



daniel armstrong associates  
ARCHITECTURAL SERVICES

## Daylight and Sunlight Assessment

---

‘Within Development’

122 Drummond Street NW1

---

Wednesday 24 April 2013

---

## INSTRUCTIONS

---

You have instructed this practice to provide you with a survey based on the 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. Superseded for the proposed scheme. Instruction was given By Mrs Julia Pyper.

## INTRODUCTION

---

The study is based guidelines set out within Building Research Establishment (BRE) Digest 209 'Site Layout Planning for Daylight and Sunlight: a good practice guide' by P J Littlefair 1991 (superseded).

In this report we have only taken into account the main living space as the bathroom and galley kitchen are non-habitable rooms. Kitchens in some cases can be taken into account as long as it is large enough to accept a table and in this case it is not.

## SOURCES OF INFORMATION

---

DRAWING NUMBER	TITLE
4462/25	Basement Plans
4462/25	Elevations
4462/33	Section and notes

## ASSUMPTIONS

---

No assumptions made

## THE SITE

---

The property in question is a studio flat based at 122 Drummond Street, London. The proposed flat will be accessed by use of external steps to the front of the property.

## TESTS

---

### Interior Daylighting

The recommendations set out in BRE 209 are based on British Standard BS 8206 Part 2 and the Chartered Institute of Building Services Engineers Applications Manual on window design. Collectively, the guides set out below:

#### Average Daylight Factor (df)

The Average Daylight Factor can be calculated using the following formula:

$$df = \frac{T A_w \theta}{A (1-R_2)} \cdot \%$$

Where

T is the diffuse visible transmittance of the glazing

A<sub>w</sub> is the net glazed area of the window (m<sup>2</sup>)

A is the total area of the room surfaces (m<sup>2</sup>)

R is their average reflectance

θ is the angle of visible sky in degrees

For the purpose of this study we have assumed BRE internal reflectance values pertaining to medium wooden floors, matte white painted walls and ceilings.

The guide 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.

#### Position of the no sky line

If a significant area of the working plane lies beyond the no sky line (i.e. it receives no direct skylight), then the distribution of daylight in the room will look poor and supplementary electric lighting will be required.

#### Sunlight to Windows

The BRE guide recommends that main living room windows should receive 25% of the total annual probable sunlight hours, including 5% of the annual sunlight hours during the winter months between 21st September and 21st March.

The BRE sunlight tests are applied to all living rooms and conservatories which have a window which faces within 90 degrees of due south.

## PROPERTIES

---

122 Drummond Street, London.

## RESULTS OF STUDY

---

#### Interior Daylighting

All rooms pass the BRE Average Daylight Factor targets.

The no sky line contours are presented in Appendix

The Bedroom / Living Space Passes the Sunlight to Windows Test

## CONCLUSION

---

Daniel Armstrong Associates confirms that the proposed design satisfies all of the requirements set out in BRE Digest 209 'Site Layout Planning for Daylight and Sunlight'.

## Appendices

---

## Appendix 1

---

Do not scale off this drawing.  
Figured dimensions only to be used.

Revision:	Date:	Notes:

**WATKINSON+COSGRAVE**  
CHARTERED BUILDING SURVEYORS  
CONSULTANT STRUCTURAL ENGINEERS

LINTON HOUSE  
39-51 HIGHGATE ROAD  
LONDON NW5 1RT

Tel: 020 7485 6016 Fax: 020 7284 4058  
Email: info@watcos.co.uk

Site Address:

122 DRUMMOND STREET  
NW1

Drawing Title:

FRONT ELEVATION  
AS PROPOSED

Date:

JULY 2012

Scale:  
1:50@A3

Drawn By:

JF

Drawing No:

4462/21

Revision No:

A



## Appendix 2

---

MBS Software Ltd (Daylight Distribution)

Floor Ref.	Room Ref.	Room Use.	Room Area	Lit Area Proposed
---------------	--------------	--------------	--------------	----------------------

B1

Basement	R1	Bedroom	Area m <sup>2</sup> % of room	34456588.42 29342869.95	85%
----------	----	---------	----------------------------------	----------------------------	-----

MBS Software Ltd (Average Daylight Factor)													
Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Req'd Value	Pass/Fail	
1	101	Office	101W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	102	Office	102W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	103	Office	103W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	104	Office	104W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	105	Office	105W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	106	Office	106W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	107	Office	107W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	108	Office	108W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	109	Office	109W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	110	Office	110W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	111	Office	111W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	112	Office	112W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	113	Office	113W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	114	Office	114W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	115	Office	115W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	116	Office	116W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	117	Office	117W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	118	Office	118W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	119	Office	119W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	120	Office	120W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	121	Office	121W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	122	Office	122W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	123	Office	123W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	124	Office	124W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	125	Office	125W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	126	Office	126W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	127	Office	127W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	128	Office	128W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	129	Office	129W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	130	Office	130W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	131	Office	131W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	132	Office	132W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	133	Office	133W1	0.8	10	45	20	0.7	0.15	1.2	2.0	Pass	
1	134	Office	134W1										

**B1**

Basement	R1	Bedroom	W1-L	0.80	228633.04	29.16	68972181.90	0.50	0.15	0.02	1.0	PASS
			W2-U	0.80	3467366.96	48.61	68972181.90	0.50	1.00	2.61		
									2.62			

MBS Software Ltd							
Floor Ref.	Room Ref.	Room Use.	Window Ref.	VSC	Available Sunlight Hours		
					Proposed / Existing	Annual %	Winter %

**B10**

Basement	R2	Bedroom	W1	Existing	39.62	1.00	68	23
				Proposed	39.62		68	23

\* Window faces within 90 degrees of North

