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Planning. Design. Economics.

64 Grafton Way

Daylight, Sunlight and Shadow Assessment

Ozone Investment Holdings Ltd

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1.0 Introduction

1.1 This report considers the effects of the proposed development at No. 64 Grafton Way, LB Camden on the levels of daylight and sunlight received by nearby residential properties. It also considers the levels of natural light that will be experienced within the proposed residential units in the development, as well as the effects of the scheme on the proportions of sunlight and shadow received within areas of amenity space. The assessment has been prepared on behalf of Ozone Investment Holdings Ltd.

1.2 The proposed development comprises the conversion/reconfiguration and extension of the existing building at the site to create six new residential units.

1.3 The daylight and sunlight assessment considers the effects of the proposal on residential properties situated opposite and adjacent to the site on Grafton Way, Whitfield Street and Whitfield Street (including the recent development at No. 116 Whitfield Street). It considers the levels of daylight and sunlight that will be received within all of the proposed residential units in the development. The assessment also considers the levels of sunlight and shadow that will be experienced within neighbouring areas of amenity space.

1.4 The quantitative assessment has been undertaken in accordance with the guidelines set out in the revised Building Research Establishment (BRE) report "*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*" (October 2011). The Guide is intended to be advisory and does not contain mandatory standards. The introduction states:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not 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. In special circumstances the developer or planning authority may wish to use different target values. For example in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."

1.5 This assessment considers the impacts of the development in terms of daylight and sunlight. It does not address rights to light, which is a legal matter rather than a material planning consideration.

1.6 This assessment has been carried out using the following information:

- The planning application drawings prepared by Hinge Associates;
- Measured survey drawings;
- Ordnance Survey Superplan digital mapping of the area;

- Approved planning application drawings for neighbouring buildings (where available);
- A photographic survey of the site and surroundings.

1.7 The report is divided into the following subsequent sections:

- Section 2.0 provides a brief description of the site and surroundings and the nature of the proposed development, highlighting features of relevance to the assessment of daylight and sunlight levels;
- Section 3.0 outlines the scope of the assessment;
- Section 4.0 sets out relevant planning policy considerations;
- Section 5.0 provides an assessment of the impacts of the proposal on levels of daylight;
- Section 6.0 considers the proposal's impacts in terms of sunlighting;
- Section 7.0 considers the scheme's overshadowing effects;
- Section 8.0 provides a summary of the assessment and our conclusions are drawn.

1.8 The assessment is supported by a series of reference plans and results tables attached at Appendices 1-6.

2.0 Site, surroundings and the proposal

Site and Surroundings

2.1 The application site is situated on the north eastern side of the junction between Grafton Way and Whitfield Street.

2.2 The existing building rises to a height of four storeys above a basement, with a restaurant at ground floor and basement levels and residential units in the floors above.

2.3 The site is surrounded by buildings in a mix of commercial and residential use. Many of the neighbouring buildings have recently been converted for residential use.

2.4 To the east of the site, Grafton Wayy is fronted on its northern side by a consistent four storey terrace of properties, of which No. 62 Grafton Way is situated closest to the site. The building includes rear windows which could potentially be affected by the development.

2.5 To the rear is a recent residential development at No. 116 Whitfield Street. The majority of the accommodation within the development that faces the Grafton Way site comprises entrance halls and staircases which do not require assessment.

2.6 To the west of the site, Grafton Way is fronted by a further terrace of four storey properties. No 66 Grafton Way turns the corner to Whitfield Street and includes windows facing the site. Whitfield Street is itself lined by terraced properties opposite the site. The southernmost property, No 131 Whitfield Street is most likely to be affected by the development.

2.7 On the basis of this review of neighbouring buildings, the assessment has focused on the effects of the development on residential accommodation within No. 62 Grafton Way, No. 66 Grafton Way, Nos. 131 Whitfield Street and the recent development at No. 116 Whitfield Street. Other buildings in the vicinity of the site are non residential in use and/or are situated a sufficient distance from the site to be unaffected in daylight and sunlight terms by the modest increase in mass resulting from the development.

2.8 The site and its context are illustrated in Appendix 1.

The Proposal

2.9 The proposed development comprises the conversion of the basement and the rear part of the ground floor of No. 64 Grafton Way to form a single residential unit. An infill extension will be introduced above the existing single storey bay on Whitfield Street. The building's roof will be remodelled and the upper floor

layouts will be reconfigured. The development will provide six new residential units between basement and fourth floor (roof) level.

