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Daylight and Sunlight Study
New Houses at Mill Lane to the Rear of 16 & 18 Hillfield Road, London NW6 1

9th March 2012

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CONTENTS

1 EXECUTIVE SUMMARY

1.1 Overview

1.1.1 Right of Light Consulting has been commissioned to undertake a daylight and sunlight study of the proposed development at Mill Lane to the Rear of 16 & 18 Hillfield Road, London NW6 1.

1.1.2 The aim of the study is to assess the impact of the development on the light receivable by the neighbouring residential properties at 14 to 20 Hillfield Road and 70 to 74 Mill Lane. The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice' by P J Littlefair 2011.

1.1.3 In summary, the proposed development will have a low impact on the light receivable by its neighbouring properties. Right of Light Consulting confirms that the development design satisfies all of the requirements set out in BRE guide 'Site Layout Planning for Daylight and Sunlight'.

2 INFORMATION SOURCES

2.1 Documents Considered

2.1.1 This report is based on drawings:

Matrix Architects

01	Topographical Survey as Existing	Rev –
02	Elevation as Existing	Rev –
03	Elevation 2 as Existing	Rev –
04	Elevation 1 & 2 Combined as Existing	Rev –

PROUN Architects

2496/P/01	Location Plan	Rev –
2496/P/02	Proposed Ground Floor Plan	Rev A
2496/P/03	Proposed First Floor Plan	Rev –
2496/P/04	Proposed Roof Plan	Rev –
2496/P/10	Proposed Section A - A	Rev –
2496/P/11	Proposed Street Elevation B – B	Rev –
2496/P/12	Proposed Street Elevation & Section C – C	Rev –
2496/P/13	Proposed Rear Elevation D – D	Rev –
2496/P/14	Proposed Elevation E – E	Rev –
2496/P/15	Proposed West Elevation F – F	Rev –
2496/P/16	Street Context Elevation	Rev –

3 METHODOLOGY OF THE STUDY

3.1 BRE Guide : Site Layout Planning for Daylight and Sunlight

3.1.1 The study is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice' by P J Littlefair 2011. In general, the BRE tests are based on the requirements of the British Standard, BS 8206 Part 2.

3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The following statement is quoted directly from the BRE guide:

3.1.3 "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design."

3.2 Daylight to Windows

3.2.1 Diffuse daylight is the light received from the sun which has been diffused through the sky. 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 diffuse daylight.

Diffuse daylight calculations should be undertaken to all rooms where daylight is required, including living rooms, kitchens and bedrooms. Usually, if a kitchen is less than $13m^2$ it is considered to be a non-habitable room and the daylight tests need not be applied. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

3.2.2 The BRE guide contains two tests which measure diffuse daylight:

3.2.3 Test 1 <u>Vertical Sky Component</u>

The percentage of the sky visible from the centre of a window is known as the Vertical Sky Component. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.

3.2.4 Test 2 Daylight Distribution

The BRE guide states that where room layouts are known, the impact on the daylighting distribution can be found by plotting the, 'no sky line' in each of the main rooms. The no-sky line is a line which separates areas of the working plane that can and cannot have a direct view of the sky. Daylight may be adversely affected if after the development the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.

3.3 Sunlight availability to Windows

3.3.1 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The guide states that kitchens and bedrooms are less important, although care should be taken not to block too much sunlight.

3.3.2 The BRE guide states that sunlight availability may be adversely affected if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and
- receives less than 0.8 times its former sunlight hours during either period and
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

3.4 Overshadowing to Gardens and Open Spaces

3.4.1 The availability of sunlight should be checked for all open spaces where sunlight is required. This would normally include:

- Gardens, usually the main back garden of a house
- Parks and playing fields
- Children's playgrounds
- Outdoor swimming pools and paddling pools
- Sitting out areas, such as those between non-domestic buildings and in public squares
- Focal points for views such as a group of monuments or fountains.

3.4.2 The BRE guide recommends that at least 50% of the area of each amenity space listed above should receive at least two hours of sunlight on 21st March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21st March is more than 0.8 times its former value, then the loss of light is likely to be noticeable.

4 RESULTS OF THE STUDY

4.1 Windows & Amenity Areas Considered

4.1.1 Appendix 1 provides a plan and photographs to indicate the positions of the windows and gardens analysed in this study.

4.2 Numerical Results

4.2.1 Appendix 2 lists the detailed numerical daylight and sunlight test results. The results are interpreted below.

4.3 Daylight to Windows

4.3.1 All windows pass the Vertical Sky Component test – before / after ratios of 0.99 and above (against the BRE target of 0.8). The proposed development therefore satisfies the BRE daylight requirements by a significant margin.

4.4 Sunlight to Windows

4.4.1 All windows which face within 90 degrees of due south have been tested for direct sunlight. All windows pass both the total annual sunlight hours test and the winter sunlight hours test. The proposed development therefore satisfies the BRE direct sunlight to windows requirements.

4.5 Overshadowing to Gardens and Open Spaces

4.5.1 The results show that 85% or more of the area of each amenity space will receive at least two hours of sunlight on 21st March. This is significantly better than the BRE recommendation which states that at least 50% of any garden or amenity area should receive at least two hours of sunlight on the 21st March. The proposed development therefore passes the BRE overshadowing to gardens and open spaces test.

4.6 Conclusion

4.6.1 The proposed development will have a low impact on the light receivable by its neighbouring properties. Right of Light Consulting confirms that the development design satisfies all of the requirements set out in BRE guide 'Site Layout Planning for Daylight and Sunlight'.

5 CLARIFICATIONS

5.1 General

5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.

5.1.2 We have undertaken the survey following the guidelines of the RICS publication "Surveying Safely".

5.1.3 We have used our best endeavours to ensure all relevant windows within the neighbouring properties have been identified.

5.1.4 Where limited access is available, reasonable assumptions will have been made.

5.1.5 We have adopted the conventional approach of assessing all habitable rooms within domestic properties.

5.1.6 Right of Light Consulting have endeavoured to include in the report those matters, which they have knowledge of or of which they have been made aware, that might adversely affect the validity of the opinion given.

5.1.7 Right of Light Consulting will notify those instructing them immediately and confirm in writing if for any reason the report requires any correction or qualification.

5.2 Project Specific

5.2.1 None

APPENDICES

APPENDIX 1

WINDOW & GARDEN KEY

Window & Garden Key

Key

Window 1 ● Window reference

Development site

Neighbouring Properties

(G1) Neighbouring Gardens and Amenity Areas

Project Name: New House Mill Lane to the Rear of 16 & 18 Hillfield Road, London NV6 1

Drawing Title: Appendix 1 – Neighbouring Windows

Scale: Do not scale

Drawing No: 1 Rev: -

Rev	Date	Details of revision

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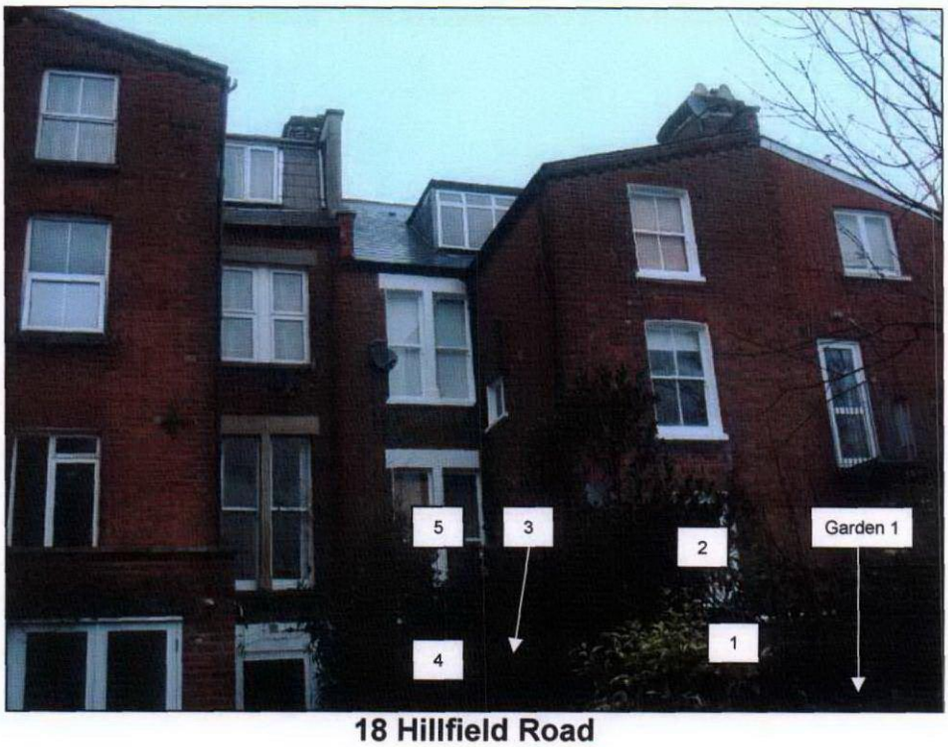
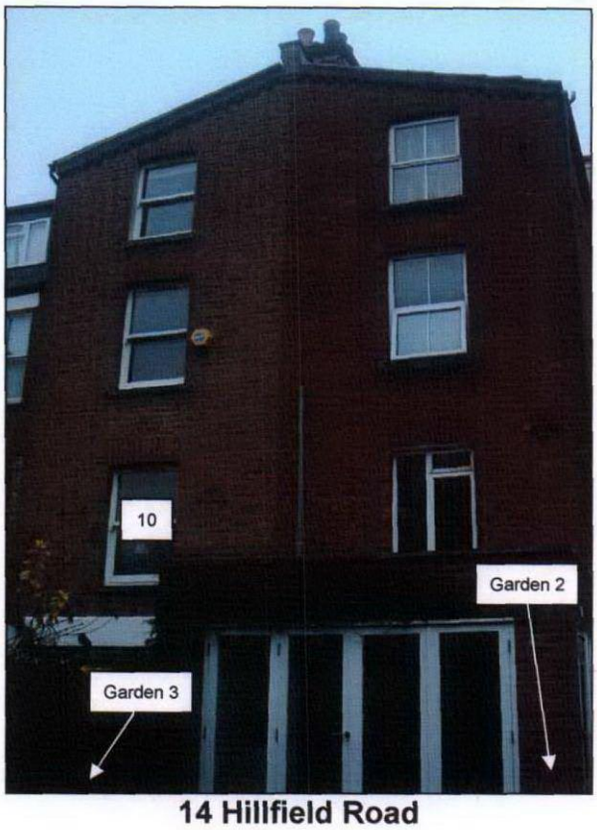
Neighbouring Windows



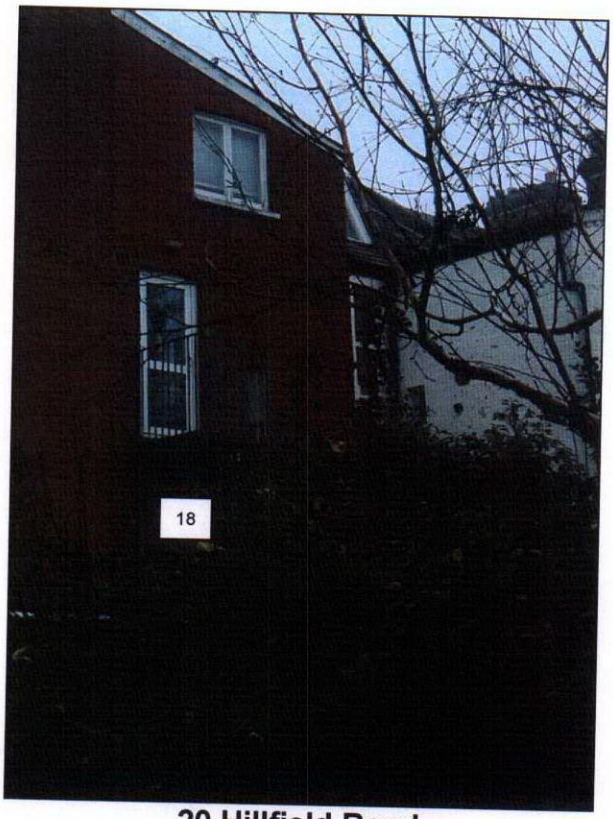
18 Hillfield Road

18 Hillfield Road

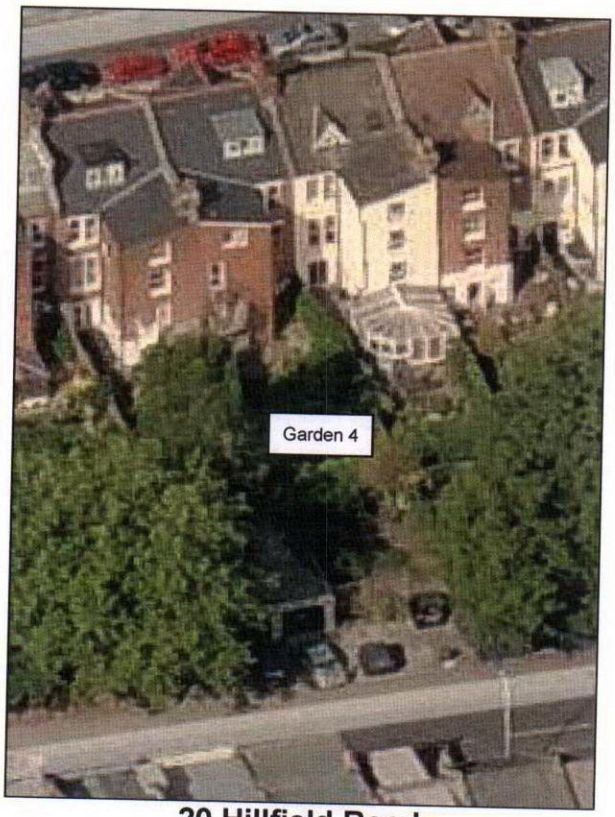


14 Hillfield Road

70 to 74 Mill Lane



20 Hillfield Road



20 Hillfield Road

APPENDIX 2

DAYLIGHT AND SUNLIGHT RESULTS

Appendix 2 - Vertical Sky Component

New House Mill Lane to the Rear of 16 & 18 Hillfield Road, London NW6 1

Reference	Use Class	Vertical Sky Component			
		Before	After	Loss	Ratio
18 Hillfield Road					
Window 1	Supp Light	34.2%	33.9%	0.4%	0.99
Window 2	Supp Light	37.3%	37.3%	0.0%	1.0
Window 3	Supp Light	9.1%	9.1%	0.0%	1.0
Window 4	Supp Light	15.3%	15.3%	0.0%	1.0
Window 5	Supp Light	17.8%	17.8%	0.0%	1.0
16 Hillfield Road					
Window 6	Supp Light	16.5%	16.5%	0.0%	1.0
Window 7	Supp Light	19.1%	19.1%	0.0%	1.0
Window 8	Supp Light	35.4%	34.8%	0.5%	0.98
Window 8+1	Supp Light	24.8%	24.8%	0.0%	1.0
Window 9	Supp Light	37.3%	37.3%	0.0%	1.0
14 Hillfield Road					
Window 10	Supp Light	36.7%	36.7%	0.0%	1.0
70 to 74 Mill Lane					
Window 12	Supp Light	34.4%	34.4%	0.0%	1.0
Window 13	Supp Light	34.6%	34.6%	0.0%	1.0
Window 14	Supp Light	34.7%	34.7%	0.0%	1.0
Window 15	Supp Light	34.9%	34.9%	0.0%	1.0
Window 16	Supp Light	34.5%	34.5%	0.0%	1.0
Window 17	Supp Light	33.2%	33.2%	0.0%	1.0
20 Hillfield Road					
Window 18	Supp Light	37.2%	37.2%	0.0%	1.0

Appendix 2 - Sunlight to Windows

New House Mill Lane to the Rear of 16 & 18 Hillfield Road, London NW6 1

Reference	Use Class	Sunlight to Windows							
		Total Sunlight Hours				Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
18 Hillfield Road									
Window 1	Supp Light	77%	77%	0%	1.0	25%	25%	0%	1.0
Window 2	Supp Light	82%	82%	0%	1.0	27%	27%	0%	1.0
Window 3	Supp Light	26%	26%	0%	1.0	13%	13%	0%	1.0
Window 4	Supp Light	27%	27%	0%	1.0	14%	14%	0%	1.0
Window 5	Supp Light	30%	30%	0%	1.0	14%	14%	0%	1.0
16 Hillfield Road									
Window 6	Supp Light	26%	26%	0%	1.0	12%	12%	0%	1.0
Window 7	Supp Light	29%	29%	0%	1.0	12%	12%	0%	1.0
Window 8	Supp Light	83%	83%	0%	1.0	26%	26%	0%	1.0
Window 9	Supp Light	81%	81%	0%	1.0	27%	27%	0%	1.0
14 Hillfield Road									
Window 10	Supp Light	79%	79%	0%	1.0	26%	26%	0%	1.0
20 Hillfield Road									
Window 18	Supp Light	81%	81%	0%	1.0	27%	27%	0%	1.0

Appendix 2 - Overshadowing to Gardens and Open Spaces
New House Mill Lane to the Rear of 16 & 18 Hillfield Road, London NW6 1

Reference	Total Area	Area receiving at least two hours of sunlight on 21st March						
		Before		After		Loss		Ratio
18 Hillfield Road								
Garden 1	93.1 m2	88.23 m2	95%	79.47 m2	85%	8.76 m2	10%	0.89
16 Hillfield Road								
Garden 2	61.72 m2	61.61 m2	100%	60.82 m2	99%	0.79 m2	1%	0.99
14 Hillfield Road								
Garden 3	156.02 m2	155.72 m2	100%	155.72 m2	100%	0.0 m2	0%	1.0
20 Hillfield Road								
Garden 4	142.47 m2	139.34 m2	98%	139.52 m2	98%	-0.19 m2	0%	1.0

APPENDIX 3

OVERSHADOWING TO GARDENS AND OPEN SPACES

Appendix 3 : Overshadowing to Gardens and Open Spaces

Key

Receives under two hours sunlight on 21st March before and after the development.

Receives under two hours sunlight on 21st March before the development; but will receive at least two hours sunlight on 21st March after the development (light improved).

Receives at least two hours sunlight on 21st March before the development; but will receive under two hours sunlight after the development (light loss).

Receives at least two hours sunlight on 21st March before and after the development.

Notes:

1. Contours derived in accordance with BRE Guide : Site Layout Planning for Daylight and Sunlight

Project Name:	New House Mill Lane to the Rear of 16 & 18 Hillfield Road, London NW6 1
Drawing Title:	Appendix 3 - Overshadowing to Gardens and Open Spaces
Scale:	Do not scale
Drawing No:	1
Rev:	-

Rev	Date	Details of revision

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