159A Goldhurst Terrace

Daylight Analysis

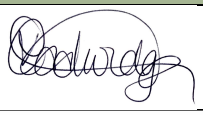
Design Stage Report

HDSGREENTECH LTD

The Old Dairy
8 Blackfield Road
Fawley
SO45 1ED

Registered Company 8978201

Phone: 07738946988
Email: info@HDSgreentech.co.uk
Web www.HDSgreentech.co.uk

Document Number:21152 R01 Daylight Analysis		Revision	-
	Name	Signature	Date
Author	Clare Lodwidge		28/09/2023
Checked	Damian Markham-Smith CIBSE LCEA 41943		28/09/2023

Revision Record					
Rev	Date	By	Summary of changes	Ckd	Appr
A	16/06/24	CL	VSC Calculation to 161 and 157	DMS	DMS

Helga Florian
159A Goldhurst Terrace
London
NW6 3EU

CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

EXECUTIVE SUMMARY

This report discusses the findings of a Target Illuminates Assessment for the redevelopment and the effect it is likely to have on the bedroom at the rear of 159A Goldhurst Terrace.

It also considers the impact the new extension is likely to have on the GF closest windows of no. 157 and 161 through the use of Vertical Sky Component (VSC) calculations.

The assessment has been conducted in line with the BRE 209 2022 "Site Layout and Planning for Daylight and Sunlight". To assess the performance of the proposed new-build design we have used the IES <VE> FlucsDL software. This software is compliant with the requirements of CIBSE Application Manual AM11.

HDSgreentech have input agreed parameters to the software to predict the Target Illuminance ratio to assess internal daylight levels and to calculate the VSC analysis to assess the impact on view from the adjacent properties.

This report will show that the assessed space will achieve the internal recommended Target Illuminances and VSC in line with BRE guidance.

INTRODUCTION

This report looks at the proposed GF re development at the rear of 159A Goldhurst Terrace.

This report has been generated as evidence for planning to show it is in line with the recommendations set out in BRE "Site layout planning for daylight and sunlight" 2011.

To deliver this study HDSgreentech have used the Radiance package from the Virtual Environment analysis suite. This software provides for daylight calculation and analysis in accordance with the governing standard 'BS EN 17037, Daylight in buildings'.

The objective is to test the design against the BRE 209 2022.

For internal daylight levels, the recommendation is to achieve a target illuminance over 50% of the floor area over 50% of the occupied daylight hours.

Room	Target illuminance (Lux)
Bedroom	100
Lounge	150
Combined Living (Kitchen/ Dinning)	150

Table 1 – Minimum Target Illuminance as stated in Appendix C section C15 and C16

MODEL IMAGES

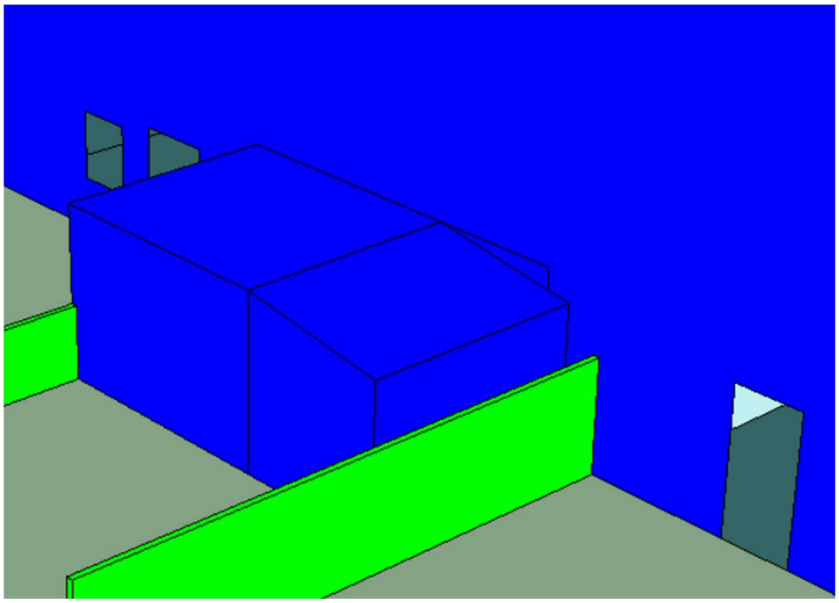


Figure 1 - Model images (Existing)