2.10 The layout and heights of the proposed development and its relationship with surrounding buildings are illustrated in Appendix 1.

3.0 Scope of Assessment

3.1 This section of the assessment provides an overview of the scope of the daylight and sunlight assessment in terms of the neighbouring properties, proposed units and the amenity space assessed.

3.2 The locations of the window reference points and main rooms/bedrooms assessed are illustrated in the layouts and model images attached at Appendix 2.

Neighbouring Properties Assessed

3.3 The assessment has provided an analysis of the impacts of the development on natural light levels within neighbouring residential accommodation within No. 62 Grafton Way, No. 66 Grafton Way, Nos. 131 Whitfield Street and the recent development at No. 116 Whitfield Street.

3.4 We have assessed the closest windows and rooms within the residential accommodation in these buildings. Only main rooms and bedrooms require assessment. The following provides a summary of the neighbouring properties assessed on this basis:

Address	Floors	Orientation	No. windows assessed	
			Daylight	Sunlight*
62 Grafton Way	1-2	North	2	0
66 Grafton Way	1	West	1	0
116 Whitfield Street	1	South	2	2
131 Whitfield Street	1-2	West	2	0
Total			*7*	*2*

Table 3.1: Neighbouring Properties Assessed [*windows orientated within 90 degrees of due south]

3.5 Overall, the assessment has considered the effects of the development on the daylight levels received by seven windows within neighbouring properties and the sunlight levels received by two south facing windows.

3.6 All of the windows have been assessed in terms of ambient daylight (VSC) levels. The south facing windows serving main rooms and bedrooms have been assessed in terms of annual and winter sunlight availability.

3.7 The windows selected for analysis represented the windows serving existing and recently approved neighbouring properties that are most likely to be affected by the proposed development. As outlined in the preceding section, other buildings in the area are non-residential in use or are situated a sufficient distance from the site to be unaffected by the development in daylight and sunlight terms. The analysis of this accommodation enables inferences to be drawn regarding the wider effects of the development on other less sensitive neighbouring properties.

Proposed Units Assessed

3.8 The proposed accommodation has been designed to ensure internal daylight levels within the units are maximised. The assessment has considered the levels of natural light that will be received by all of the windows and main rooms/bedrooms within the proposed residential units. The following table provides a summary of the proposed accommodation assessed on this basis.

Floor	Daylight: No windows/ rooms assessed	Sunlight: No. windows assessed*
B	2/2	2
G	2/1	1
1	7/3	7
2	8/4	8
3	6/3	4
4	2/2	2
Total	**27/15**	**26**

Table 3.2: Proposed accommodation assessed within the proposed development [*windows orientated within 90 degrees of due south]

3.9 The daylight analysis has considered 27 windows serving 15 rooms between basement and fourth floor (roof) levels within the six proposed units. Of these windows, 26 are south facing and have also been assessed in terms of sunlight availability.

3.10 All of these windows have been assessed in terms of ambient daylight (VSC) levels. The rooms they serve have been assessed in terms of internal daylighting (Average Daylight Factor and Daylight Distribution). The south facing windows serving main rooms and bedrooms have been assessed in terms of annual and winter sunlight availability.

Overshadowing

3.11 Finally, the assessment has considered the effects of the development on the levels of sunlight and shadow that will be experienced within the amenity terraces serving the adjacent development at No. 116 Whitfield Street. These spaces have been assessed in the context of the BRE two hour sunlight contour analysis.

4.0 Planning Policy Context

4.1 The statutory development plan covering the proposal site is formed by the London Plan (2011) and the London Borough of Camden's Core Strategy DPD and Development Policies DPD. The following outlines planning policy of relevance to the daylight and sunlight assessment.

4.2 The London Plan addresses the residential amenity effects of development. Policy 7.6 states that proposals for buildings should, amongst other things, *"not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to privacy, overshadowing, wind and microclimate"*. Amenity in this case is considered to include access to adequate daylight and sunlight.

4.3 At the local level, Policy CS9 of the Local Plan Core Strategy DPD states that the Council will protect residential amenity in Central London.

