABLE SUNLIGHT HOURS

The Vertical Sky Component and APSH results for the surrounding properties and proposed development are attached in Appendix 2.

AVERAGE DAYLIGHT FACTOR

The Average Daylight Factor results for the proposed development are attached in Appendix 3.

8 Conclusion

It is worth reiterating that the national BRE Report states that "care should be taken in applying these guidelines", for example where the buildings stand very close or when a new development is to match the height and proportion of an existing building.

The BRE Report states that the numerical values are advisory only and failure to meet the guideline criteria should not be used by Local Councils as an indicator as to whether a development is acceptable.

The results show that the proposed development is mostly in line with the national BRE Site Layout Planning for Daylight and Sunlight good practice guide having regard to the site context.

We have looked at the Vertical Sky Component and Annual Probable Sunlight Hour tests to measure the daylighting and Sunlighting impact of the development on the surrounding buildings. There will be nominal impact on the surrounding buildings. The development will not impact on the surrounding which would decrease their values below the recommended level in the BRE Guidance.

We have looked at the Average Daylight Factor and Annual Probable Sunlight Hour tests to measure the proposed development itself. The proposed development will mostly receive the recommended levels of light. The Ground Floor Room which is slightly underachieving can be resolved by using a white paint to the internal walls.

In our opinion the proposed development is suitable and does not injure the surrounding properties for it to be considered inappropriate for the area.

We hope this Report covers all matters upon which you wished to be advised. However, if any items require clarification, please do not hesitate to contact us. We also take this opportunity to thank you earnestly for your esteemed instructions.

Signed: 

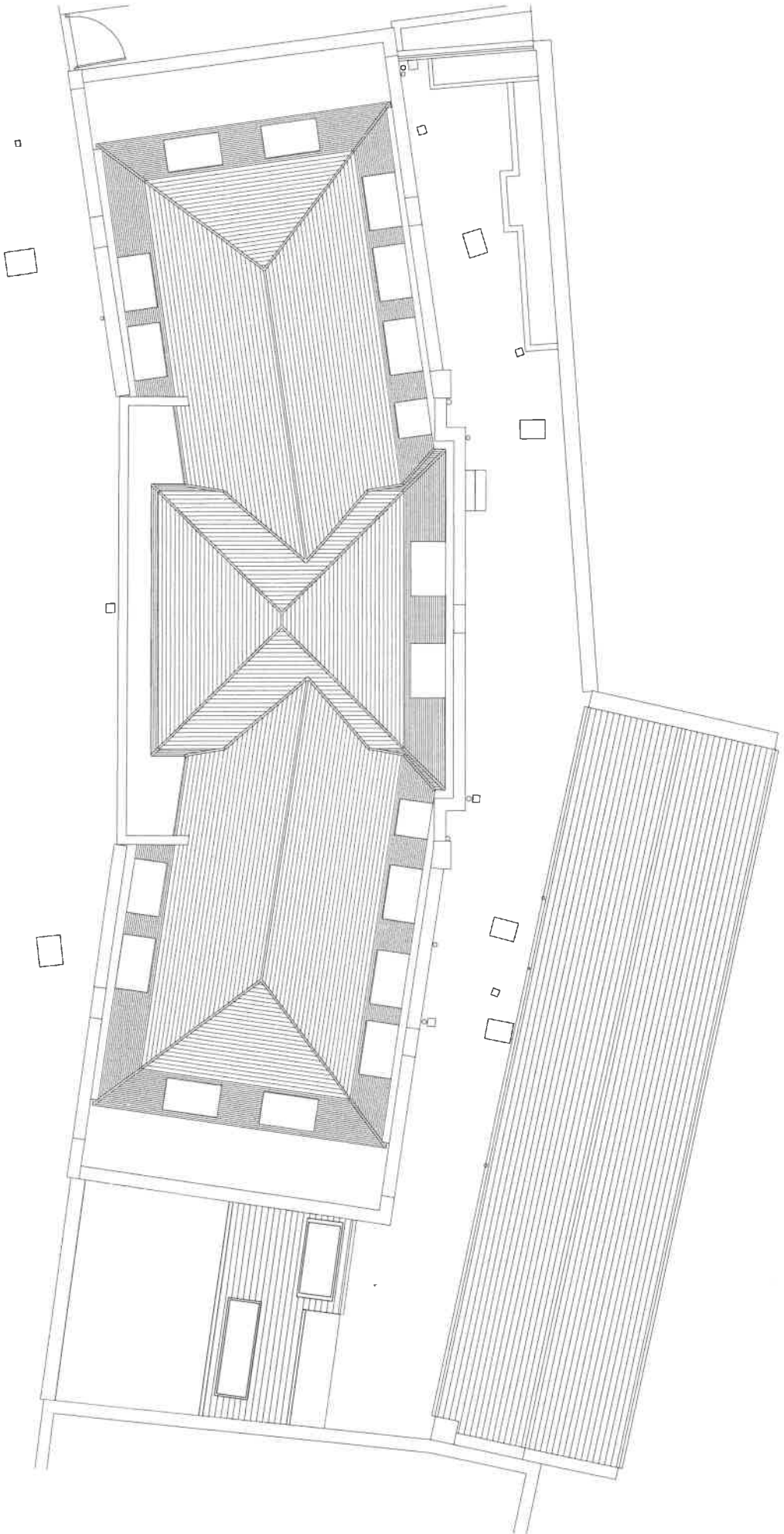
Felix Carter BA (Hons)
Building Surveyor

