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Daylight & Sunlight Report Frederick Morfill House

16th December 2022

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DAYLIGHT & SUNLIGHT REPORT

Client: London Brough of Haringey

Project: Frederick Morfill House
69a & 69b Bounds Green Road, London N22 8DF

Report date: 16th December 2022

Authors: Chris Jones BEng (Hons) MSc
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About MES Building Solutions

MES Building Solutions (MES) is an established consultancy practice specialising in providing building solutions throughout the UK.

We offer a full range of services for both residential and commercial buildings from small individual properties through to highly complex mixed use developments.

We are an industry leader in delivering a professional, accredited and certified service to a wide range of clients including architects, developers, builders, housing associations, the public sector and private householders.

Employing highly qualified staff, our team comes from a variety of backgrounds within the construction industry with combined knowledge of building design, engineering, assessment, construction, development, research and surveying.

MES Building Solutions maintains its position at the forefront of changes in building regulations as well as technological advances. Our clients, large or small are therefore assured of a cost effective, cohesive and fully integrated professional service.

About the Authors

Chris Jones is the Technical Director at MES Building Solutions. Chris has a Masters Degree in Energy Efficient & Sustainable Building, as well as an Honours degree in Mechanical Engineering. Chris has over 20 years' experience in providing sustainable building solutions and assists the Neighbourly Matters team at MES. He undertakes daylighting, sunlight and shadow cast analysis for planning applications. Chris is also a qualified BREEAM and Code for Sustainable Homes assessor and has worked with some of the UK's top developers, as well as housing associations and local authorities.

Andrew Pickersgill is an Associate member of the Royal Institution of Chartered Surveyors and leads our neighbourly matters team. He has a BSc (Hons) degree in Building Surveying. Andrew undertakes daylighting, sunlight and shadow analysis for planning applications. He is also involved in party wall issues and carries out other building surveying services for our clients.



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1. Executive Summary

- 1.1 We have carried out calculations following guidance in Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair et al 2022. to ascertain the impact of the proposed redevelopment of Frederick Morfill House, 69a & 69b Bounds Green Road, London N22 8DF on the daylight and sunlight of the neighbouring residential properties.
- 1.2 The proposed redevelopment of Frederick Morfill House will have minimal impact on daylight & sunlight provision to the neighbouring properties with all of the neighbouring windows, assessed comfortably meeting the BRE planning guidance. Just one of the twelve rooms assessed falls slightly short of the BRE guidance, however this could be considered marginal with retained light at 78% of the current level.
- 1.3 Therefore In our opinion the proposals accord with the intent and context of the planning guidance in this case.



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2. Introduction

2.1 The purpose of this report is to assess the impact of the proposed redevelopment of Frederick Morfill House, 69a & 69b Bounds Green Road, London N22 8DF, on the daylight and sunlight of the neighbouring residential properties.

2.2 This report considers the daylight and sunlight issues against the criteria set out for national guidance in the following publications:

- Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair et al 2022 published by the BRE (Building Research Establishment).