4.4 Policy DP26 of the LDF Development Policies DPD addresses managing the impact of development on occupiers and neighbours. It states that the Council will seek to protect the quality of life of occupiers and neighbours in terms of amenity, including daylight and sunlight levels. The accompanying text indicates that the BRE guide will form the basis for assessment of a development's daylight and sunlight impacts.

4.5 The Council's CPG (Housing) (2011) also states that new development should be designed to maximise daylight and sunlight levels.

5.0 # Daylight

5.1 This section of the assessment assesses the impact of the proposed development on the level of daylight received at the aforementioned window reference points and rooms.

Methodology

5.2 The daylight assessment is based on three analyses: Vertical Sky Component (VSC); Daylight Distribution (DD) and Average Daylight Factor (ADF).

5.3 The following sets out the methodology for calculating VSC, ADF and Daylight Distribution.

Vertical Sky Component

5.4 The level of ambient daylight received by a window is quantified in terms of its Vertical Sky Component (VSC), which represents the amount of vertical skylight falling on a vertical window. The daylight assessment has been based on three dimensional AutoCAD models constructed for the site and surroundings as existing and with the proposed development in place. The heights and locations of the surrounding buildings and the proposed development have been taken from measured site survey information, Ordnance Survey digital plan data, site observations, aerial photography of the site and surroundings and drawings produced by Hinge Associates Architects.

5.5 The VSC level at each of the windows requiring assessment has been quantified using Waldram Tools daylight and sunlight software (MBS Software Ltd).

5.6 The BRE good practice guide outlines numerical guidelines that represent flexible targets for new developments in relation to the vertical sky component at nearby window reference points. The document states that:

*"If the vertical sky component, with the new development in place, is **both** less than 27% **and** less than 0.8 times its former value, then the loss of light is likely to be noticeable." (our emphasis)*

5.7 The guidelines therefore require that **either** the VSC target **or** the degree of change in daylighting are met (i.e. if the 27% target is adhered to, there is no requirement under the BRE guidelines for the resultant VSC level to remain at 0.8 times the former VSC level).

Daylight Distribution

5.8 The analysis of daylight distribution considers the area of a room which can receive an unobstructed view of the sky. It is quantified at working plane height (+0.85m).

5.9 The BRE (2011) guide states:

"If, following construction of a new development, a no-sky line moves so that the area of the existing room which does not receive direct skylight is reduced to less than 0.8 times its former value, this will be noticeable to the occupants."

5.10 The analysis of daylight distribution provides a more sophisticated method of assessing daylight than VSC as it takes into account the size of a room and the size and number of its windows.

Average Daylight Factor

5.11 The BRE guide advises that the calculation of Average Daylight Factor (ADF) provides an alternative means of assessing the level of daylight received by the interior of the room served by a window.

5.12 The calculation of ADF again provides a more sophisticated method of calculating the daylight level experienced within a room than VSC as it takes into account the size and reflectance of room's surfaces and the number, size and transmittance of its window(s), as well as the ambient daylight level (VSC) received at the window(s).

5.13 The Average Daylight Factor (df) is defined as the average internal illuminance as a percentage of the unobstructed external illuminance under standard overcast conditions.

5.14 ADF can be calculated using the following formula (amended in the updated BRE guide, 2011):

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

Where:

T is the diffuse visible transmittance of the glazing (a value of 0.65 is typical for double glazed clear glass; a value of 0.34 is used for obscured glazing);

A_w is the net glazed area of the window (m^2);

θ is the angle of visible sky in degrees;

A is the total area of the room surfaces: ceiling, floor, walls and windows (m^2);

R is the average reflectance (a value of 0.7 is applicable for new/proposed accommodation with light internal surface treatments[1]).

5.15 The updated BRE guide (2011) introduces a separate procedure for floor to ceiling windows and glazed doors. It states that areas of glazing below the working plane should be treated as a separate window and an extra factor is applied to it to take account of the reduced effectiveness of low level glazing in lighting the room. The BRE states that a value equivalent to the floor reflectance can be taken for this factor. An adjustment factor of 0.3 is appropriate for medium timber floors and has been used in this case.

5.16 The approach to assessing internal daylighting using the ADF method is set out at Appendix C of the BRE guide. The BRE guide and British Standard BS8206 set the following minimum recommended ADF levels for different room types:

- Kitchens: 2%;
- Living rooms: 1. 5%;
- Bedrooms: 1%.

