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Daylight and Sunlight Study

17 Ferdinand Street, Camden, London

26th January 2015

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CONTENTS

APPENDICES

1 EXECUTIVE SUMMARY

1.1 Overview

1.1.1 Right of Light Consulting has been commissioned to undertake a daylight and sunlight study of the proposed development at 17 Ferdinand Street, Camden, London.

1.1.2 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring properties at 10 to 14 Belmont Street, 21 & 23 Ferdiannd Street, Tottenhall (Ferdinand Estate) and Kent House. We have also assessed the impact on the proposed dwellings at 19 Ferdinand Street and 10a Belmont Street. The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice' by P J Littlefair 2011.

1.1.3 The window key in Appendix 1 identifies the windows analysed in this study. Appendices 2 to 6 give the numerical results of the various daylight and sunlight tests.

1.1.4 The numerical results confirm that the proposed design will have a low impact on the light receivable by its neighbouring properties. In our opinion there is no daylight/sunlight related reason why planning permission should not be granted for this scheme.

2 INFORMATION SOURCES

2.1 Documents Considered

2.1.1 This report is based on drawings:

Contemporary Design Solutions

141205-A(GA)100	Proposed Ground Floor Plan	Rev –
141205-A(GA)105	Proposed Mezzanine Floor Plan	Rev –
141205-A(GA)110	Proposed First Floor Plan	Rev –
141205-A(GA)120	Proposed Second Floor Plan	Rev –
141205-A(GA)130	Proposed Third Floor Plan	Rev –
141205-A(GA)140	Proposed Fourth Floor Plan	Rev –
141205-A(GA)150	Proposed Roof Plan	Rev –
141205-A(GA)400	Proposed West Elevation	Rev –
141205-A(GA)401	Proposed North Elevation	Rev –
141205-A(GA)402	Proposed East Elevation	Rev –
141205-A(GA)403	Proposed South Elevation	Rev –

3 METHODOLOGY OF THE STUDY

3.1 BRE Guide : Site Layout Planning for Daylight and Sunlight

3.1.1 The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice' by P J Littlefair 2011. In general, the BRE tests are based on the requirements of the British Standard, BS 8206 Part 2.

3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The following statement is quoted directly from the BRE guide:

3.1.3 "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not 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 since natural lighting is only one of many factors in site layout design."

3.2 Daylight to Windows

3.2.1 Diffuse daylight is the light received from the sun which has been diffused through the sky. Even on a cloudy day when the sun is not visible, a room will continue to be lit with light from the sky. This is diffuse daylight.

3.2.2 Diffuse daylight calculations should be undertaken to all rooms where daylight is required, including living rooms, kitchens and bedrooms. Usually, if a kitchen is less than 13m^2 it is considered to be a non-habitable room and the daylight tests need not be applied. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

3.3 Daylight to existing neighbouring properties

3.3.1 The BRE guide contains two tests which measure diffuse daylight to existing neighbouring properties:

3.3.2 Test 1 Vertical Sky Component

The percentage of the sky visible from the centre of a window is known as the Vertical Sky Component. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.

3.3.3 Test 2 Daylight Distribution

The BRE guide states that where room layouts are known, the impact on the daylighting distribution can be found by plotting the, 'no sky line' in each of the main rooms. The no-sky line is a line which separates areas of the working plane that can and cannot have a direct view of the sky. Daylight may be adversely affected if after the development 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.

3.4 Daylight to new and proposed dwellings

3.4.1 The method for assessing new or proposed dwellings (such as those at 10a Belmont Street and 19 Ferdinand Street) is slightly different to that used to assess existing neighbouring properties. The following tests should be applied to new and proposed dwellings:

3.4.2 Test 1 Average Daylight Factor

3.4.3 The Average Daylight Factor can be calculated using the following formula:

$$df = \frac{T\ Aw\ \theta}{A\ (1-R^2)}\ \%$$

Where

T is the diffuse visible transmittance of the glazing
Aw is the net glazed area of the window (m^2)
A is the total area of the room surfaces (m^2)
R is their average reflectance
Θ is the angle of visible sky in degrees

3.4.4 The guide recommends an Average Daylight Factor of 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary lighting is provided. There are additional minimum recommendations for dwellings of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

3.4.5 Test 2 Room Depth

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

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

Where

W is the room width

H is the window-head height above floor level

R_b is the average reflectance of the surfaces in the rear half of the room

3.4.6 Test 3 Daylight Distribution

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

The no sky line assessment is not applicable where a room derives its daylight solely from a light well or atrium. In these situations the room relies on borrowed light instead of direct skylight.

3.5 Sunlight availability to windows at existing neighbouring properties

3.5.1 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The guide states that kitchens and bedrooms are less important, although care should be taken not to block too much sunlight.

3.5.2 The BRE guide states that sunlight availability may be adversely affected if 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 and
- 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% of annual probable sunlight hours.