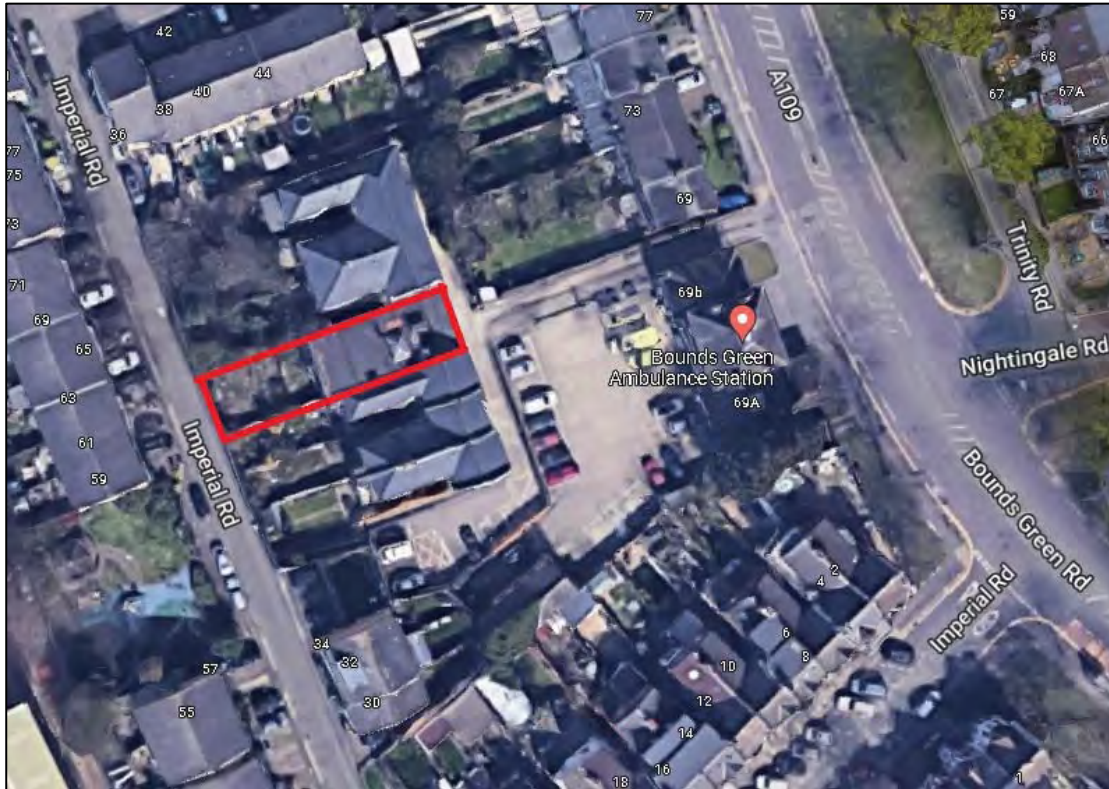
The SLPDS is the culmination of research undertaken by the BRE to determine whether or not a new development will adversely affect the light to nearby properties. The BRE tests are approved by the Department of the Environment and are widely used by local authorities when deciding on development applications.

- BS 8206-2- Code of practice for skylighting.

2.3 There are no minimum mandatory requirements for sunlight & skylight in Building Regulations for England & Wales but the guidance set out in SLPDS is widely accepted as the approved methodology when calculating sunlight & skylight.

3. Description of Development

- 3.1 The scheme comprises of the redevelopment of the existing commercial property at Frederick Morfill House, 69a & 69b Bounds Green Road, London N22 8DF to provide two new three bed dwellings.
- 3.2 The property is located on the west side of Bounds Gree Road, to the rear of Bounds Green Road Ambulance Station and is situated within a terrace of residential properties that back onto Imperial Road to the West.



Site Location Plan (Google 2022)



4. Assessment Process

The effect on neighbouring properties:

- 4.1 The SLPDS describes three parameters to be assessed in order to measure the impact of the proposed new building on Daylight/Sunlight availability to the key adjacent properties. The parameters to be assessed are as follows:

1) Daylight:

Vertical Sky Component (VSC)

Daylight Distribution (DD)

2) Sunlight:

Annual Probable Sunlight Hours (APSH)

- 4.2 The guidance states that rooms to be assessed should be living rooms, kitchens and bedrooms in residential properties. In non-domestic buildings rooms where occupants 'have a reasonable expectation of daylight' should be assessed. Although these spaces are not defined, examples are given of the type of non-domestic buildings that would normally fall into this category. These include schools, hospitals, hotels and hostels, small workshops and *some* offices.
- 1.3 As it is difficult to be sure of the specific use of neighbouring spaces, we have taken a view on the relevance of the spaces adjacent to the proposed development. If we have been in any doubt, we have carried out the assessment. However, it should be noted some of the spaces we have assessed could fall outside the test requirement criteria.
- 1.4 It is important to note that the numerical values in the guidance are advisory and different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.
- 1.5 The neighbouring properties we have assessed are as follows:
- 3-4 Firemans Flats Bounds Green Road
 - 5-6 Firemans Flats Bounds Green Road
 - 7-8 Firemans Flats Bounds Green Road

4.6 The assessment is based on a site visit, 3D laser scan survey and OS data, along with the following drawings, provided by Campbell & Co Architects.

