Daylight assessment

NEW ONE BEDROOM MAISONETTE

37 Fortess Road

London NW5 1AD

July 2013

Image: illuminance of the top floor of the maisonette – 21 March at 12.00 with overcast sky conditions

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17/07/2013

Daylight assessment of the new one bedroom 37 Fortess Road

Dear Ramy,

Thank you for requesting a daylight assessment service for the project above.

As agreed, please find enclosed results of the daylight assessment to satisfy requirements of the Code for Sustainable Homes (daylight factors and sky-line), and impact of the new building on flat no.2 and flat no.3 as per drawings forwarded by yourself on the 21/06/2013 and 02/07/2013.

Kind regards,

Rory Bergin

Partner

Sustainable Futures

1.0 Scope of the assessment

We have been appointed by Ramy Elmasry, Span Group, for a daylight study of a new one bedroom maisonette in 37 Fortess Road.

A Code for Sustainable Homes pre-assessment is required by the Local Authority, therefore this report aims to provide the necessary calculations for the assessment of credit 'Hea 1 – Daylighting'.

In addition, the Local Authority has also required an evaluation of the impact of the new built to the daylight factors in the existing flats no.2 and no.3, which is also enclosed.

The assumptions for the daylight calculations are as follows:

- Overcast sky conditions
- The internal surfaces have been assumed to be white paint (white matt)
- A light transmittance factor of 0.68 has been assumed for the window, and a frame factor has also been included.

Velux Daylight Visualizer has been used to model the daylight factors.

2.0 Code for Sustainable Homes of 37 Fortess Road– 'Hea 1 Daylighting'

Hea 1 Daylighting – Requirements

Credits under 'Hea 1 – Daylight' of the Code for Sustainable Homes are awarded as follows:

1 credit where kitchens achieve a minimum Average Daylight Factor of at least 2%.

1 credit where all living rooms, dining rooms and studies (including any room designated as a home office under Ene 9 – Home Office*) achieve a minimum Average Daylight Factor of at least 1.5%.

1 credit where 80% of the working plane in each kitchen, living room, dining room and study (including any room designated as a home office under Ene 9 – Home Office*) achieve direct light from the sky.

*In one bedroom dwellings, a suitable room is the living room or the bedroom.

Hea 1 Daylighting – Results

Daylight factors and Sky View has been calculated for the new one bedroom maisonette. Three credits under 'Hea 1 – Daylighting' can be awarded, as follows.

Daylight factor in kitchen/ lounge

As shown in the image below (Fig.1), the average Daylight Factor in the kitchen/lounge area is **9.3%**; the DF greatly exceeds the Code for Sustainable Homes target of 2%.

