



Internal Daylight Assessment

Park View Extra-Care Home

For the London Borough of Hillingdon

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XCO2 energy

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About us:

XCO2 Energy are a low-carbon consultancy working in the built environment. We are a multi-disciplinary company consisting of both architects and engineers, with specialists including CIBSE low carbon consultants, Code for Sustainable Homes, EcoHomes and BREEAM assessors, BRE trained daylight consultants and LEED accredited professionals.

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Daylight Assessment

Executive Summary

This report outlines the daylight analysis of the proposed extra-care home development in Stockley Road, within the London Borough of Hillingdon. The assessment is based on the British Standard “BS 8206-2:2008 Code of Practice for Daylighting” and in line with BRE’s “Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice” by PJ Littlefair (2011), which is accepted as good practice.

The body of this report outlines the calculations carried out to test the levels of daylight in the habitable areas of the proposed residential units.

The rooms evaluated include all open plan kitchen, living room, dining spaces and bedrooms. Additionally, a number of relevant common spaces are also analysed. The findings indicated that the vast majority of the habitable rooms assessed satisfy the recommendations set out by the BRE’s guidelines on daylight.

Therefore, the proposed development is anticipated to achieve good levels of daylighting.

Daylight Assessment

Internal Daylight Assessment

An internal daylight assessment has been carried out for the proposed Park View development to determine whether the designed living spaces will receive adequate daylight.

BRE Guidelines and Methodology

The following guidelines to analyse internal daylight and sunlight of a development are contained on the British Research Establishment's (BRE) publication Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice, by PJ Littlefair (2011).

BRE Guidelines

The BRE publication Site Layout Planning for Daylight and Sunlight gives advice on site layout planning to achieve good daylighting in buildings. It is important to note that the advice given in the BRE guide is "not mandatory" and "its aim is to help rather than constrain the designer".

The guide also clearly states that "this document should not be seen as an instrument of planning policy" and that "in special circumstances the developer or planning authority may wish to use different target values".

The BRE breaks the daylight assessment down into the following recommended calculation:

Average Daylight Factor

The BRE states that daylighting in new rooms can be determined using average daylight factor (ADF) calculations. BS8206-2 Code of Practice for Daylighting recommends different average daylight factors for different habitable spaces. These are as follows:

- 1% for bedrooms
- 1.5% for living rooms and
- 2% for kitchens

This report will demonstrate the calculations carried out to quantify the levels of daylight achieved in the proposed development, in line with the BRE requirements. Calculations were based on the drawings and 3d model provided by the architect (17/08/15).



Daylight Assessment

Site

The proposed development is located in the London borough of Hillingdon. The site is situated north of Stockley Road and east of Park View Road.

The approximate location of the site is presented in the figure below.