3.6 Sunlight availability to windows at new and proposed dwellings

3.6.1 The BRE guide recommends that where possible each dwelling should have at least one main living room window that faces within 90 degrees of due south. However, the guide acknowledges that this is not always possible when it comes to flats.

3.6.2 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The guide states that sunlight is viewed as less important in kitchens and bedrooms. In non-domestic buildings, any spaces which are deemed to have a specific requirement for sunlight should be checked.

3.6.3 The BRE guide recommends that main living room windows should receive 25% of the total annual probable sunlight hours, including 5% of the annual probable sunlight hours during the winter months between 21st September and 21st March.

3.7 Overshadowing to existing gardens and open spaces

3.7.1 The availability of sunlight should be checked for all open spaces where sunlight is required. This would normally include:

- Gardens, usually the main back garden of a house
- Parks and playing fields
- Children's playgrounds
- Outdoor swimming pools and paddling pools
- Sitting out areas, such as those between non-domestic buildings and in public squares
- Focal points for views such as a group of monuments or fountains.

3.7.2 The BRE guide recommends that at least 50% of the area of each amenity space listed above should receive at least two hours of sunlight on 21st 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 two hours of sun on 21st March is less than 0.8 times its former value, then the loss of light is likely to be noticeable.

4 RESULTS OF THE STUDY

4.1 Windows & Amenity Areas Considered

4.1.1 Appendix 1 provides a plan to indicate the positions of the windows and amenity areas analysed in this study.

4.2 Numerical Results

4.2.1 Appendices 2 to 6 gives the detailed numerical daylight and sunlight test results. The results are interpreted below.

4.3 Daylight to Windows

4.3.1 Refer to Appendix 2 for the daylight results pertaining to existing neighbouring properties. All existing neighbouring properties pass the Vertical Sky Component test. All rooms tested also pass the daylight distribution test.

4.3.2 We note that the windows at Tottenhall are already obstructed by overhanging balconies. The BRE guide acknowledges that existing windows with balconies above them typically receive less daylight as the balcony cuts out light from the top part of the sky and that even a modest obstruction opposite may result in a large relative impact on the VSC. The guide goes on to explain that the correct way to apply the VSC test in this instance is by assuming that the balconies do not exist. If the windows meet the targets on this basis then this confirms that it is the balcony that prevents the targets from being met as opposed to an unreasonable level of obstruction caused by the development. The windows at Tottenhall pass the Vertical Sky Component test without the overhanging balconies in place (see Appendix 3) and meet the BRE recommendations.

4.3.3 19 Ferdinand Street and 10a Belmont Street are proposed new developments and therefore in accordance with the BRE recommendations we have applied the Average Daylight Factor (ADF) test. All rooms meet or surpass the minimum recommended ADF targets, including those hampered by balconies (see relevant results in Appendices 4 and 5).

4.4 Sunlight to Windows

4.4.1 All windows pass both the total annual sunlight hours test and the winter sunlight hours test with the exception of four windows at Tottenhall (Ferdinand Estate). However, the direct sunlight hours targets stated in the BRE guide are only intended

to be applied to main living room windows. From our external observations, it seems unlikely that the windows which fall short serve main living rooms. Moreover, the windows are already hampered by overhangs. We are therefore of the opinion that the impact on sunlight is acceptable.

4.5 Overshadowing to Gardens and Open Spaces

4.5.1 The results show that 54% or more of the area of each amenity space will receive at least two hours of sunlight on 21st March. This is better than the BRE recommendation which states that at least 50% of any garden or amenity area should receive at least two hours of sunlight on the 21st March. The results also confirm that the total of the surrounding amenity areas which can receive at least two hours of sunlight on the 21st March is 79% (see Appendix 2 and 6). The proposed development therefore passes the BRE overshadowing to gardens and open spaces test.

4.6 Conclusion

4.6.1 The numerical results confirm that the proposed design will have a low impact on the light receivable by its neighbouring properties. In our opinion there is no daylight/sunlight related reason why planning permission should not be granted for this scheme.

5 CLARIFICATIONS

5.1 General

5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.

5.1.2 We have undertaken the survey following the guidelines of the RICS publication "Surveying Safely".

5.1.3 We have used our best endeavours to ensure all relevant windows within the neighbouring properties have been identified.

5.1.4 Where limited access is available, reasonable assumptions will have been made.

5.1.5 We have adopted the conventional approach of assessing all habitable rooms within domestic properties.

5.1.6 Right of Light Consulting have endeavoured to include in the report those matters, which they have knowledge of or of which they have been made aware, that might adversely affect the validity of the opinion given.