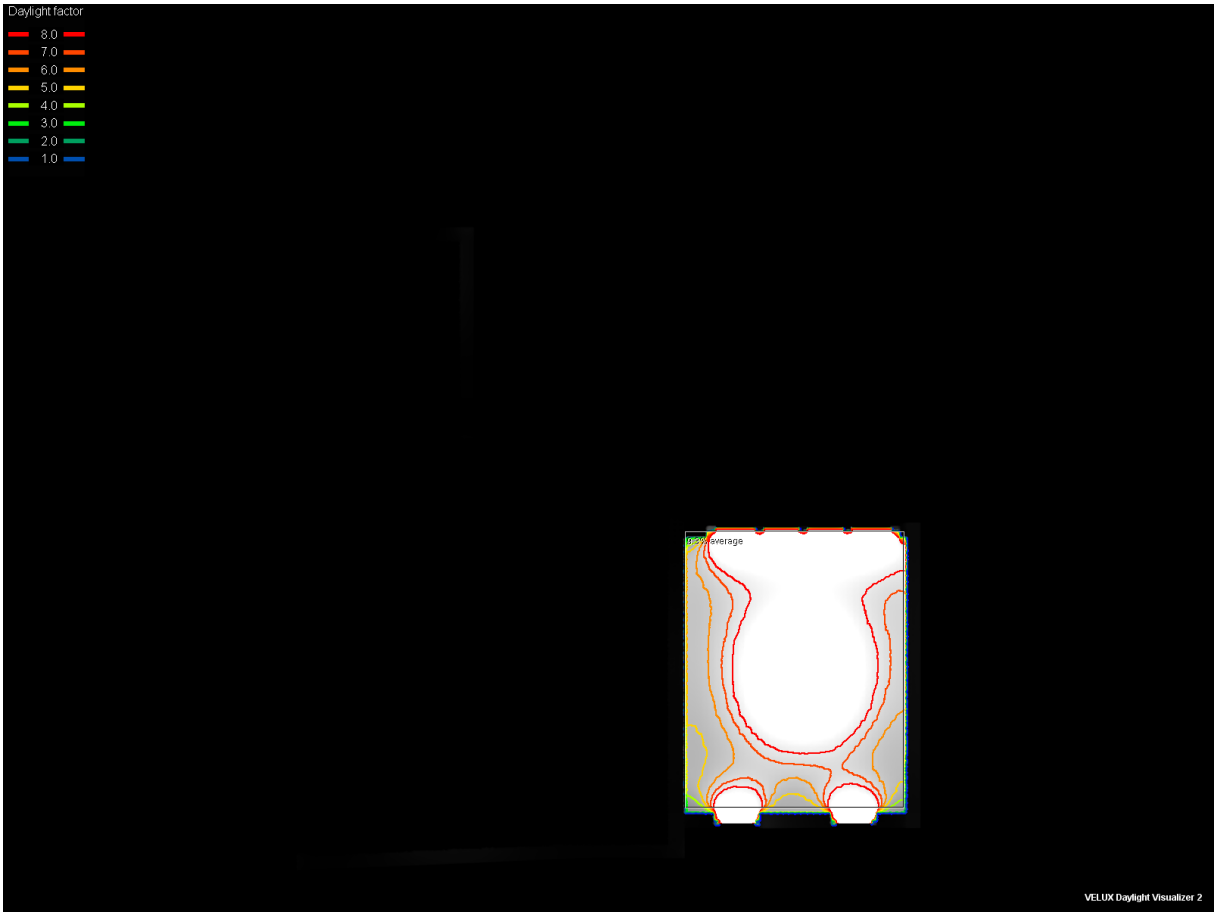

Fig.1 Average daylight factor in the lounge/kitchen is 9.3%.

Daylight factor in the bedroom

The average Daylight Factor of the bedroom is **1.8%** (see Fig.5). If this space was to be used as a Home Office, it would exceed the Code for Sustainable Homes target of 1.5%.

Sky view

The sky view has been calculated with the BRE daylight calculator. 100% of the working planes in kitchen/lounge receive direct light from the sky.

If the bedroom was designated as Home Office, it would also achieve > 80% of working planes receiving direct light from the sky.

3.0 Impact of new one bedroom maisonette on daylight of existing flats no.2 and no.3

Flat 2 – Basement pre development

The two bedrooms in Flat no.2 in the basement currently have an average Daylight Factor of **5.9%** and **3.3%** (see Fig.2)

