

Right of Light Consulting 40 Sandhill Road Eastwood, Leigh-on-Sea Essex SS9 5BY TEL 0800 197 4836 E-MAIL enquiries@right-of-light.co.uk WEBSITE www.right-of-light-consulting.com

# Daylight and Sunlight Study 74 & 78 Highgate Road, London NW5

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Report Prepared By	:	Paul Andrew Fawell B.Sc. (Hons) MRICS
Specialist Field	:	Daylight and Sunlight Chartered Surveyor

Right of Light Consulting

40 Sandhill Road Eastwood Leigh-on-Sea Essex SS9 5BY

Tel: 0800 197 4836

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# APPENDICES

APPENDIX 1	WINDOW & GARDEN KEY
APPENDIX 2	DAYLIGHT AND SUNLIGHT RESULTS

## **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 78 Highgate Road, London NW5.
- 1.1.2 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring properties. The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) Digest 209 'Site Layout Planning for Daylight and Sunlight: a good practice guide' by P J Littlefair 1991.
- 1.1.3 The window key in Appendix 1 identifies the windows analysed in this study. Appendix 2 gives the numerical results of the various daylight and sunlight tests.
- 1.1.4 All neighbouring windows pass all of the BRE diffuse daylight and direct sunlight tests. The development also satisfies the BRE overshadowing to gardens and open spaces requirements.
- 1.1.5 In summary, the proposed development will have a low impact on the light receivable by its neighbouring properties. Right of Light Consulting confirms that the development design satisfies all of the requirements set out in BRE Digest 209 'Site Layout Planning for Daylight and Sunlight'.

# 2 INFORMATION SOURCE

## 2.1 Documents Considered

2.1.1 This report is based on drawings:

Healycornelius Design Consultancy Ltd.

P010	Existing Plans	Rev A
P011	Existing Plans/Section	Rev –
P012	Existing Section	Rev –
P021	Existing West Elevation	Rev –
P100	Proposed Basement/Ground Floor Plan	Rev A
P101	Proposed First and Second Floor	Rev A
P102	Proposed Sections	Rev A
P103	Proposed Section and Elevations	Rev A
P104	Proposed Roof Plan	Rev –
P121	Proposed West Elevation	Rev A

# 3 METHODOLOGY OF THE STUDY

## 3.1 BRE Digest 209 : 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) Digest 209 'Site Layout Planning for Daylight and Sunlight: a good practice guide' by P J Littlefair 1991. 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. In instances where there is a special requirement for daylight or sunlight, higher levels may be deemed necessary. In other situations, such as with urban developments, lower daylight and sunlight levels may be unavoidable. 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 is not mandatory and this document should not be considered as an instrument of planning policy. Its aim is to help rather than constrain the developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the 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 main windows at adjoining residential properties. The calculations should be applied to non-domestic buildings where there is a reasonable expectation of daylight. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

3.2.3 The BRE guide contains three tests which measure diffuse daylight. These are explained in the following sections.

#### 3.2.4 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 will 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.

#### 3.2.5 Test 2 No-Sky Line

The no-sky line test involves calculating the percentage of a room's area which can receive direct sky light. Diffuse daylight is likely to be adversely affected if after the development the area of a room receiving direct skylight is less than 0.8 times its former value.

#### 3.2.6 Test 3 Average Daylight Factor

The Average Daylight Factor test is more reliable than the first two diffuse daylight tests. This is because Average Daylight Factor test takes into account a range of variables which the other tests do not. For example, only the Average Daylight Factor test takes into account the size of the window and whether the room has more than one window. These are important factors which affect the level of illumination within a room.

The BRE test is based on the British Standard BS 8206 Part 2, which 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.

## 3.3 Sunlight availability to windows

- 3.3.1 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. In non-domestic buildings, any spaces which are deemed to have a specific requirement for sunlight should be checked.
- 3.3.2 The BRE guide recommends that main living room windows should receive at least 25% of the total annual probable sunlight hours, including at least 5% of the annual probable sunlight hours during the winter months between 21st September and 21st March. Sunlight availability will be adversely affected if both the total number of sunlight hours falls below these targets and is less than 0.8 times the amount before the development.

## 3.4 Overshadowing to Gardens and Open Spaces

- 3.4.1 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, and allotments
  - 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
- 3.4.2 The BRE guide recommends that for an open space to appear adequately lit throughout the year, no more than 40% and preferably no more than 25% of its area should be prevented from receiving any sunlight at all on 21<sup>st</sup> March. Sunlight availability will be adversely affected if these targets are not met and the amount of sunlight received on 21<sup>st</sup> March is less than 0.8 times the amount before the development.

# 4 RESULTS OF THE STUDY

#### 4.1 Windows Considered

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

#### 4.2 Numerical Results

4.2.1 Appendix 2 lists the detailed numerical daylight and sunlight test results. The results are interpreted below.

## 4.3 Daylight to Windows

4.3.1 All windows pass the Vertical Sky Component and No Sky Line diffuse daylight tests. The Average Daylight Factor test indicates that some of the neighbouring rooms receive a relatively small amount of daylight before the proposed development. The results confirm that the losses resulting from the development are negligible. The proposed development therefore satisfies the BRE daylight requirements.