Signed: 

George Palos B.Sc. (Eng.) ACGI FRICS FCIArb MAE MIET
Chartered Surveyor, Director
Arbitrator, Independent Expert

9 Appendix

9.1 Appendix 1 – Drawings



1 Proposed Site Plan

1:100 (A1)

Notes
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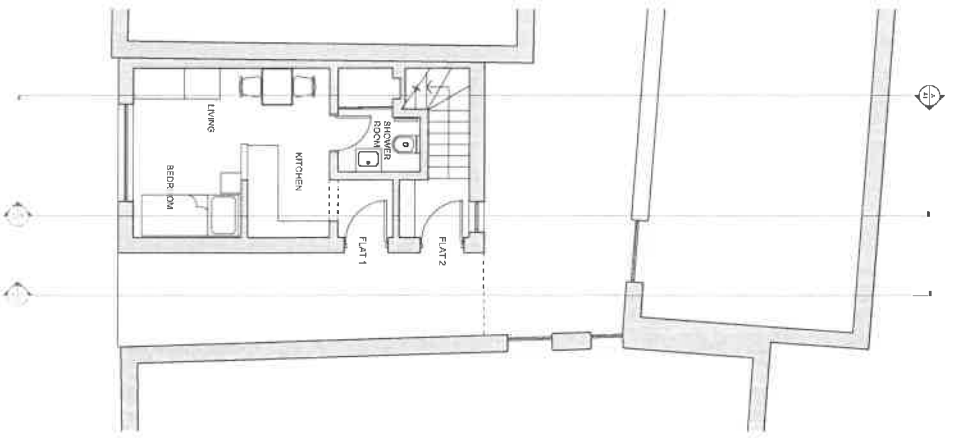
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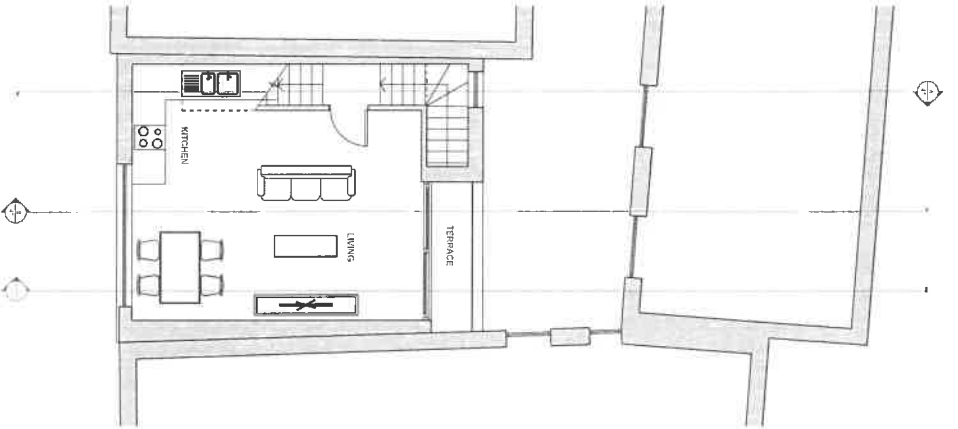
Rev. Date Remarks
A 30/05/17 Reduced Building Depth