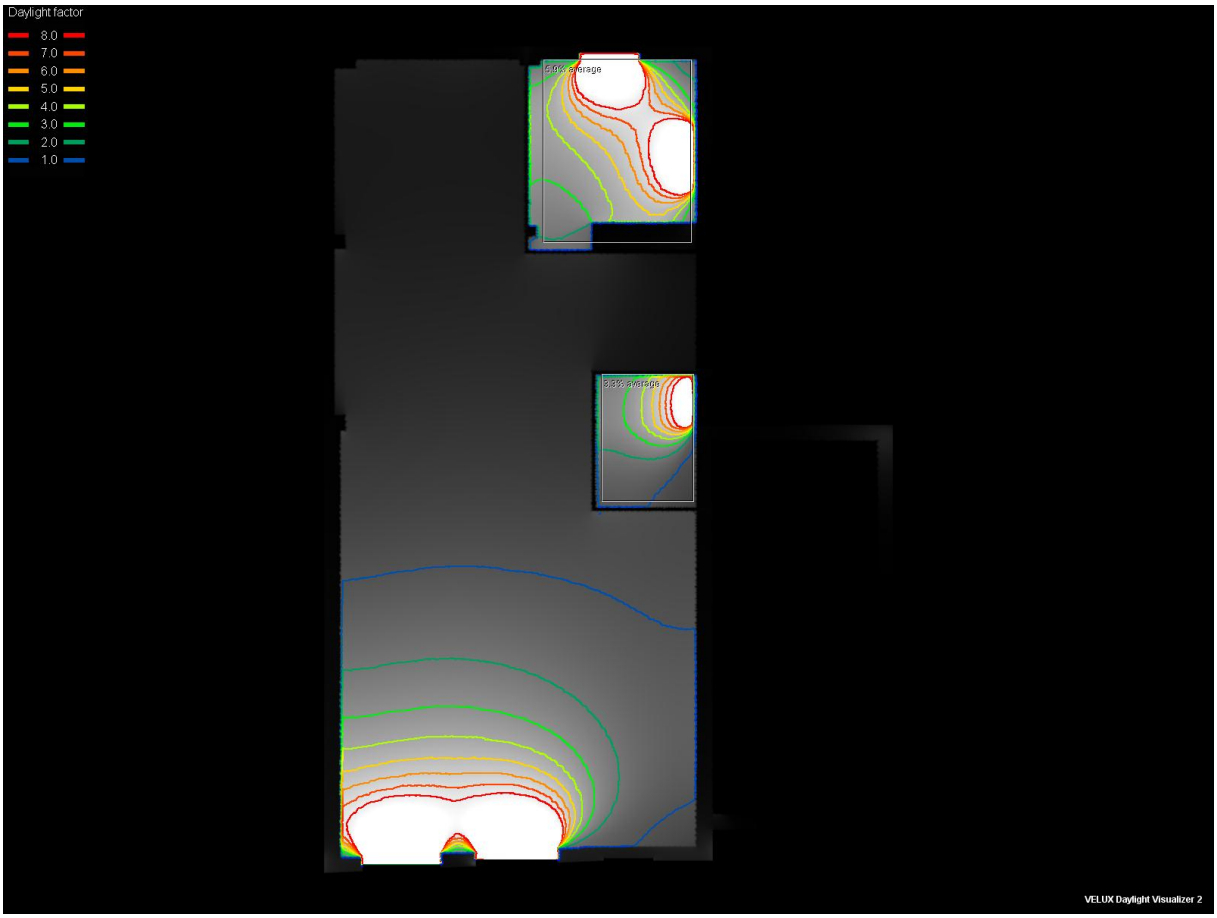

Fig.2 Average daylight factor in Flat 2 in the basement pre development

Flat 2 – Basement post development

The two bedrooms in Flat no.2 in the basement will have an average Daylight Factor of **5.7%** and **3.2%** post development (see Fig.3)

