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Daylight & Sunlight Report
13 Hawtrey Road

26th October 2020

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DAYLIGHT & SUNLIGHT REPORT

Client: Deborah Felix

Project: 13 Hawtrey Road, London, NW3 3SS

Report date: 26th October 2020

Authors: Andrew Pickersgill BSc (Hons), AssocRICS

Chris Jones BEng (Hons) MSc

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

Andrew Pickersgill is an Associate member of the Royal Institution of Chartered Surveyors and is a member of 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.

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 15 years' experience in providing sustainable building solutions and leads 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.

Contents

1. Executive Summary

1.1 We have carried out calculations following guidance in Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 to ascertain the impact of the proposed roof top extension of 13 Hawtrey Road, London, NW3 3SS, on the daylight and sunlight on the neighbouring properties.

1.2 In this case all of neighbouring windows and rooms comfortably fulfil all the planning guidance. This would be regarded as a high level of compliance in an urban environment such as this.

1.3 In our opinion the proposals accord with the intent and context of the planning guidance in this case.

2. Introduction

2.1 The purpose of this report is to assess the impact of the proposed roof top extension of 13 Hawtrey Road, London, NW3 3SS, on the daylight and sunlight on the neighbouring 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 2011 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.

2.4 It is worthy of note that SLPDS was first published in 1991 and BS 8206-2 in 1992. However SLPDS was updated in Oct 2011 and we have therefore undertaken this study on the basis of this guidance document.

3. Description of Development

3.1 The scheme comprises of a single storey roof top extension to 13 Hawtrey Road, London, NW3 3SS, to provide additional residentional accomodation.

3.2 The property is located on the south side of Hawtrey Road and is situated amongst a number of other similarly sized houses adjoining the road.

Proposed Front Elevation

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 three parameters to be assessed are as follows:

1) Daylight:
Vertical Sky Component (VSC)
Daylight Distribution (DD)

2) Sunlight:
Annual Probable Sunlight Hours (APSH)

3) Overshadowing (Amenity Space)
On relevant open spaces

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.

4.3 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.

4.4 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.