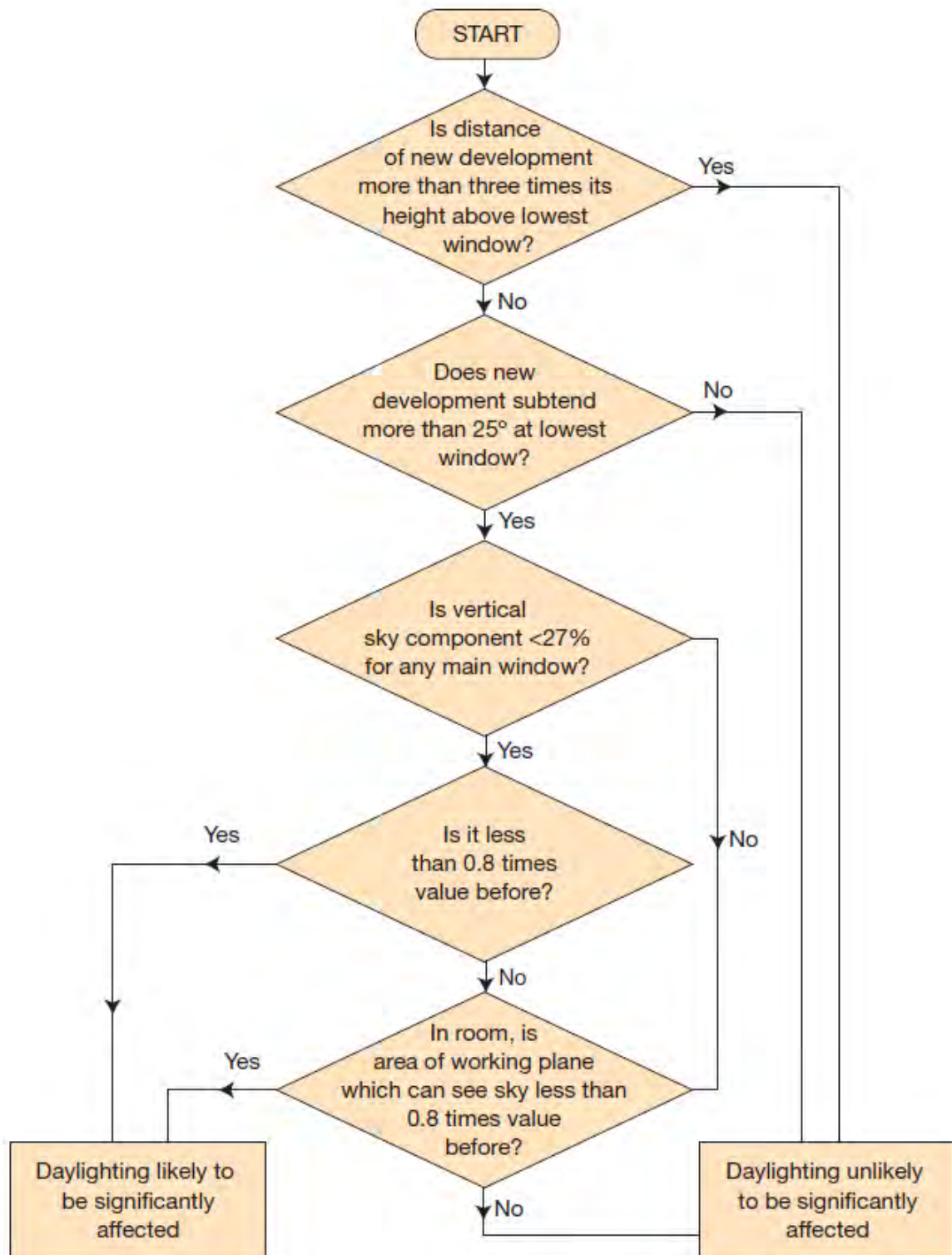
- 1968-E 1-50 Proposed elevations
- 1968-P-00 1-50 Proposed Ground Floor Plan
- 1968-P-01 1-50 Proposed First Floor Plan
- 1968-P-02 1-50 Proposed Second Floor Plan
- 1968-P-03 1-50 Proposed Roof Plan



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5. Daylight

5.1 Site Layout Planning for Daylight & Sunlight contains the following flow chart showing the steps which should be taken in order to establish whether a building will receive adequate daylight:



Distance Check:

