Daylight & Sunlight Report

Client: Mrs Vicky Unwin & Mr Robert Cattel,
4 Parkhill Rd
London
NW3 2YN

Project: 4 Parkhill Road, London, NW3 2YN

Report date: 19th November 2014

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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 is an Associate of the Royal Institution of Chartered Surveyors and is a key member of the Neighbourly Matters team. As well as having a Master's degree in Building Surveying, James 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.

Neil Cawood is the head of the *MES Building Solutions* 'Neighbourly Matters' department. He is a Member of the Royal Institution of Chartered Surveyors and undertakes all aspects of neighbourly matters work, which in addition to light analysis, includes the Party Wall Act 1996, access agreements, crane over-sail agreements and schedules of condition. Neil provides consultancy advice to clients and undertakes detailed planning appraisals with regard to all aspects of daylight, sunlight and shadow casting.

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Section 1: Executive Summary

We have carried out calculations following guidance in Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 to ascertain the impact of the proposed extension of 4 Parkhill, London, NW3 2YN, on the daylight and sunlight of the neighbouring properties.

The results demonstrate that the proposals have a minimal impact on the neighbouring properties of 6 Parkhill Road and 4b Parkhill Road. Many results show no reduction whatsoever and therefore we consider the extension to easily meet the intention of the BRE guidelines.

Section 2: Introduction

The purpose of this report is to assess the impact of the proposed extension of 4 Parkhill Road, on the daylight and sunlight of 4b Parkhill Road and 6 Parkhill Road.

This report considers the daylight and sunlight 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 adversely affect the light to nearby properties. 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.

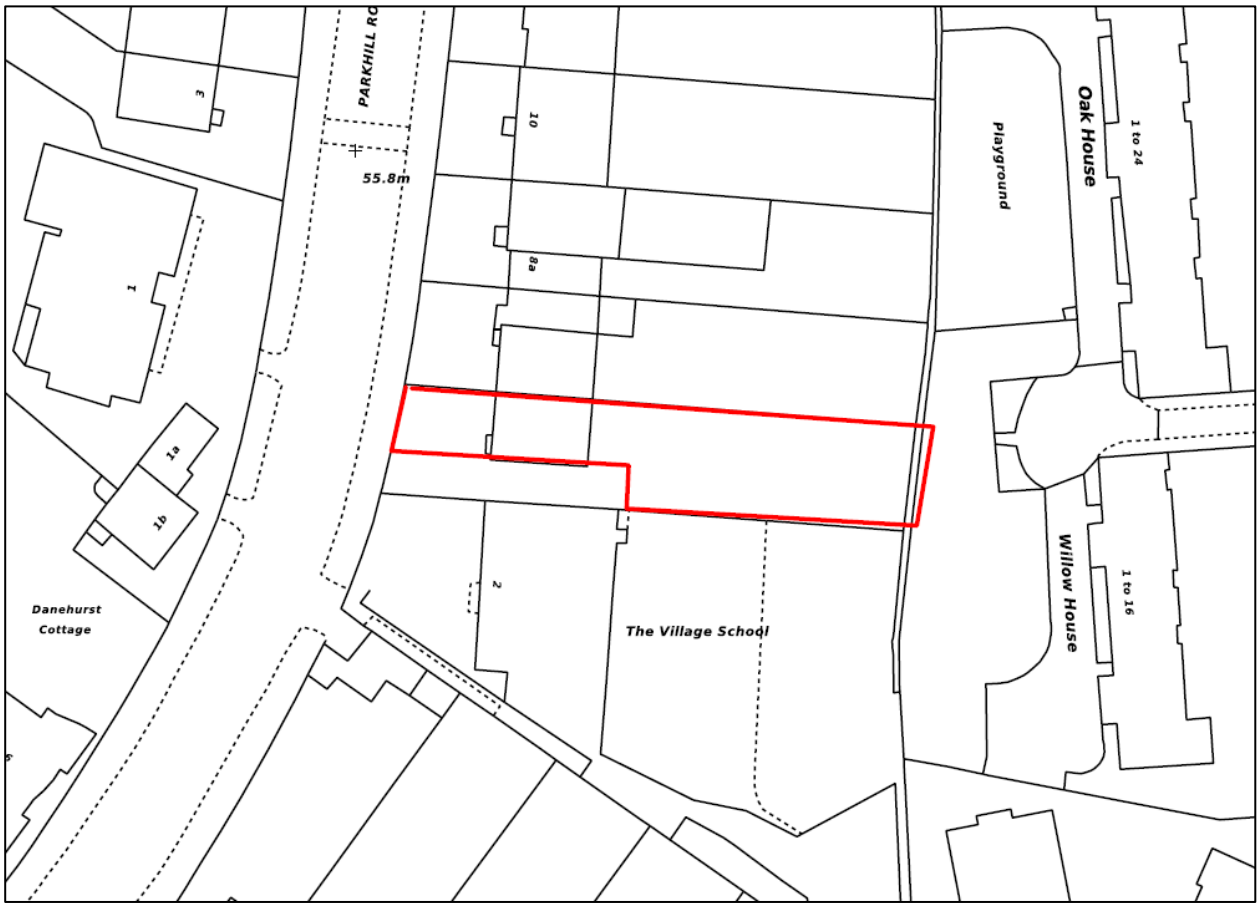
There are no minimum mandatory requirements for sunlight & skylight in Building Regulations for England & Wales but the guidance set out in SLPDS is widely accepted as the approved methodology when calculating sunlight & skylight.

