

DAYLIGHT ASSESSMENT

DECEMBER 2023, REF: A.41.2023116/ LIGHT



CLIENT:

Project-s developments Ltd
Unit A, 107 Mayes Road
London
N22 6UP

SITE ADDRESS:

107 Mayes Road London
N22 6UP

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Introduction

This report has been commissioned by Project-s developments Ltd and prepared by Atelier 41 Architects to assess the levels of daylight within the proposed 2x ground floor flats at 107 Mayes Road London N22 6UP.

Prior approval for the scheme is being sought under Class MA of The General Permitted Development Order, 2015, (the "GPDO") for the; *"change of use of a building and any land within its curtilage from a use falling within Class E (commercial, business and service) of Schedule 2 to the Use Classes Order to a use falling within Class C3 (dwellinghouses) of Schedule 1 to that Order"*. Condition MA.2 (f) of the order states that for prior approval to be granted the development must provide; *"adequate natural light in all habitable rooms of the dwelling/houses"*.

No guidance has been provided under the legislation to quantify what comprises *"adequate natural light"* so for the purpose of this report it has been assumed appropriate to apply the guidance related to daylight contained within the BRE's *"Site Layout Planning for Daylight and Sunlight, a Guide to Good Practice"*, Second Edition, PJ Littlefair 2011, which is generally accepted as good practice by local planning authorities in the UK.

It is important to note that the advice given in the guide *"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"* (page V, paragraph 1.6).

Site & Project Description

The application site comprises a large 2-storey plus loft property with office space at ground floor level and residential upper floors.

Surrounding the property is a mixture of commercial and residential properties ranging from 2 to 4 storeys tall.

It is proposed to convert the rear of the ground floor to form 1x studio flat and 1x 1 bedroom flat.

Proposed plans and elevations can be found in Appendix 1.

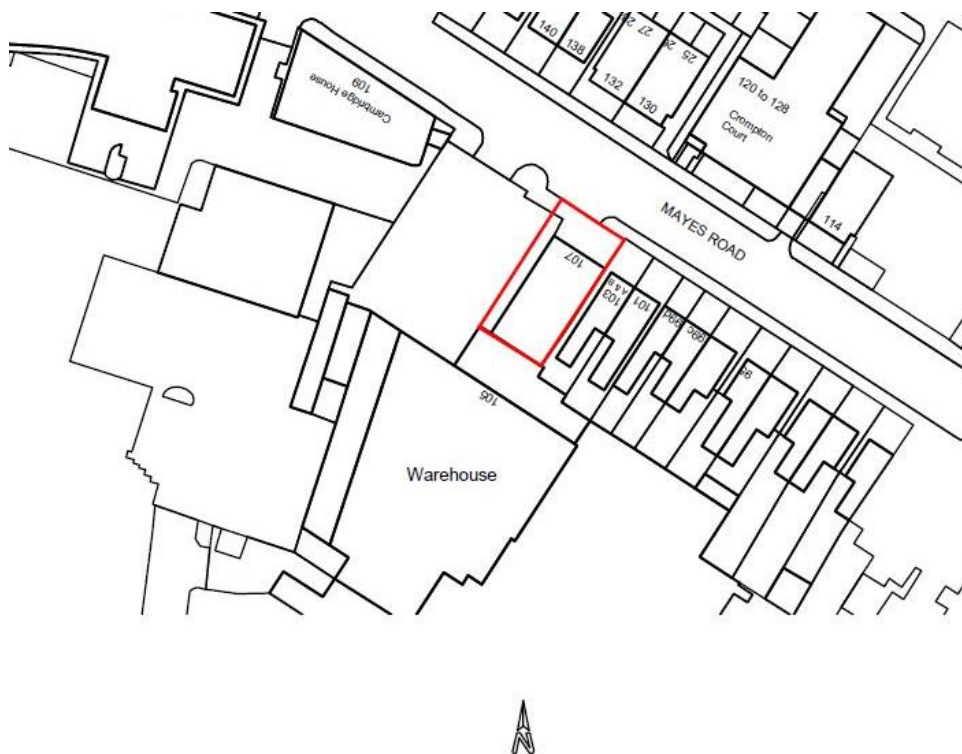


Fig 1. Location Plan. Not to scale.