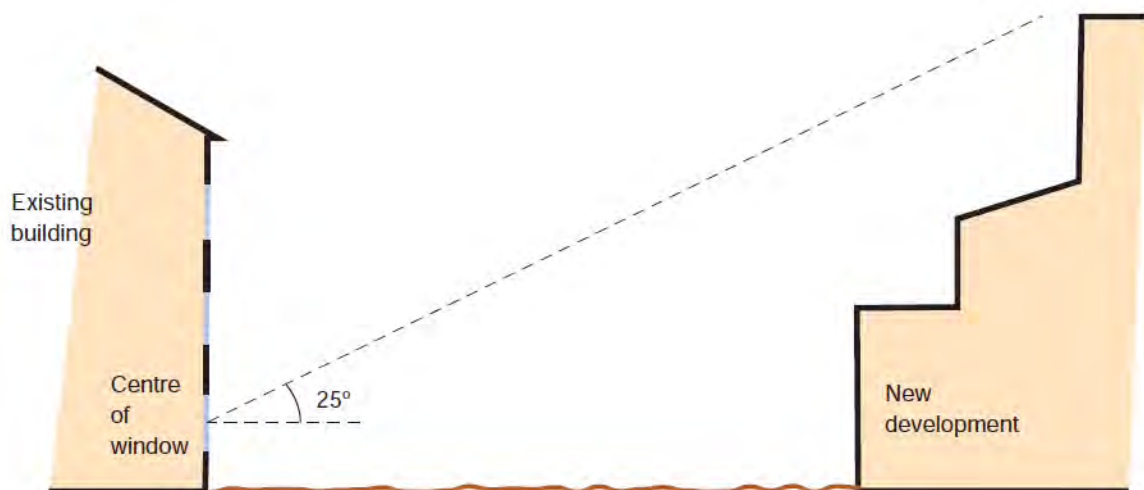
- 5.2 Site Layout Planning for Daylight & Sunlight (2022) states: "Loss of light to existing windows need not be analysed if the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing window."

Distance Check Results

- 5.3 On this occasion the ratio of the height of the proposed building to its distance from the centre of the lowest existing window is less than 1:3 and the 25° rule must be applied.

25° Rule:

- 5.4 The angle to the horizontal subtended by the new development at the level of the centre of the lowest affected window should be no greater than 25°. If this is the case then it is unlikely to have a noticeable effect on diffuse skylight enjoyed by the existing building.



- 5.5 If, for any part of the development, the angle is more than 25°, a more detailed check is needed to find the loss of skylight to the existing building:

25° Rule Results

- 5.6 On this occasion the angle to the horizontal subtended by the new development at the level of the centre of the lowest affected window is likely to be greater than 25° and therefore the following more detailed checks have been carried out:



Vertical Sky Component:

- 5.7 Daylight is the light received from the sun which is diffused through the sky's clouds. 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 also known as 'diffuse light'. Any reduction in the total amount of daylight can be calculated by finding the 'Vertical Sky Component'.
- 5.8 The Vertical Sky Component (VSC) is the ratio of the direct skylight illuminance falling on a vertical face at a reference point (usually the centre of a window), to the simultaneous horizontal illuminance under an unobstructed sky.
- 5.9 The guidance states that the VSC will be adversely affected if after a development it is both less than 27% of the overall available diffuse light and less than 0.8 times its former value.
- 5.10 Therefore if the VSC is more than 27% then enough light would still be reaching the window of the neighbouring building. However if the VSC is less than 27% as well as less than 0.8 times its former value the occupants will notice the reduction in the amount of skylight.

VSC Results

- 5.11 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair et al 2022.

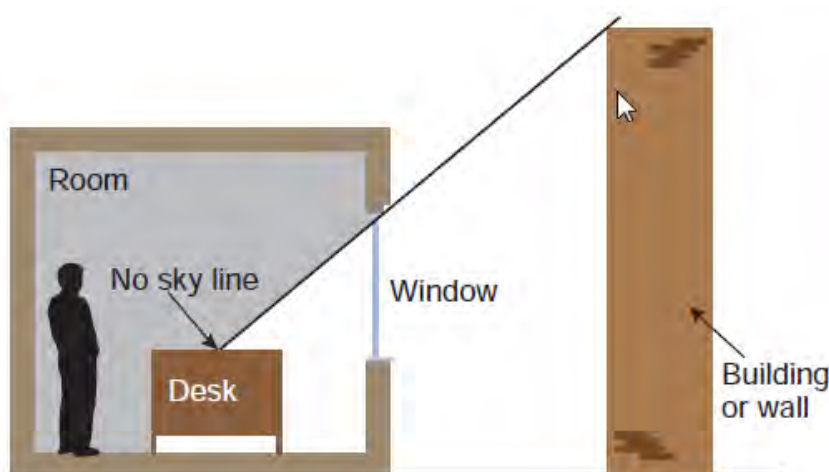
Detailed results are in Section 7.

