Daylight, Sunlight & Overshadowing Report

Development & Light LLP
49 Greek Street
London
W1D 4EG

Garages at 11 Ferrymoor, Ham

Partner:	Rob Croft
Client:	New Hill Ltd
Project No:	126
Date:	October 2022
Version:	V1

Development & Light LLP
49 Greek Street
London
W1D 4EG

New Hill Ltd c/o PAG
By Email

19 October 2022

Dear Philip

Re: Proposed works at Garages, 11 Ferrymoor, Ham – Daylight & Sunlight

Development & Light have been instructed to undertake a daylight and sunlight assessment for the proposed redevelopment of the garages in terms of their effects to neighbouring dwellings at nos. 7, 9 & 11 Ferrymoor. The purpose of this letter-report is to demonstrate the results of our findings and conclusions.

Executive Summary

The results of the daylight and sunlight assessment demonstrate that all neighbouring windows, rooms and back gardens will meet the target daylight and sunlight levels recommended in the BRE guidelines. The results are illustrated on drawings and tabulated results in Appendix 01.

Introduction

Development & Light specialise in the effect of development upon the natural light enjoyed by neighbouring properties within the built environment and the measurement of lighting standards within new accommodation.

The assessments contained within this report have been undertaken in accordance with the Building Research Establishment publication 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' (Third Edition, published in 2022), more commonly known as 'the BRE guidelines' (Ref 1.1) and the British Standard Daylight in buildings, BS EN 17037 (Ref.1.2).

Methodology

It is correct to assess daylight and sunlight in relation to the BRE guidelines. This document is most widely accepted by planning authorities as how to judge the acceptability of a scheme.

The BRE Guidelines are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens, and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas, and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops, and some offices.

To determine whether a neighbouring existing building may be adversely affected, the initial test provided by the BRE is to establish if any part of the proposal subtends an angle of more than 25˚ from the lowest window serving the existing building. If this is the case then there may be an adverse effect, and more detailed calculations are required to quantify the extent of any impact.

The BRE guidelines provide two principal measures of daylight for assessing the impact on properties neighbouring a site, namely Vertical Sky Component (VSC) and No-Sky Line (NSL).

In terms of sunlight, we examine the BRE Annual Probable Sunlight Hours (APSH); and in relation to sunlight amenity to gardens and amenity spaces, we apply the quantitative BRE overshadowing guidance.

Daylight

Vertical Sky Component (VSC) – VSC is a measure of the direct skylight reaching a point from an overcast sky. It is the ratio of the illuminance at a point on a given vertical plane to the illuminance at a point on a horizontal plane due to an unobstructed sky.

For existing buildings, the BRE guideline is based on the loss of VSC at a point at the centre of a window, on the outer plane of the wall.

The BRE guidelines state that if the VSC at the centre of a window is less than 27%, and it is less than 0.8 times its former value (i.e. the proportional reduction is greater than 20%), then the reduction in skylight will be noticeable, and the existing building may be adversely affected.

The BRE advises that the VSC assessment should focus on the main window serving each room; and in instances where a room has two or more windows of equal size a mean reading of the VSC across the windows may be taken. To ensure a comprehensive approach, the VSC results in Appendix B have been assessed for all windows in habitable rooms that are considered to be sensitive receptors. Thereafter, the specific position for any room with windows that technically record effects in excess of the typical guidance is discussed further below.

No-Sky-Line (NSL) - NSL is a measure of the distribution of daylight within a room. It maps out the region within a room where light can penetrate directly from the sky, and therefore accounts for the size of and number of windows by simple geometry.

Where room layouts are known (for example if they are available on the local authority's planning portal), the impact on the daylighting distribution in the existing building should be found by plotting the no sky line in each of the main rooms. For houses this would include living rooms, dining rooms, and kitchens; bedrooms should also be analysed although they are less important.

The BRE suggest that it is useful to plot the no-sky-line where room uses are known (para 2.2.8). The area of the working plane within a room that can receive direct skylight should not be reduced to less than 0.8 times its former value (i.e. the proportional reduction in area should not be greater than 20%).

If an existing building contains rooms lit from one side only and greater than 5m deep, then the BRE Guidelines advise that a greater movement of the no sky line may be unavoidable.

Sunlight

Annual Probable Sunlight Hours (APSH) - In relation to sunlight, the BRE recommends that the APSH received at a given window in the proposed case should be at least 25% of the total available, including at least 5% in winter.

Where the proposed values fall short of these, and the absolute loss is greater than 4%, then the proposed values should not be less than 0.8 times their previous value in each period (i.e. the proportional reductions should not be greater than 20%).

The BRE guidelines state that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90 degrees of due south. Kitchens and bedrooms are less important.

The APSH figures are calculated for each individual window relevant for assessment. Where a room is served by more than one window, but the windows are in opposite walls, the contribution of each is accounted for in the overall figures for the room. For rooms served by multiple windows that are not in opposite walls, the BRE Guidance recommends that reference should be made only to the results for the best sunlit window serving the room.

Overshadowing

The BRE Guidelines acknowledge that sunlight in the space between buildings has an important effect on the overall appearance and ambience of a development.

Sun on the Ground - The method for assessing sun on the ground is the 'sun-on-ground indicator'. The BRE suggest that the Spring Equinox (March 21) is a suitable date for the assessment.

Using specialist software, the path of the sun is tracked to determine where the sun would reach the ground and where it would not. This assessment reviews the total percentage of an area that receives at least 2 hours of direct sunlight on 21 March.

The BRE Guidelines suggest that for a garden or amenity area to appear adequately sunlit throughout the year, no more than half (50%) of the area should be prevented by buildings from receiving 2 hours of sunlight on the 21 March or the area that can receive two hours of sun on 21 March is less than 0.8 times former value. The BRE Guidelines advise that any alteration beyond these standards may be noticeable to occupants.

For proposed new private and/or public amenity space, the BRE suggest no more than half (50%) of the area should be prevented from receiving 2 hours of sunlight on the 21 March.

Results

Daylight

The neighbouring property is understood to consist of 3 dwellings – nos. 7, 9 and 11 Ferrymoor. For daylight, each has been tested for VSC and NSL in accordance with BRE guidelines.

It can be noted that floor plans have been obtained for the first and second floor maisonettes at nos. 7 & 9. The room depths for 11 Ferrymoor at ground floor have been replicated in the absence of floorplans.

The tabulated daylight results are attached in Appendix 01 and summarised in Table 01 and Table 02 below.

TABLE 01 – SUMMARY OF VSC RESULTS

Property	Number of Windows Tested	Windows that meet BRE Guidelines		VSC Windows No. of Windows Experiencing Adverse Impacts		
		No.	%	20-29.99% loss (minor adverse losses)	30-39.99% loss (moderate adverse losses)	>40% loss (substantial losses)
7 Ferrymoor	3	3	100%	0	0	0
9 Ferrymoor	3	3	100%	0	0	0
11 Ferrymoor	4	4	100%	0	0	0
Total	**10**	**10**	**100%**	**0**	**0**	**0**

The VSC results demonstrate all windows would comfortably meet BRE recommendations in that they would experience a negligible change in their daylighting condition with the introduction of the proposed development.

The tabulated results in Appendix 01 show that all windows would retain a VSC in excess of 27%, which the BRE guide states is an indication of good daylighting.

TABLE 02 – SUMMARY OF NSL RESULTS

Property	Number of Rooms Tested	Rooms that meet BRE Guidelines		DD Rooms No. of Rooms Experiencing Adverse Impacts		
		No.	%	20-29.99% loss (minor adverse losses)	30-39.99% loss (moderate adverse losses)	>40% loss (substantial losses)
7 Ferrymoor	3	3	100%	0	0	0
9 Ferrymoor	3	3	100%	0	0	0
11 Ferrymoor	4	4	100%	0	0	0
Total	**10**	**10**	**100%**	**0**	**0**	**0**

As a second check on daylighting, the NSL results demonstrate all rooms would comfortably meet BRE recommendations in that they would experience a negligible change in their daylighting condition with the introduction of the proposed development.

Sunlight and Overshadowing

All the rear windows at the neighbouring properties are predominantly north facing and do not require assessment for APSH in accordance with BRE guidelines. The sunlight effects to these windows would be negligible by virtue of their orientation.

For overshadowing, the results of the sunlighting effects to the back gardens are shown in drawing 016-20 in Appendix 01 and summarised in table 03 below.

TABLE 03 – SUMMARY OF SHOG RESULTS

Floor Ref	Amenity Ref		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
11 Ferrymoor							
F00	A1	Area m2	123.22	60.33	60.29	1.00	YES
		Percentage		49%	49%		

The overshadowing results show there would be no change to the amount of neighbouring garden area that could receive at least 2 hours sunlight on 21 March. The BRE test would be fully satisfied and any overshadowing to the back garden throughout the year would be negligible.

Conclusions

The results of the daylight and sunlight assessment demonstrate that all neighbouring windows, rooms and back gardens will meet the target daylight and sunlight levels recommended in the BRE guidelines.

The Proposed Development adheres to local policy, together with the London Plan and the NPPF in terms of daylight and sunlight.

For and on behalf of Development & Light LLP

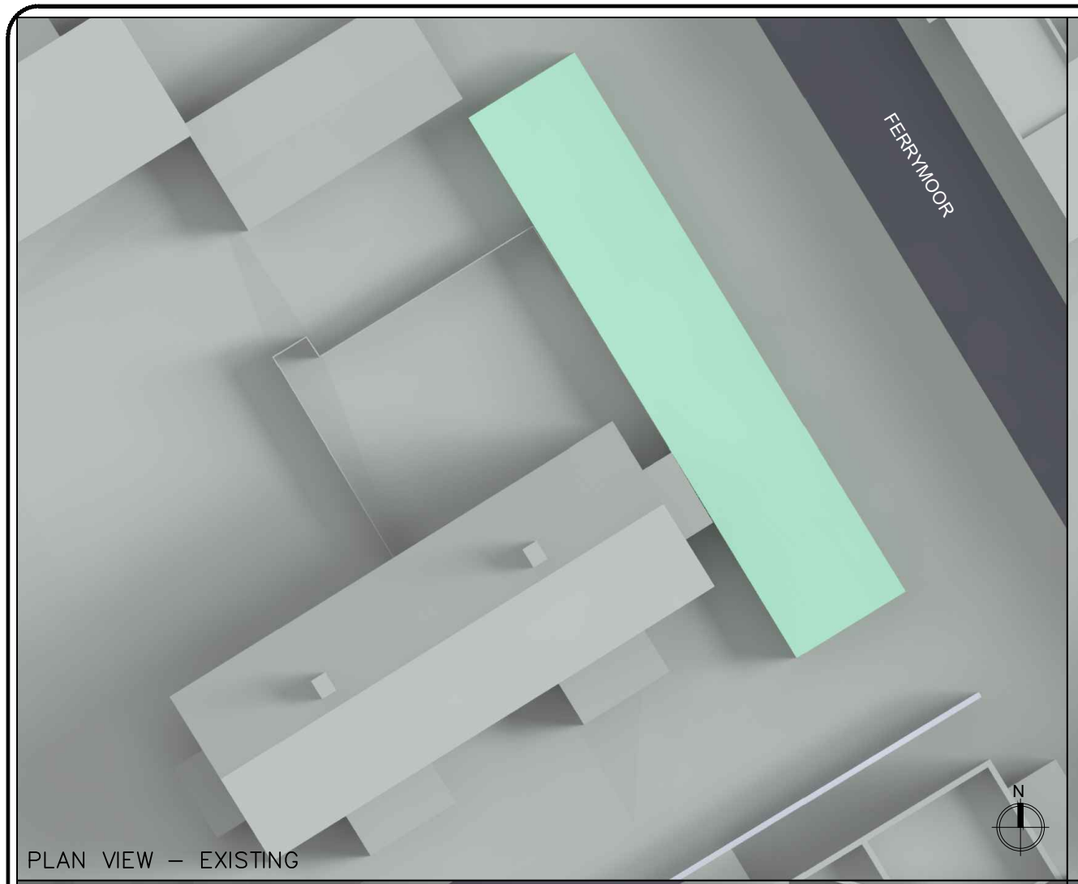
References

Ref. 1.1 Building Research Establishment publication 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' (Third Edition, published in 2022) - available at https://www.bre.co.uk/

[Date accessed: 15. 07.2022]

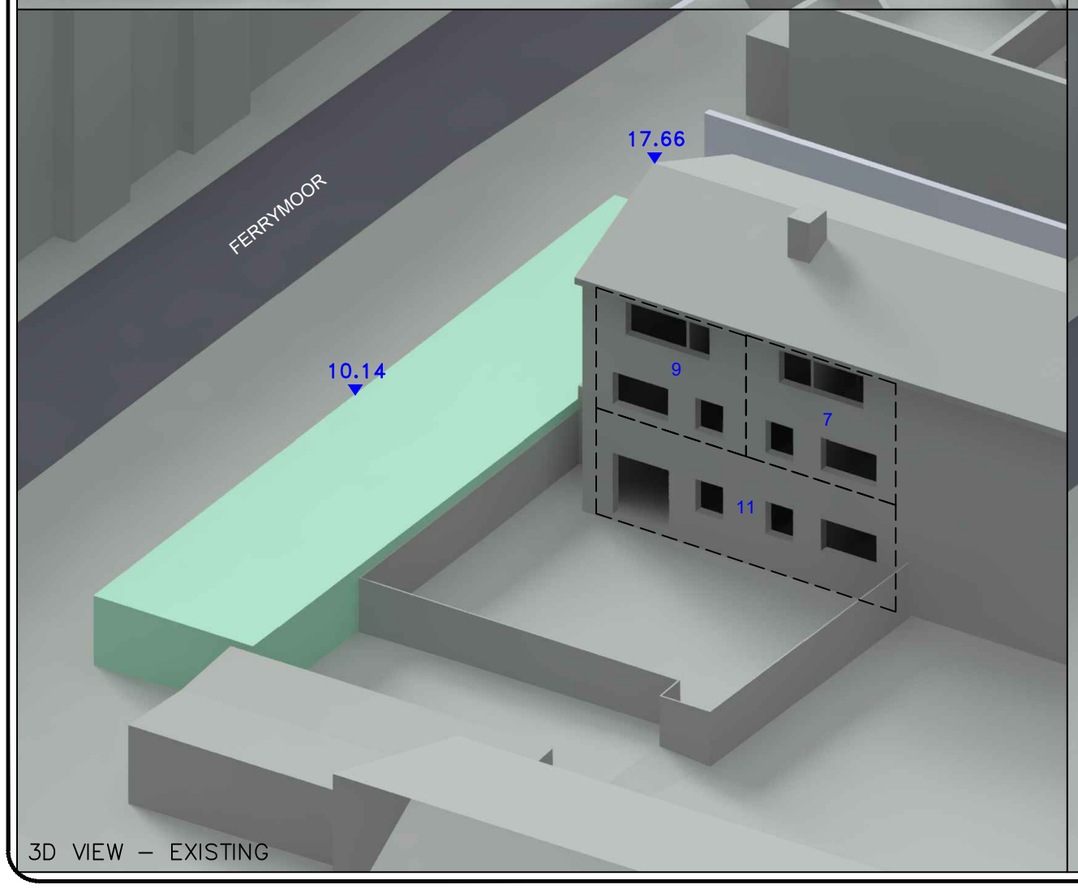
Ref. 1.2 The British Standard Daylight in buildings, BS EN 17037 - https://www.bsigroup.com/en-GB/

[Date accessed: 07.09.2022]

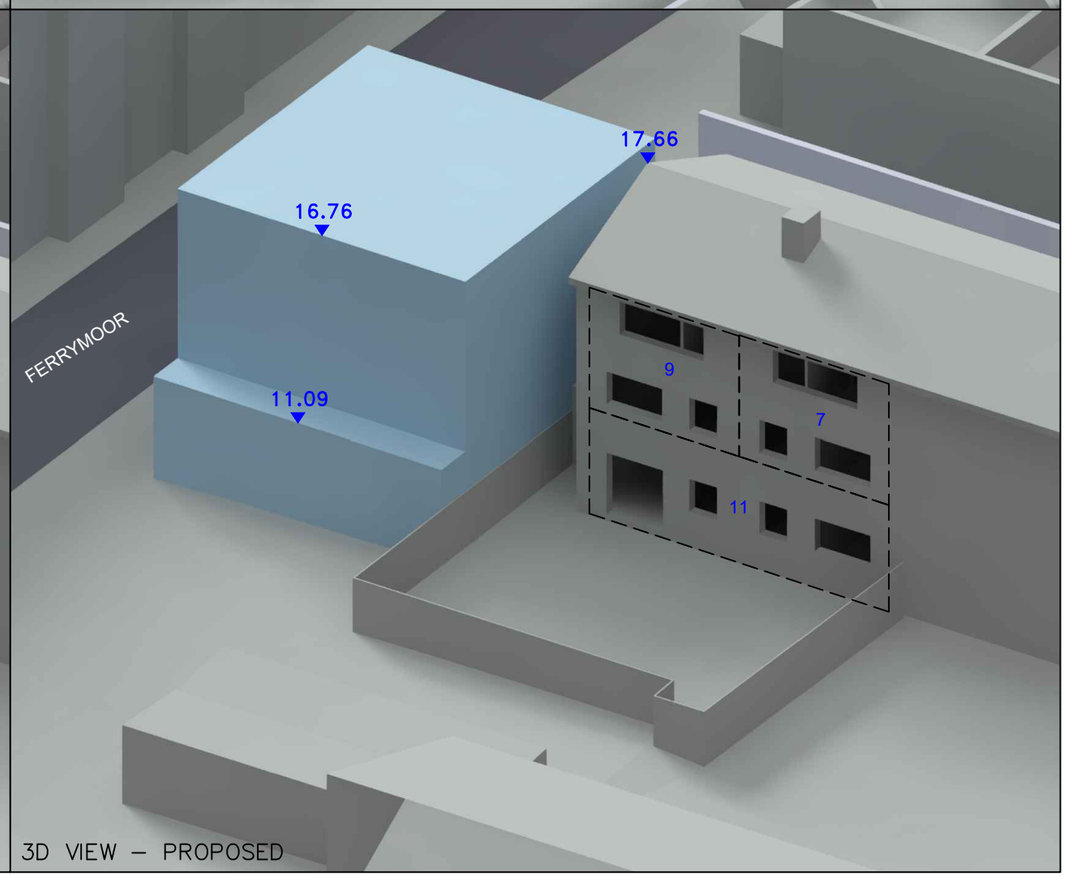


PLAN VIEW – EXISTING

PLAN VIEW – PROPOSED



3D VIEW – EXISTING



3D VIEW – PROPOSED

SOURCES OF INFORMATION:

3D CONTEXT MODEL
ACCUCITIES MODEL
002989_Croft Way,ham_HD_MASTER

PROPOSAL SCHEME
ZDA - 13.10.22
19021-P-121 - 129

HEIGHTS SHOWN ARE TO AOD (m)
PROPOSED BUILDINGS SHOWN IN BLUE
EXISTING BUILDINGS SHOWN IN GREEN

REV:	DESCRIPTION:	BY:	DATE:
G			
F			
E			
D			
C			
B			
A	-	-	-

PROJECT:
FERRYMOOR GARAGES
TW10

TITLE:
PLAN & 3D VIEWS
EXISTING & PROPOSED

JOB NO:	RELEASE:	DRG NO:
016	01-01	01
DATE:	DRAWN:	SCALE:
OCT' 2022	CS-01	NTS

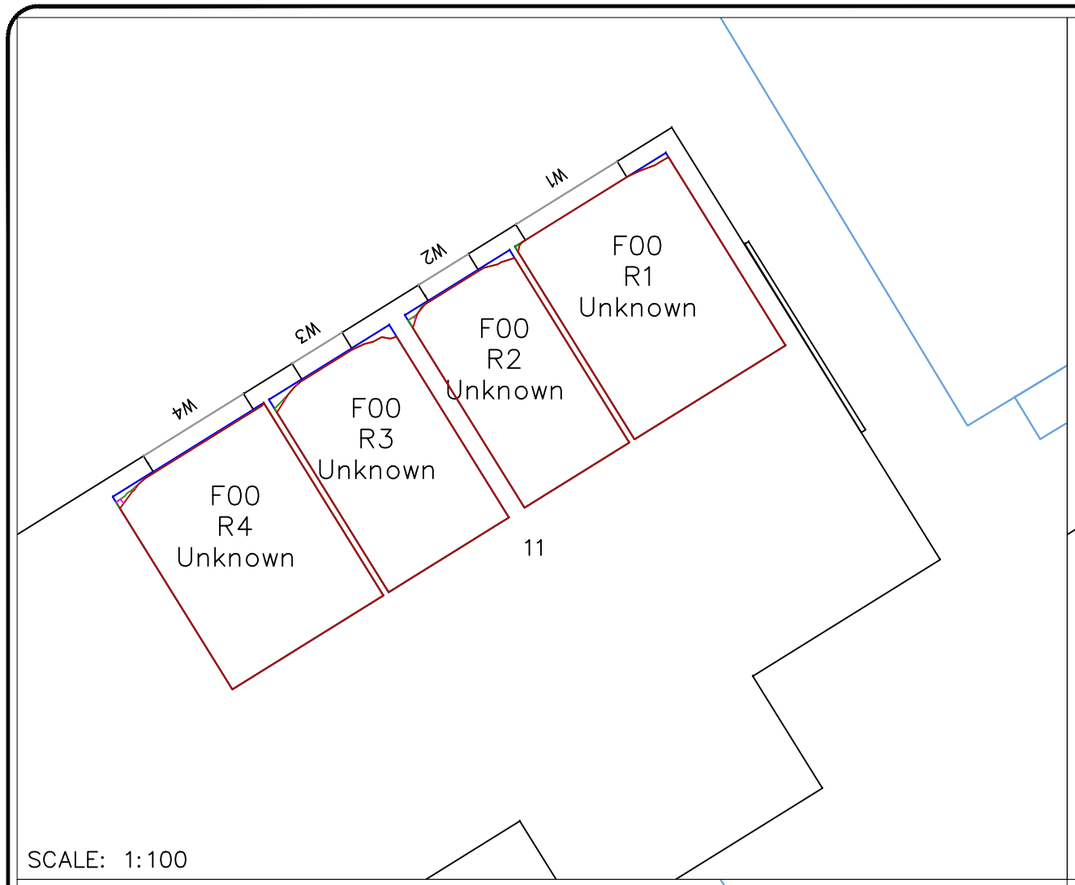
DEVELOPMENT & LIGHT

Project Name: Ferrymoor Garages
Project No.: 16-01-01
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 18/10/2022

Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use	Window Ref.	Window Attribute		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Room VSC	Pr/Ex	Meets BRE Criteria
7 Ferrymoor														
F01	R1		Residential	Dining Room	W1		Existing	37.28	0.99	YES	328°N			
							Proposed	37.06				37.28 37.06	0.99	YES
	R2		Residential	Kitchen	W2		Existing	37.22	0.99	YES	328°N			
							Proposed	36.77				37.22 36.77	0.99	YES
F02	R1		Residential	Bedroom	W1		Existing	35.34	1.00	YES	328°N			
							Proposed	35.25				35.34 35.25	1.00	YES
9 Ferrymoor														
F01	R1	Assumed	Residential	Dining Room	W1		Existing	37.08	0.91	YES	328°N			
							Proposed	33.74				37.08 33.74	0.91	YES
	R2	Assumed	Residential	Kitchen	W2		Existing	37.15	0.97	YES	328°N			
							Proposed	36.02				37.15 36.02	0.97	YES
F02	R1	Assumed	Residential	Bedroom	W1		Existing	35.20	0.96	YES	328°N			
							Proposed	33.89				35.20 33.89	0.96	YES
11 Ferrymoor														
F00	R1		Residential	Unknown	W1		Existing	34.62	0.89	YES	328°N			
							Proposed	30.73				34.62 30.73	0.89	YES
	R2		Residential	Unknown	W2		Existing	35.46	0.96	YES	328°N			
							Proposed	34.00				35.46 34.00	0.96	YES
	R3		Residential	Unknown	W3		Existing	35.53	0.98	YES	328°N			
							Proposed	34.88				35.53 34.88	0.98	YES
	R4		Residential	Unknown	W4		Existing	35.50	0.99	YES	328°N			
							Proposed	35.16				35.50 35.16	0.99	YES

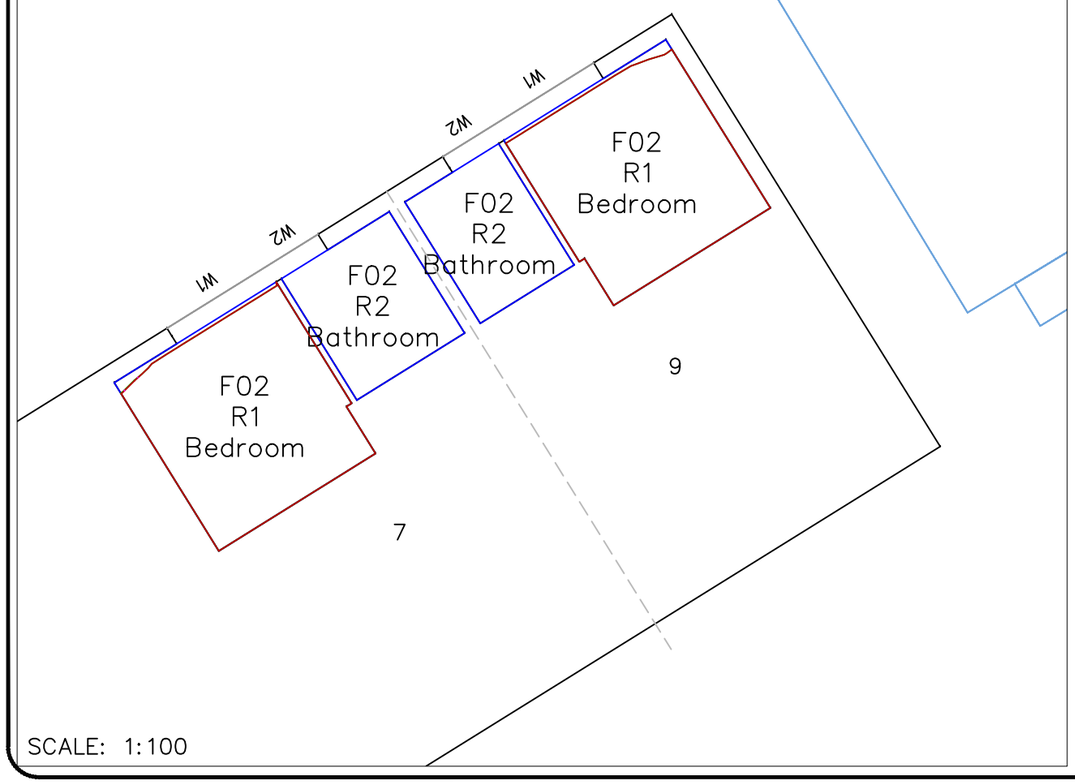
Project Name: Ferrymoor Garages
Project No.: 16-01-01
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 18/10/2022