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 and we have therefore undertaken this study on the basis of this new guidance document.

Section 3: Description of development

The scheme comprises a lower ground floor extension of the current property to provide an additional bedroom and increased kitchen/living space.

The propety is located on the eastern side of Parkhill Road and is situated amongst a number of other similarly sized houses adjoining the road.



Location Plan

Section 4: Assessment Process

The effect on neighbouring properties:

The SLPDS describes three parameters to be assessed in order to measure the impact of the proposed new building on Daylight/Sunlight availability to the key adjacent properties. The three parameters to be assessed are as follows:

1) Daylight:
Vertical Sky Component (VSC)
Daylight Distribution (DD)

2) Sunlight:
Annual Probable Sunlight Hours (APSH)

3) Overshadowing (Amenity Space)
On relevant open spaces

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.

As it is difficult to be sure of the specific use of neighbouring spaces we have taken a view on the relevance of the spaces adjacent to the proposed development. If we have been in any doubt we have carried out the assessment. However it should be noted some of the spaces we have assessed could fall outside the test requirement criteria.

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

The neighbouring properties we have assessed are as follows:

- 4b Parkhill Road
- 6 Parkhill Road

The assessment is based on the following drawings, provided by Casson Conder Partnership:

- 1144 – PL01
- 1144 – PL02
- 1144 – PL04

- 1144 – PL05
- 1144 – PL10
- 1144 – PL12
- 1144 – PL13

Section 5: Daylight

Vertical Sky Component:

Daylight is the light received from the sun which is diffused through the sky's clouds. 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 also known as 'diffuse light'. Any reduction in the total amount of daylight can be calculated by finding the 'Vertical Sky Component'.

The Vertical Sky Component (VSC) is the ratio of the direct skylight illuminance falling on a vertical face at a reference point (usually the centre of a window), to the simultaneous horizontal illuminance under an unobstructed sky.

The guidance states that the VSC will be adversely affected if after a development it is both less than 27% of the overall available diffuse light and less than 0.8 times its former value.

Therefore if the VSC is more than 27% then enough light would still be reaching the window of the neighbouring building. However if the VSC is less than 27% as well as less than 0.8 times its former value the occupants will notice the reduction in the amount of skylight.

VSC Results

Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

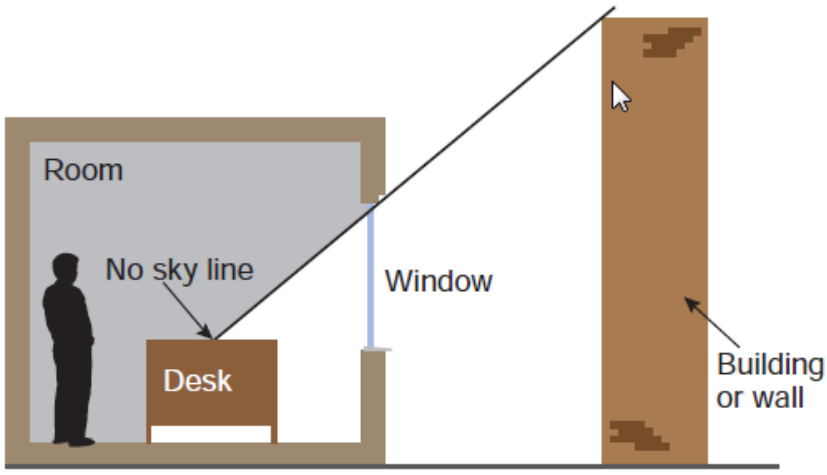
Detailed results are in Appendix A.

