



# Harefield Grove, Rickmansworth Road, Harefield

## Internal Daylight Assessment

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## 1.0 Introduction

- 1.1 This internal daylight assessment has been prepared to support a planning application (REF 28301/APP/2022/2205 and 2206) for the proposed development at Harefield Grove, Rickmansworth Road, Harefield, UB9.
- 1.2 The report assesses the proposals in respect of daylight matters within habitable rooms in the proposed dwellings at ground, first and second floor level, having regard to industry standard guidance.
- 1.3 The report concludes that the proposal is acceptable and in accordance with planning policy requirements in relation to daylight for those rooms assessed.
- 1.4 There is no existing specific National Planning Policy relating to the prospective impacts of developments on daylight and sunlight on their surrounding environment.
- 1.5 However, the BRE Report 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' (3<sup>rd</sup> edition, 2022) is the established National guidance to aid the developer to prevent and/or minimise the impact of a new development on the availability of daylight within new proposals. It has been developed in conjunction with daylight and sunlight recommendations in BS EN 17037: 2018+A1:2021 (with UK Annexe): 'Daylight in Buildings'
- 1.6 This reference document is accepted as the authoritative work in the field on daylight, sunlight and overshadowing and is specifically referred to in many Local Authorities' planning policy guidance for daylighting. The methodology therein has been used in numerous lighting analyses and the standards of permissible reduction in light are accepted as the industry standards.

## 2.0 Project Summary

- 2.1 The proposal site is at Harefield Grove, Rickmansworth Road, Harefield UB9.
- 2.2 The proposal is for a three storey block of flats consisting of 29 residential units, the internal refurbishment of the existing house on the site to create 6 new residential units and the construction and extension of other existing buildings on site to create 4 additional homes.
- 2.3 Following comments from LBH conservation and Design Officer during the applications process, changes have been made to the new stable block. This has resulted in the internal layout being reconfigured this is to ensure the new locations of the habitable rooms receive sufficient daylight.
- 2.4 It is understood that the position, place and design of the 4 additional homes means there will be no issue with daylight access.
- 2.5 No changes to the internal layout of the Main House have been made and therefore the results previously supplied in T16 Design's original report are unchanged (Ref: Job No. 4600)
- 2.6 2D CAD drawings have been provided to us by the design team. These have been used to construct a 3D analysis model in order to assess the internal daylight levels within each room.
- 2.7 Computer simulation modelling has been used to produce the results, presented below



Site Location



## 3.0 Methodology

3.1 This BRE and BS EN 17037 guidance allows for two alternative methods to assess daylight within new dwellings. This report uses the following method:

- Target Daylight Factor ( $DF_T$ )

3.2 The  $DF_T$  method is a complex and representative calculation to determine natural internal luminance.

3.3 It takes into account such factors as window size, number of windows available to the room, room size and layout, room surface reflectance, and the angle of visible sky reaching the window.

3.4 Due to the complexity of the daylight entering the proposed rooms, the Target Daylight Factor approach is the most suitable calculation to give a realistic indication of the internal illuminance that will be experienced.

3.5 The calculations have assumed a white ceiling, cream walls and mid-grey carpet or wooden floor using reflectance values taken from the BS EN 170437 Guidance.

