Daylight & Sunlight Report

Client: Sarah Fournier, 5 Kemplay Road, London, NW3 1TA

Project: 5 Kemplay Road, London, NW3 1TA

Report date: 15th November 2013

Authors: Alex W. Hole, FRICS

James Hargreaves

MES Energy Services
Newark Beacon,
Beacon Hill Office Park,
Cafferata Way,
Newark
Nottinghamshire NG24 2TN.

Tel: 01636 653 055 Fax: 01636 653 010
Email: info@mesenergyservices.co.uk
www.mesenergyservices.co.uk

SUSTAINABLE BUILDING SOLUTIONS

London office: 344-354 Gray's Inn Road, London WC1X 8BP, Tel: 0207 033 3757
MES Energy Services is the trading name of Midland Energy Services Ltd, Company No: 5945430

About *MES Energy Services*

***MES Energy Services* 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 used 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 Energy Services 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

Alex Hole is the Managing Director of MES Energy Services. 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 also heads up the Daylighting division of MES.

James Hargreaves is a graduate surveyor in the Daylighting department within MES. With a background in measured surveys he is also studying part time for a Masters in Building Surveying. James undertakes daylighting, sunlight and shadow cast analysis for planning applications. Experienced in Code and BREEAM requirements James also works with clients so their buildings can achieve daylighting credits.

List of contents

Section 1 Executive Summary

Section 2 Introduction

Section 3 Description of development

Section 4 Assessment Process

Section 5 Daylight

Section 6 Sunlight

Section 7 Amenity Space

Appendix A *Window and Room References*

Notes

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 development of 5 Kemplay Road, NW3 1TA on the daylight and sunlight of 3 Kemplay Road.

In our opinion the results accord with the intention and context of the BRE guidance. All windows except one are comfortably within the planning guidelines. Results are discussed in greater detail throughout this report.

Proposed Street Elevation

Section 2: Introduction

The purpose of this report is to assess the impact of the redevelopment of 5 Kemplay Road on the sunlight and skylight of the neighbouring property, of 3 Kemplay Road.

This report considers the sunlight and skylight 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 proposals comprise the demolition of the existing property and the erection of a three storey house with car parking and landscaping.

Proposed Rear Elevation

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
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.

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 the vertical wall 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% then if the VSC is also less than 0.8 times its former value the occupants will notice the reduction in the amount of skylight.

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 overleaf. All windows except Basement W2 comfortably fulfill the guidelines. It should be noted that the result for this window is very close to the guidance threshold of 0.8 and in our opinion this is acceptable. This window may also serve a non-habitable room and if so should be disregarded.

MES Calculations (VSC)

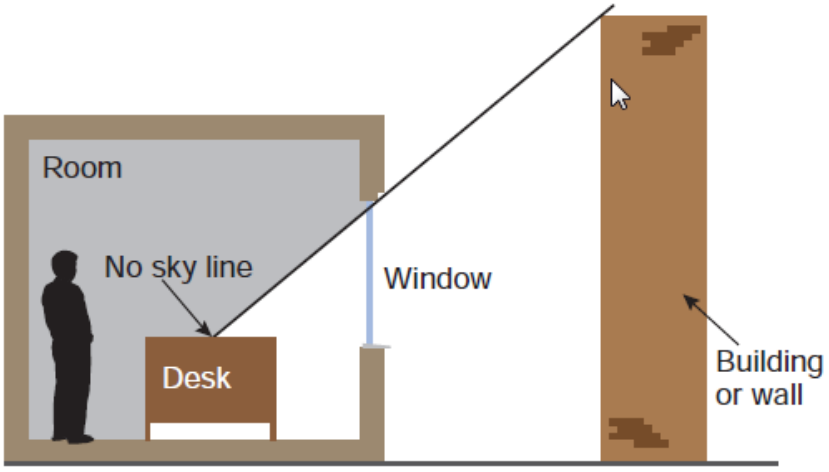
3 Kemplay Road

Floor Ref.	Room Ref.	Window Ref.		VSC	Proposed / Existing
Basement	R1	W1	Existing	25.92	0.85
			Proposed	21.99	
Basement	R2	W2	Existing	5.37	0.79
			Proposed	4.22	
Ground	R4	W4	Existing	39.50	0.72
			Proposed	28.49	
Ground	R4	W5	Existing	39.56	0.88
			Proposed	34.83	
First	R2	W2	Existing	39.62	1.00
			Proposed	39.62	
Second	R1	W1	Existing	38.11	0.73
			Proposed	27.64	
Second	R2	W2	Existing	39.62	1.00
			Proposed	39.62	

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.

Results

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

As can be seen all of rooms assessed comfortably fulfil the BRE guidance.

MES Calculations (Daylight Distribution)

3 Kemplay Road

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Proposed / Existing
Basement	R1	Area m^2	13.41	12.94	12.75	0.99
		% of room		97%	95%	
Basement	R2	Area m^2	12.78	8.25	8.19	0.99
		% of room		65%	64%	
Ground	R4	Area m^2	12.84	12.68	12.68	1.00
		% of room		99%	99%	
First	R2	Area m^2	20.11	19.24	19.24	1.00
		% of room		96%	96%	
Second	R1	Area m^2	31.63	22.85	18.90	0.83
		% of room		72%	60%	
Second	R2	Area m^2	18.52	18.46	18.46	1.00
		% of room		100%	100%	

Section 6: Sunlight

Annual Probable Sunshine 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.