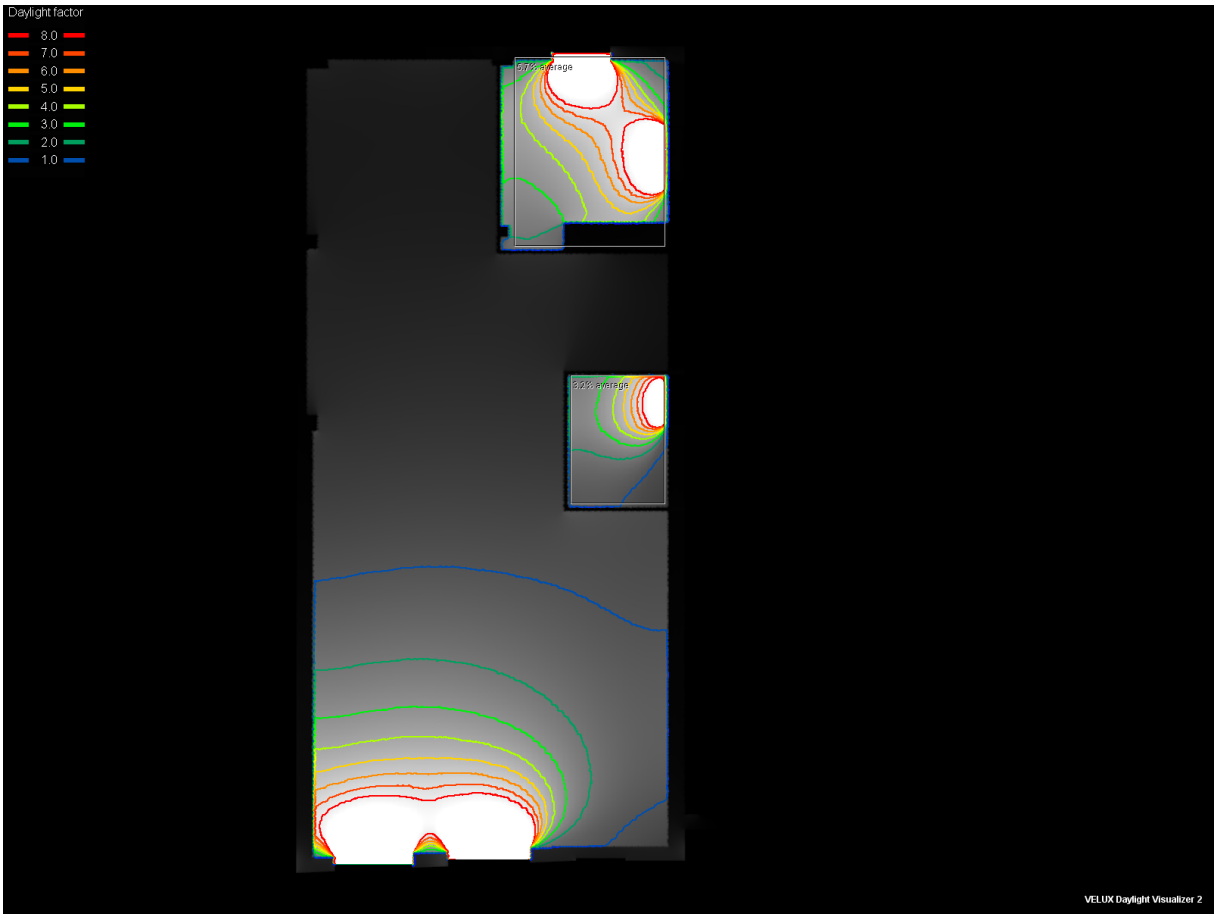

Fig. 3 Average daylight factor in Flat 2 in the basement post development

Flat 3 – Ground Floor pre development

Average Daylight Factors pre development have been calculated for the three rooms affected by the new built (Fig. 4).

The kitchen-reception has been split into three areas, and the average Daylight Factor is **3.05%.**

The two bedrooms have average Daylight Factors of **3.1%** and **3%**.