4.5 The neighbouring properties we have assessed are as follows:

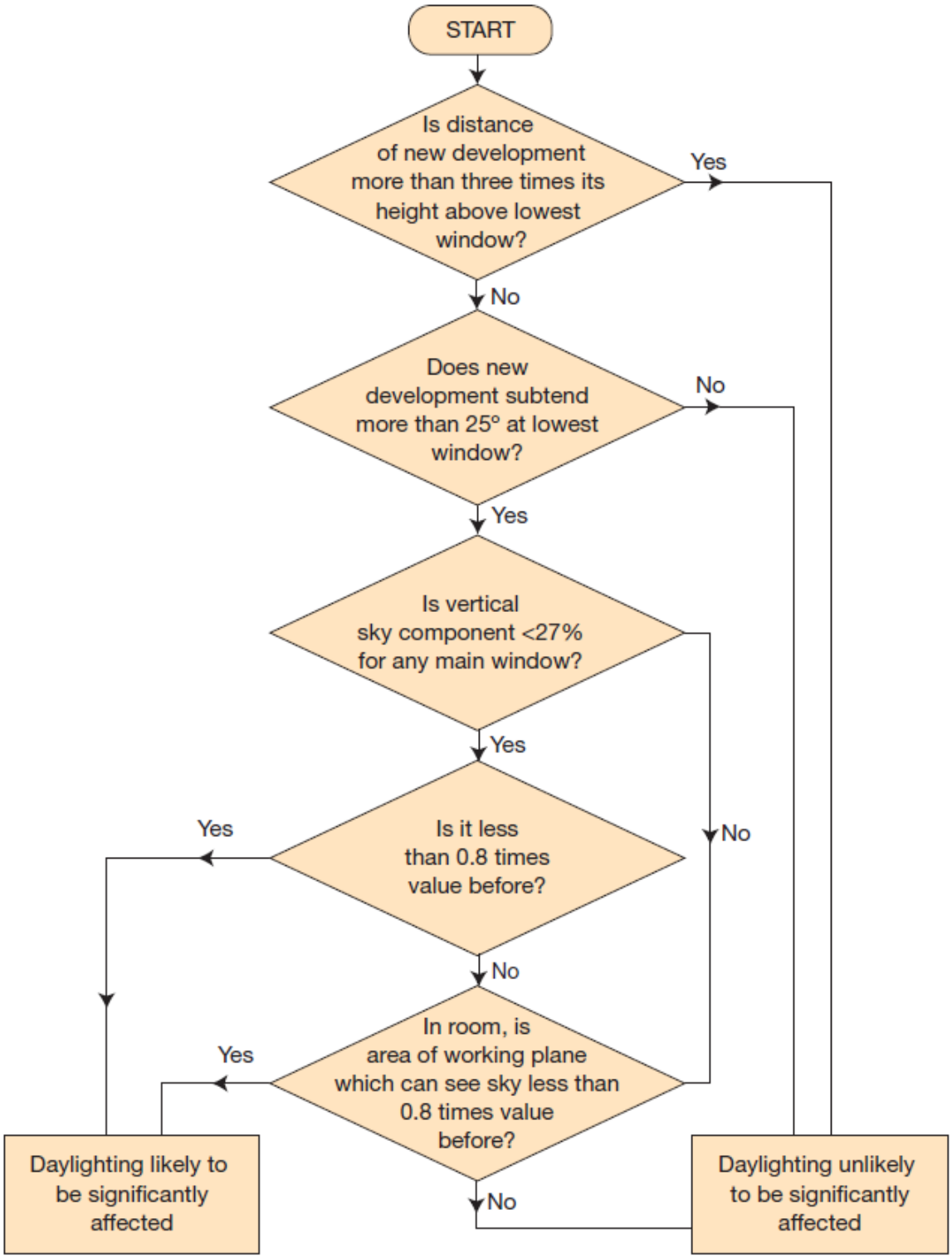
- 118 King Henry's Road
- 120 King Henry's Road
- 122 King Henry's Road
- 11 Hawtrey Road
- 15 Hawtrey Road

4.6 The assessment is based on the following drawings, provided by Kasia Whitfield Design

- HR13 – EX1 – Existing Floor Plan
- HR13 – EX2 – Existing Roof Plan
- HR13 – EX4 – Existing Front Elevation (North)
- HR13 – EX5 – Existing Side Elevation (West)
- HR13 – EX6 – Existing Rear Elevation (South)
- HR13 – EX7 – Existing Section
- HR13 – EX0 – Location Plan
- HR13 – PD1 – Proposed First Floor Plan
- HR13 – PD2 – Proposed Second Floor Plan
- HR13 – PD3 – Proposed Roof Plan
- HR13 – PD4 – Proposed Front Elevation (North)
- HR13 – PD1 – Proposed Side Elevation (West)
- HR13 – PD6 – Proposed Rear Elevation (South)
- HR13 – PD7 – Proposed Section A-A
- HR13 – PD8 – Proposed Side Elevation (East)

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:

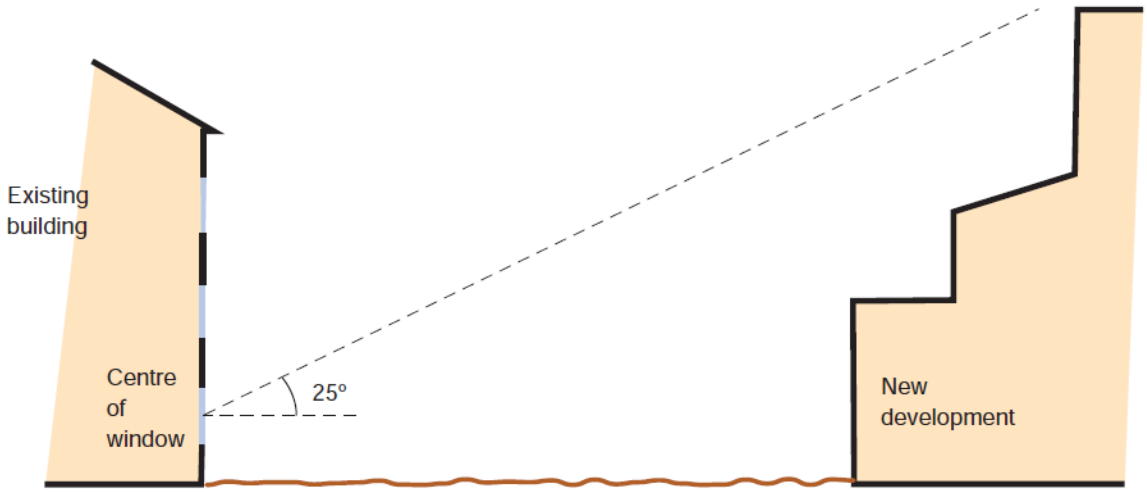
5.2 Site Layout Planning for Daylight & Sunlight (2011) states: "Loss of light to existing windows need not be analysed if the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing window."