Daylight Results: Neighbouring Properties

5.17 The following table sets out the VSC results obtained for the neighbouring buildings assessed.

Address	Floor	Window	Existing VSC	Resultant VSC	Change	Above/Below BRE Guide
62 Grafton Way	1	62-1	21.28	16.93	0.80	Above
	2	62-2	27.11	23.72	0.87	Above
66 Grafton Way	1	66-1	27.35	26.37	0.96	Above
116 Whitfield Street	1	116-1	0.04	0.02	0.50	Below
	1	116-2	0.09	0.08	0.89	Above
131 Whitfield Street	1	131-1	26.15	25.47	0.97	Above
	2	131-2	30.92	30.58	0.99	Above

Table 5.1: Neighbouring Properties – Summary of Daylight Results

5.18 The results show that all of the windows assessed serving Nos. 62 and 66 Grafton Way and No. 131 Whitfield Street will comply with the BRE guide levels with the scheme in place. The development will not result in any materially noticeable reduction in daylight to these windows.

5.19 The windows assessed serving the recent development at No. 116 Whitfield Street currently receive extremely low VSC levels and this will be maintained following the development. This reflects the fact that the south facing windows serving the new accommodation at No. 116 Whitfield Street are set beneath a

[1] A 0.7 reflectance value assumes white painted walls and ceiling (0.85) and a medium wooden floor (0.3).

deep balcony which is screened by louvres on its southern side (i.e. the low levels of natural light received by the bedroom served by these windows are primarily a function of the neighbouring development's own architecture).

5.20 The BRE guide recognises the constraints to development imposed by balconies serving neighbouring properties and suggests, in such instances, that additional calculations can also be carried out omitting the balconies. This approach serves to isolate the influence of balconies on the levels of natural light received from the separate effects arising from the development. Para. 2.2.11 of the guide states:

"Existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a relatively large impact on the VSC…One way to demonstrate this would be to carry out an additional VSC calculation for both the existing and proposed situations but without the balcony in place."

5.21 We have re-run the VSC analysis for the two windows in question on this basis. The results are set out in the table below.

Address	Floor	Window	Existing VSC	Resultant VSC	Change	Above/Below BRE Guide
116 Whitfield Street	1	116-1	16.64	16.00	0.96	Above
	1	116-2	17.11	16.49	0.96	Above

Table 5.2: Daylight Results for No. 116 Whitfield Street Omitting Balconies

5.22 The results of this exercise are compliant with the guide levels. They illustrate that the neighbouring windows set beneath balconies which serve units within these buildings would all comply fully with the BRE guide levels for VSC if the constraints imposed by their own design did not restrict the natural light levels they receive.

5.23 Given that the lower VSC levels at these windows with the development in place are predominantly attributable to the existence of these balconies (i.e. the windows would otherwise comply with the guide levels), the effect of the development on these two isolated windows is acceptable.

5.24 Overall, the development will not result in any materially unacceptable effects on the VSC levels experienced by neighbouring residential properties in the context of the BRE guidance.

Daylight Results: Proposed Accommodation

5.25 The following table provides a summary of the VSC, DD and ADF results for the proposed accommodation within the scheme. The results are contained in full at Appendices 3-5.

Vertical Sky Component (VSC)						
Proposed Development: Floor	Windows assessed	Above BRE guide level		Below BRE guide level		
		No.	%	No.	%	Marginal
Basement	2	0	0%	2	100%	0
Ground	2	0	0%	2	100%	0
First	7	2	28.6%	5	71.4%	5
Second	8	8	100%	0	0%	-
Third	6	5	83.3%	1	16.7%	0
Fourth	2	1	50%	1	50%	1
Total	27	16	59.3%	11	40.7%	6
Daylight Distribution (DD)						
Floor	Rooms assessed	Above BRE guide level		Below BRE guide level		
		No.	%	No.	%	Marginal
Basement	2	2	100%	0	0%	-
Ground	1	1	100%	0	0%	-
First	3	3	100%	0	0%	-
Second	4	4	100%	0	0%	-
Third	3	3	100%	0	0%	-
Fourth	2	2	100%	0	0%	-
Total	*15*	*15*	*100%*	*0*	*0%*	-
Average Daylight Factor (ADF)						
Floor	Rooms assessed	Above BS/ BRE guide level		Below BS/BRE guide level		
		No.	%	No.	%	Marginal
Basement	2	2	100%	0	0%	-
Ground	1	1	100%	0	0%	-
First	3	3	100%	0	0%	-
Second	4	3	75%	1*	25%	1
Third	3	3	100%	0	0%	-
Fourth	2	1	50%	1*	50%	0
Total	*15*	13	86.7%	2*	13.3%	1

