

JS LEWIS LTD

Sunlight and Daylight Assessment

Revision A

April 2017

Boydell Court Management Workshop
Proposed New First Floor Residential Unit
London NW8 6NJ

Client: Mr Sony Douer

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1 INTRODUCTION

1.1 Site and Surroundings

This document forms part of the planning submission for the proposed new first floor residential unit over the Boydell Court management workshop, Boydell Court, London NW8 6NJ. The proposals are for a ground floor extension of the workshop and the creation of a new residential unit at first floor level. The living space has an Easterly window, and Bedroom 1 has a westerly facing slot window.

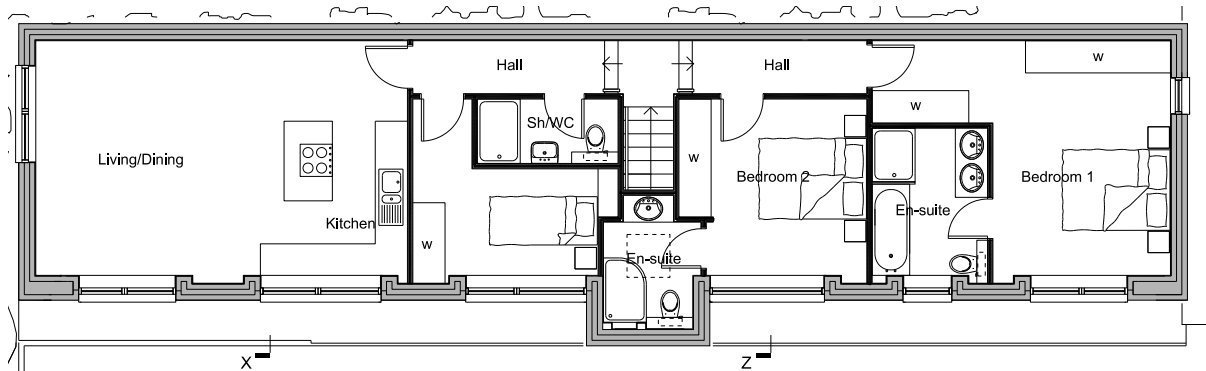


Figure 1 - Floor Plan

1.2 Requirement for Sunlight and Daylight Assessment

JS Lewis Ltd was instructed to assess the sunlight and daylight levels within the proposed unit to inform the planning process.

1.3 Scope of Work

The scope of this report and the associated design input was to undertake in accordance with in accordance with the BRE’s Site Layout Planning For Daylight And Sunlight document the following:

1. An assessment of daylight factors to the rooms in the proposed scheme;
2. An assessment of sunlight levels.

This report does not deal with Rights to Light matters.

1.4 Methodology

1.4.1 Daylight for Proposed Dwellings

The daylight levels within the proposed units were evaluated for kitchen/living/dining spaces and bedrooms using the BRE equation $ADF = (M*W*u*T)/(A(1-(R*R)))$ and dimensions from the proposed plans.

The Guide sets out the following guidelines for recommended minimum average daylight factors within rooms:

- Kitchens – 2%
- Living rooms – 1.5%
- Bedrooms – 1%

1.4.2 Sunlight for Proposed Dwellings

The methodology followed was to use the direction finder and the sunlight availability indicator as set out in the Appendices of the BRE 'Site Layout Planning for Daylight and Sunlight' document.

The guide notes for sunlight levels in new developments:

'In housing the main requirement for sunlight is in living rooms... It is viewed as less important in bedrooms and kitchens... Sensitive layout design will attempt to ensure that each individual dwelling has at least one main living room which can receive a reasonable amount of sunlight.'

It sets out the following guidelines:

- Winter sunlight hours – 5%
- Annual sunlight hours – 25%

1.5 Key Assumptions and Inputs

Plans and elevations from the proposed scheme were used to inform the study, together with photography of the surrounding buildings and context. Where data was not readily available, floor to floor heights of commensurate with the period of the buildings were assumed.

1.6 Flexibility

Daylight and sunlight considerations are complex and there are no fixed rules which assess whether a design is acceptable or not. Some guidance does exist, and the key document is "Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice". The 2011 document was a revision of the original 1991 document. In setting the targets, it also advises caution in their application:

'The guide is a comprehensive revision of the 1991 edition. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.'

It goes on to say:

'Although it gives numerical guidelines, these should be interpreted flexibly since natural daylighting is only one of many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of the existing buildings.'

With regard to sunlight levels within proposed developments, the BRE guidance document recognises the following:

“Where possible, living rooms should face southern or western parts of the sky and kitchens towards the North or East...developments of flats, especially those with site constraints, it may not be possible to have every living room facing within 90 degrees of South.”

It goes on to say:

“The BS criterion (25% and 5% targets for annual and winter sunlight) is intended to give good sunlight in a range of situations. However, in special circumstances the designer or planning authority may wish to choose a different target for hours of sunlight. “

2 ASSESSMENT OF THE PROPOSED UNIT

2.1 Daylight Assessment

Following the assessment methodology, the average daylight factors were assessed for kitchen/living/dining spaces and for bedrooms within the proposed unit. The subtended angle for the North facing windows was reduced according to the impact of the tall building to the rear. For the kitchen/living/dining space this required separate analysis for each window as the sub-tended angles were various. The results were as follows:

	Window area	Room floor area	Room ceiling area	Room perimeter	FtC	Room wall area	Total room area	U	ADF	Result
Kitchen Diner W1	2.88	30.45	30.45	22.70	2.40	54.48	115.38	65.00	1.30	
Kitchen Diner W2	2.88	31.45	31.45	22.70	2.40	54.48	117.38	27.60	0.54	
Kitchen Diner W3	1.27	32.45	32.45	22.70	2.40	54.48	119.38	27.60	0.24	
Kitchen Diner Total									2.08	Pass
Bed 1	3.96	17.82	17.82	19.80	2.40	47.52	83.16	27.60	1.05	Pass
Bed 2	3.36	9.57	9.57	12.40	2.40	29.76	48.90	27.60	1.52	Pass
Bed 3	3.36	8.70	8.70	14.40	2.40	34.56	51.96	27.60	1.43	Pass

Figure 2 – Average Daylight Factors for Proposed Flat

All rooms achieve the recommended daylight levels within the BRE document. There are no areas of failure. A slot window was added to Bedroom 1 in order to achieve compliance.

2.2 Sunlight Assessment

The sunlight levels to the kitchen-living-dining space was analysed for sunlight levels. The bedrooms were not analysed as sunlight is not a requirement for them. The results were as follows:

- Winter sunlight hours – 15%
- Annual sunlight hours – 50%

The scheme passed the 5% winter sunlight and 25% annual sunlight levels comfortably.

3 CONCLUSION

3.1 Average Daylight Factors in Proposed Unit

All rooms within the proposed unit meet the BRE standards for daylight.

3.2 Sunlight in Proposed Unit

The living room achieves well beyond the guideline standards for both annual and winter sunlight.

3.3 Conclusion

The proposals are for a ground floor extension of the workshop and the creation of a new residential unit at first floor level. The scheme achieves good daylight levels within its own rooms that are better than the standards proposed in the BRE's Site Layout Planning For Daylight And Sunlight document. An additional slot window has been added to bedroom one to ensure that it meets the standard. Furthermore, the living space achieves annual sunlight and winter sunlight levels well beyond the guidelines.

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