Planning & Built Environment
Camden Borough Council
Camden Town Hall
Judd Street
London WC1H 9JE

Our Ref : 3515-01-01(1)

DATE: 27th OCTOBER 2015

c/o OCTIV ARCHITECTURE DESIGN: Highwood Studios, 13 Aylmer Drive, Stanmore, Middlesex HA7 3EJ

Dear Sirs

TOWN & COUNTRY PLANNING ACTS – Interior Daylight Assessment
Application Site Address : 67 GOLDHURST TERRACE LONDON NW6 3BH

1.00 INSTRUCTIONS

1.01 The property is a traditionally built end of terrace house circa 1900, with accommodation on ground, 1st, 2nd and 3rd floor roof levels.

1.02 Amongst other things, it is proposed to excavate and build new basement accommodation including front and rear lightwells, to house No 3 x bedrooms, and I have been requested to verify that these proposed habitable rooms will receive an adequate standard of interior daylight for comfortable dwelling house bedroom purposes.

2.00 FINDING :

2.01 I can confirm that the proposed bedrooms will receive an adequate standard of interior daylight for comfortable dwelling house purposes.

3.00 TERMS OF REFERENCE :

3.01 The Building Research Establishment Practice Guidance Report, Site Layout Planning for Daylight and Sunlight, a Guide to Good Practice, 2nd Ed. BR209 Oct. 2011 – "The BRE Guidelines"; and, the British Standards Code of Practice for Day-lighting, "BS8206-2:2008".

3.03 The drawings forming a part of the planning application, and the analytic appendices 3515-A01 and 3515-A02, herewith.

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4.00 IN BRIEF :

4.01 All daylight is sunlight, and by the terms of reference *daylight* means the sun's radiation diffused over the whole dome of sky by the earth's atmosphere (Commission Internationale de l'Eclairage - CIE standard overcast sky), and *sunlight* means the sun's radiation unobstructed by cloud formation in the southern hemisphere (north of the equator).

4.02 Broadly in assessing a good standard of interior daylight for dwelling house habitable rooms, the BRE guidelines provide the following three principle criteria for analysis, with the recommendation that an Authority adopt them flexibly applying a permissive interpretation when weighing the merits of any particular scheme with regard to all other applicable environmental planning criteria.

4.03 An assessment of :

(i) The percentage "Average Daylight Factor" within a subject room (*ADF*)

(ii) For rooms lit by windows in one wall only : A "Limiting Value" for room depth (*LV*)

(iii) The significance of direct sky daylight spread over the room illumination plane (adopted at 850mm above finished floor level), with reference to the exterior townscape horizon no-sky-line : Daylight Distribution (*DD*).

4.04 These criteria seek to collectively apply the found values for exterior vertical sky component, with interior and exterior reflected daylight components to give an average daylight factor, and then weigh this with an assessment of the size and shape of any windows relative to the size and shape of the rooms they serve.

4.05 The percentage value for average daylight factor *(ADF)*, applies the ratio of the exterior sky illumination adjusted for clean glass light transmissibility through the window area, to the interior surface area of the room adjusted for average light reflectivity. If the percentage value for bedrooms is less than 1%, or for living rooms is less than 1.5%; then with reference to common expectations, the implication is that inhabitants may find these rooms gloomy in appearance.

4.06 The limiting value for room depth *(L)*, where a room is lit by windows in one wall only, applies a ratio of the window head height above the interior floor level to the interior room width, and seeks to discourage the design of especially deep rooms whether or not the exterior built townscape horizon may be high in relation to the proposed window head. If the designed depth of a room is greater than the limiting value, then depending on the room daylight distribution (see below 4.07), the implication is that inhabitants may find the room gloomy to its rear,

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4.07 The percentage value for "daylight distribution" *(DD)*, applies the ratio of the visible sky quadrant above the exterior built townscape horizon mapped with reference to the no-sky-line, over the total analytic area of the room illumination plane.

4.08 There are no specific percentage values for daylight distribution given by the guideline criteria, but it is submitted that if the average daylight factor and limiting value for room depth, for any given room meet or exceed the preference values sought, then generally where a dominant daylight appearance is not an expectation such as for basement bedrooms, a low daylight distribution over the illumination plane may be regarded acceptable for densely populated inner urban areas.