#### 4.4 Sunlight to Windows

4.4.1 Windows 1 to 5 and 7 pass both the total annual sunlight hours test and the winter sunlight hours test. All other windows do not face within 90 degrees of due south and do not need to be tested for direct sunlight. The proposed development satisfies all of the direct sunlight to windows requirements.

## 4.5 Overshadowing to Gardens and Open Spaces

4.5.1 All neighbouring gardens pass the BRE overshadowing to gardens and open spaces test. The proposed development will not cause any gardens or amenity areas to remain in permanent shadow on the 21<sup>st</sup> March.

## 4.6 Conclusion

4.6.1 The proposed development will have a low impact on the light receivable by its neighbouring properties. The development design satisfies all of the requirements set out in BRE Digest 209 'Site Layout Planning for Daylight and Sunlight'.

# **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 External areas will have been inspected from best vantage points or a standard twelve-foot surveyor's ladder. We shall have undertaken the survey following the guidelines of the RICS publication "Surveying Safely".
- 5.1.3 Where limited access is available, reasonable assumptions will have been made.
- 5.1.4 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.
- 5.1.5 Right of Light Consulting have indicated the sources of all information used in the report.
- 5.1.6 Right of Light Consulting will notify those instructing them immediately and confirm in writing if for any reason the report requires any correction or qualification.
- 5.1.7 Right of Light Consulting confirm that they have not entered into any arrangement where the amount or payment of fees is in any way dependent on the outcome of a planning decision.
- 5.1.8 Right of Light Consulting confirm that they have used their best endeavours to ensure that the facts stated in this report are correct and that the opinions expressed represent a true and complete professional opinion.

## 5.2 Project Specific

5.2.1 None

APPENDICES

# **APPENDIX 1**

WINDOW & GARDEN KEY





**Neighbouring Windows** 





# **APPENDIX 2**

DAYLIGHT AND SUNLIGHT RESULTS

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						Dayliç	to Wind	aws				[			ดี	Inlight to	Window	S		
Reference	Use Class	Vert	tical Sky Cc	Jmpone	ut.		No-Sky L	ine		Average	e Dayligł	ht Factor	Ĕ	otal Sunlig	ht Hour	s	Wi	nter Sunli	ght Hou	rs
		Existing	Proposed	Ratio	Result t	Existing F	roposed	Ratio	Result	Target	Existing	Proposec	Existing	Proposed	Ratio	Result	Existing	Proposec	Ratio	Result
Window 1	Sup Light	30%	27%	0.90	Pass	89%	89%	1.00	Pass	2.0%	2.4%	2.3%	31%	29%	0.94	Pass	3%	3%	1.00	Pass
Window 2	Sup Light	30%	27%	0.90	Pass	89%	89%	1.00	Pass	2.0%	2.4%	2.3%	31%	28%	0.90	Pass	3%	3%	1.00	Pass
Window 3	Sup Light	31%	27%	0.87	Pass	84%	84%	1.00	Pass	2.0%	1.2%	1.1%	26%	22%	0.85	Pass	2%	2%	1.00	Pass
Window 4	Sup Light	12%	12%	1.00	Pass	87%	87%	1.00	Pass	2.0%	1.1%	1.1%	21%	21%	1.00	Pass	6%	%9	1.00	Pass
Window 5	Sup Light	10%	10%	1.00	Pass	53%	47%	0.88	Pass	2.0%	1.1%	1.1%	6%	6%	1.00	Pass	%0	%0	1.00	Pass
Window 6	Sup Light	18%	18%	1.00	Pass	98%	98%	1.00	Pass	2.0%	5.7%	5.7%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 7	Sup Light	14%	14%	1.00	Pass	%06	%06	1.00	Pass	2.0%	1.0%	1.0%	6%	6%	1.00	Pass	%0	%0	1.00	Pass
Window 8	Sup Light	35%	33%	0.94	Pass	95%	95%	1.00	Pass	2.0%	1.8%	1.7%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 9	Sup Light	31%	26%	0.84	Pass	86%	78%	0.90	Pass	2.0%	1.7%	1.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Window 10	Sup Light	28.6%	22.9%	0.80	Pass	86%	78%	0.90	Pass	2.0%	1.7%	1.4%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

n/a = window does not face within 90 degrees of due south; or serves a kitchen or bedroom and does not need to be tested for direct sunlight.

andix 2 - Overshadowing to Garden 78 Highgate Road, London NW5
Appendix 74 & 78 Hi

	Nesul	Pass	Pass	Pass	
ch	Ratio	1.00	1.00	1.00	
t some sunlight on 21 <sup>st</sup> Mar	pe	27%	%0	%0	
	Propose	6 m <sup>2</sup>	0 m <sup>2</sup>	0 m <sup>2</sup>	
ving at least		27%	%0	%0	
Area receiv	Existing	6 m <sup>2</sup>	0 m <sup>2</sup>	0 m <sup>2</sup>	
rch L	þé	73%	100%	100%	
light on 21 <sup>st</sup> Ma	Propose	16 m <sup>2</sup>	10 m <sup>2</sup>	14 m <sup>2</sup>	
ving no sun	Existing	73%	100%	100%	
Area recei		16 m2	10 m2	14 m2	
000	AIEa	m2	m2	m2	
LotoT	I UIAI	22	10	14	
Deference	Kelelence	Garden 1	Garden 2	Garden 3	