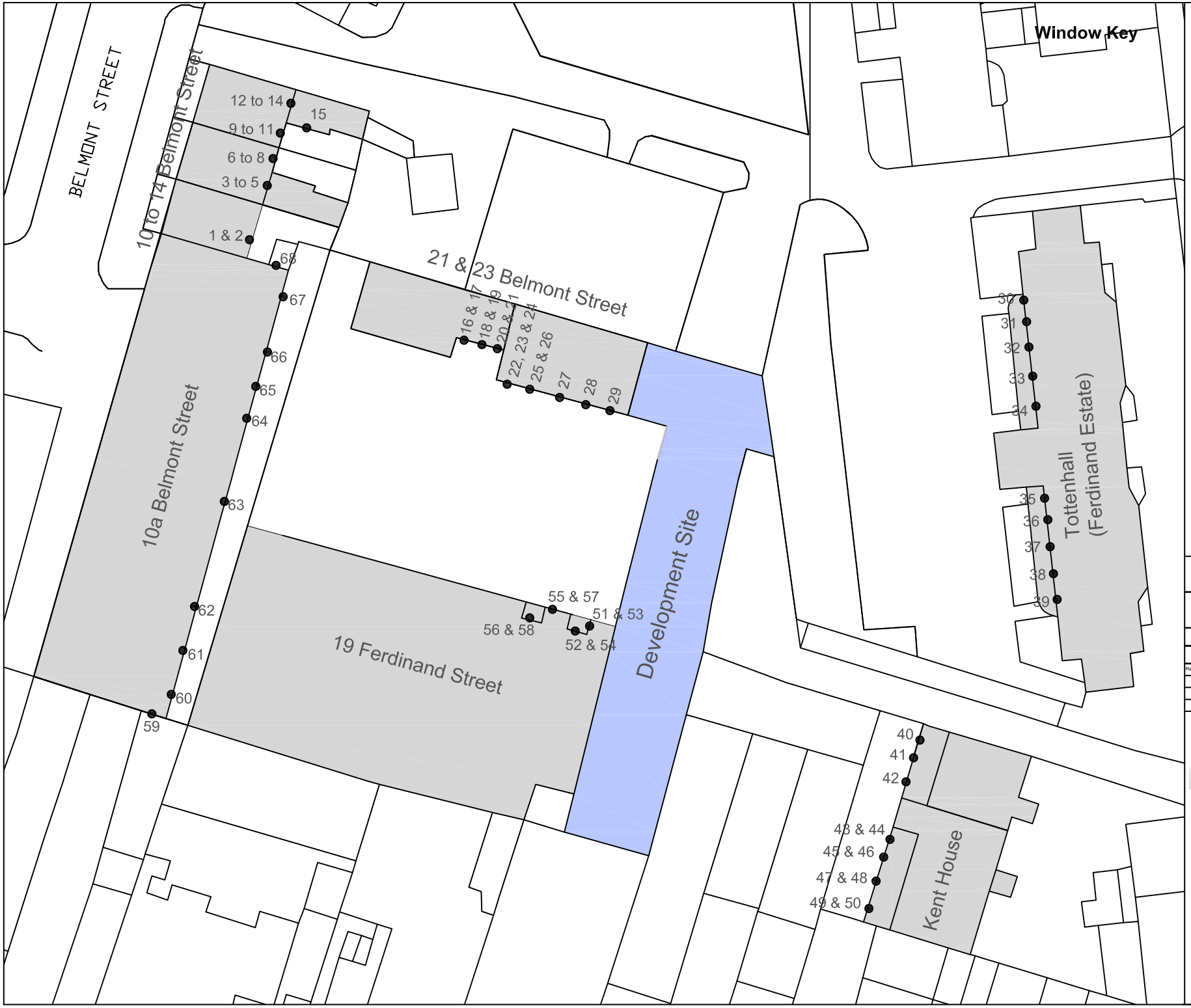
5.2 Project Specific

5.2.1 None

APPENDICES

APPENDIX 1

WINDOW KEY



Project Name:	17 Ferdinand Street, Camden, London NW1 10
Drawing Title:	Appendix 1 - Neighbouring Windows
Scale:	Do not scale
Drawing No:	1
Rev.	-

Rev	Date	Details of revision

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APPENDIX 2

RESULTS (EXISTING PROPERTIES)