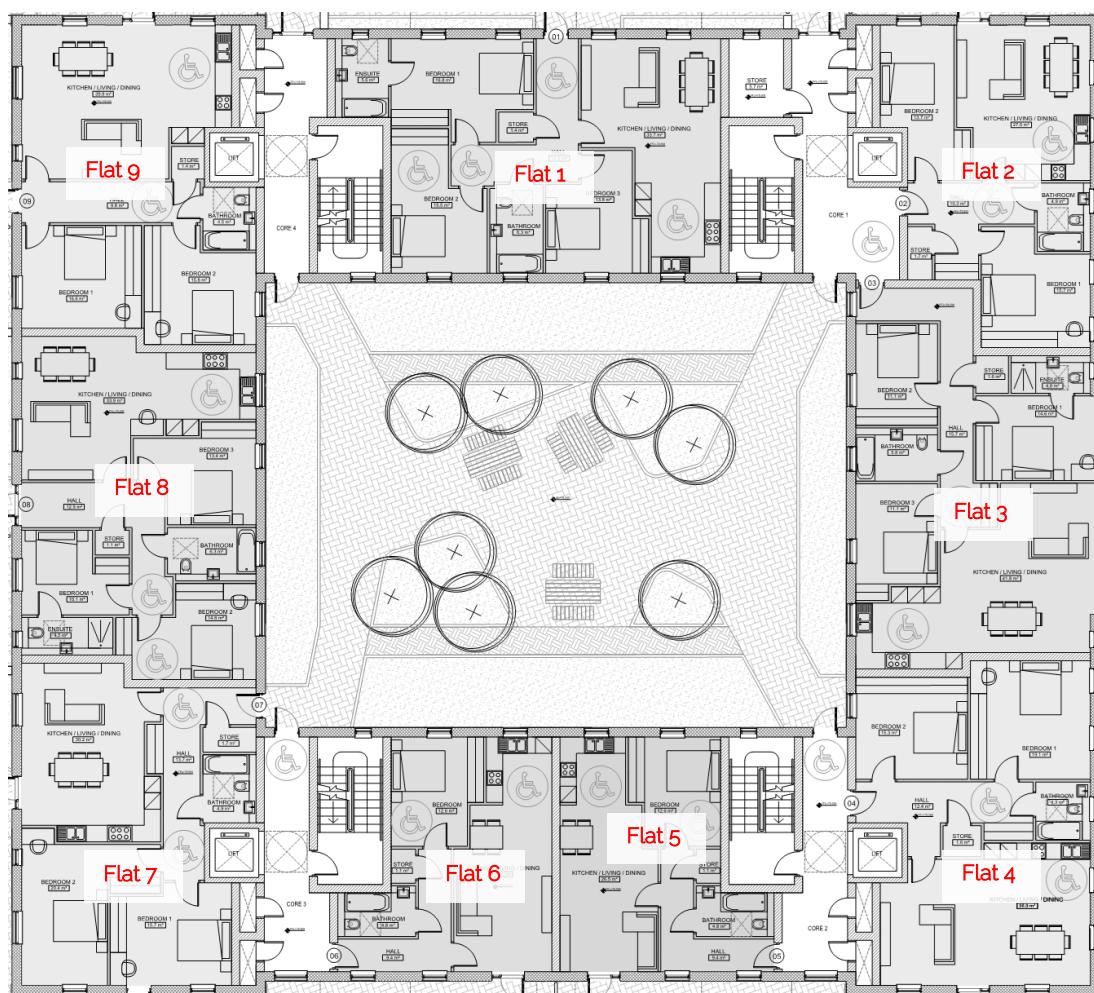
3.6 The benchmark values for all habitable rooms which are recommended by the BRE guidance and BS:EN 17037:2018 are:

**Table C2 – Target daylight factors (D) for London**

Level of recommendation	Target daylight factor D for half of assessment grid	Target daylight factor D for 95% of assessment grid
<b>Minimum</b>	2.1%	0.7%
<b>Medium</b>	3.5%	2.1%
<b>High</b>	5.3%	3.5%