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^{O} rule must be applied.

25^{O} 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^{0}. 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^{0}, a more detailed check is needed to find the loss of skylight to the existing building:

25^{O} 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 will be greater than 25^{o} and more detailed checks are necessary:

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 2011.

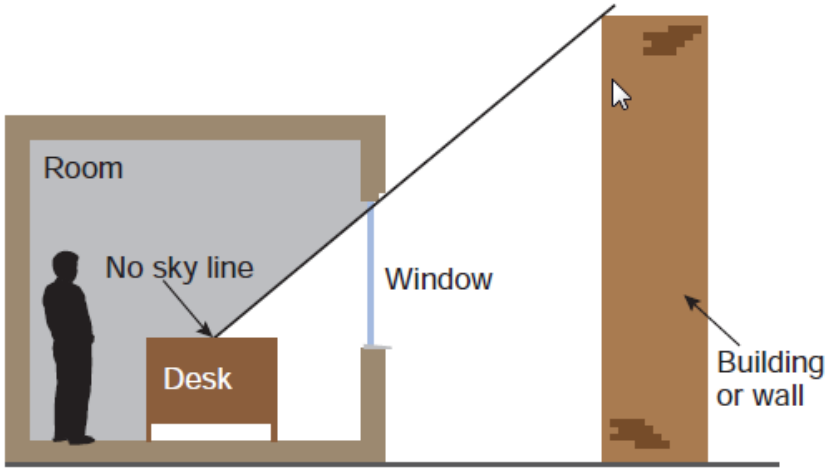
Detailed results are in Section 7.

5.12 All of the neighbouring windows assessed within the neighbouring properties meet the BRE guidance for the vertical sky component test.

Daylight Distribution:

5.15 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.

5.16 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

5.17 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.

5.18 We have estimated internal layouts to assess the Daylight Distribution in rooms adjacent to the development.

Daylight Distribution Results

5.19 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

Detailed results are in Section 7:

5.20 All of the neighbouring rooms assessed within the neighbouring properties meet the BRE guidance for the daylight distribution test.

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 2011.

Detailed results are in Section 7:

6.7 All of the neighbouring windows assessed within the neighbouring properties meet the BRE guidance for the available sunlight test's.

7. Appendices

Results:

Vertical Sky Component
Available Sunlight Hours

Daylight Distribution

MES Building Solutions Vertical Sky Component & Available Sunlight Hours
Project Name: 13 Hawtrey Road, London, NW3 3SS
Date of Analysis: 26/10/2020