Table 5.3: VSC, DD and ADF Results for Proposed Units
[*Rooms served by rooflights not included in ADF calculations]

5.26 The daylight results for the proposed accommodation show that some of the windows serving the proposed accommodation will experience VSC levels below the guide levels, particularly at basement and ground floor levels. The levels of ambient daylight experienced are typical of a development situated in an urban environment in Inner London. The BRE guidance is predicated on a suburban scale of development; therefore certain breaches of its indicative guide levels are unavoidable in such locations.

5.27 On the basis that some of the proposed windows assessed will experience VSC levels below the guide levels, DD and ADF calculations have been undertaken for the rooms they serve. As outlined above, these methods of assessment provide a more accurate and sophisticated measure of daylight

than VSC as they takes into account a series of internal room parameters, as well as the ambient daylight level (VSC) received at the window(s).

5.28 The DD results show that all of the main rooms and bedrooms within the proposed residential units will comply fully with the BRE guide levels. Similarly, all but two rooms will comply with the guide levels for ADF. Each of the two rooms that will experience lower ADF levels is served by a rooflight which cannot be factored into the ADF analysis (i.e. ADF is based on the light received from vertical windows only). As such, DD provides a more appropriate measure of the daylight within these two rooms and in each case the resultant DD level will be very high (98% and 100%).

5.29 Overall, the levels of interior daylight that will be experienced across the proposed residential accommodation in the development are high, particularly for an urban development in an intensively developed area of Central London.

6.0 Sunlight

6.1 This section of the report assesses the effects of the proposed development on levels of sunlight at the window reference points. Of the windows considered in the daylight assessment, only those serving the adjacent development at No. 116 Whitfield Street require assessment in terms of sunlight availability (2 windows). In addition, 26 of the windows serving the proposed residential accommodation are orientated due south and have been assessed in terms of sunlighting.

Methodology

6.2 The levels of sunlight availability at the window reference points assessed have been calculated based on the three dimensional AutoCAD models of the site and surroundings as existing and with the development in place, using the Waldram Tools daylight and sunlight software. The calculations provide the percentage year round sunlight availability and the percentage of sunlight availability received during the winter months.

6.3 The BRE good practice guide states that the sunlighting of an existing dwelling may be adversely affected by a development *"…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"

6.4 As with daylight, the guidelines require that **either** the sunlight availability targets **or** the degree of change in sunlighting **or** a reduction less than 4% of APSH are achieved (i.e. if the 25%/5% targets are adhered to, there is no requirement under the BRE guidelines for the resultant sunlight levels to remain at 0.8 times the former levels etc.).

Sunlight Results: Neighbouring Properties

6.5 The following table contains the results of the sunlight analyses.

6.6

Address	Floor	Window	Existing APSH (WPSH)	Resultant APSH (WPSH)	Change	Above/Below BRE Guide
62 Grafton Way	1	62-1	n/a	n/a	n/a	n/a
	2	62-2	n/a	n/a	n/a	n/a
66 Grafton Way	1	66-1	n/a	n/a	n/a	n/a
116 Whitfield Place	1	116-1	1(1)	0(0)	100% (100%)	Below (Below)
	1	116-2	1(1)	1(1)	0% (0%)	Above (Above)
131 Whitfield Street	1	131-1	n/a	n/a	n/a	n/a
	2	131-2	n/a	n/a	n/a	n/a

Table 6.1: Neighbouring Properties –Sunlight Results

6.7 The sunlight results for the windows serving the new units within No. 116 Whitfield Street are very low both as existing and with the development in place. As with daylighting this reflects the location of these windows beneath a deep balcony which is screened by louvres on its southern side.