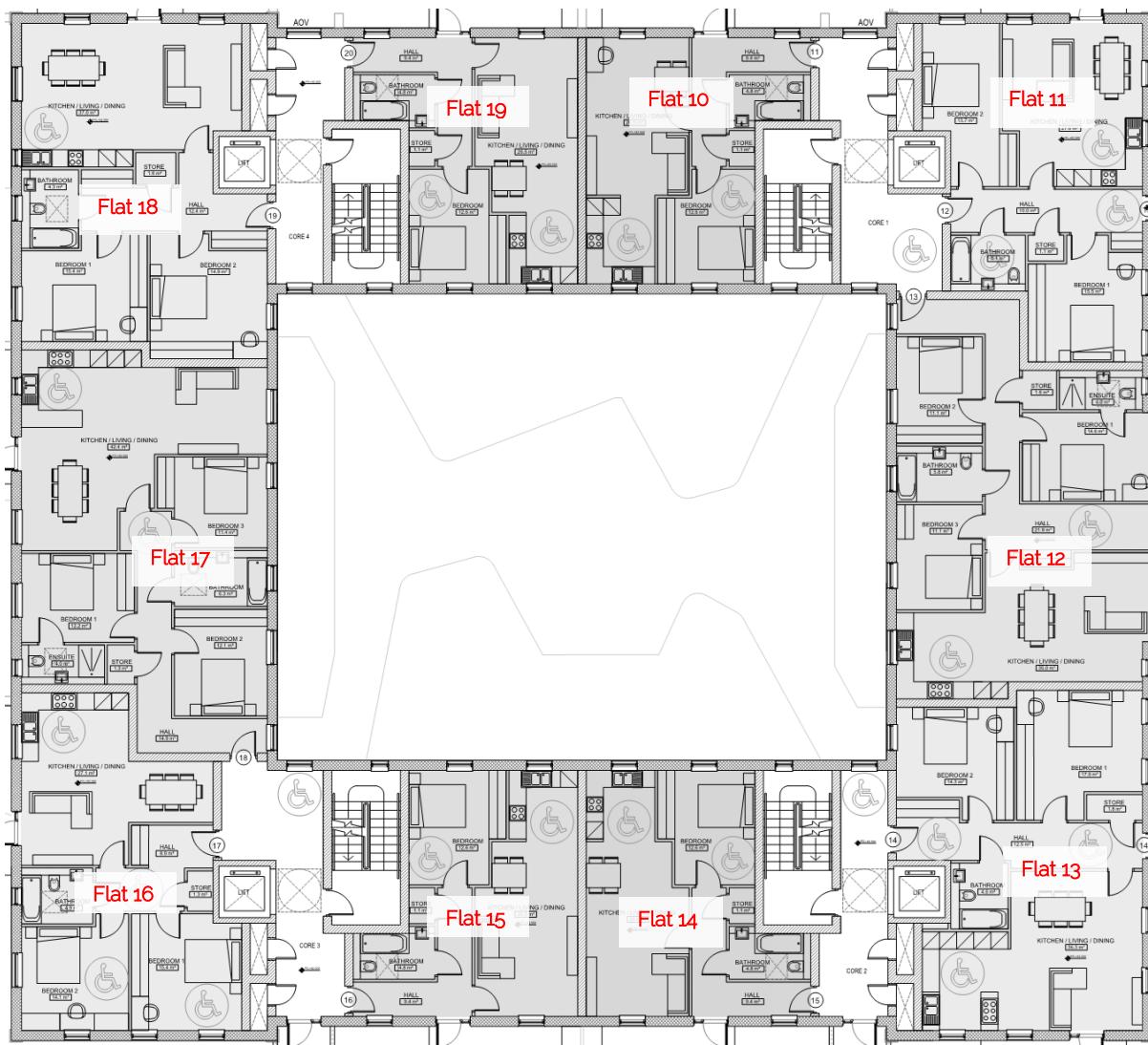
3.7 It is deemed by the guidance that if the minimum DF criteria are met, then the occupiers of the dwelling will have sufficient daylight. As can be seen from the results below that all assessed habitable rooms meet and exceed the minimum levels of internal daylight.