Client:
Project: Walls Court, Oak Place - Mews House
Drawing: Proposed Site Plan

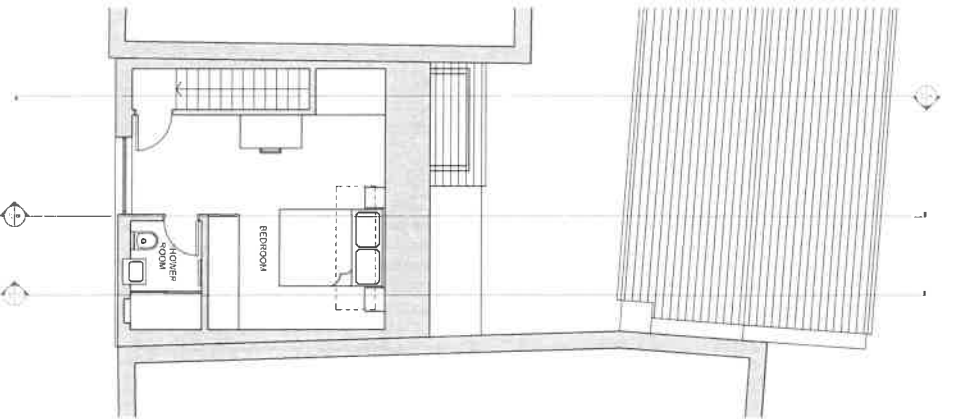
Drawing Number: 557/129
Revision: A
Date: 21/04/17
Scale: Planning