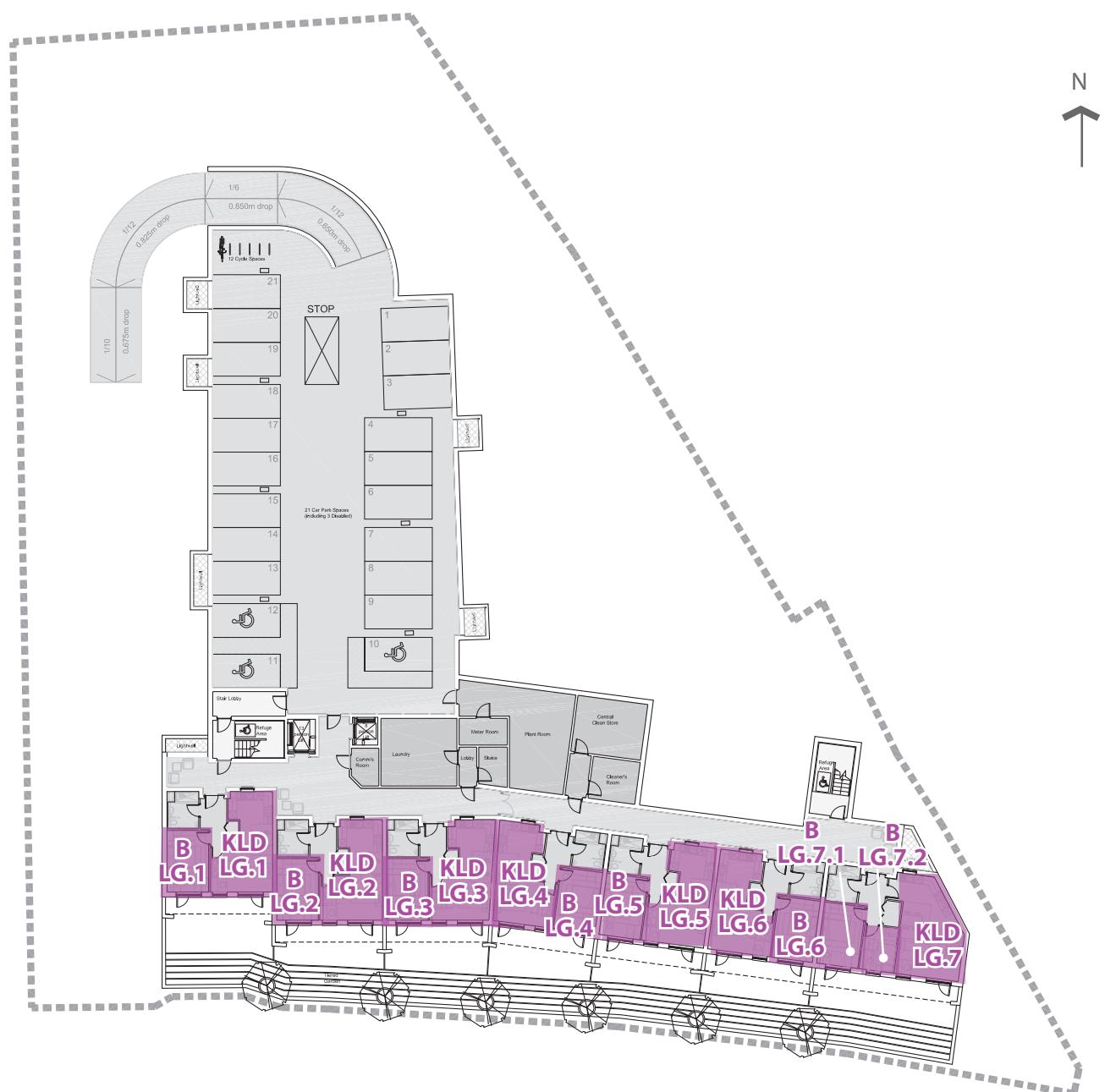


Results

The diagrams on pages 6-9 detail the evaluated rooms.

The table on pages 10-13 shows the results for the rooms assessed within the proposed development.

The analysis indicates that the vast majority of the rooms achieve the recommended corresponding ADF target. Only 1.6% of the rooms fail to achieve their internal daylight target, which corresponds to two rooms in total. It is worth noting that these correspond to the catering kitchen and staff room which are not part of the residential space.



Rooms assessed

Lower Ground floor

Park View Extra-Care Home



Rooms assessed

Ground floor

Park View Extra-Care Home



Rooms assessed

First floor

Park View Extra-Care Home



Rooms assessed

Second floor

Park View Extra-Care Home



ADF Results Summary

Floor	Room	Room ADF (%)	ADF target (%)	ADF criterion
LG	B LG.1	1.8	1.00	PASS
LG	B LG.2	1.8	1.00	PASS
LG	B LG.3	1.8	1.00	PASS
LG	B LG.4	1.7	1.00	PASS
LG	B LG.5	1.7	1.00	PASS
LG	B LG.6	1.7	1.00	PASS
LG	B LG.7.1	1.7	1.00	PASS
LG	B LG.7.2	1.4	1.00	PASS
LG	KLD LG.1	2.0	2.00	PASS
LG	KLD LG.2	2.0	2.00	PASS
LG	KLD LG.3	2.0	2.00	PASS
LG	KLD LG.4	2.0	2.00	PASS
LG	KLD LG.5	2.0	2.00	PASS
LG	KLD LG.6	2.0	2.00	PASS
LG	KLD LG.7	2.0	2.00	PASS
0	B 0.1	3.8	1.00	PASS
0	B 0.2	2.5	1.00	PASS
0	B 0.3	2.5	1.00	PASS
0	B 0.4	2.5	1.00	PASS
0	B 0.5	2.5	1.00	PASS
0	B 0.6	2.5	1.00	PASS
0	B 0.7	2.5	1.00	PASS
0	B 0.8.1	2.8	1.00	PASS
0	B 0.8.2	2.3	1.00	PASS
0	B 0.9	2.5	1.00	PASS
0	B 0.10	2.5	1.00	PASS
0	B 0.11	2.5	1.00	PASS
0	B 0.12	2.5	1.00	PASS
0	B 0.13	2.5	1.00	PASS
0	B 0.14	2.2	1.00	PASS
0	Dining	2.8	1.50	PASS
0	Kitchen	0.6	2.00	NOT PASS
0	KLD 0.1	2.2	2.00	PASS
0	KLD 0.2	2.2	2.00	PASS
0	KLD 0.8	3.0	2.00	PASS
0	KLD 0.4	2.0	2.00	PASS
0	KLD 0.1	2.9	2.00	PASS
0	Main Lounge	2.2	1.50	PASS
0	Meeting 0	2.0	1.50	PASS