## 4.0 Room Schedules



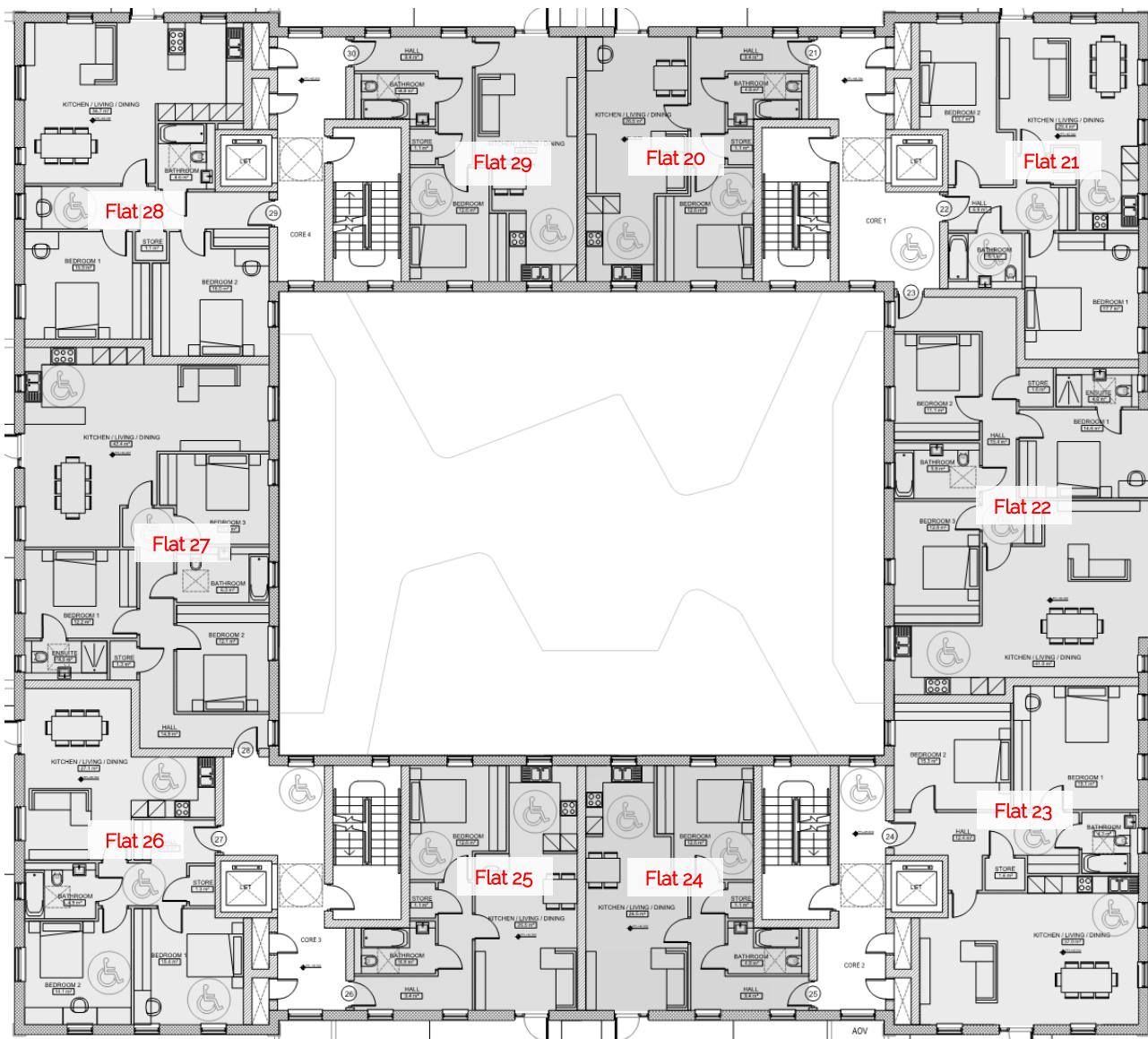
Stable Block - Ground Floor

## 4.0 Room Schedules



Stable Block - First Floor

## 4.0 Room Schedules



Stable Block - Second Floor



## 5.0 Daylight Results

Minimum Target Daylight Factor – Ground Floor						
Flat	Room	0.7% DF Target Area	Area Receiving 0.7% DF	2.1% DF Target Area	Area Receiving 2.1% DF	Meets Standards?
Flat 1	LKD	95%	99.10%	50%	91.30%	Yes
Flat 1	Bedroom 1	95%	99.40%	50%	92.20%	Yes
Flat 1	Bedroom 2	95%	97.90%	50%	72.70%	Yes
Flat 1	Bedroom 3	95%	97.60%	50%	70.80%	Yes
Flat 2	LKD	95%	100.00%	50%	100.00%	Yes
Flat 2	Bedroom 1	95%	100.00%	50%	96.40%	Yes
Flat 2	Bedroom 2	95%	97.20%	50%	69.80%	Yes
Flat 3	LKD	95%	98.50%	50%	84.70%	Yes
Flat 3	Bedroom 1	95%	98.60%	50%	85.10%	Yes
Flat 3	Bedroom 2	95%	98.90%	50%	88.40%	Yes
Flat 3	Bedroom 3	95%	98.20%	50%	81.30%	Yes
Flat 4	LKD	95%	99.80%	50%	95.90%	Yes
Flat 4	Bedroom 1	95%	100.00%	50%	100.00%	Yes
Flat 4	Bedroom 2	95%	96.90%	50%	67.50%	Yes
Flat 5	LKD	95%	96.40%	50%	65.80%	Yes
Flat 5	Bedroom 1	95%	97.80%	50%	74.50%	Yes
Flat 6	LKD	95%	96.50%	50%	65.90%	Yes
Flat 6	Bedroom 1	95%	98.00%	50%	74.70%	Yes
Flat 7	LKD	95%	100.00%	50%	100.00%	Yes
Flat 7	Bedroom 1	95%	98.30%	50%	94.40%	Yes
Flat 7	Bedroom 2	95%	98.10%	50%	93.90%	Yes
Flat 8	LKD	95%	98.20%	50%	80.80%	Yes
Flat 8	Bedroom 1	95%	99.00%	50%	93.10%	Yes
Flat 8	Bedroom 2	95%	97.50%	50%	68.90%	Yes
Flat 8	Bedroom 3	95%	97.90%	50%	71.50%	Yes
Flat 9	LKD	95%	99.60%	50%	95.10%	Yes