Floor Ref.	Room Ref.	Window Ref.		VSC	Difference	Meets BRE Guidance	Annual	Difference	Meets BRE Guidance	Winter	Difference	Meets BRE Guidance
118 King Henry's Road												
Gnd	R1	W1	Existing	30.42	0.98	YES	*North*			*North*		
			Proposed	29.77								
		W2	Existing	26.54	0.98	YES	*North*			*North*		
			Proposed	26.07								
		W3	Existing	23.12	0.98	YES	*North*			*North*		
			Proposed	22.65								
	R2	W4	Existing	21.26	1.00	YES	*North*			*North*		
			Proposed	21.16								
1st	R1	W1	Existing	33.84	0.98	YES	*North*			*North*		
			Proposed	33.31								
	R2	W2	Existing	32.44	1.00	YES	*North*			*North*		
			Proposed	32.44								
		W3	Existing	37.64	0.97	YES	*North*			*North*		
			Proposed	36.52								
120 King Henry's Road												
Gnd	R1	W1	Existing	21.20	0.99	YES	*North*			*North*		
			Proposed	21.04								
	R2	W2	Existing	26.99	0.98	YES	*North*			*North*		
			Proposed	26.50								
1st	R1	W1	Existing	32.34	0.97	YES	*North*			*North*		
			Proposed	31.43								
	R2	W2	Existing	36.77	0.98	YES	*North*			*North*		
			Proposed	36.02								
	R3	W3	Existing	36.28	0.98	YES	*North*			*North*		
			Proposed	35.61								
122 King Henry's Road												
Gnd	R1	W1	Existing	28.59	0.98	YES	*North*			*North*		
			Proposed	28.08								
		W2	Existing	25.26	0.98	YES	*North*			*North*		
			Proposed	24.80								
		W3	Existing	24.34	0.98	YES	*North*			*North*		
			Proposed	23.87								
		W4	Existing	20.48	0.98	YES	*North*			*North*		
			Proposed	20.01								
1st	R1	W1	Existing	33.86	0.98	YES	*North*			*North*		
			Proposed	33.24								
	R2	W2	Existing	28.60	0.98	YES	*North*			*North*		
			Proposed	28.01								

MES Building Solutions Vertical Sky Component & Available Sunlight Hours
Project Name: 13 Hawtrey Road, London, NW3 3SS
Date of Analysis: 26/10/2020

Floor Ref.	Room Ref.	Window Ref.		VSC	Difference	Meets BRE Guidance	Annual	Difference	Meets BRE Guidance	Winter	Difference	Meets BRE Guidance
11 Hawtrey Road												
Gnd	R1	W1	Existing	20.28	0.93	YES		*North*			*North*	
			Proposed	18.82								
		W2	Existing	18.35	0.83	YES		*North*			*North*	
			Proposed	15.21								
1st	R1	W1	Existing	37.92	1.00	YES	88.00	0.99	YES	30.00	1.00	YES
			Proposed	37.91			87.00			30.00		
	R2	W2	Existing	36.79	1.00	YES	86.00	1.00	YES	29.00	1.00	YES
			Proposed	36.78			86.00			29.00		
15 Hawtrey Road												
1st	R1	W1	Existing	27.67	0.93	YES	54.00	0.93	YES	16.00	1.00	YES
			Proposed	25.79			50.00			16.00		