6.8 Again, the sunlight levels at these windows have also been reassessed without the inhibiting effects of these balconies, to isolate the effects of the balconies from the separate effects of the development (as recommended by the BRE guidance). The results are contained in the table below

Address	Floor	Window	Existing APSH (WPSH)	Resultant APSH (WPSH)	Change	Above/Below BRE Guide
116 Whitfield Street	1	116-1	33 (4)	32 (3)	0.75	Above (Below - marginal)
	1	116-2	34 (4)	32 (3)	0.75	Above (Below - marginal)

Table 5.2: Daylight Results for No. 116 Whitfield Street Omitting Balconies

6.9 This exercise shows that both windows would comply with the BRE guide levels for annual sunlight availability if the effects of the balconies are omitted from the assessment. The winter sunlight results remain marginally below the guide levels, however this is a secondary measure and the degree of change is only slightly below the guide levels in each case (0.75 against a guide level of 0.8).

6.10 Overall, the effects of the development on the sunlight levels experienced by neighbouring properties will be negligible. As such, it is considered that the development will not give rise to any unacceptable effects in terms of the sunlight experienced by neighbouring properties.

Sunlight Results: Proposed Units

6.11 The following table provides a summary of the annual and winter sunlight results for the proposed residential accommodation. The results are set out in full at Appendix 6.

Assessment	Building	No. windows/ rooms assessed	Above BRE Guide		Below BRE Guide		
			No.	%	No.	%	Marginal
Annual Sunlight	B	2	1	50%	1	50%	1
	G	1	1	100%	0	0%	-
	1	7	7	100%	0	0%	-
	2	8	8	100%	0	0%	-
	3	4	4	100%	0	0%	-
	4	2	2	100%	0	0%	-
	Total	**24**	**23**	95.8%	*1*	*4.2%*	*1*
Winter Sunlight	B	2	2	100%	0	0%	-
	G	1	1	100%	0	0%	-
	1	7	7	100%	0	0%	-
	2	8	8	100%	0	0%	-
	3	4	4	100%	0	0%	-
	4	2	2	100%	0	0%	-
	Total	**24**	**24**	100%	*0*	*0%*	-

Table 6.2: Proposed Units – Summary of Sunlight Results
*[Minor effect: *APSH or WPSH within 20% of guide level]*

6.12 The results of the sunlight analysis for the proposed units demonstrate that all but one window will achieve the BRE guide levels for annual sunlight availability and all will comply fully in terms of winter sunlight. A single bedroom at basement level will experience a level of annual sunlighting marginally below the guide level (23% against a guide level of 25%). Otherwise, the development is fully compliant with the guidance for sunlight availability. This is a very high level of compliance for a development in an intensively developed urban environment in Central London.

6.13 On this basis, it is considered that the proposed accommodation will experience acceptable levels of sunlighting.

7.0 # Overshadowing

7.1 The analysis has considered the levels of sunlight and shadow that will be experienced within the two amenity terraces within the adjacent development at No. 116 Whitfield Street. The following outlines the methodology and results of the overshadowing assessment.

Methodology

7.2 The BRE 'test' for a development's overshadowing impacts relates to the area of an amenity space that receives more than two hours of sunlight on 21 March (the Spring Equinox). The guide states:

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

7.3 The assessment has, therefore, considered the area of amenity space that can receive more than two hours of direct sunlight on this date.

Results

7.4 The results of the shadow analysis are set out in the table below.

Amenity Space	Area	Existing Lit Area > 2 Hrs Sunlight	Resultant Lit Area > 2 Hrs Sunlight	Change	Above/Below Guide Levels
No.116 Whitfield Street – eastern terrace (first floor)	24.3sqm	0sqm (0%)	0sqm (0%)	0	Above
No.116 Whitfield Street – eastern terrace (first floor)	30.9sqm	19.8sqm (64%)	13.9sqm (45%)	0.7	Below – marginal

Table 7.1: Summary of Overshadowing Results
*[Minor effect: *APSH or WPSH within 20% of guide level]*

7.5 The results illustrate that no part of the eastern terrace within the No. 116 Whitfield Street development receives more than two hours sunlight at the March Equinox prior to construction of the proposed development. As such, the scheme will have no effect on the levels of shadow experienced on this terrace in the context of the BRE guidance.

7.6 The western terrace will experience a reduction in the area that will receive more than two hours sunlight from 64% to 46% as a result of the development. This is marginally below the guide level of 50%, however the retained area

receiving more than two hours sunlight remains good for an urban environment.

7.7 Overall, the development is not considered to result in any materially unacceptable effects in terms of overshadowing.