Daylight Assessment

Floor	Room	Room ADF (%)	ADF target (%)	ADF criterion
0	Multi-function Room	2.6	1.50	PASS
0	Office	2.0	1.50	PASS
1	B 1.1	4.8	1.00	PASS
1	B 1.2	3.1	1.00	PASS
1	B 1.3	3.1	1.00	PASS
1	B 1.4	3.1	1.00	PASS
1	B 1.5	3.1	1.00	PASS
1	B 1.6	3.1	1.00	PASS
1	B 1.7	3.1	1.00	PASS
1	B 1.1	3.5	1.00	PASS
1	B 1.2	2.9	1.00	PASS
1	B 1.9	3.1	1.00	PASS
1	B 1.10	3.1	1.00	PASS
1	B 1.11	3.1	1.00	PASS
1	B 1.12	3.1	1.00	PASS
1	B 1.13	3.1	1.00	PASS
1	B 1.14	3.1	1.00	PASS
1	B 1.15	3.1	1.00	PASS
1	B 1.16	3.1	1.00	PASS
1	B 1.17	3.1	1.00	PASS
1	B 1.18	3.1	1.00	PASS
1	B 1.19	3.1	1.00	PASS
1	B 1.20	3.1	1.00	PASS
1	KLD 1.2	2.7	2.00	PASS
1	KLD 1.3	2.7	2.00	PASS
1	KLD 1.4	2.7	2.00	PASS
1	KLD 1.5	2.7	2.00	PASS
1	KLD 1.6	2.7	2.00	PASS
1	KLD 1.7	2.7	2.00	PASS
1	KLD 1.8	3.9	2.00	PASS
1	KLD 1.9	2.7	2.00	PASS
1	KLD 1.10	2.7	2.00	PASS
1	KLD 1.11	2.7	2.00	PASS
1	KLD 1.12	2.7	2.00	PASS
1	KLD 1.13	2.7	2.00	PASS
1	KLD 1.14	2.7	2.00	PASS
1	KLD 1.15	2.7	2.00	PASS
1	KLD 1.16	2.7	2.00	PASS
1	KLD 1.17	2.7	2.00	PASS



Daylight Assessment

Floor	Room	Room ADF (%)	ADF target (%)	ADF criterion
1	KLD 1.18	2.7	2.00	PASS
1	KLD 1.19	2.7	2.00	PASS
1	KLD 1.20	2.7	2.00	PASS
1	Meeting 1	3.2	1.50	PASS
1	Staff KLD	1.2	1.50	NOT PASS
1	Staff B	1.5	1.50	PASS
2	B 2.2	3.7	1.00	PASS
2	B 2.3	3.7	1.00	PASS
2	B 2.4	3.7	1.00	PASS
2	B 2.5	3.7	1.00	PASS
2	B 2.6	3.7	1.00	PASS
2	B 2.7	3.7	1.00	PASS
2	B 2.8	3.7	1.00	PASS
2	B 2.9	3.7	1.00	PASS
2	B 2.10	3.7	1.00	PASS
2	B 2.11	3.7	1.00	PASS
2	B 2.12	3.7	1.00	PASS
2	B 2.13	3.7	1.00	PASS
2	B 2.14	3.7	1.00	PASS
2	B 2.15	3.7	1.00	PASS
2	B 2.16	3.7	1.00	PASS
2	B 2.17	3.7	1.00	PASS
2	B 2.18	3.7	1.00	PASS
2	B 2.19	3.7	1.00	PASS
2	B 2.20	3.7	1.00	PASS
2	KLD 2.2	3.2	2.00	PASS
2	KLD 2.3	3.2	2.00	PASS
2	KLD 2.4	3.2	2.00	PASS
2	KLD 2.5	3.2	2.00	PASS
2	KLD 2.6	3.2	2.00	PASS
2	KLD 2.2	3.2	2.00	PASS
2	KLD 2.3	3.2	2.00	PASS
2	KLD 2.4	3.2	2.00	PASS
2	KLD 2.5	3.2	2.00	PASS
2	KLD 2.6	3.2	2.00	PASS
2	KLD 2.7	3.2	2.00	PASS
2	KLD 2.8	4.0	2.00	PASS
2	KLD 2.9	3.2	2.00	PASS
2	KLD 2.10	3.2	2.00	PASS
2	KLD 2.11	3.2	2.00	PASS



Floor	Room	Room ADF (%)	ADF target (%)	ADF criterion
2	KLD 2.12	3.2	2.00	PASS
2	KLD 2.13	3.2	2.00	PASS
2	KLD 2.14	3.2	2.00	PASS
2	KLD 2.15	3.2	2.00	PASS
2	KLD 2.16	3.2	2.00	PASS
2	KLD 2.17	3.2	2.00	PASS
2	KLD 2.18	3.2	2.00	PASS
2	KLD 2.19	3.2	2.00	PASS
2	KLD 2.20	3.2	2.00	PASS
2	Meeting 2	5.3	1.50	PASS

Daylight Assessment

Conclusion

The building's conformity to the BRE guidance on daylight has been assessed in this report. The BRE guidance suggests that calculations should be undertaken to determine the levels of daylight in a room.

The rooms evaluated include all open plan kitchen, living room, dining spaces and bedrooms. Additionally, a number of relevant common spaces are also analysed. The findings indicated that the vast majority of the habitable rooms assessed satisfy the recommendations set out by the BRE's guidelines on daylight.

Therefore, the proposed development is anticipated to achieve good levels of daylighting.