Appendix 2 - Vertical Sky Component
17 Ferdinand Street, London NW1

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
10 to 14 Belmont Street					
Window 1 (Ground)	Supp Light	18.5%	18.5%	0.0%	1.0
Window 2 (First)	Supp Light	20.8%	20.7%	0.2%	0.99
Window 3 (Ground)	Supp Light	27.1%	26.8%	0.3%	0.99
Window 4 (First)	Supp Light	30.2%	29.6%	0.6%	0.98
Window 5 (Second)	Supp Light	31.9%	30.9%	1.0%	0.97
Window 6 (Ground)	Supp Light	21.2%	21.1%	0.1%	0.99
Window 7 (First)	Supp Light	29.7%	29.3%	0.4%	0.99
Window 8 (Second)	Supp Light	32.5%	31.6%	0.9%	0.97
Window 9 (Ground)	Supp Light	19.7%	19.1%	0.6%	0.97
Window 10 (First)	Supp Light	30.9%	30.3%	0.6%	0.98
Window 11 (Second)	Supp Light	33.4%	32.5%	0.9%	0.97
Window 12 (Ground)	Supp Light	30.5%	29.8%	0.7%	0.98
Window 13 (First)	Supp Light	32.9%	32.2%	0.8%	0.98
Window 14 (Second)	Supp Light	34.5%	33.7%	0.8%	0.98
Window 15 (Ground)	Supp Light	11.0%	10.9%	0.2%	0.98
21 & 23 Ferdinand Street					
Window 16 (Ground)	Supp Light	17.3%	16.2%	1.1%	0.93
Window 17 (First)	Supp Light	21.1%	19.2%	1.9%	0.91
Window 18 (Ground)	Supp Light	19.7%	19.1%	0.6%	0.97
Window 19 (First)	Supp Light	26.7%	24.6%	2.1%	0.92
Window 20 (Ground)	Supp Light	18.2%	18.1%	0.0%	1.0
Window 21 (First)	Supp Light	27.8%	25.4%	2.4%	0.91
Window 22 (Ground)	Supp Light	21.8%	19.0%	2.8%	0.87
Window 23 (First)	Galley Kitchen	24.7%	21.8%	3.0%	0.88
Window 24 (First)	Bedroom	27.8%	24.8%	3.1%	0.89
Window 25 (Ground)	Living Room[1]	22.3%	17.8%	4.5%	0.8
Window 26 (First)	Bedroom	27.9%	24.0%	3.9%	0.86
Window 27 (Ground)	Living Room[1]	22.3%	17.8%	4.5%	0.8
Window 28 (Ground)	Living Room[1]	22.3%	17.8%	4.5%	0.8
Window 29 (Ground)	Living Room[1]	22.3%	17.8%	4.5%	0.8

Appendix 2 - Vertical Sky Component
17 Ferdinand Street, London NW1

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
Tottenhall - Ferdinand Estate					
Window 30 (Ground)	Supp Light	9.3%	6.9%	2.4%	0.74
Window 31 (Ground)	Supp Light	9.3%	6.7%	2.6%	0.72
Window 32 (Ground)	Supp Light	9.0%	6.3%	2.7%	0.7
Window 33 (Ground)	Supp Light	8.3%	5.5%	2.9%	0.66
Window 34 (Ground)	Supp Light	6.7%	4.5%	2.1%	0.68
Window 35 (Ground)	Supp Light	4.7%	2.1%	2.6%	0.44
Window 36 (Ground)	Supp Light	6.9%	3.4%	3.5%	0.49
Window 37 (Ground)	Supp Light	7.4%	3.9%	3.5%	0.53
Window 38 (Ground)	Supp Light	7.3%	3.8%	3.5%	0.52
Window 39 (Ground)	Supp Light	6.8%	3.5%	3.4%	0.51
Kent House					
Window 40 (First)	Supp Light	31.1%	26.6%	4.5%	0.86
Window 41 (First)	Supp Light	28.3%	24.1%	4.3%	0.85
Window 42 (First)	Supp Light	22.5%	18.5%	4.0%	0.82
Window 43 (Ground)	Supp Light	18.5%	16.7%	1.8%	0.9
Window 44 (First)	Supp Light	23.1%	21.0%	2.1%	0.91
Window 45 (Ground)	Supp Light	23.5%	21.0%	2.5%	0.89
Window 46 (First)	Supp Light	28.9%	25.9%	3.0%	0.9
Window 47 (Ground)	Supp Light	26.2%	23.8%	2.4%	0.91
Window 48 (First)	Supp Light	32.0%	29.0%	3.0%	0.91
Window 49 (Ground)	Supp Light	28.2%	26.1%	2.1%	0.92
Window 50 (First)	Supp Light	33.4%	30.8%	2.6%	0.92

Note 1. Main windows are of equal size, serve the same room and therefore the VSC results have been averaged in accordance with paragraph 2.2.6 of the BRE guide.

Appendix 2 - Daylight Distribution
17 Ferdinand Street, London NW1

Reference	Use Class	Daylight Distribution			
		Before	After	Loss	Ratio
21 & 23 Ferdinand Street					
Windows 22, 25, 27 & 29	Lower Ground Living Area	70%	67%	3.0%	0.96
Window 23	Galley Kitchen	32%	32%	0.0%	1.0
Window 24	Bedroom	86%	74%	11.6%	0.86
Windows 25, 27, 28 & 29	Mezzanine Living Area	41%	40%	0.9%	0.98
Window 26	Bedroom	78%	65%	13.3%	0.83