Floor Ref.	Room Ref	Room Attribute	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
7 Ferrymoor										
F01	R1		Residential	Dining Room	Area m2	8.50	8.46	8.46		
					% of room		99.56%	99.53%	1.00	YES
	R2		Residential	Kitchen	Area m2	6.77	6.64	6.64		
					% of room		98.12%	98.11%	1.00	YES
F02	R1		Residential	Bedroom	Area m2	9.96	9.72	9.72		
					% of room		97.67%	97.63%	1.00	YES
9 Ferrymoor										
F01	R1	Assumed	Residential	Dining Room	Area m2	8.50	8.47	8.47		
					% of room		99.67%	99.65%	1.00	YES
	R2	Assumed	Residential	Kitchen	Area m2	5.90	5.84	5.83		
					% of room		98.98%	98.97%	1.00	YES
F02	R1	Assumed	Residential	Bedroom	Area m2	9.96	9.72	9.72		
					% of room		97.61%	97.61%	1.00	YES
11 Ferrymoor										
F00	R1		Residential	Unknown	Area m2	10.72	10.69	10.68		
					% of room		99.66%	99.61%	1.00	YES
	R2		Residential	Unknown	Area m2	7.44	7.34	7.32		
					% of room		98.63%	98.43%	1.00	YES
	R3		Residential	Unknown	Area m2	8.54	8.39	8.38		
					% of room		98.20%	98.07%	1.00	YES
	R4		Residential	Unknown	Area m2	10.72	10.63	10.60		
					% of room		99.09%	98.86%	1.00	YES



SCALE: 1:100

SCALE: 1:100



SCALE: 1:100

SOURCES OF INFORMATION:

3D CONTEXT MODEL
ACCUCITIES MODEL
002989_Croft Way,ham_HD_MASTER

PROPOSAL SCHEME
ZDA - 13.10.22
19021-P-121 - 129

- ROOM AREA
- EXISTING LIT AREA
- PROPOSED LIT AREA
- LOSS / GAIN AREA

N

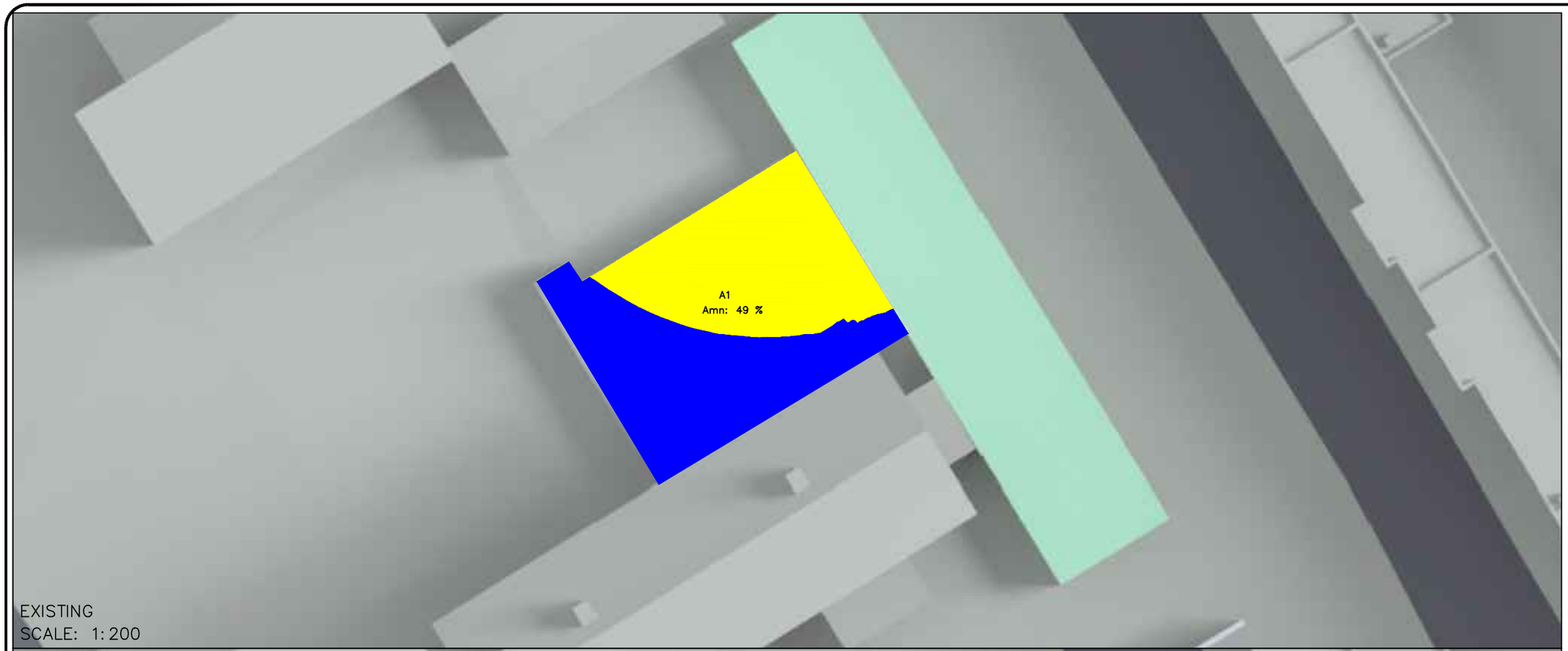
REV:	DESCRIPTION:	BY:	DATE:
G			
F			
E			
D			
C			
B			
A	-	-	-