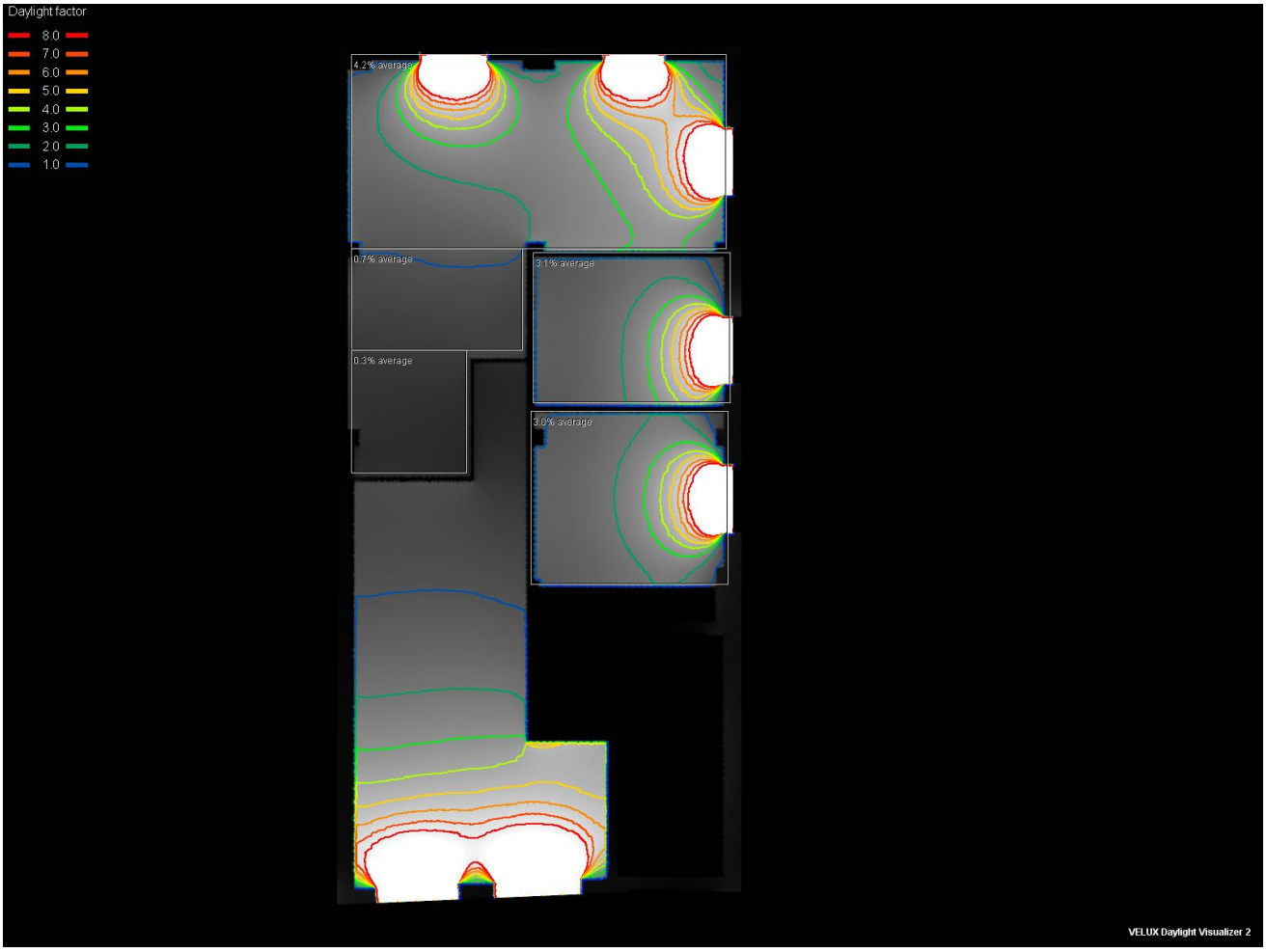

Fig. 4 Average daylight factor in Flat 3 on the ground floor pre development

Flat 3 – Ground Floor post development

Average Daylight Factor post-development has been calculated for the three rooms affected by the new built (Fig. 5).

The kitchen-reception has been split into three areas, and the average Daylight Factor is **2.98%.**

The two bedrooms have average Daylight factors of **2.9%** and **2.3%**.