Appendix 2 - Sunlight to Windows
17 Ferdinand Street, London NW1

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
10 to 14 Belmont Street									
Window 1 (Ground)	Supp Light	12%	12%	0%	1.0	0%	0%	0%	1.0
Window 2 (First)	Supp Light	16%	16%	0%	1.0	0%	0%	0%	1.0
Window 3 (Ground)	Supp Light	32%	31%	1%	0.97	4%	3%	1%	0.75
Window 4 (First)	Supp Light	38%	36%	2%	0.95	8%	6%	2%	0.75
Window 5 (Second)	Supp Light	38%	36%	2%	0.95	8%	6%	2%	0.75
Window 6 (Ground)	Supp Light	20%	20%	0%	1.0	1%	1%	0%	1.0
Window 7 (First)	Supp Light	38%	38%	0%	1.0	7%	7%	0%	1.0
Window 8 (Second)	Supp Light	43%	43%	0%	1.0	10%	10%	0%	1.0
Window 9 (Ground)	Supp Light	34%	34%	0%	1.0	4%	4%	0%	1.0
Window 10 (First)	Supp Light	39%	39%	0%	1.0	7%	7%	0%	1.0
Window 11 (Second)	Supp Light	46%	46%	0%	1.0	11%	11%	0%	1.0
Window 12 (Ground)	Supp Light	42%	42%	0%	1.0	9%	9%	0%	1.0
Window 13 (First)	Supp Light	49%	49%	0%	1.0	13%	13%	0%	1.0
Window 14 (Second)	Supp Light	50%	50%	0%	1.0	13%	13%	0%	1.0
Window 15 (Ground)	Supp Light	31%	31%	0%	1.0	5%	5%	0%	1.0
21 & 23 Ferdinand Street									
Window 16 (Ground)	Supp Light	39%	37%	2%	0.95	13%	11%	2%	0.85
Window 17 (First)	Supp Light	53%	46%	7%	0.87	21%	15%	6%	0.71
Window 18 (Ground)	Supp Light	36%	35%	1%	0.97	11%	10%	1%	0.91
Window 19 (First)	Supp Light	61%	52%	9%	0.85	21%	15%	6%	0.71
Window 20 (Ground)	Supp Light	31%	31%	0%	1.0	9%	9%	0%	1.0
Window 21 (First)	Supp Light	64%	54%	10%	0.84	22%	16%	6%	0.73
Window 22 (Ground)	Living Room	48%	33%	15%	0.69	10%	7%	3%	0.7
Window 23 (First)	Galley Kitchen	55%	41%	14%	0.75	12%	10%	2%	0.83
Window 24 (First)	Bedroom	66%	52%	14%	0.79	21%	15%	6%	0.71
Window 25 (Ground)	Living Room	54%	38%	16%	0.7	13%	10%	3%	0.77
Window 26 (First)	Bedroom	64%	48%	16%	0.75	19%	14%	5%	0.74
Window 27 (Ground)	Living Room	55%	38%	17%	0.69	12%	9%	3%	0.75
Window 28 (Ground)	Living Room	51%	31%	20%	0.61	10%	7%	3%	0.7
Window 29 (Ground)	Living Room	44%	26%	18%	0.59	8%	5%	3%	0.63

Appendix 2 - Sunlight to Windows
17 Ferdinand Street, London NW1

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
Tottenhall - Ferdinand Estate									
Window 30 (Ground)	Supp Light	13%	8%	5%	0.62	3%	1%	2%	0.33
Window 31 (Ground)	Supp Light	13%	6%	7%	0.46	4%	1%	3%	0.25
Window 32 (Ground)	Supp Light	12%	7%	5%	0.58	4%	2%	2%	0.5
Window 33 (Ground)	Supp Light	10%	6%	4%	0.6	3%	3%	0%	1.0
Window 34 (Ground)	Supp Light	7%	4%	3%	0.57	0%	0%	0%	1.0
Window 35 (Ground)	Supp Light	10%	4%	6%	0.4	3%	3%	0%	1.0
Window 36 (Ground)	Supp Light	9%	5%	4%	0.56	3%	3%	0%	1.0
Window 37 (Ground)	Supp Light	9%	5%	4%	0.56	3%	3%	0%	1.0
Window 38 (Ground)	Supp Light	10%	6%	4%	0.6	3%	3%	0%	1.0
Window 39 (Ground)	Supp Light	8%	5%	3%	0.63	2%	2%	0%	1.0

Appendix 2 - Overshadowing to Gardens and Open Spaces
17 Ferdinand Street, London NW1

Reference	Total Area	Area receiving at least two hours of sunlight on 21st March						
		Before		After		Loss		Ratio
Amenity Areas								
Amenity Area 1	695.4 m2	695.37 m2	100%	695.37 m2	100%	0.0 m2	0%	1.0
Amenity Area 2	591.59 m2	363.15 m2	61%	309.46 m2	52%	53.68 m2	9%	0.85
Amenity Area 3	223.68 m2	193.47 m2	86%	193.47 m2	86%	0.0 m2	0%	1.0
Total Amenity Area	1510.67 m2	1251.98 m2	83%	1198.3 m2	79%	53.68 m2	4%	0.95