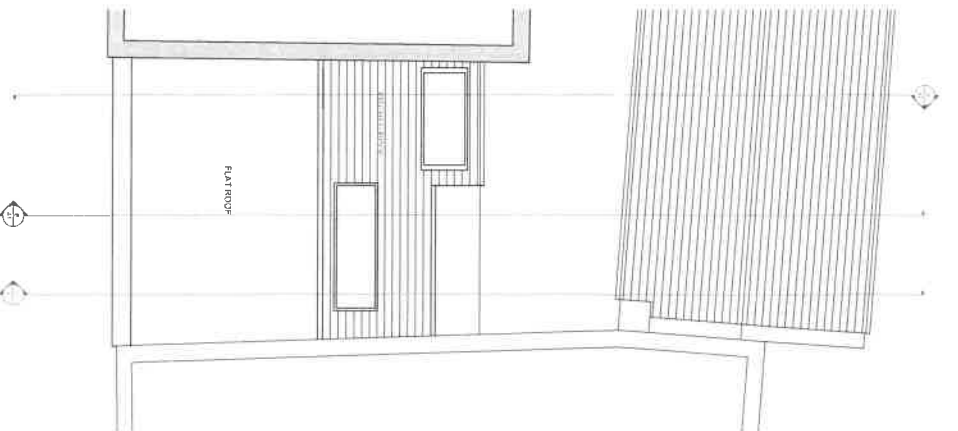
1 Proposed Ground Floor Plan



2 Proposed First Floor Plan



3 Proposed Second Floor Plan



3 Proposed Third Floor Plan

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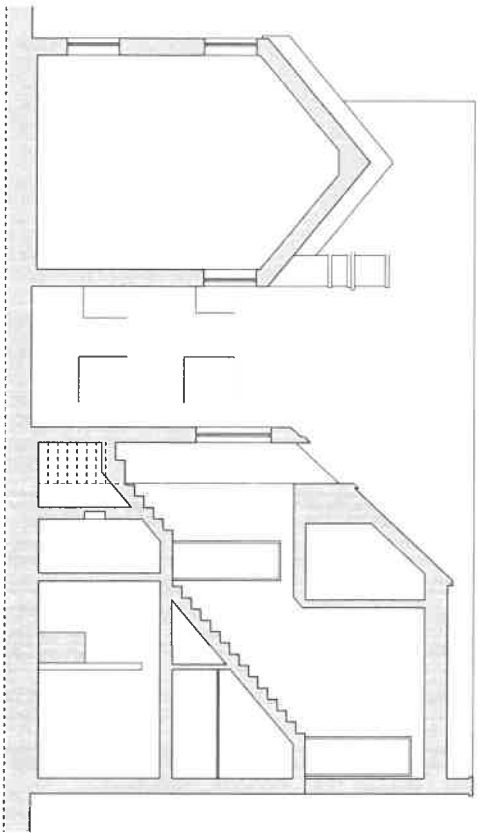
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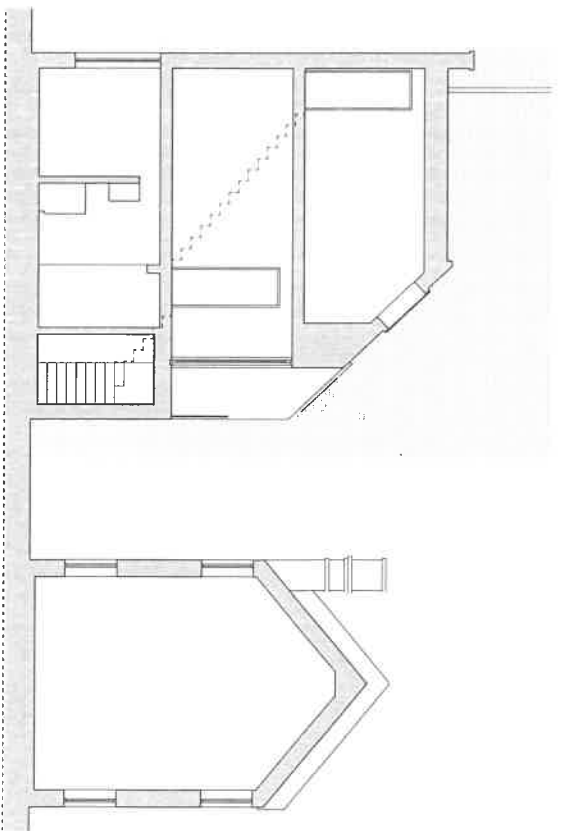
Rev. Date Reason
A 30/05/17 Reduced Building Depth

Client: Wells Court, Old Place - News House
Project: Proposed Floor Plan
Drawing: A
Date: 20/04/17
Scale: Planning

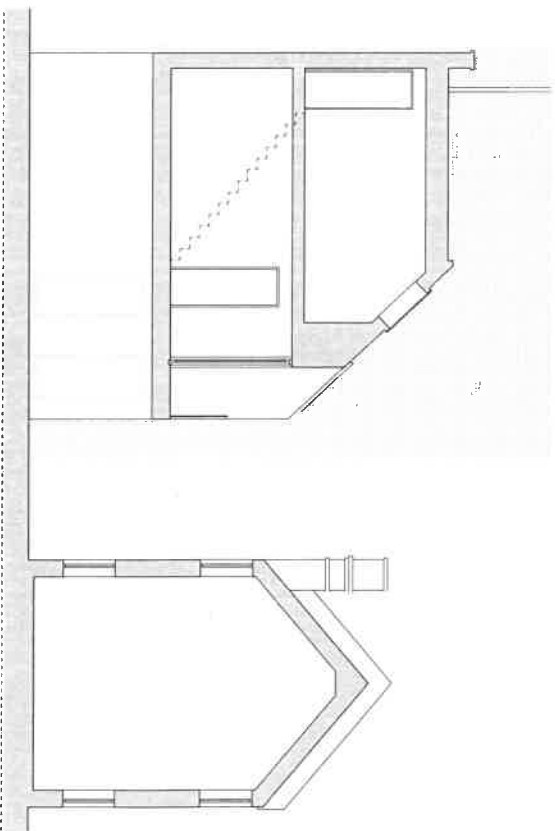
Drawing Number: 587140
Revision: A
Date: 20/04/17
Scale: Planning



1 Proposed Section A
Scale: 1/50 (2x A1, 1/200x A3)



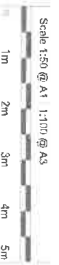
2 Proposed Section B
Scale: 1/50 (2x A1, 1/200x A3)



3 Proposed Section C
Scale: 1/50 (2x A1, 1/200x A3)

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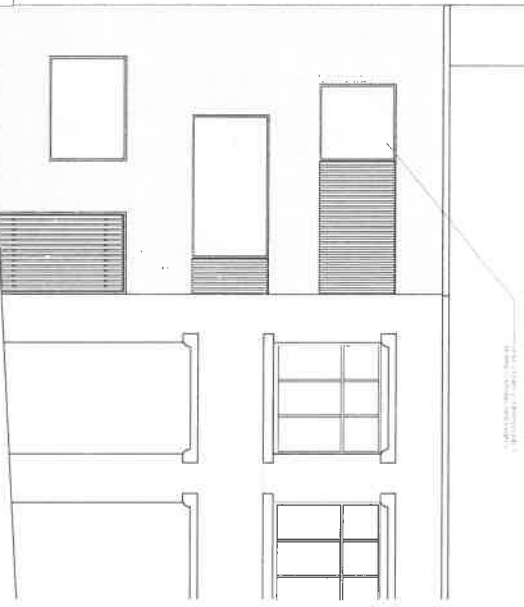