Results

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

All windows assessed achieve scores better than the thresholds outlined in the guidance. See overleaf for results.

MES Calculations (APSH)

3 Kemplay Road

Floor Ref.	Room Ref.	Window Ref.		Available Sunlight Hours Annual %	Winter %
Basement	R1	W1	Existing	39	16
			Proposed	34	15
Basement	R2	W2	Existing	7	2
			Proposed	7	2
Ground	R4	W4	Existing	57	24
			Proposed	42	18
Ground	R4	W5	Existing	57	24
			Proposed	52	21
First	R2	W2	Existing	57	24
			Proposed	57	24
Second	R1	W1	Existing	*North Facing	
			Proposed		
Second	R2	W2	Existing	65	27
			Proposed	65	27

* Window faces within 90 degrees of North

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 overleaf indicate that the proposals cause no loss of sunlight to the neighbouring amenity space.

MES Calculations (Two Hours of Sunlight to Amenity)

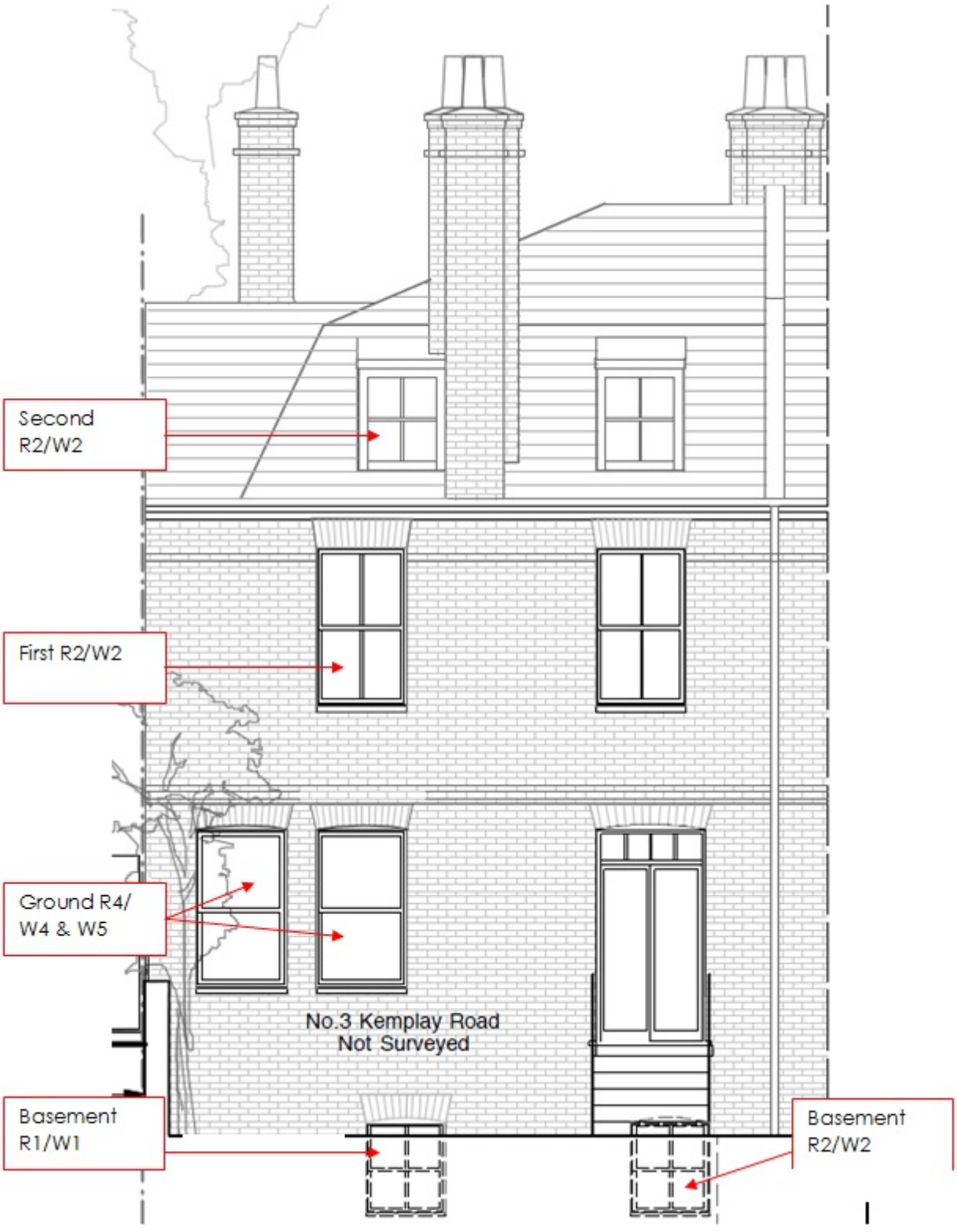
3 Kemplay Road

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Proposed / Existing
Ground	A1	Area m^2	46.90	46.90	46.90	1.00
				100%	100%	

Appendix A

Window & Room References

We understand those windows at ground and first floor in this photograph serve non-habitable rooms and therefore do not need to be assessed.



As it is difficult to access all of the windows of this property this is the window layout we have used in our assessment.

Notes

This report has been prepared for the sole use of Sarah Fournier. 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 architects 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.

We haven't assessed 7 Kemplay Road because under normal circumstances with this type of development it would be highly unlikely that the impact of the proposals would cause daylighting problems.