- 5.12 As can be seen the proposed development will have minimal effect on daylight provision to the neighbouring properties assessed, with all sixteen of the windows assessed comfortably meeting the BRE guidelines for vertical sky component.



Daylight Distribution:

- 5.13 Where room layouts are known (or estimated) the impact on daylighting distribution can be found by plotting what is known as the 'no sky line' in each of the main rooms. These are the same rooms as used for the VSC test.
- 5.14 The no sky line effectively divides the points on the working plane (0.85m high for residential properties and 0.7m high for offices) that cannot see the sky. Therefore areas beyond the no sky line will receive no direct daylight but will instead be lit from reflected light.



BRE 209

- 5.15 If, following the construction of a new development, the no sky line moves so that the area of the existing room, which does not receive direct skylight, is reduced to less than 0.8 times its former value, this will be noticeable to the occupants.
- 5.16 We have estimated internal layouts to assess the Daylight Distribution in rooms adjacent to the development.

Daylight Distribution Results

- 5.17 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair et al 2022.

Detailed results are in Section 7:

- 5.18 As can be seen, there will be very little impact on daylight within the three neighbouring properties assessed due to the proposed development. With eleven of the twelve rooms assessed comfortably meeting the BRE guidelines for daylight distribution. The remaining room, a first floor room within 7-8 Firemans Flats, could be considered marginal,

6. Sunlight

Available Sunlight Hours

- 6.1 Guidance for minimum sunlight values can be found in Section 3 of Site Layout Planning for Daylight and Sunlight (SLPDS).
- 6.2 Habitable rooms in domestic buildings that face within 90° of due south are tested, as are rooms in non-domestic buildings that have a particular requirement for sunlight.
- 6.3 The recommendations are that applicable windows should receive a minimum of 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months between 21st September to the 21st March (the approximate dates of the spring and autumn equinoxes).
- 6.4 However if this is not possible (or the amount of sunlight is already reduced because of the effect of existing obstructions) then a further reduction in sunlight availability will be noticeable to an occupier if the total number of sunlight hours is below the target 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months, *and* is less than 0.8 times its former value prior to the development.
- 6.5 There is no requirement for windows that face within 90° of due north so windows that fall into this category have not been considered for sunlight calculations.

Available Sunlight Hours Results

- 6.6 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair et al 2022.

Detailed results are in Section 7:

- 6.7 We have assessed sixteen windows within the three neighbouring properties assessed. Nine windows are orientated within ninety degrees of south. All nine comfortably meet the BRE guidance for both winter and annual sunlight provision.



7. Appendices

Results:

*Vertical Sky Component
Available Sunlight Hours*

Daylight Distribution

Amenity Space



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MES Building Solutions Vertical Sky Component and Probable Sunlight Hours Calculation Results
Project: Frederick Morfill House
Date of Analysis: 05/12/2022

Floor Ref.	Room Ref.	Window Ref.	VSC	Retained Light	Meets BRE Guidance	Annual	Retained Light	Meets BRE Guidance	Winter	Retained Light	Meets BRE Guidance
3-4 Firemans Flats											
Gnd	R1	W1	Existing 7.56 Proposed 7.56	100%	YES		*North	*North		*North	*North
		W2	Existing 11.18 Proposed 11.18	100%	YES		*North	*North		*North	*North
	R2	W3	Existing 12.36 Proposed 12.36	100%	YES		*North	*North		*North	*North
1st	R1	W1	Existing 19.80 Proposed 19.63	99%	YES		*North	*North		*North	*North
		W2	Existing 25.74 Proposed 25.46	99%	YES		*North	*North		*North	*North
	R2	W3	Existing 26.42 Proposed 26.20	99%	YES		*North	*North		*North	*North
2nd	R1	W1	Existing 83.08 Proposed 83.00	100%	YES		*North	*North		*North	*North
5-6 Firemans Flats											
2nd	R1	W1	Existing 83.28 Proposed 77.47	93%	YES	87.00 81.00	93%	YES	27.00 27.00	100%	YES

