Daylighting Calculations Report

Development at Riverpark Gardens Bromley

Contents

1. Introduction

This daylight assessment has been undertaken in accordance with the Code for Sustainable Homes methodology (November 2010 Technical Guide) to determine whether the development achieves credits against category Hea1. The aim of issuing this credit is to promote good natural daylight levels in the home and thus reduce the energy demand from artificial lighting.

Up to three credits are available as detailed in the table below.

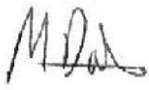| Code for Sustainable Homes Criteria	Credits
Kitchens must achieve a minimum *Average Daylight Factor* of at least 2%	1
All living rooms, dining rooms and studies (including any room designated as a home office under Ene 9 – Home Office) must achieve a minimum *Average Daylight Factor* of at least 1.5%	1
80% of the *working plane* in each kitchen, living room, dining room and study (including any room designated as a home office under Ene 9 – Home Office) must receive direct light from the sky	1
Default Cases None	

Table 1. Code for Sustainable Homes Hea1 credit criteria

2. Project Details

Stroma Project Reference: 07-14-40410

Development: Development at Riverpark Gardens

Drawing References: Plans sections and elevations, Site Plan

Prepared By	Checked By
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Technical Administrator	Sustainability Consultant
Issue Date: : 24/11/2014	

3. Calculation Procedure

Average daylight factor

The average daylight factor is the average indoor illuminance (from daylight) on the working plane within a room, expressed as a percentage of the simultaneous outdoor illuminance on a horizontal plane under an unobstructed CIE 'standard overcast sky'.

Calculation Procedure:

$$\text{DF} = \frac{MW_uT}{A(1 - R^2)}$$

Where:
W = total glazed area of windows or roof lights
A = total area of all the room surfaces (ceiling, floor, walls and windows)
R = area-weighted average reflectance of the room surfaces
M = a correction factor for dirt
T = glass transmission factor
u = angle of visible sky

No sky line

The no-sky line divides those areas of the working plane which can receive direct light from the sky, from those which cannot. It is important as it indicates how good the distribution of daylight is in a room. Areas beyond the no-sky line will generally look gloomy.

Calculation Procedure:

$$\text{d} = \frac{xh}{y}$$

Where:
h = height of the window head above the working plane
y = height of the obstruction above the window head
x = distance from the window to the obstruction

If d is greater than the room depth, then no part of the room lies beyond this no-sky line.

Where results using this methodology do not comply with the requirements, more accurate calculations can be carried out, as detailed in the Calculation Procedures of the issue.

4. Daylight Calculations Summary Table

Plot	HEA1 - Average Daylight Factor				HEA1 - No-Sky Line				Credits				Comments
	Kitchen	Living Room	Dining Room	Study	Kitchen	Living Room	Dining Room	Study	Kitchen	Living, Dining & Study	Skyline	Total	
	2.00	1.50	1.50	1.50	80	80	80	80	Credits	Credits	Credits	Credits	
Flat G.01	3.70	3.70	3.70	2.18	100	100	100	100	1	1	1	**3**	Bedroom 2 as study
Flat 1.01	3.70	3.70	3.70	2.18	100	100	100	100	1	1	1	**3**	Bedroom 2 as study
Flat G.02	2.65	2.65	2.65	4.18	100	100	100	100	1	1	1	**3**	Bedroom 2 as study
Flat 1.02	3.06	3.06	3.06	3.53	100	100	100	100	1	1	1	**3**	Bedroom 2 as study
Flat 1.03	4.15	4.15	4.15	1.87	100	100	100	100	1	1	1	**3**	Bedroom 2 as study
Flat 2.01	7.08	7.08	7.08	1.59	100	100	100	100	1	1	1	**3**	Bedroom 2 as study
Flat 2.02	8.27	8.27	8.27	3.62	100	100	100	100	1	1	1	**3**	Bedroom 2 as study
Flat 2.03	8.30	8.30	8.30	4.49	100	100	100	100	1	1	1	**3**	Bedroom 2 as study

5. Developer or Design Team Member sign off

Code for Sustainable Homes – Daylighting Calculation Procedures

Seeking expert advice is recommended to carry out daylighting calculations. Code assessors are not prohibited in performing the calculations themselves, however it is up to the assessor and the design team to judge whether the assessor has sufficient expertise to perform this function. Therefore, it is required that any calculations carried out by the code assessor should be signed off by the developer or a member of the design team before submitting as evidence;

Signed by developer or design team member:
Print Name:
Job Title
Company Name:
Date: