BLDAconsultancy

# Planning Sunlight & Daylight Report

**At**

**14 Hatton Wall**
**Hatton Gardens**
**London**
**EC1N 8JH**

**For**

**Mr Desmond Higgins**

**12th November 2014**

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# 1 Introduction

**1.1** The development site is situated at 14 Hatton Wall, Hatton Gardens, London EC1N 8JH. This report assesses the Sunlight and Daylight adequacy of the proposed north facing rooms from ground to third floor to the rear of the property within the existing 14 Hatton Wall building.

**1.2** The existing building at 14 Hatton Wall is shown hatched in red in Figure 1 below.

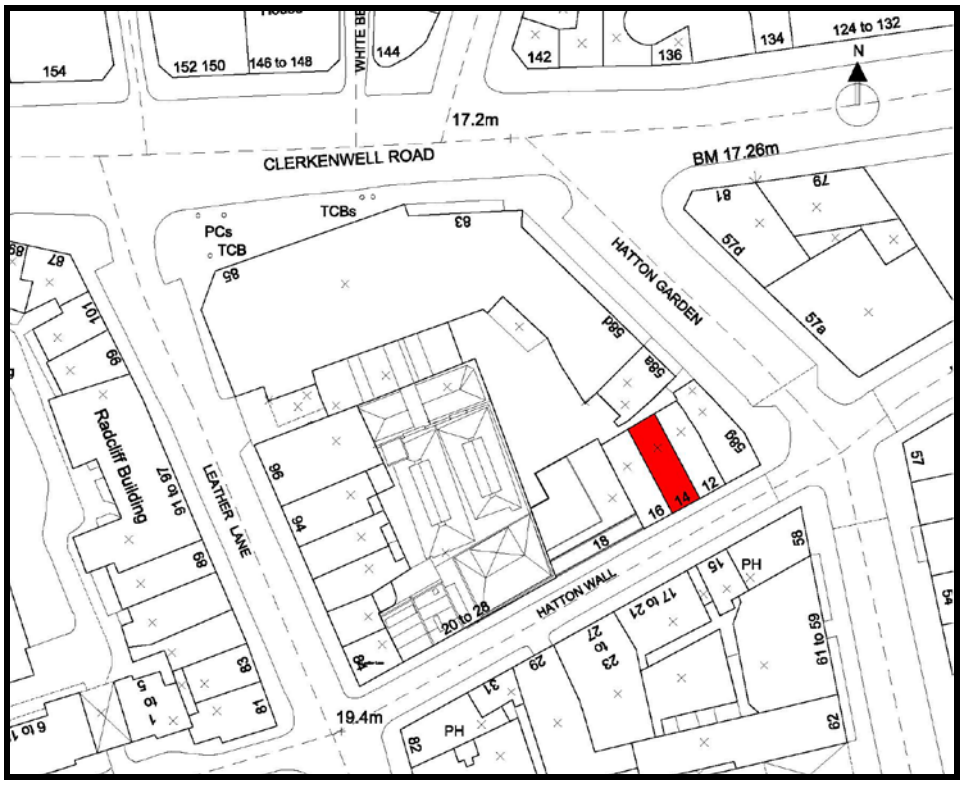


**Figure 1.** Existing Site Plan

## 2 Scope of this report

**2.1** This report considers the Sunlight and Daylight issues against the criteria set out for national discretionary guidance in the publication 'Site Layout Planning for Daylight and Sunlight' (SLP)[1] published by the Building Research Establishment (BRE) in 2011. The document SLP refers both to particular amounts of daylight and sunlight and to a method of setting alternative target values for skylight. The LPA has not set such alternative target values. The document SLP states in its own introduction on page 1 that:

*"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy"*

**2.2** The British Standard current for this subject is BS 8206-2:2008 – code of practice for daylighting[2].

**2.3** The analyses used in this chapter are:

2.3.1 **For daylight VSC**: The principles set out in section 2 of SLP together with the concept of Vertical Sky Component (***VSC%***) as set out in both Appendix A of SLP – and in BS 8206-2:2008:code of practice for daylighting.

2.3.2 **For daylight ADF**: The principles set out in section 2 of SLP together with the concept of average daylight factor (***df***) as set out in both Appendix C of SLP - interior daylighting recommendations – and in BS 8206-2:2008:code of practice for daylighting. Also an assessment of percentage loss.

2.3.3 **For sunlight**: The sun light protractor method and sunlight availability indicator for 51.5° N as set out in Appendix A. of SLP.

2.3.4 **For daylight to existing**: The principles set out in section 2 of SLP together with the concept of Vertical Sky Component (***VSC%***) as set out in both Appendix A of SLP – and in BS 8206-2:2008:code of practice for daylighting.

[1] Littlefair, P.J (2011) Site Layout Planning for Daylight and Sunlight, A guide to good practice, IHS and BRE

[2] Lighting for Buildings. Code of Practice for Daylighting BS 8206-2: 2008, British Standards Institution, 2008

# 3 Methodology

## 3.1 For Sunlight at a Building

3.1.1 The methodology used is that of the sun light protractor method and sunlight availability indicator for 51.5° N as set out in Appendix A of Site Layout Planning for daylight and sunlight: A guide to good practice (SLP).

3.1.2 This method considers sunlight at a reference point. On looking out from the reference point the angular size of an obstructing building is assessed by reference to its ratio of Distance/Height relative to the reference point.

3.1.3 The composite obstruction profile is plotted using this ratio. The resultant plot of obstructions for any given reference point is then overlaid on the Building Research Establishment (BRE) sunlight availability indicator for 51.5° N.

3.1.4 The concept of available sunlight takes into account the probability of cloud obscuring the sun from a given reference point in addition to the change of sunrise and sunset times. Very approximately at 51.5° N, BRE anticipate an average of 4 hours and 4 minutes of sunlight per day throughout the year on the basis only of cloud as an obstruction. The sunlight indicator takes into account the lower sun angles of the winter months.

3.1.5 The resultant assessment provides a percentage of annual probable sunlight hours at a given point. This assessment is for sunlight on the outside face of a building.

3.1.6 BRE discretionary guidance states that on a window wall facing within 90° of due south there will be adequate potential for sunlight if the reference point receives at least 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months. If the available sunlight hours are both less than the recommended values, and less than 0.8 times their former value,

either over the whole year or during the winter months, the reduction in sunlight access will be noticeable.

3.1.7 In accordance with the BRE guidelines set out in SLP there is no sunlight requirement for windows facing within 90° of due north.

## 3.2 For Daylight at a Building

3.2.1 An accurate prediction is made of the amount of daylight within a room using the concept of Average Daylight Factor (***df***). This assessment is carried out in accordance with section 2 and Appendix C of SLP - interior daylighting recommendations – and in accordance with BS 8206-2:2008:code of practice for daylighting. The reference levels for such daylighting are also given in these documents.

3.2.2 The procedure is, as with the sunlight analysis, to describe in terms of the Distance/Height ratio all physical obstructions to light paths with reference to a subject position. These obstructions are then plotted against the light distribution from a CIE Standard Overcast Sky**3** as defined by the Commission Internationale de l'Eclairage (CIE).

3.2.3 The resulting daylight at the external face of the building can be computed. This is known as the Vertical Sky Component (***VSC***). The parameters of window size, glass transmissivity, room size and internal surface reflectances are then evaluated against the VSC for the window location. The resulting assessment gives a measure of internal daylight as a df value known as Average Daylight Factor.

3.2.4 The approach advocated by SLP, but not by BS 8206-2:2008, is to use only the external VSC measurement at existing surrounding property. Because this approach does not consider any of the window or room qualities, including window size for example, we prefer the more detailed average daylight factor approach and assessment.

[3] This is a completely overcast sky, the mathematical definition of which is given at Appendix H of SLP as a luminance ratio.

3.2.5 The Average Daylight Factor tests takes into account window size, room size, internal reflectances in addition to external light levels at the window. VSC is a measurement made externally only and does not describe daylight internally.

3.2.6 The suggested average daylight factor levels in SLP are:

- Bedrooms 1.0%df
- Living Room 1.5%df
- Kitchens 2.0%df
- Living/Kitchens 2.0%df

The assessment of adequate light internally in general relates to the quantum of light remaining as set out in BS 8206-2:2008 (in this instance measured as average daylight factor – df) rather than how much light is taken away.

## 4 Drawings

**4.1** The report is prepared on the basis of the following drawings, received on 11th November 2014, and dated 18TH June 2013, as listed below,.

**4.2** Those by Emulsion Architects

| DRAWING TITLE : | DRAWING NUMBER |
|---|---|
| Proposed – Ground Floor Plan | 400_102A - A |
| Proposed – 1st Floor Plan | 400_103 |
| Proposed – 2nd Floor Plan | 400_104 |
| Proposed – 3rd Floor Plan | 400_105A - A |
| Proposed – Front and Rear Elevations | 400_202 - A |
| Existing 3D Model (Z-map) received from Emulsion | N/A |

## 5 The Scheme

**5.1** The proposals consist of the internal reconfiguration of an existing shop into residential dwellings from ground to second floor and the addition of a third storey extension on top of the existing building at 14 Hatton Wall.

**5.2** The proposed floor layouts from ground to third floor at 14 Hatton Wall are shown below in Figure 2.

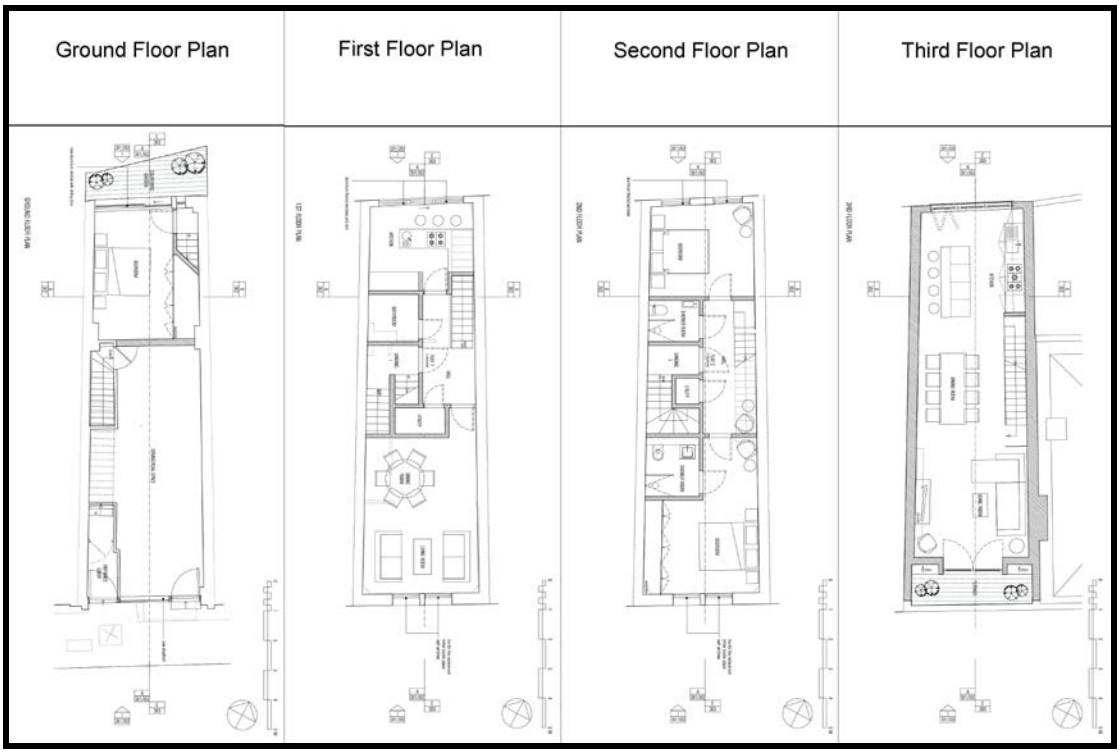


**Figure 2.** Proposed Floor Plans

## 6 Description of the Surroundings

**6.1** 14 Hatton Wall is a three storey mid-terrace property located in a densely populated area of mixed use residential and commercial properties. To the immediate north of the site is 58a Hatton Garden, and beyond this there is a four storey mixed use block of flats and commercial units. To the east and west of the site there are three storey buildings which are retail at ground floor level and residential at upper floors. To the south there are four storey residential terraces that house commercial units at ground floor level and residential at the levels above.

## 7 Sunlight

**7.1** We have tested the sunlight levels at rooms to ground, first, second and third floor levels of the proposed development. The tests have been carried out to bedrooms, kitchen and combined kitchen and living rooms.

**7.2** In accordance with the BRE guidelines set out in SLP there is no sunlight requirement for windows facing within 90° of due north. Therefore, rooms within the proposed 14 Hatton Wall development would meet the BRE criteria.

## 8 Daylight

### 8.1 Daylight to Proposed Dwellings

8.1.1 In accordance with the BRE assessment methodology, we have assessed the daylight Average Daylight Factor (ADF) levels within the proposed habitable rear rooms from ground to third floor of 14 Hatton Wall. The assessment considers the impact of the immediate surroundings, including 58a Hatton Garden which is located within close proximity of the proposed rear rooms.

8.1.2 The Average Daylight Factor tests takes into account window size, room size, internal reflectance in addition to external light levels at the window known as the Vertical Sky Component (VSC).

8.1.3 The BRE discretionary guidance for daylight ADF to proposed habitable rooms following development is a minimum of:

- 1.0% ADF for a Bedroom
- 1.5% ADF for a living room
- 2.0% ADF for a kitchen or combined kitchen and living room

8.1.4 We have taken daylight ADF assessments at all proposed rear rooms from ground to third floor which face north and may be affected by the existing surrounding buildings. The test locations are shown in Figure 3 in Appendix 1 of this report and the results of the daylight ADF assessments are shown in Table 1 in Appendix 2.

8.1.5 The results of the daylight ADF study demonstrates that following the redevelopment of the proposed rear rooms at ground to third floor levels, the proposed rooms to the rear of 14 Hatton Wall would not be adversely impacted upon by the existing surrounding buildings.

8.1.6 Following development the tested rooms at from ground to third floor level would receive daylight ADF levels which would meet and exceed the BRE and British Standards recommendations.

## 9 Conclusions

**8.1** In accordance with the BRE guidelines set out in SLP there is no sunlight requirement for windows facing within 90° of due north. Therefore, rooms within the proposed 14 Hatton Wall development would meet the BRE criteria.

**8.2** The daylight assessments have been carried out to the proposed north facing rooms from ground to third floor to the rear of 14 Hatton Wall. We have tested the impact of the existing surroundings on to the proposed rear rooms at 14 Hatton Wall.

**8.3** The daylight results demonstrate that all rear rooms tested at ground to third floor levels would not be adversely impacted by the existing surrounding dwellings in terms of daylight. Following development of the north facing rooms to the rear of 14 Hatton Wall, the proposed rooms would achieve high levels of daylight which would meet and exceed the BRE and British Standards recommendations.