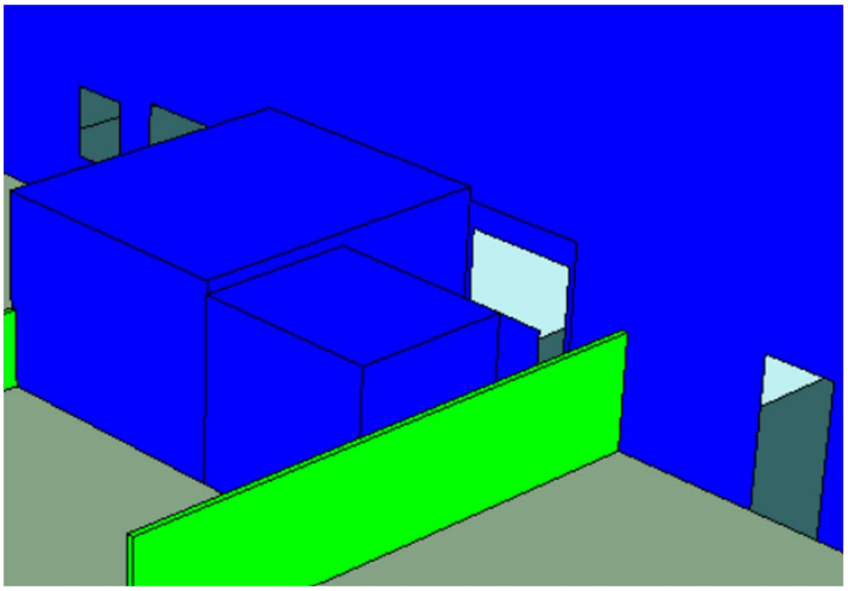


Figure 2 - Model image (Proposed)

SITE IMAGES

Figure 3 - Orientation, North towards top of page

MODEL CONSTRUCTION INFORMATION

The following drawings were used in the modelling:

Floor Plans – 142_Proposed*

Floor Plans – 142_Existing*

Section – 142_A_SEC-B-A*

WINDOW SCHEDULE

Room	Window Description (width then height windows)
Bedroom	Windows 1.8m by 2.3m

Table 2 – Window Schedule

LOCATION

This project uses the location of London (accredited weather file), this being the most appropriate location of 159A Goldhurst Terrace.

BUILDING FABRIC

The constructions assigned to the model have the basic properties as agreed with Ungar Architects:

EXTERNAL OPAQUE ELEMENTS

Element	Reflectance
External walls (Internal)	0.7
Floor	0.4
Ceiling / Roof	0.8
Internal Walls	0.7

Table 3 – Opaque surface reflectance

GLAZING TO WINDOWS/ ROOFLIGHTS/ DOORS

Element	Description	Frame Factor %	Light transmittance
Windows External	Double glazing 20% frame	20	0.624
Frame			0.45

Table 4 – Glazing properties

ASSESSMENT CRITERIA

TARGET ILLUMINANCE METHOD

The objective is to test the design against the new BRE 209 2022. The base target achieves a target illuminance over 50% of the floor area, over 50% of the occupied daylight hours. Values as stated in table 1.

VERTICAL SKY COMPONENT

A skylight plot has been undertaken in line with the BRE 209 2022 Site layout and planning for daylight and sunlight.

The VSC should be: -

- a score above 27
  or
- a reduction of no more than 20% in the VSC between the existing and the proposed

to achieve a pass.

It is anticipated that if either standard is achieved the occupants of the adjacent buildings will not notice a reduction in the amount of skylight in the occupied room.

RESULTS – TARGET ILLUMINANCE METHOD

The following table gives results for the target illuminance method.

Room	Type	Target Illuminance (lux)	Target	%	Pass / Fail
Bedroom	GF	100	50%	53.4	PASS

Table 5 – Results Table Target Illuminance

RESULTS - VERTICAL SKY COMPONENT

Only main windows for occupied rooms are modelled. “Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be assessed”.

If the VSC is above 27 the numbers are highlighted green in Table 6 and is considered a pass with no further comment.

Building	Floor	Window No.	Existing	Proposed	Difference %	Pass / Fail
161 Goldhurst Terrace	GF	1	38.8	35.8		PASS
		2	37.5	34.4		PASS
157 Goldhurst Terrace	GF	1	35.1	34.3		PASS

Table 6 – VSC results

Figure 4 - 161 Goldhurst Terrace window 1 and 2 are numbered left to right.

Figure 5 - 157 Goldhurst Terrace window 1

CONCLUSION

The Bedroom is anticipated to achieve the internal daylight standards and the GF windows of 161 and 157 are anticipated to achieve the VSC standard as set out in the BRE 209 2022 “Site Layout and Planning for Daylight and Sunlight”.

.