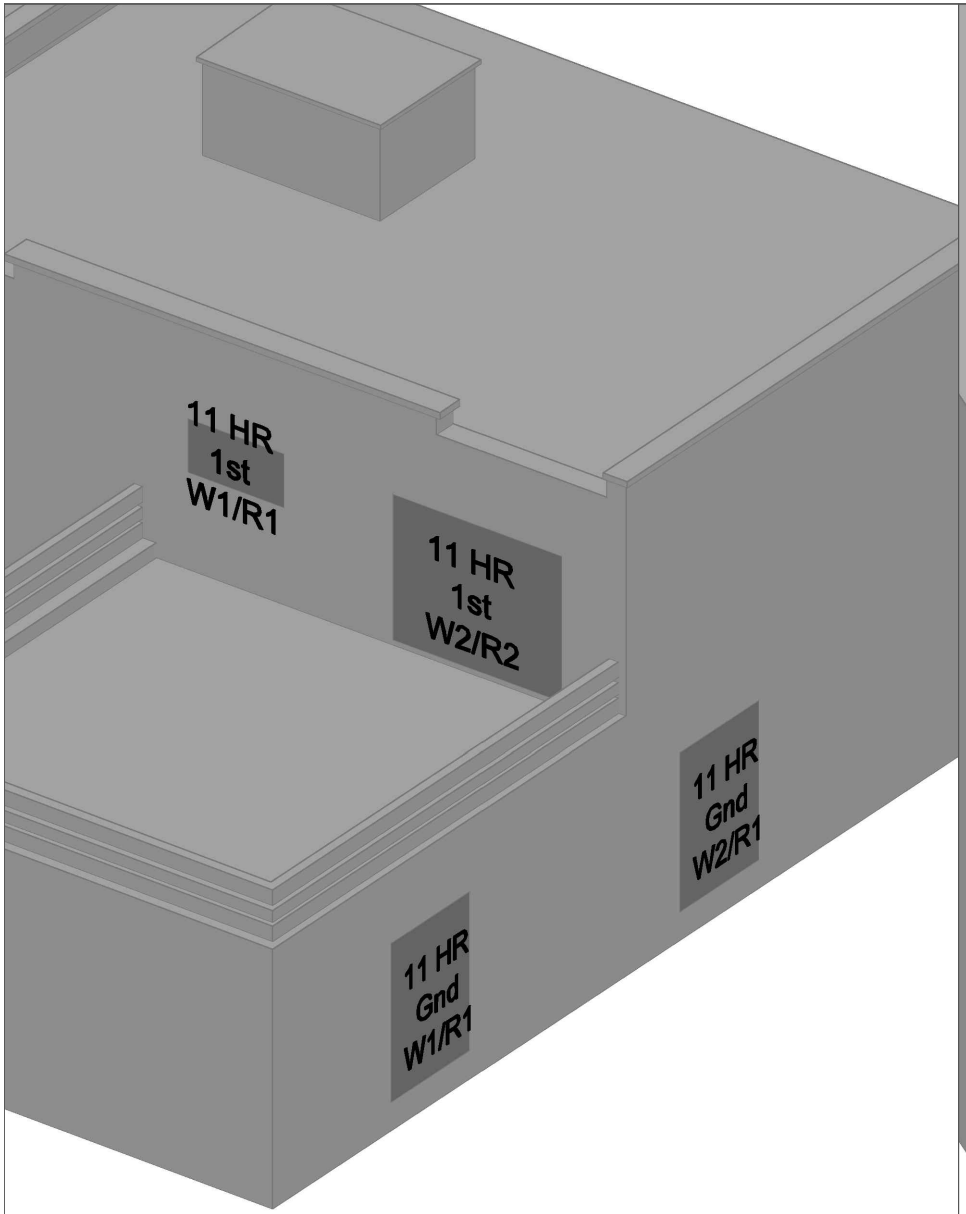
MES Building Solutions Daylight Distribution Calculations
Project Name: 13 Hawtrey Road
Date of Analysis: 26/10/2020

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Difference	Meets BRE Guidance
118 King Henry's Road							
Gnd	R1	Area m2	9.90	9.86	9.86		
		% of room		100%	100%	100.00%	YES
	R2	Area m2	8.66	8.57	8.57		
		% of room		99%	99%	100.00%	YES
1st	R1	Area m2	15.72	15.46	15.46		
		% of room		98%	98%	100.00%	YES
	R2	Area m2	22.55	22.55	22.55		
		% of room		100%	100%	100.00%	YES
120 King Henry's Road							
Gnd	R1	Area m2	8.66	8.42	8.42		
		% of room		97%	97%	100.00%	YES
	R2	Area m2	9.90	9.79	9.79		
		% of room		99%	99%	100.00%	YES
1st	R1	Area m2	11.54	11.12	11.12		
		% of room		96%	96%	100.00%	YES
	R2	Area m2	4.73	4.12	4.12		
		% of room		87%	87%	100.00%	YES
	R3	Area m2	9.65	9.53	9.53		
		% of room		99%	99%	100.00%	YES
122 King Henry's Road							
Gnd	R1	Area m2	20.71	20.44	20.44		
		% of room		99%	99%	100.00%	YES
1st	R1	Area m2	8.68	8.61	8.61		
		% of room		99%	99%	100.00%	YES
	R2	Area m2	4.73	4.13	4.13		
		% of room		87%	87%	100.00%	YES