Flat 9	Bedroom 1	95%	98.00%	50%	89.70%	Yes
Flat 9	Bedroom 2	95%	96.50%	50%	67.30%	Yes



## 5.0 Daylight Results

Minimum Target Daylight Factor – First Floor						
Flat	Room	0.7% DF Target Area	Area Receiving 0.7% DF	2.1% DF Target Area	Area Receiving 2.1% DF	Meets Standards?
Flat 10	LKD	95%	96.80%	50%	65.20%	Yes
Flat 10	Bedroom 1	95%	98.20%	50%	84.50%	Yes
Flat 11	LKD	95%	100.00%	50%	100.00%	Yes
Flat 11	Bedroom 1	95%	100.00%	50%	98.90%	Yes
Flat 11	Bedroom 2	95%	97.50%	50%	73.40%	Yes
Flat 12	LKD	95%	99.20%	50%	87.20%	Yes
Flat 12	Bedroom 1	95%	99.40%	50%	89.60%	Yes
Flat 12	Bedroom 2	95%	99.50%	50%	91.10%	Yes
Flat 12	Bedroom 3	95%	99.40%	50%	91.00%	Yes
Flat 13	LKD	95%	100.00%	50%	99.20%	Yes
Flat 13	Bedroom 1	95%	100.00%	50%	100.00%	Yes
Flat 13	Bedroom 2	95%	97.60%	50%	75.90%	Yes
Flat 14	LKD	95%	97.00%	50%	69.60%	Yes
Flat 14	Bedroom 1	95%	98.20%	50%	76.40%	Yes
Flat 15	LKD	95%	96.90%	50%	67.30%	Yes
Flat 15	Bedroom 1	95%	97.90%	50%	73.80%	Yes
Flat 16	LKD	95%	100.00%	50%	100.00%	Yes
Flat 16	Bedroom 1	95%	100.00%	50%	100.00%	Yes
Flat 16	Bedroom 2	95%	100.00%	50%	100.00%	Yes
Flat 17	LKD	95%	98.90%	50%	88.80%	Yes
Flat 17	Bedroom 1	95%	99.20%	50%	93.60%	Yes
Flat 17	Bedroom 2	95%	98.70%	50%	81.90%	Yes
Flat 17	Bedroom 3	95%	98.20%	50%	78.60%	Yes
Flat 18	LKD	95%	100.00%	50%	100.00%	Yes
Flat 18	Bedroom 1	95%	98.30%	50%	91.20%	Yes
Flat 18	Bedroom 2	95%	97.00%	50%	70.50%	Yes
Flat 19	LKD	95%	96.70%	50%	65.00%	Yes
Flat 19	Bedroom 1	95%	98.00%	50%	83.40%	Yes