APPENDIX 3

RESULTS WITHOUT OVERHANGS (EXISTING PROPERTIES)

Appendix 3 - Alternative Vertical Sky Component (Excluding Balconies)
17 Ferdinand Street, London NW1

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
Tottenhall - Ferdinand Estate					
Window 30 (Ground)	Supp Light	29.9%	27.4%	2.5%	0.92
Window 31 (Ground)	Supp Light	30.3%	27.6%	2.6%	0.91
Window 32 (Ground)	Supp Light	29.5%	26.7%	2.8%	0.9
Window 33 (Ground)	Supp Light	27.0%	24.0%	3.0%	0.89
Window 34 (Ground)	Supp Light	21.1%	18.8%	2.2%	0.89
Window 35 (Ground)	Supp Light	19.5%	17.1%	2.3%	0.88
Window 36 (Ground)	Supp Light	25.8%	22.6%	3.2%	0.88
Window 37 (Ground)	Supp Light	27.9%	24.9%	3.1%	0.89
Window 38 (Ground)	Supp Light	28.2%	25.4%	2.8%	0.9
Window 39 (Ground)	Supp Light	27.3%	24.8%	2.5%	0.91

APPENDIX 4

RESULTS (PROPOSED DWELLINGS)

Appendix 4 - Average Daylight Factor (ADF) and Daylight Distribution
17 Ferdinand Street, London NW1

Reference	Target ADF based on room use		Average Daylight Factor Coefficients					Actual ADF		Visible Sky	
	Primary room use	ADF	T	Aw	A	R	Theta	ADF	Result	Percentage	Result
19 Ferdinand Street											
Window 51			0.68	1.14	116.21	0.69	24.7	0.3%			
Window 52 (lower)			0.68	1.29	116.21	0.69	27.8	0.2%			
Window 52 (upper)			0.68	1.9	116.21	0.69	24.0	0.5%			
Total ADF for room	Living/Dining/Kitchen	2.0%						**1.0%**	**Fail**	**83%**	**Pass**
Window 53			0.68	1.14	116.21	0.69	25.6	0.3%			
Window 54 (lower)			0.68	1.29	116.21	0.69	29.2	0.2%			
Window 54 (upper)			0.68	1.9	116.21	0.69	24.5	0.5%			
Total ADF for room	Living/Dining/Kitchen	2.0%						**1.0%**	**Fail**	**83%**	**Pass**
Window 55			0.68	1.61	102.29	0.69	56.6	1.2%			
Window 56 (lower)			0.68	1.31	102.29	0.69	41.8	0.3%			
Window 56 (upper)			0.68	1.93	102.29	0.69	34.7	0.8%			
Total ADF for room	Living/Dining/Kitchen	2.0%						**2.3%**	**Pass**	**99%**	**Pass**
Window 57			0.68	1.61	102.29	0.69	61.5	1.3%			
Window 58 (lower)			0.68	1.31	102.29	0.69	44.7	0.3%			
Window 58 (upper)			0.68	1.93	102.29	0.69	36.5	0.9%			
Total ADF for room	Living/Dining/Kitchen	2.0%						**2.5%**	**Pass**	**100%**	**Pass**
10a Belmont Street											
Window 59 (lower)			0.68	0.23	112.9	0.67	90.0	0.1%			
Window 59 (upper)			0.68	2.29	112.9	0.67	90.0	2.2%			
Window 60 (lower)			0.68	0.23	112.9	0.67	89.6	0.1%			
Window 60 (upper)			0.68	2.29	112.9	0.67	89.7	2.2%			
Window 61 (lower)			0.68	0.23	112.9	0.67	89.6	0.1%			
Window 61 (upper)			0.68	2.29	112.9	0.67	89.7	2.2%			
Total ADF for room	Living/Dining	1.5%						**6.8%**	**Pass**	**100%**	**Pass**
Window 62 (lower)			0.68	0.23	66.46	0.7	89.5	0.2%			
Window 62 (upper)			0.68	2.29	66.46	0.7	89.6	4.1%			
Total ADF for room	Bedroom	1.0%						**4.3%**	**Pass**	**99%**	**Pass**
Window 63 (lower)			0.68	0.23	101.94	0.7	89.4	0.1%			
Window 63 (upper)			0.68	2.29	101.94	0.7	89.5	2.7%			
Total ADF for room	Living/Dining	1.5%						**2.8%**	**Pass**	**98%**	**Pass**
Window 64 (lower)			0.68	1.7	118.92	0.66	0.4	0.0%			
Window 64 (upper)			0.68	2.86	118.92	0.66	89.4	2.6%			
Window 65 (lower)			0.68	1.7	118.92	0.66	0.4	0.0%			
Window 65 (upper)			0.68	2.86	118.92	0.66	89.4	2.6%			
Total ADF for room	Living/Dining	1.5%						**5.2%**	**Pass**	**100%**	**Pass**
Window 66 (lower)			0.68	1.7	64.77	0.68	0.4	0.0%			
Window 66 (upper)			0.68	2.86	64.77	0.68	89.3	5.0%			
Total ADF for room	Kitchen	2.0%						**5.0%**	**Pass**	**100%**	**Pass**
Window 67 (lower)			0.68	0.23	77.15	0.68	88.9	0.1%			
Window 67 (upper)			0.68	2.29	77.15	0.68	89.2	3.4%			
Window 68 (lower)			0.68	0.23	77.15	0.68	89.0	0.1%			
Window 68 (upper)			0.68	2.29	77.15	0.68	89.2	3.4%			
Total ADF for room	Bedroom	1.0%						**7.0%**	**Pass**	**100%**	**Pass**