MES Building Solutions Vertical Sky Component and Probable Sunlight Hours Calculation Results
Project: Frederick Morfill House
Date of Analysis: 05/12/2022

Floor Ref.	Room Ref.	Window Ref.		VSC	Retained Light	Meets BRE Guidance	Annual	Retained Light	Meets BRE Guidance	Winter	Retained Light	Meets BRE Guidance
7-8 Firemans Flats												
Gnd	R1	W1	Existing Proposed	10.49 12.21	116%	YES	15.00 20.00	133%	YES	1.00 3.00	300%	YES
	R2	W2	Existing Proposed	6.75 8.41	125%	YES	23.00 28.00	122%	YES	2.00 6.00	300%	YES
	R3	W3	Existing Proposed	9.77 18.06	185%	YES	24.00 42.00	175%	YES	3.00 13.00	433%	YES
1st	R1	W1	Existing Proposed	23.45 25.41	108%	YES	43.00 47.00	109%	YES	14.00 19.00	136%	YES
	R2	W2	Existing Proposed	25.29 23.19	92%	YES	63.00 54.00	86%	YES	21.00 22.00	105%	YES
	R3	W3	Existing Proposed	29.68 32.43	109%	YES	74.00 69.00	93%	YES	20.00 24.00	120%	YES
		W4	Existing Proposed	36.85 37.35	101%	YES	62.00 62.00	100%	YES	21.00 21.00	100%	YES
		W5	Existing Proposed	37.13 37.32	101%	YES	62.00 62.00	100%	YES	21.00 21.00	100%	YES

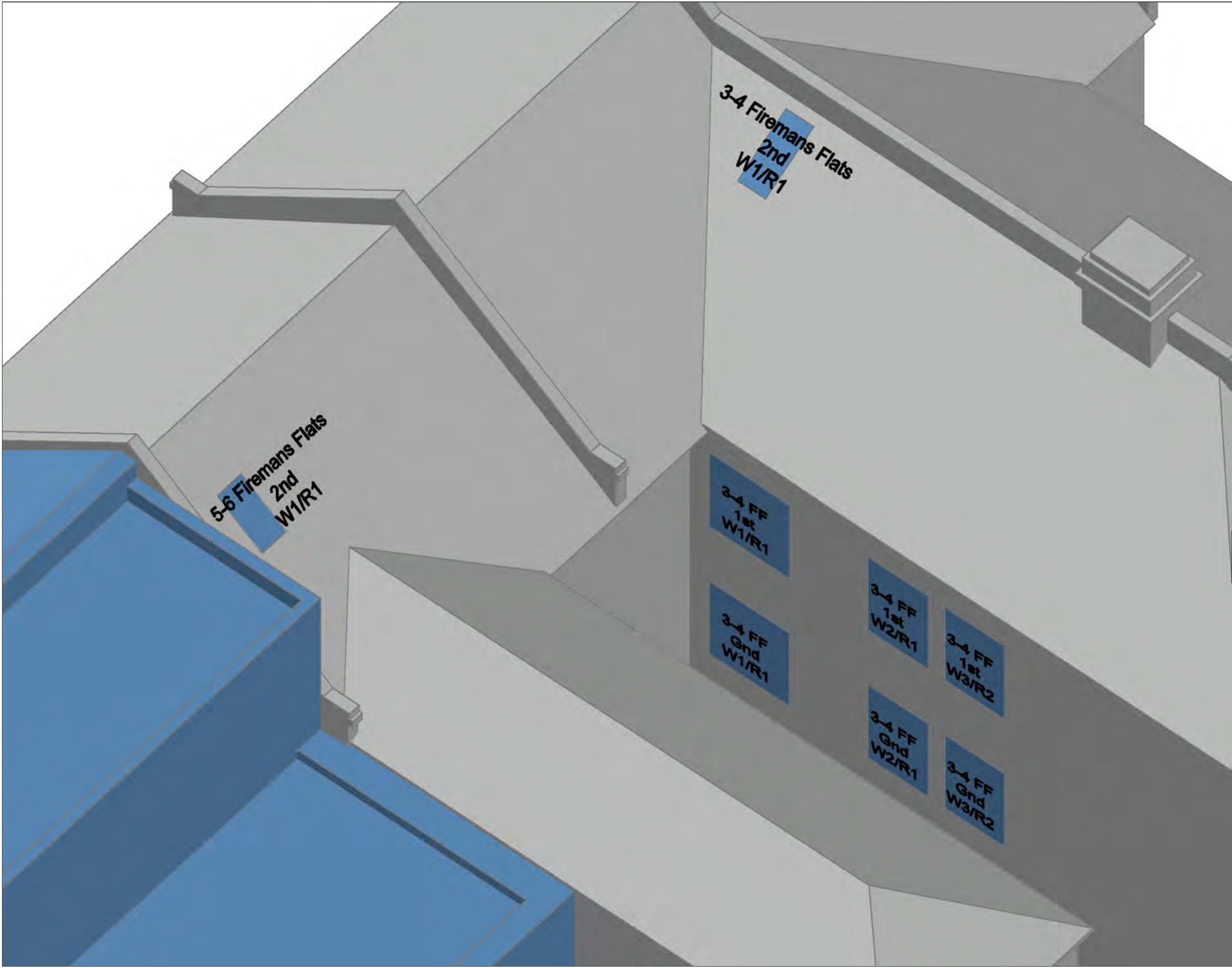
MES Building Solutions Daylight Distribution Calculations
Project: Frederick Morfill House
Date of Analysis: 05/12/2022