MES Building Solutions Daylight Distribution Calculations
Project Name: 13 Hawtrey Road
Date of Analysis: 26/10/2020

Floor Ref.	Room Ref.		Room Area	Lit Area Existing	Lit Area Proposed	Difference	Meets BRE Guidance
11 Hawtrey Road							
Gnd	R1	Area m2	32.72	24.75	24.19		
		% of room		76%	74%	98.00%	YES
1st	R1	Area m2	4.88	4.38	4.38		
		% of room		90%	90%	100.00%	YES
	R2	Area m2	9.52	9.46	9.46		
		% of room		99%	99%	100.00%	YES
15 Hawtrey Road							
1st	R1	Area m2	12.65	12.53	12.25		
		% of room		99%	97%	98.00%	YES

Window & Room References:



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CLIENT
Boyer Planning Limited

PROJECT
13 Hawtrey Road

DRAWING TITLE
Window Labels
11-15 Hawtrey Road

DRAWN BY	CHECKED BY
AP/JB	CJ

DATE	DRAWING NO.
26/10/2020	-

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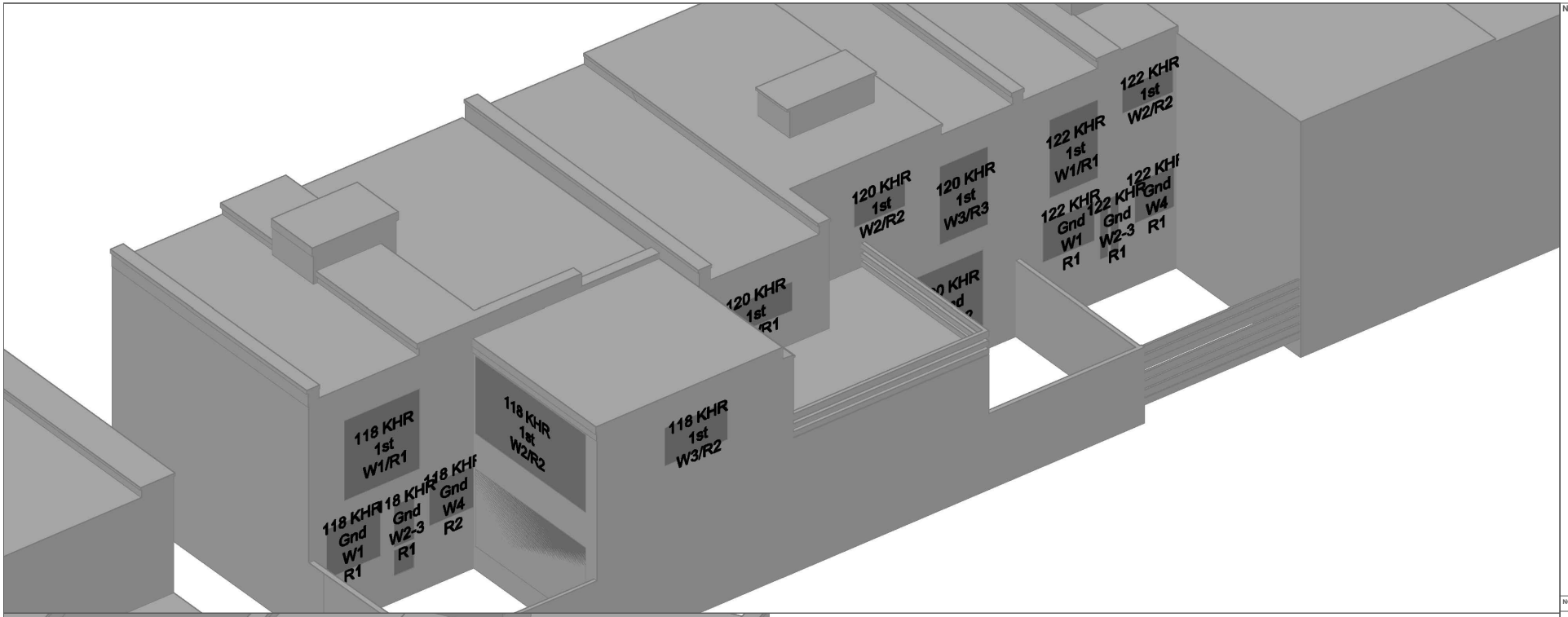