Appendix 4 - Room Depth Calculation
17 Ferdinand Street, London NW1

Room	Room Depth Coefficients				Room Depth Calculation			Result
	L	W	H	Rb	L/W + L/H	<=	2/1-Rb	
19 Ferdinand Street								
Window 51	2.1	8.0	2.1	0.69	1.26	<=	6.51	Pass
Window 52	6.5	4.5	2.1	0.69	4.54	<=	6.51	Pass
Window 53	2.1	8.0	2.1	0.69	1.26	<=	6.51	Pass
Window 54	6.5	4.5	2.1	0.69	4.54	<=	6.51	Pass
Window 55	6.0	4.4	2.1	0.69	4.22	<=	6.41	Pass
Window 56	5.3	4.4	2.1	0.69	3.73	<=	6.41	Pass
Window 57	6.0	4.4	2.1	0.69	4.22	<=	6.41	Pass
Window 58	5.3	4.4	2.1	0.69	3.73	<=	6.41	Pass
10a Belmont Street								
Window 59	6.3	4.9	2.4	0.67	3.91	<=	6.04	Pass
Window 60	4.9	6.3	2.4	0.67	2.82	<=	6.04	Pass
Window 61	4.9	6.3	2.4	0.67	2.82	<=	6.04	Pass
Window 62	4.8	3.0	2.4	0.7	3.6	<=	6.69	Pass
Window 63	4.8	6.2	2.4	0.7	2.77	<=	6.68	Pass
Window 64	4.9	6.6	2.3	0.66	2.87	<=	5.89	Pass
Window 65	4.9	6.6	2.3	0.66	2.87	<=	5.89	Pass
Window 66	4.9	2.8	2.3	0.68	3.88	<=	6.32	Pass
Window 67	4.9	3.8	2.4	0.68	3.33	<=	6.26	Pass
Window 68	3.8	4.9	2.4	0.68	2.36	<=	6.26	Pass

Appendix 4 - Sunlight to Windows
17 Ferdinand Street, London NW1

Reference	Use Class	Annual Probable Sunlight Hours	
		Total	Winter
10a Belmont Street			
Window 59	Living/Dining	86%	30%
Window 60	Living/Dining	60%	20%
Window 61	Living/Dining	60%	20%
Window 63	Living/Dining	60%	20%
Window 64	Living/Dining	60%	20%
Window 65	Living/Dining	60%	20%

APPENDIX 5

RESULTS WITHOUT OVERHANGS (PROPOSED DWELLINGS)