5.00 COMMENTARY and FINDING : (Please see appendices 3515-A01 and 3515-A02)

5.01 (i) The proposed lower ground floor bedroom "R1" :

(a) ADF = 1.7%

(b) L = 5.6m *(designed room depth: 4m)*

(c) DD = 25%

(ii) It may be considered that the low value for daylight distribution is compensated by a high *adf* value for bedrooms, given the room depth limitation is notably higher than the designed room depth; and, that the implication is inhabitants will find this room has been designed for a comfortable standard of daylight for customary bedroom use.

5.02 (i) The proposed lower ground floor bedroom "R2" :

(a) ADF = 2.0%

(b) L = 5.0m *(designed room depth: 2.7m)*

(c) DD = 65%

(ii) The implication is that inhabitants will find this room has been designed for a comfortable standard of daylight for customary bedroom use.

5.03 (i) The proposed lower ground floor bedroom "R3" :

(a) ADF = 3.0%

(b) L = 5.2m

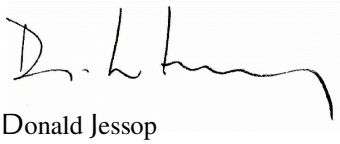
(c) DD = 98%

(ii) The implication is that inhabitants will find this room has been designed for a comfortable standard of daylight for customary bedroom use, and all other residential habitable uses.

6.00 CONCLUSION :

6.01 The development proposal has been well designed to receive a comfortable standard of daylight for bedroom dwelling house habitable purposes.

Yours faithfully



Donald Jessop
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DAYLIGHT AND SUNLIGHT CONSULTANTS

APPENDIX

[NOT PAGINATED]

EXTRACT ANALYSIS DRAWINGS

3515-A01 Interior Daylight Modelling

3515-A02 Interior Daylight Calculations

INTERIOR DAYLIGHT ANALYSIS

3515-A01

Application Site Address : 67 GOLDHURST TERRACE LONDON NW6 3BH

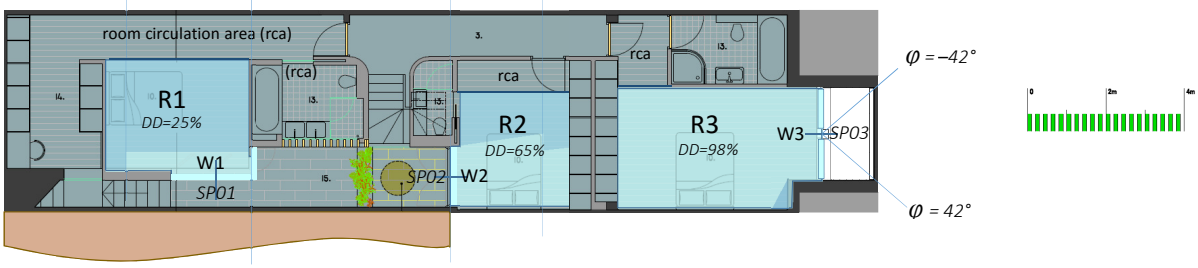
TOWN and COUNTRY PLANNING ACTS (BRE Guideline Criteria)

Extract Drawing for Identification and Modelling Purposes ONLY - Reduced Scale (subject to survey) - OCTOBER 2015

W1 : (2.2 x 2.3 + 0.8 x 2.3) = (3.0 x 2.3)
Glazing Transmission Adjustment (GTA) :
(3.0 x 0.85)(0.38) + (3.0 x 1.45)(0.68) = **3.9**

W2 : (1.5 x 2.3)
GTA : (1.5 x 0.85)(0.38)
+ (1.5 x 1.45)(0.68) = **2.0**

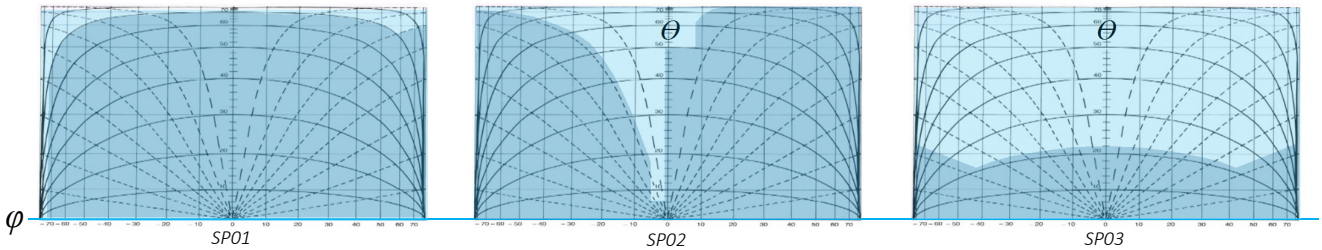
W3 : (2.3 x 1.5)
GTA : (2.3 x 1.5)(0.68) = **2.4**