Rev. Date Reason
A 30/05/17 Reduced Building Depth

Check
Project: Walls Court, Oriel Place - Mews House
Drawing Number: 53/7/171
Revision: A
Date: 20/04/17
Scale: Planning



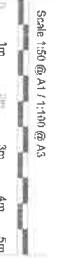
1 Proposed Front Elevation



1 Proposed Rear Elevation

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Rev. Date Remarks
A 30/05/17 Reduced Building Depth

Client: Wills Court, Old Price - News House
Project: Proposed Front and Rear Elevations
Drawing No: 5871/A2
Date: 27/04/17
Scale: Planning

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Architects Interior Design New Build Extension Refurbishment

9.2 Appendix 2 – Vertical Sky Component

Appendix 2 - Vertical Sky Component

Floor Ref.	Room Ref.	Room Attribute	Property Type	Window Ref.	VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria				
																			Annual	Pr/Ex	Meets BRE Criteria	Winter
1 Oriol Court																						
Ground	R1	Residential		W1	Existing 5.70	0.81	YES	341°N		*North*				*North*								
				W2	Proposed 4.59	0.82	YES	341°N		*North*		*North*				*North*						
				W3	Existing 6.59	0.87	YES	341°N		*North*		*North*				*North*						
				W4	Proposed 5.40	1.00	YES	161°	29	1.00	YES	7	1.00	YES	7	1.00	YES					
				W5	Existing 6.45	1.00	YES	161°	29	1.00	YES	7	1.00	YES	7	1.00	YES					
					Proposed 16.29	1.00	YES	161°	54	1.00	YES	12	1.00	YES	56	YES	14	YES				
					Proposed 24.95	1.00	YES	161°	54	1.00	YES	12	1.00	YES	56	YES	14	YES				
					Proposed 24.95	1.00	YES	161°	54	1.00	YES	12	1.00	YES	56	YES	14	YES				
First	R1	Residential		W1	Existing 8.84	0.99	YES	341°N		*North*				*North*								
				W2	Proposed 8.75	0.95	YES	341°N		*North*		*North*				*North*						
				W3	Existing 8.95	1.00	YES	161°	68	1.00	YES	17	1.00	YES	17	1.00	YES					
				W4	Proposed 8.47	1.00	YES	161°	68	1.00	YES	21	1.00	YES	21	1.00	YES					
					Existing 28.74	1.00	YES	161°	73	1.00	YES	21	1.00	YES	74	YES	21	YES				
					Proposed 28.74	1.00	YES	161°	73	1.00	YES	21	1.00	YES	74	YES	21	YES				
					Existing 29.49	1.00	YES	161°	73	1.00	YES	21	1.00	YES	74	YES	21	YES				
					Proposed 29.49	1.00	YES	161°	73	1.00	YES	21	1.00	YES	74	YES	21	YES				

9.3 Appendix 3 – Average Daylight Factor

Appendix 3 - Average Daylight Factor

Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use.	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Working Plane Factor	ADF Proposed	Req'd Value	Meets BRE Criteria
Wells Court Mews															
Ground	R1		Residential	LKD	W1-L	0.80	1.00	38.63	46.00	64.44	0.62	1.00	0.92	2.00	YES
					W1-U	0.80	1.12	52.78	47.90	64.44	0.62	1.00	1.07		
First	R1		Residential	LKD	W1-L	0.80	0.33	37.57	29.01	121.00	0.62	1.00	0.23	2.00	YES
					W1-U	0.80	1.67	38.29	28.90	100.78	0.62	1.00	0.62		
					W2-L	0.80	1.79	30.63	63.19	100.78	0.62	1.00	0.34		
					W2-U	0.80	2.22	32.48	64.46	100.78	0.62	1.00	0.85		
Second	R1		Residential	LKD	W1-L	0.80	1.00	38.63	36.72	64.44	0.62	1.00	0.74	2.00	YES
					W1-U	0.80	1.12	39.18	31.57	64.44	0.62	1.00	0.71		
													1.45	1.00	YES