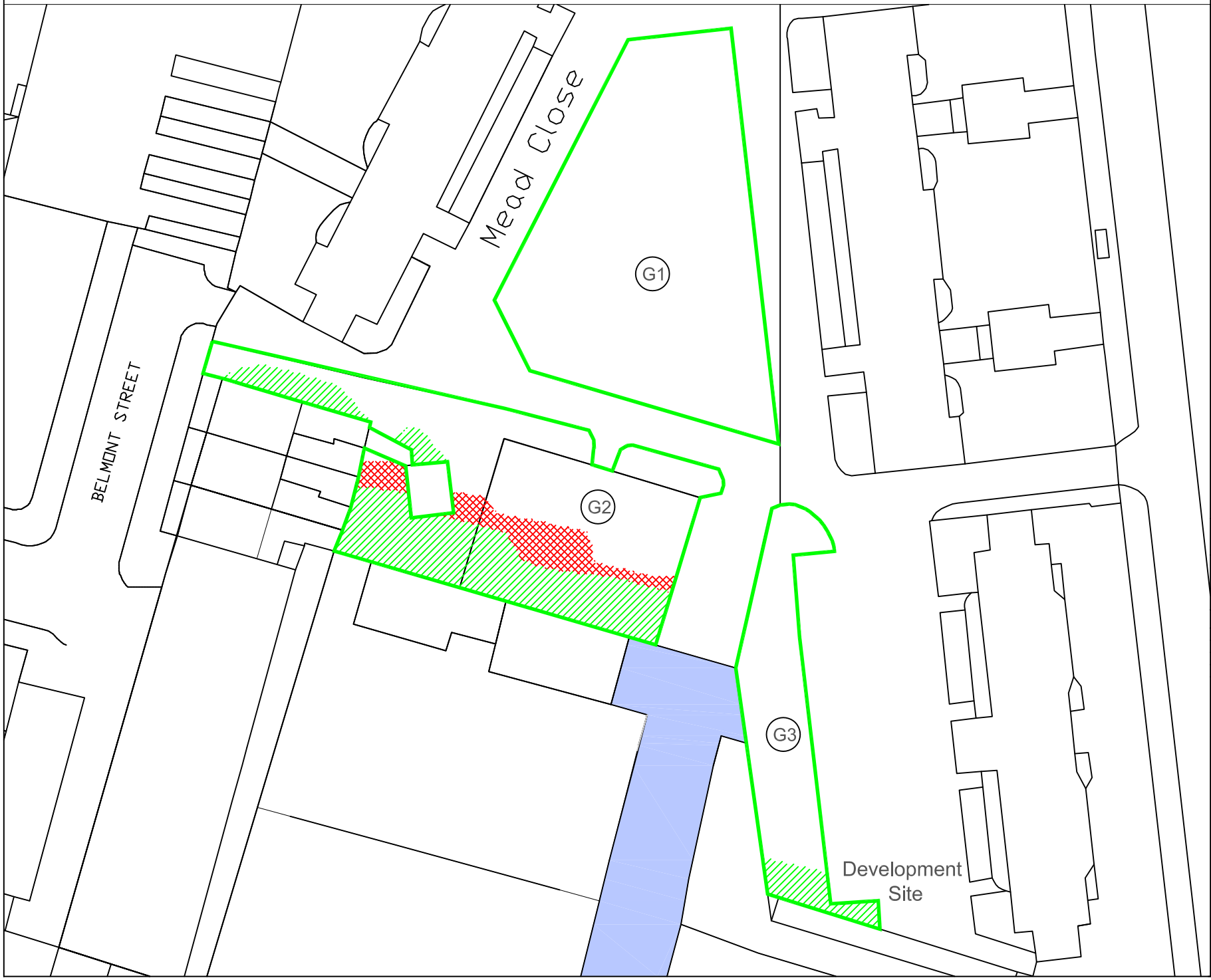
Appendix 5 - Alternative Average Daylight Factor (Exlcuding Overhangs)
17 Ferdinand Street, London NW1

Reference	Target ADF based on room use		Average Daylight Factor Coefficients					Actual ADF	
	Primary room use	ADF	T	Aw	A	R	Theta	ADF	Result
19 Ferdinand Street									
Window 51			0.68	1.14	116.21	0.69	66.6	0.9%	
Window 52 (lower)			0.68	1.29	116.21	0.69	41.6	0.2%	
Window 52 (upper)			0.68	1.9	116.21	0.69	42.8	0.9%	
Total ADF for room	Living/Dining/Kitchen	2.0%						**2.0%**	**Pass**
Window 53			0.68	1.14	116.21	0.69	70.6	0.9%	
Window 54 (lower)			0.68	1.29	116.21	0.69	44.9	0.3%	
Window 54 (upper)			0.68	1.9	116.21	0.69	46.2	1.0%	
Total ADF for room	Living/Dining/Kitchen	2.0%						**2.2%**	**Pass**
Window 55			0.68	1.61	102.29	0.69	56.7	1.2%	
Window 56 (lower)			0.68	1.31	102.29	0.69	58.0	0.2%	
Window 56 (upper)			0.68	1.93	102.29	0.69	60.0	1.5%	
Total ADF for room	Living/Dining/Kitchen	2.0%						**2.9%**	**Pass**
Window 57			0.68	1.61	102.29	0.69	61.6	1.3%	
Window 58 (lower)			0.68	1.31	102.29	0.69	63.4	0.2%	
Window 58 (upper)			0.68	1.93	102.29	0.69	65.3	1.6%	
Total ADF for room	Living/Dining/Kitchen	2.0%						**3.1%**	**Pass**

APPENDIX 6

OVERSHADOWING TO GARDENS AND OPEN SPACES

Appendix 6 : Overshadowing to Gardens and Open Spaces



Key

- Receives under two hours sunlight on 21st March before and after the development.
- Receives under two hours sunlight on 21st March before the development; but will receive at least two hours sunlight on 21st March after the development (light improved).
- Receives at least two hours sunlight on 21st March before the development; but will receive under two hours sunlight after the development (light loss).
- Receives at least two hours sunlight on 21st March before and after the development.

Notes:

1. Contours derived in accordance with BRE Guide : Site Layout Planning for Daylight and Sunlight

Project Name:	17 Ferdinand Street, Camden, London
Drawing Title:	Appendix 6 - Overshadowing to Gardens and Open Spaces
Scale:	Do not scale
Drawing No:	1
Rev.	-

Rev	Date	Details of revision

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