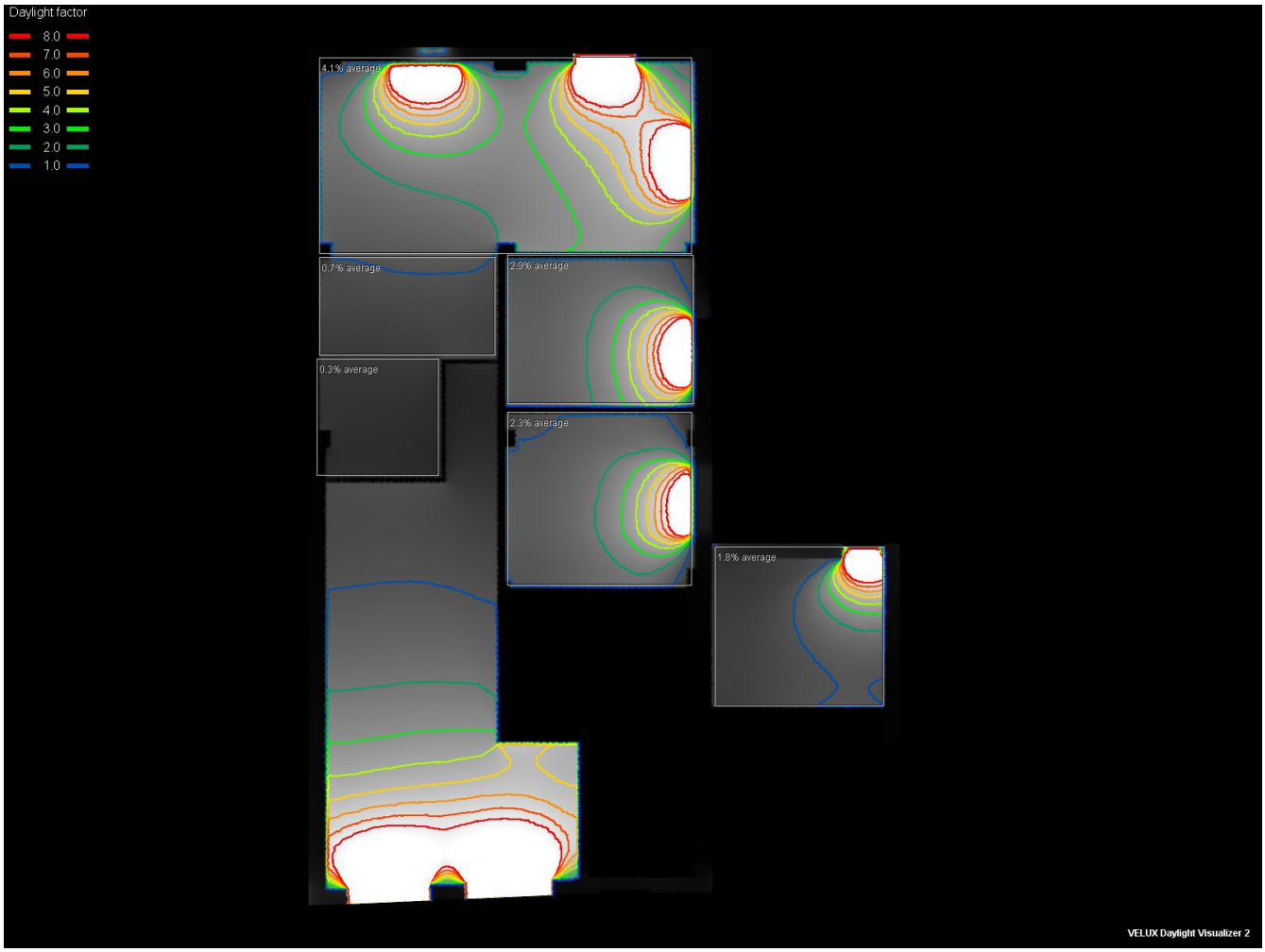

Fig. 5 Average daylight factor in Flat 3 on the ground floor post development

4.0 Conclusions

Daylight assessment in the new one bedroom maisonette

In the new one bedroom maisonette in 37 Fortess road, both daylight factors and Sky View satisfy Code for Sustainable Homes requirements, therefore three credits can be awarded under 'Hea 1 – Daylighting.

Impact of the new built on flats no.2 and no.3 of the existing house

The impact on daylight factors of flats no.2 and no. 3 is minimal. The average Daylight Factors of the rooms affected all exceed 2%, which is considered an acceptable level according to the Code for Sustainable Homes daylight requirements.