8.0 Summary and Conclusions

8.1 This assessment has considered the effects of the development at No. 64 Grafton Way on the levels of daylight and sunlight received by nearby residential properties. It also considers the levels of natural light that will be experienced within the proposed residential units in the development. Finally, the assessment has considers the effects of the development in terms of overshadowing of adjacent areas of amenity space. The assessment has been carried out in accordance with BRE guidance relating to the analysis of daylight and sunlight.

8.2 The assessment has considered the scheme's effects on the levels of daylight received by seven windows serving within neighbouring residential accommodation at No. 62 Grafton Way, No. 66 Grafton Way, Nos. 131 Whitfield Street and the recent development at No. 116 Whitfield Street. The levels of sunlight experienced by two south facing windows serving the Whitfield Street development have also been analysed. Other buildings in the vicinity of the site are non residential in use or are situated a sufficient distance from the site to be unaffected in daylight and sunlight terms.

8.3 The assessment has considered the levels of daylight received by all of the windows and main rooms/bedrooms in the residential units within the development. This constitutes 27 windows serving 15 proposed rooms. The levels of sunlight availability experienced by the development's 24 south facing windows have also been analysed.

8.4 Finally, the assessment has considered the levels of sunlight and shadow that will be experienced within two neighbouring amenity terraces with the development in place.

Daylight

8.5 The results of the daylight analysis demonstrate that all of the windows assessed serving Nos. 62 and 66 Grafton Way and No. 131 Whitfield Street will comply with the BRE guide levels with the scheme in place. The development will not result in any materially noticeable reduction in daylight to these windows.

8.6 The windows assessed serving the development at No. 116 Whitfield Street experience very low existing and resultant daylight levels due to their position beneath a deep balcony which is screened by louvres. The BRE guide recommends that in such circumstances the limiting effects of the balconies should be omitted from the analysis. The results of this exercise are compliant with the guide levels, illustrating that these windows would comply fully with the BRE guide levels for VSC if the constraints imposed by their own design did not restrict the natural light levels they receive.

8.7 The daylight results for the proposed residential units within the development show that all of the main rooms and bedrooms assessed will comply with the

BRE guide levels in terms of Daylight Distribution. Similarly all of the rooms will achieve the BS/BRE guide levels for ADF (with the exception of two rooms served by roof lights which cannot be included in the ADF analyses)

8.8 It is concluded that the development will not result in any unacceptable impacts on the daylight levels received by neighbouring residential properties in the context of the BRE guidance. The proposed development will also provide a good quality residential environment in terms of interior daylighting.

Sunlight

8.9 The sunlight analysis has considered the effects of the development on the windows serving the new units within No. 116 Whitfield Street. As with daylighting, the resultant sunlight levels are very low as existing and with the development in place, owing to the windows' location beneath a deep balcony which is screened by louvres on its southern side. Again, if the balconies are omitted from the analyses (as recommended by the BRE guidance), the windows would comply with the BRE guide levels for annual sunlight availability.

8.10 The results of the sunlight analysis for the proposed units demonstrate that all but one window will achieve the BRE guide levels for annual sunlight availability and all will comply fully in terms of winter sunlight. A single basement level bedroom will receive an annual sunlight level very marginally below the BRE guide level for annual sunlight availability. Otherwise, the development is fully compliant with the guidance for sunlight availability.

8.11 On this basis, it is considered that the development will not result in any unacceptable effects on neighbouring residential accommodation in terms of sunlighting and that good levels of sunlight will be experienced by the proposed residential units.

Overshadowing

8.12 The overshadowing analysis has considered the effects of the development on two amenity terraces serving the adjacent development at No. 116 Whitfield Street. The development will have no effect on the levels of shadow experienced by the eastern terrace and will cause a marginal and insignificant reduction in sunlight at the western terrace. As such, the development is not considered to result in any materially unacceptable effects in terms of overshadowing.

Overall Conclusions

8.13 In conclusion, the development will not result in any materially unacceptable daylight and sunlight effects in relation to neighbouring residential properties, the proposed accommodation and amenity spaces. The development is consistent with the objectives and requirements of the BRE guidance and relevant planning policy. We respectfully conclude that there are no reasons on

which planning permission could reasonably be refused on daylight or sunlight impact grounds.

Appendices

Appendix 1: Assessment Model

Appendix 2: Window and Room References

Appendix 3: VSC Results for Proposed Units

Appendix 4: DD Results for Proposed Units

Appendix 5: ADF Results for Proposed Units

Appendix 6: Sunlight Results for Proposed Units