## 5.0 Daylight Results

Minimum Target Daylight Factor – Second Floor						
Flat	Room	0.7% DF Target Area	Area Receiving 0.7% DF	2.1% DF Target Area	Area Receiving 2.1% DF	Meets Standards?
Flat 20	LKD	95%	99.20%	50%	95.80%	Yes
Flat 20	Bedroom 1	95%	99.90%	50%	97.10%	Yes
Flat 21	LKD	95%	100.00%	50%	100.00%	Yes
Flat 21	Bedroom 1	95%	100.00%	50%	100.00%	Yes
Flat 21	Bedroom 2	95%	98.90%	50%	86.20%	Yes
Flat 22	LKD	95%	100.00%	50%	98.90%	Yes
Flat 22	Bedroom 1	95%	100.00%	50%	99.20%	Yes
Flat 22	Bedroom 2	95%	100.00%	50%	100.00%	Yes
Flat 22	Bedroom 3	95%	100.00%	50%	100.00%	Yes
Flat 23	LKD	95%	100.00%	50%	100.00%	Yes
Flat 23	Bedroom 1	95%	100.00%	50%	100.00%	Yes
Flat 23	Bedroom 2	95%	98.70%	50%	85.40%	Yes
Flat 24	LKD	95%	98.60%	50%	83.20%	Yes
Flat 24	Bedroom 1	95%	98.80%	50%	84.90%	Yes
Flat 25	LKD	95%	98.50%	50%	83.10%	Yes
Flat 25	Bedroom 1	95%	98.70%	50%	84.70%	Yes
Flat 26	LKD	95%	100.00%	50%	100.00%	Yes
Flat 26	Bedroom 1	95%	100.00%	50%	100.00%	Yes
Flat 26	Bedroom 2	95%	100.00%	50%	100.00%	Yes
Flat 27	LKD	95%	100.00%	50%	100.00%	Yes
Flat 27	Bedroom 1	95%	100.00%	50%	100.00%	Yes
Flat 27	Bedroom 2	95%	99.70%	50%	91.90%	Yes
Flat 27	Bedroom 3	95%	99.90%	50%	98.40%	Yes
Flat 28	LKD	95%	100.00%	50%	100.00%	Yes
Flat 28	Bedroom 1	95%	99.60%	50%	96.10%	Yes
Flat 28	Bedroom 2	95%	97.80%	50%	78.90%	Yes
Flat 29	LKD	95%	98.80%	50%	83.90%	Yes
Flat 29	Bedroom 1	95%	98.90%	50%	85.10%	Yes



## 6.0 Conclusions

- 6.1 The proposed development at Harefield Grove, Rickmansworth Road, Harefield has been assessed for internal daylight levels using the Target Daylight Factor ( $DF_T$ ) test as prescribed by the BRE guidance and BS EN 17037:2018.
- 6.2 The design team has endeavoured to ensure that the proposed habitable rooms have levels of natural light in excess of the minimum standards prescribed by the standards.
- 6.3 This has been successfully achieved, as demonstrated by the positive results presented within this report.
- 6.4 The assessed room meets the recommendations using the  $DF_T$  test.
- 6.5 This means the future occupants will enjoy a well-lit environment, with reduced reliance on artificial lighting.
- 6.6 It is therefore the conclusion of this report that the proposals meet the guidance levels for daylight and are therefore acceptable in planning terms.



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