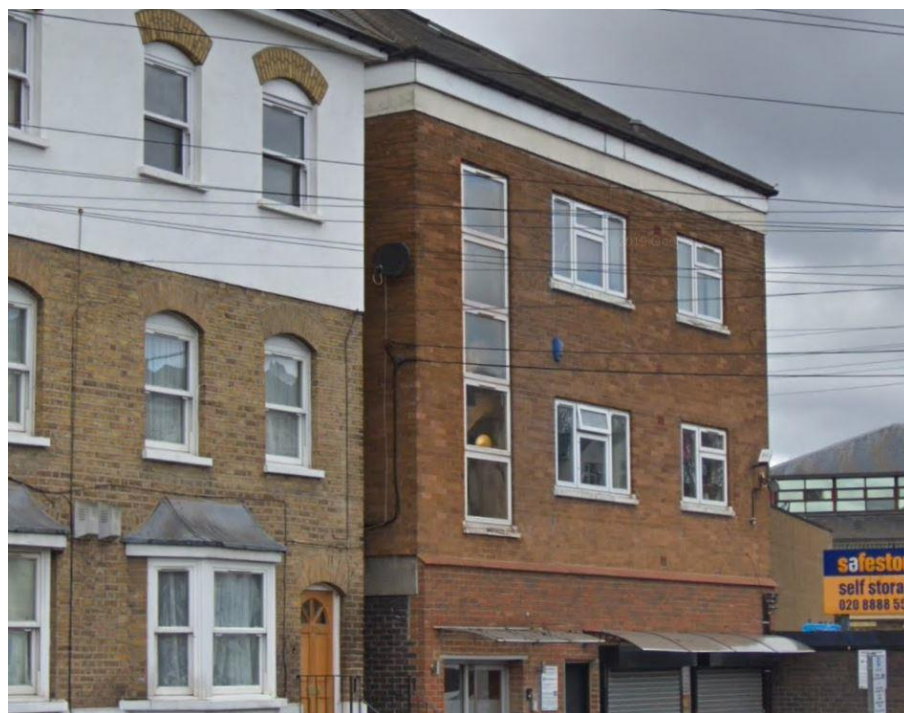


Fig 2. View of site from north - east

Methodology

The proposed 3D model of the site was prepared by Atelier 41 Architects to a level of detail suitable for testing, using drawings, OS data and photographs provided by the client.

Any windows not serving the proposed habitable rooms were omitted from the model as they do not affect results.

There are no trees in the immediate area that could affect the daylight provision.

Materials were set to provide accurate reflectance values with white painted walls and ceilings and light coloured wooden floors within the proposed flats, and red/yellow stock brick, white render, roof slates, tiles and tarmac elsewhere.

The following methods of measurement were then applied in accordance with the BRE guidelines, using specialist analysis software (MBS Daylight Visualiser).

Daylight - Average Daylight Factor (ADF)

Daylight provision in proposed rooms may be checked using the Average Daylight Factor (ADF). The ADF is a measure of the overall amount of daylight in a space and may be defined as the ratio of daylight flux incident on the working plane to the area of the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky (for residential accommodation the working plane is measured at 850mm above floor level, set in 500mm from perimeter walls). Thus a 1% ADF would mean that the average indoor illuminance would be one hundredth of the outdoor unobstructed illuminance. BS 8206-2 *Code of practice for daylighting* recommends an ADF of 5% for a well day-lit space and 2% for a partly day-lit space with acceptable minimum values of 2% for kitchens, 1.5% for living rooms and combined living/kitchen/diners, and 1% for bedrooms.

Daylight - Room Depth

If a proposed habitable room has windows in only one wall the depth of the room should ideally not exceed the limiting value given by $(L/W) + (L/H) < (2/(1-R_b))$, where L is the room length, W the room width, H the window head height above floor level and R_b the average reflectance of the surface in the rear half of the room. If L exceeds this value supplementary electric lighting will be required towards the end of the room furthest from the window.

Figure 3 shows the model as tested.



Fig 3. 3D model viewed from west.

Data

Daylight - Average Daylight Factor (ADF)

The following table compares ADF results for the proposed habitable rooms with BRE recommendations. Gradient maps indicating the daylight distribution can be found in Appendix 2.

Table 1. Average Daylight Factor results.

Flat	Room	ADF (%)	Minimum Accepted (%)	Meets BRE?
1	Studio	1.71	1.5	YES
2	Bedroom	1.47	1	YES
2	Living /kitchen/dining	4.85	1	YES

Daylight - Room Depth

The following table provides results for room depth calculations for all proposed single aspect habitable rooms (rooms not included are dual aspect so calculations did not apply).

Table 2. Room depth results.

Flat	Room	Length (L)	Width (W)	Window Head (H)	Average Room Reflectance (Rb)	(L/W) + (L/H)	(2/(1 - Rb))	Supplementary lighting needed?
1	Studio	5.6	6.3	2.5	0.45	3.12	3.63	NO
2	Bedroom	4.3 (measured to face of wardrobes)	2.6	2.5	0.45	3.37	3.63	NO

Conclusion

Daylight - Average Daylight Factor (ADF)

Both units were found to exceed BRE figures for Average Daylight Factor (ADF) in new dwellings with very good results, meaning they will be well day-lit.

Daylight - Room Depth

All single aspect rooms met BRE figures for maximum room depth, meaning daylight will be well distributed.

Closing Statement

Both Flats 1 and 2 enjoy levels of daylight that exceed BRE figures for new dwellings.

It is therefore our opinion that the proposal achieves "adequate levels of natural light", as expected under Class MA of the General Permitted Development Order 2015.

Michael Bukowski, Atelier 41 Architects, December 2023.

Appendix 1