Floor Ref.	Room Ref		Room Area	Lit Area Existing	Lit Area Proposed	Retained Light	Meets BRE Guidance
3-4 Firemans Flats							
Gnd	R1	Area m2	14.52	6.17	6.17		
		% of room		42.51%	42.51%	1.00	YES
	R2	Area m2	17.85	3.22	3.22		
		% of room		18.06%	18.06%	1.00	YES
1st	R1	Area m2	14.52	14.32	14.31		
		% of room		98.61%	98.59%	1.00	YES
	R2	Area m2	17.85	12.70	12.17		
		% of room		71.13%	68.15%	0.96	YES
2nd	R1	Area m2	11.45	4.03	4.03		
		% of room		35.18%	35.18%	1.00	YES
5-6 Firemans Flats							
2nd	R1	Area m2	17.78	6.45	5.60		
		% of room		36.25%	31.47%	0.87	YES
7-8 Firemans Flats							
Gnd	R1	Area m2	12.31	6.27	6.97		
		% of room		50.97%	56.67%	1.11	YES
	R2	Area m2	7.18	2.06	2.42		
		% of room		28.67%	33.77%	1.18	YES
	R3	Area m2	22.29	3.62	11.62		
		% of room		16.25%	52.11%	3.21	YES
1st	R1	Area m2	12.31	11.20	11.03		
		% of room		90.96%	89.58%	0.98	YES
	R2	Area m2	7.18	6.68	5.19		
		% of room		93.07%	72.34%	0.78	MARGINAL
	R3	Area m2	22.29	22.21	21.97		
		% of room		99.61%	98.56%	0.99	YES

Window & Room References:



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NOTES

NO.	REVISION	DATE
A	-	-
B	-	-
C	-	-
D	-	-



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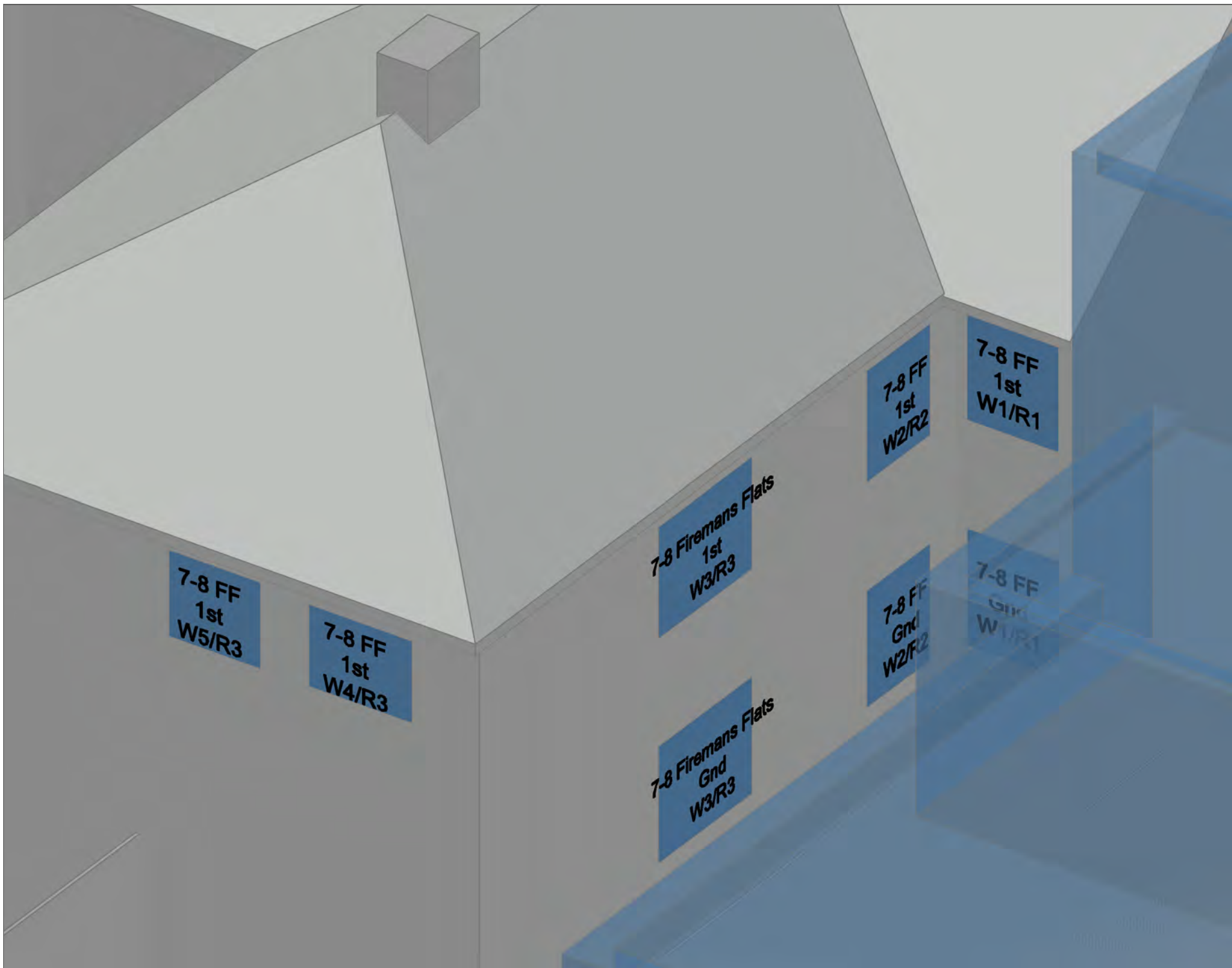
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CLIENT
Haringey Council

PROJECT
Frederick Morfill House
Bounds Green Road
London
N22 8DF

DRAWING TITLE
Window Labels
3-6 Firemans Flats

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NOTES

NO.	REVISION	DATE
A	-	-
B	-	-
C	-	-
D	-	-



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CLIENT
Haringey Council

PROJECT
Frederick Morfill House
Bounds Green Road
London
N22 8DF

DRAWING TITLE
Window Labels
7-8 Firemans Flats

DRAWN BY NJW	CHECKED BY CJ
DATE 1/12/2022	DRAWING NO. -
SCALE NTS	

8. Notes

- 8.1 This report has been prepared for the sole use of the Client. No representation or warranty (expressed or implied) is given to any other parties. Therefore this report should not be relied upon by any third party and we accept no liability from the use of this report by any other party.
- 8.2 Where full access was not available we have made reasonable estimations of internal layouts, floor areas, window sizes and positions etc.
- 8.3 Our calculations model has been built from a combination of architect's plans, partial site survey, site and aerial photographs.
- 8.4 We are not aware of any conflicts of interest between ourselves and any other party concerning this project.



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