Daylight Report

Daylight Levels in Proposed Development

Client: STS Structural Engineering

Project: 18 Ornan Road, London, NW3 4PX

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About *MES Building Solutions*

***MES Building Solutions* is an established consultancy practice specialising in providing building solutions throughout the UK.**

We offer a full range of services for both residential and commercial buildings from small individual properties through to highly complex mixed use developments.

We are an industry leader in delivering a professional, accredited and certified service to a wide range of clients including architects, developers, builders, housing associations, the public sector and private householders.

Employing highly qualified staff, our team comes from a variety of backgrounds within the construction industry with combined knowledge of building design, engineering, assessment, construction, development, research and surveying.

MES Building Solutions maintains its position at the forefront of changes in building regulations as well as technological advances. Our clients, large or small are therefore assured of a cost effective, cohesive and fully integrated professional service.

About the Authors

James Hargreaves heads up our Neighbourly Matters department and is an Associate of the Royal Institution of Chartered Surveyors. He has a Master's degree in Building Surveying and undertakes daylighting, sunlight and shadow cast analysis for planning applications. He is also involved in party wall issues and carries out other building surveying services for our clients. As an RICS Associate Mentor, he assists prospective candidates through the application process in order to become Associate members of RICS.

Alex Hole is the Managing Director of *MES Building Solutions*. Alex is a Fellow of the Royal Institution of Chartered Surveyors having been a member for over 20 years. He has a degree in Estate Management and a Diploma in Non Domestic Energy Assessment. He is also an accredited SAP & Code for Sustainable Homes Assessor and is registered with the Institute of Non Destructive Testing. Alex specialises in Daylighting matters.

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Section 1: Executive Summary

We have assessed the expected amount of natural daylight in the proposed habitable bedrooms in the basement of 18 Ornan Road, NW3 4PX and compared the results to the recognised BRE guidance figures.

All of the spaces comfortably fulfil the planning guidance. Therefore, in our opinion, the development should be regarded as acceptable in this case.

Section 2: Introduction

The purpose of this report is to assess the natural daylight levels in the bedrooms in the proposed basement of 18 Ornan Road, London, NW3 4PX.

This report considers the daylight issues against the criteria set out for national guidance in the following publications:

- Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 published by the BRE (Building Research Establishment).

  The SLPDS is the culmination of research undertaken by the BRE to determine whether or not a new development will achieve acceptable levels of internal daylight. The BRE tests are approved by the Department of the Environment and are widely used by local authorities when deciding on development applications.

- BS 8206-2- Code of practice for skylighting.

There are no minimum mandatory requirements for daylighting in Building Regulations for England & Wales but the guidance set out in SLPDS is widely accepted as the approved methodology when calculating light levels in habitable rooms.

It is worthy of note that SLPDS was first published in 1991 and BS 8206-2 in 1992. However SLPDS was updated in Oct 2011. We have undertaken this study on the basis of this guidance document.

Section 3: Assessment Process

The guidance states that rooms to be assessed should be living rooms, kitchens and bedrooms in residential properties. In non-domestic buildings rooms where occupants 'have a reasonable expectation of daylight' should be assessed. Although these spaces are not defined, examples are given of the type of non-domestic buildings that would normally fall into this category. These include schools, hospitals, hotels and hostels, small workshops and some offices.

It is important to note that the numerical values in the guidance are purely advisory and different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

The parameter we have assessed is the Average Daylight Factor, which is the most thorough method of assessing the anticipated amount of daylight within a proposed development.

Section 4: The amount of daylight in the proposed development:

Average Daylight Factors

The BRE guidance states daylight provision may be checked by using the Average Daylight Factor (ADF). The ADF is a measure of the overall amount of daylight in a space.

BS 8206-2 Code of Practice for Daylighting recommends the following values for residential buildings:

Kitchens	2%
Living Rooms	1.5%
Bedrooms	1%

Other non-habitable rooms need not be assessed.

The calculation of the Average Daylight Factor takes into account the following variables:

- The diffuse visible transmittance of the glazing (we have assumed a figure of 0.68 for double glazing).
- A maintenance factor, allowing for the effects of dirt.
- The net glazed area of the window.
- The total area of the room surfaces.
- The average reflectance of the rooms (we have assumed a light coloured room with a value of 0.5).
- The angle of the visible sky (taking into account external obstructions).

Results

Calculations were undertaken in accordance with the procedures shown in SLPDS. Our results show that all of the proposed bedrooms in the basement comfortably meet the guidelines.

Please see overleaf for the detailed results.

MES Calculations (Average Daylight Factor)
Project Name: 18 Ornan Road
Date of Analysis: 24/05/16

Floor Ref.	Room Ref.	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Meets BRE Guidelines
18 Ornan Road										
Basement	Bedroom 3	W1	0.68	0.67	31.59	73.96	0.50	1.00	0.26	
		W2	0.68	1.38	41.09	73.96	0.50	1.00	0.69	
		W3	0.68	0.68	30.86	73.96	0.50	1.00	0.26	
									1.21	YES
Basement	Bedroom 4	W9	0.68	0.71	44.73	84.68	0.50	1.00	0.34	
		W10-L	0.68	0.22	20.37	84.68	0.50	0.15	0.01	
		W10-U	0.68	0.55	32.30	84.68	0.50	1.00	0.19	
		W11-L	0.68	0.26	23.46	84.68	0.50	0.15	0.01	
		W11-U	0.68	0.66	36.48	84.68	0.50	1.00	0.26	
		W12-L	0.68	0.26	23.01	84.68	0.50	0.15	0.01	
		W12-U	0.68	0.66	35.96	84.68	0.50	1.00	0.25	
		W13-L	0.68	0.21	18.82	84.68	0.50	0.15	0.01	
		W13-U	0.68	0.54	29.67	84.68	0.50	1.00	0.17	
		W14	0.68	0.62	43.30	84.68	0.50	1.00	0.29	
		W15	0.68	0.62	47.29	84.68	0.50	1.00	0.31	
									1.85	YES
Basement	Bedroom 5	W4	0.68	0.64	46.33	75.55	0.50	1.00	0.36	
		W5-L	0.68	0.16	19.64	75.55	0.50	0.15	0.01	
		W5-U	0.68	0.40	31.07	75.55	0.50	1.00	0.15	
		W6-L	0.68	0.24	24.07	75.55	0.50	0.15	0.01	
		W6-U	0.68	0.61	37.27	75.55	0.50	1.00	0.27	
		W7-L	0.68	0.23	23.79	75.55	0.50	0.15	0.01	
		W7-U	0.68	0.58	36.90	75.55	0.50	1.00	0.25	
		W8-L	0.68	0.16	19.31	75.55	0.50	0.15	0.01	
		W8-U	0.68	0.40	30.49	75.55	0.50	1.00	0.15	
									1.21	YES

Section 5: Notes

This report has been prepared for the sole use of the Client. No representation or warranty (expressed or implied) is given to any other parties. Therefore this report should not be relied upon by any third party and we accept no liability from the use of this report by any other party.

Our calculations have been undertaken by using drawing numbers below, supplied by the Client:

- 1206-667-001 A
- 1206-667-002 A
- 1206-667-003 A
- 1206-667-004 A
- 1206-667-005 A

We are not aware of any conflicts of interest between ourselves and any other party concerning this project.