PROJECT:
FERRYMOOR GARAGES
TW10

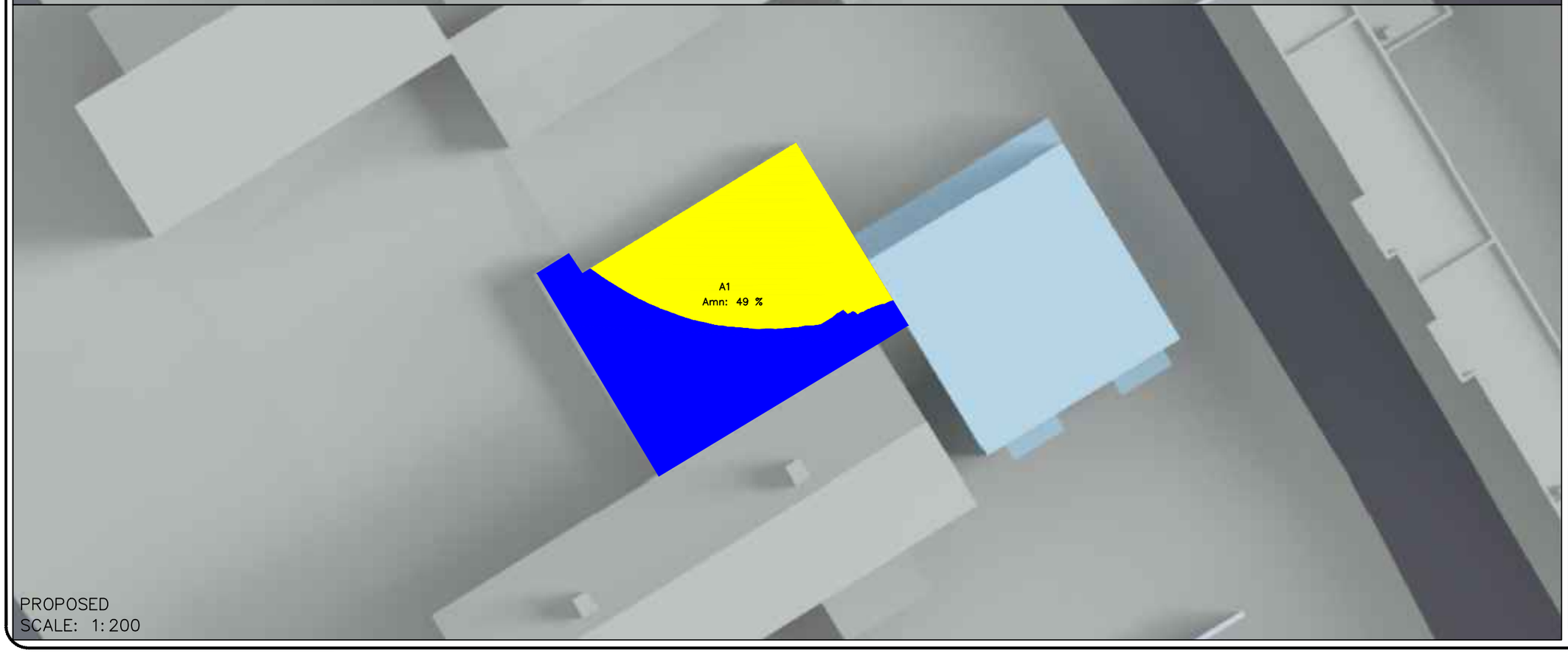
TITLE:
7, 9 & 11 FERRYMOOR
NO SKY LINE CONTOURS

JOB NO:	RELEASE:	DRG NO:
016	01-01	10
DATE:	DRAWN:	SCALE:
OCT' 2022	CS-01	INDIVIDUAL

DEVELOPMENT & LIGHT



EXISTING
SCALE: 1:200



PROPOSED
SCALE: 1:200

SOURCES OF INFORMATION:

3D CONTEXT MODEL
ACCUCITIES MODEL
002989_Croft Way,ham_HD_MASTER

PROPOSAL SCHEME
ZDA - 13.10.22
19021-P-121 - 129

■ < 2 HOURS
■ >= 2 HOURS

N

REV:	DESCRIPTION:	BY:	DATE:
G			
F			
E			
D			
C			
B			
A	-	-	-

PROJECT:
FERRYMOOR GARAGES
TW10

TITLE:
11 FERRYMOOR
2 HOUR SUNLIGHT TEST

JOB NO:	RELEASE:	DRG NO:
016	01-01	20
DATE:	DRAWN:	SCALE:
OCT' 2022	CS-01	INDIVIDUAL

DEVELOPMENT & LIGHT

Development & Light LLP
49 Greek Street
London
W1D 4EG