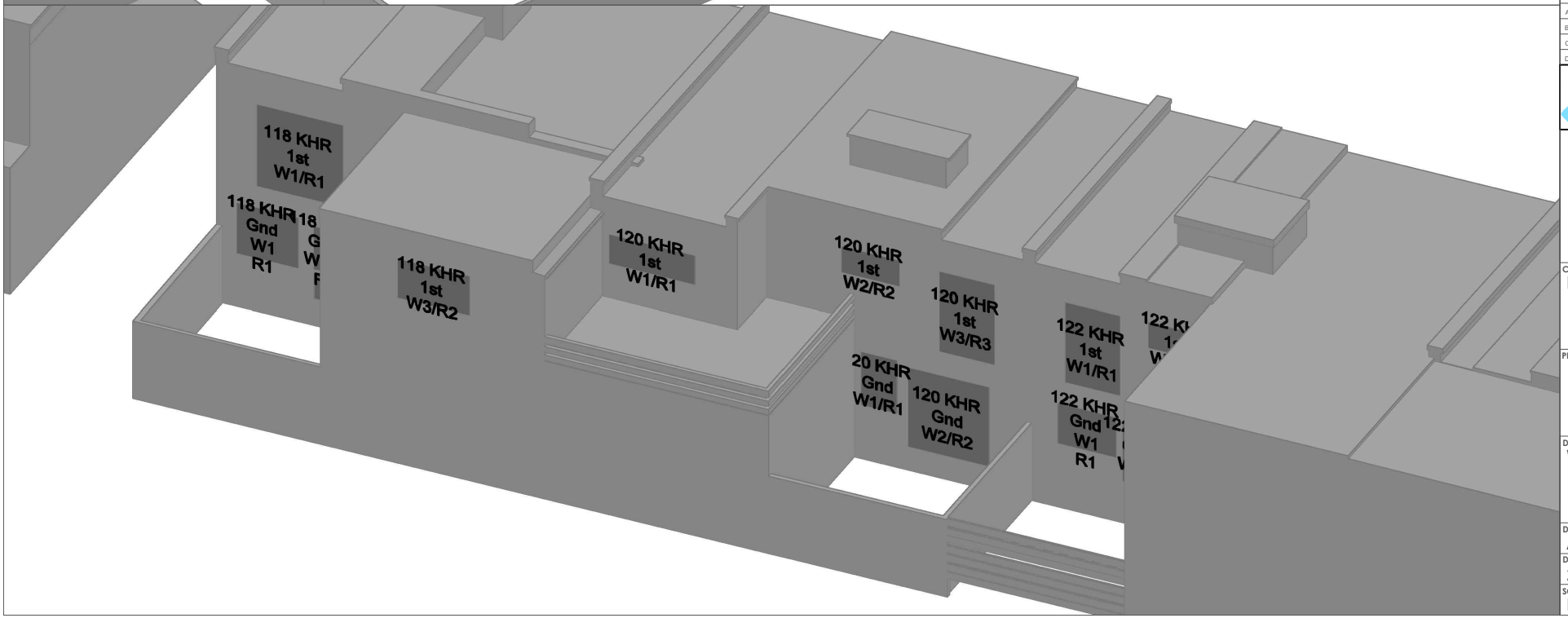

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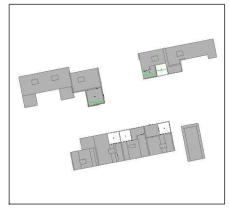

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CLIENT
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PROJECT
13 Hawtrey Road

DRAWING TITLE
Window Labels
118-122 King Henry's Rd

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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.

8.5 Appendix F of Site Layout Planning for Daylight & Sunlight (PJ Littlefair 2011) contains guidance for setting alternative target values for skylight and sunlight access.