

RICHARD W STAIG
CHARTERED BUILDING SURVEYOR

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Dear Mr Hassan

34 MAPLE STREET LONDON W1T 6HD
INTERNAL ILLUMINANCE

Further to the your instructions, I would like to confirm my advice in respect of the anticipated internal illuminance of the proposed residential unit to the basement at the above. The proposals that I have considered are as shown on the drawings revision R04 prepared by yourselves.

Following the publication of the information paper entitled "*Site Layout planning for daylight and sunlight: A guide to good practice*" by the *Building Research Establishment* in 1991, the assessment of daylight and sunlight has been generally carried out in accordance with the criteria set by this publication and which is generally taken to be the accepted basis for such assessment and adopted by most Planning Authorities. This publication has been superseded by the *Second Edition* issued October 2011. The *BRE Second Edition 2011* does give numerical guidelines, but recommends that these should be interpreted flexibly. Within Paragraph 1.6 of the *Second Edition 2011* it states, *inter alia*, "*The advice given here (sic BRE Second Edition 2011) 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*".

The analysis of the proposals confirms that the internal illuminance for the living/dining room is in excess of the recommendation of *Appendix C* of the *BRE Second Edition 2011* as is the basement bedroom.

Before providing my detailed advice, I would confirm that I am a Chartered Building Surveyor working predominately in the field of rights of light including daylight and sunlight assessments. I have an extensive and highly specialised knowledge, in these areas having worked in the past for both Anstey Horne & Co. for five years and Schatunowski Brooks (formerly known as Michael Brooks Associates as it was when I joined, then known as GVA Schatunowski Brooks and now part of Avison Young) for three years, as well as Delva Patman Associates - now known as Delva Patman Redler LLP - for four years prior to joining in Partnership Dixon Payne in 2001. All are acknowledged Experts in these fields; I now act under my own banner. I regularly provide Expert Witness advice in respect of Planning Applications in respect of daylight and sunlight at Planning Inquiries acting for both Appellants and Planning Authorities. I was consulted by the *Building Research Establishment* prior to the revision of their guidelines in 2011 and am part of the further consultation about further revisions currently.



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The criteria against which internal illuminance is considered is detailed within *Appendix C* of the *BRE Second Edition 2011* which is used in conjunction with *BS 8206-2 Code of practice for daylighting* and the *CIBSE Lighting Guide LG10 Daylighting and window design*. The guide states that where a predominately daylit appearance is required, the *ADF* should be at least 5% or more if there is no supplementary electric lighting or 2% or more there is. In respect of kitchens, living rooms and bedrooms there are additional recommendations of 2%, 1.5% and 1% respectively. *BS8206-2* further advises that achieving 2% if in living room will give an improved daylight provision whilst 3% - 4% would improve the situation further.

For the detailed technical analysis, in accordance with the *BRE Second Edition 2011*, I have constructed a 3D model of the proposals using the Architect's drawings with the massing of the surrounding contextual buildings obtained via a 3D survey from Messrs. ZMapping Limited. Utilising specialist computer programmes, I have then calculated the quantum of daylight received to the fenestration was calculated by way of Waldram analysis.

By way of explanation, Percy J. Waldram invented the Waldram diagram as a method of showing on a 2d image the curved and three-dimensional view of the sky from a fixed point. The area of a Waldram diagram drawn to scale is 396cm² which represents the total amount of unobscured sky that can be seen from a vertical plane. The vertical edges of any obstructions are plotted as vertical lines on the diagrams by reference to their angle from the reference point. The head of any obstruction are plotted along the droop line corresponding to their altitudes above the horizontal measured in the section perpendicular to the reference point

In accordance with *Appendix C* of the *BRE Second Edition 2011*, I have undertaken a technical analysis of the of the proposed configuration and this confirms that the living/dining room will achieve an *ADF* in excess of 1.5% *ADF* whereas the bedroom will have an *ADF* in excess of 1%; these proposals therefore accord entirely with the recommendations of *Appendix C* of the *BRE Second Edition 2011*.

The *ADF* of the rooms was calculated using the following formula:-

$$ADF = \frac{TMAw\Theta}{A(1-Rsq)}$$

T = Diffuse visible transmittance of the glazing; assumed 0.68 for clear double glazing

M = Maintenance factor 0.8

Aw = Area of glazing

A = Total surface area of room

R = Average reflectance; 0.5 for assumed light coloured surfaces

Theta = Vertical sky component of window in average daylight factor.

By way of further clarification/explanation, paragraph 2.1.14 of the *BRE Second Edition 2011* states:

‘2.1.14 Non-daylit internal kitchens should be avoided wherever possible, especially if the kitchen is used as a dining area too. If the layout means a small internal galley-type kitchen is inevitable, it should be directly linked to a well daylit living room.’

The proposed living/dining room with the self-contained kitchen as proposed entirely complies with the recommendation above.

In conclusion, the proposals for the basement to 34 Maple Street accord with the *Building Research Establishment* Guidance "*Site Layout planning for daylight and sunlight: A guide to good practice*" *Second Edition* issued *October 2011* as the internal illuminance for the living/dining room is in excess of the recommendation of *Appendix C* as is the basement bedroom; it is therefore my Expert opinion that Planning Permission should not therefore be hindered in regard of internal illuminance.

I hope that the foregoing clarifies matters, but if you have any queries, please do not hesitate to contact me.

Yours sincerely,

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