12th November 2014

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**Appendix 1**

Assessment Location Plans

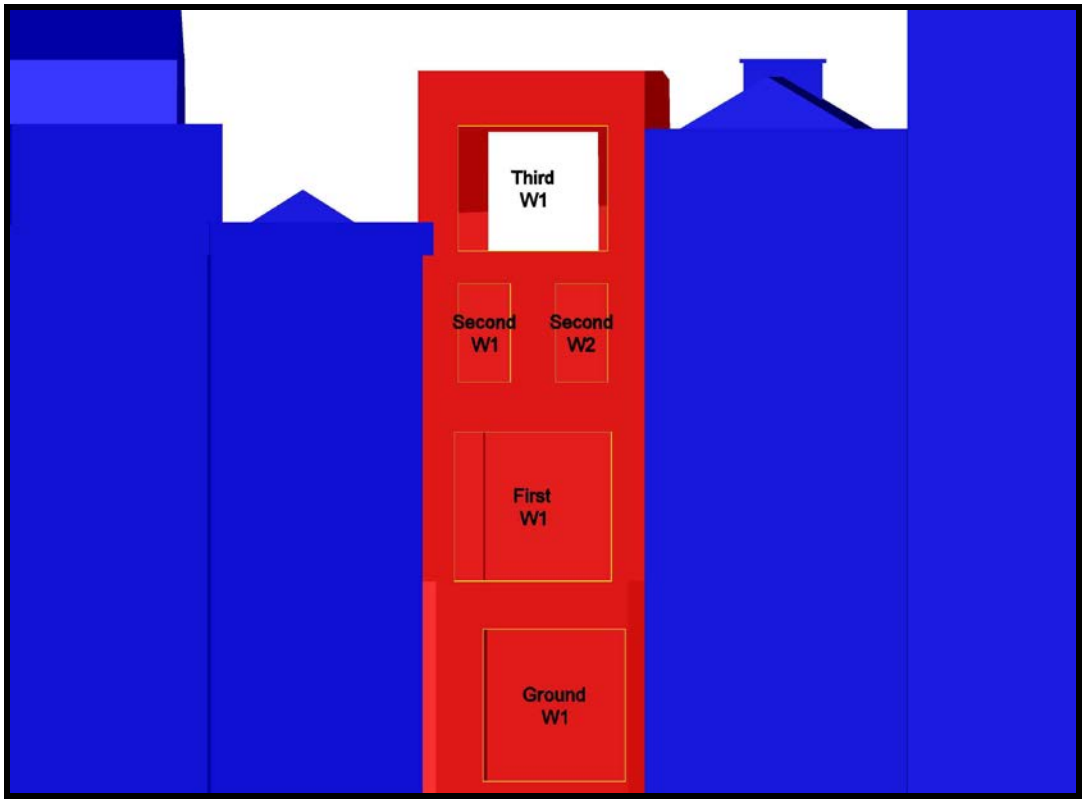


**Figure 3** –Daylight to Proposed Dwellings – Assessment Location Plan - Ground to Third Floor rooms to the rear of 14 Hatton Wall (north elevation)

**Appendix 2**

Daylight Result Tables

Project Name: 14 Hatton Wall
Project No: 6160
Report Title: Daylight ADF at 14 Hatton Wall

**14 Hatton Wall**

| Floor Ref. | Room Ref. | Room Use. | Window Ref. | Glazed Area | Room Surface Area | ADF Proposed | Req'd Value | Pass/Fail |
|---|---|---|---|---|---|---|---|---|
| Ground | R1 | Bedroom | W1 | 6.08 | 66.62 | 1.08 | | |
| | | | | | | 1.08 | 1.00 | PASS |
| First | R1 | Kitchen | W1 | 6.42 | 54.70 | 2.04 | | |
| | | | | | | 2.04 | 2.00 | PASS |
| Second | R1 | Bedroom | W1 | 0.99 | 58.69 | 0.57 | | |
| | | | W2 | 0.99 | 58.69 | 0.52 | | |
| | | | | | | 1.09 | 1.00 | PASS |
| Third | R1 | Living Room/ Kitchen | W1 | 5.14 | 172.61 | 2.02 | | |
| | | | W2 | 3.64 | 172.61 | 1.53 | | |
| | | | | | | 3.55 | 2.00 | PASS |

**Table 1** – Daylight results for assessments from Ground to Third floor rooms to the rear of 14 Hatton Wall

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