As can be seen the proposed development has very little impact on neighbouring properties with both neighbours either experiencing no effect or a minimal reduction in light.

Daylight Distribution:

Where room layouts are known (or estimated) the impact on daylighting distribution can be found by plotting what is known as the 'no sky line' in each of the main rooms. These are the same rooms as used for the VSC test.

The no sky line effectively divides the points on the working plane (0.85m high for residential properties and 0.7m high for offices) that cannot see the sky. Therefore areas beyond the no sky line will receive no direct daylight but will instead be lit from reflected light.



BRE 209

If, following the construction of a new development, the 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.

We have estimated internal layouts to assess the Daylight Distribution in rooms adjacent to the development.

Daylight Distribution Results

Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

Detailed results are in Appendix A:

The results show that the proposals have no effect on the daylight distribution of the neighbouring properties.

Section 6: Sunlight

Available Sunlight Hours

Guidance for minimum sunlight values can be found in Section 3 of Site Layout Planning for Daylight and Sunlight (SLPDS).

Habitable rooms in domestic buildings that face within 90° of due south are tested, as are rooms in non domestic buildings that have a particular requirement for sunlight.

The recommendations are that applicable windows should receive a minimum of 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months between 21st September to the 21st March (the approximate dates of the spring and autumn equinoxes).

However if this is not possible (or the amount of sunlight is already reduced because of the effect of existing obstructions) then a further reduction in sunlight availability will be noticeable to an occupier if the total number of sunlight hours is below the target 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months, *and* is less than 0.8 times its former value prior to the development.

There is no requirement for windows that face within 90° of due north so windows that fall into this category have not been considered for sunlight calculations.

Available Sunlight Hours Results

Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011:

The results demonstrate the extension comfortably fulfills the BRE guidelines.

Section 7: Amenity Space

Recent guidance through the BRE suggests that at least 50% of any garden or open spaces should receive no less than 2 hours of direct sun on the spring equinox (March 21st).

Open spaces 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

Amenity Space *Results*

The results demonstrate the extension comfortably fulfills the BRE guidelines.

Appendix A

Results:

Vertical Sky Component
Available Sunlight Hours

Daylight Distribution

Amenity Space

MES Calculations (Vertical Sky Component)
Date of Analysis: 18/11/2014

4b Parkhill Road

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Pass / Fail
Ground	R1	Unknown	W1	Existing	39.62	1.00	PASS
				Proposed	39.62		

6 Parkhill Road

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Pass / Fail
Basement	R1	Unknown	W1	Existing	39.56	0.93	PASS
				Proposed	36.64		
Ground	R1	Unknown	W1	Existing	39.62	1.00	PASS
				Proposed	39.62		

MES Calculations (Average Proabable Sunlight Hours) Date of Analysis: 18/11/2014											
Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	Available Sunlight Hours Annual %	Diff %	Pass / Fail	Winter %	Diff %	Pass / Fail
4b Parkhill Road										
Ground	R1	Unknown	W1	Existing Proposed	49 49	1.00	PASS	15 15	1.00	PASS
6 Parkhill Road										
Basement	R1	Unknown	W1	Existing Proposed	47 41	0.87	PASS	14 8	0.57	PASS
Ground	R1	Unknown	W1	Existing Proposed	46 46	1.00	PASS	12 12	1.00	PASS

MES Calculations (Daylight Distribution)
Date of Analysis: 18/11/2014

4b Parkhill Road

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Difference %	Pass / Fail
Ground	R1	Unknown	Area m2 % of room	14.40	14.40 100%	14.40 100%	1.00	PASS

6 Parkhill Road

Basement	R1	Unknown	Area m2 % of room	6.51	6.47 99%	6.47 99%	1.00	PASS
Ground	R1	Unknown	Area m2 % of room	16.00	15.68 98%	15.68 98%	1.00	PASS

MES Calculations (Two Hours' Sunlight to Amenity Space) Date of Analysis: 19/11/2014						
Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Difference %

4b Parkhill Road

Basement	A1	Area m2	17.44	0.00	0.00	0.00
		Percentage		0%	0%	

6 Parkhill Road

Basement	A1	Area m2	272.24	271.80	270.95	1.00
		Percentage		100%	100%	

Appendix B

Window & Room References

4b Parkhill Road

6 Parkhill Road

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.

Where full access was not available we have made reasonable estimations of internal layouts, floor areas, window sizes and positions etc.

Our calculations model has been built from a combination of architect's plans, partial site survey, site and aerial photographs.

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