VSC = 4% : $\Theta_{(-90,90)}$ = 73°
EQ Θ = (90° – 73°) = **17°**

VSC = 9% : $\Theta_{(-90,90)}$ = 57°
EQ Θ = (90° – 57°) = **33°**

VSC = 27% : $\Theta_{(-90,90)}$ = 25°
EQ Θ = (90° – 25°) = **65°**



Θ_0 = 70° @ SP01

Θ_0 = 50° @ SP02

Θ_0 = 22° @ SP03

Interior Day Lighting Calculations:- Average Daylight Factor (ADF) -and- Limiting Value for Room Depth (L)

$$ADF = \frac{\{[T_U(WA_U) + T_L(WA_L)](\theta_{EQ})\}_1 + \{[T_U(WA_U) + T_L(WA_L)](\theta_{EQ})\}_2 + \ldots\ldots \{[T_U(WA_U) + T_L(WA_L)](\theta_{EQ})\}_N}{[(ISA)(1 - R^2)]}$$

WA_U = upper Window Area ; T_U = upper glazing Transmission factor ; WA_L = lower Window Area ; T_L = lower glazing Transmission factor
θ_{EQ} = equivalent angle Theta ; ISA = Interior Surface Area ; R = surface area average Reflectance value

$$L = \frac{(2)(R_W)(W_H)}{(R_W + W_H)(1 - R)}$$

R_W = Room width ; W_H = Window head height above floor level ; R = surface area average Reflectance value

1 Basement Bedroom – "R2"

(i) Analytic Room Area 10.4m² : (ii) Analytic Room Perimeter: 13.0m (iii) Analytic Floor/Ceiling Height : 2.5m

(iv) Adjusted Analytic Window Value "W1" : 3.9 : (iv) Equivalent Angle Theta Value : 17°

ADF value: $W_A = [3.9]$; $\theta_{EQ} = [17]$; $ISA = [53.3]$; $R = [0.5]$ ..... ADF = 1.7%

L value : $W_H = [2.3]$; $R_W = [3.6]$; $R = [0.5]$ ..... $L = 5.6m$ (analytic room depth 2.9m) (designed room depth 4.0m)

DD value: 25% (see app. 3515-A01)

2 Basement Bedroom – "R2"

(i) Analytic Room Area 7.8m² : (ii) Analytic Room Perimeter: 11.2m (iii) Analytic Floor/Ceiling Height : 2.5m

(iv) Adjusted Analytic Window Value "W2" : 2.0 : (iv) Equivalent Angle Theta Value : 33°

ADF value: $W_A = [2.0]$; $\theta_{EQ} = [33]$; $ISA = [43.6]$; $R = [0.5]$ ..... ADF = 2.0%

L value : $W_H = [2.3]$; $R_W = [2.9]$; $R = [0.5]$ ..... $L = 5.1m$ (designed room depth 2.7m)

DD value: 65% (see app. 3515-A01)

3 Basement Bedroom – "R3"

(i) Analytic Room Area 14.5m² : (ii) Analytic Room Perimeter: 16.0m (iii) Analytic Floor/Ceiling Height : 2.5m

(iv) Adjusted Analytic Window Value "W3" : 2.4 : (iv) Equivalent Angle Theta Value : 65°

ADF value: $W_A = [2.4]$; $\theta_{EQ} = [65]$; $ISA = [69.0]$; $R = [0.5]$ ..... ADF = 3.0%

L value : $W_H = [2.3]$; $R_W = [3.0]$; $R = [0.5]$ ..... $L = 5.2m$ (designed room depth 5m)

DD value: 98% (see app. 3515-A01)