

Hornsey Town Hall Blocks A & B

Average Daylight Calculations

Prepared for Ardmore

10687-S-ADC-0001

Revision 1

8th April 2020



WHITECODE DESIGN ASSOCIATES

BUILDING SERVICES DESIGN CONSULTANTS

Executive Summary

This report has been commissioned to investigate and enable the awarding of credits for daylighting under the Comfort section of the Home Quality Mark Assessment (Beta 2015).

Average Daylight Factor (ADF) and view of sky calculations have been carried out using IES 2019.0.1.0.

The daylighting section of the Home Quality Mark assessment awards up to 16 credits where the relevant building area achieves the following:

All kitchens achieve a minimum average daylight factor of 2% (6 credits)

All living rooms, dining rooms and studies achieve a minimum average daylight factor as follows:

- 1.5% (2 credits)
- 1.8% (4 credits)
- 2.0% (6 credits)

A further 4 credits can be awarded where results indicate that 80% of the working plane in each relevant room receives direct light from the sky.

All dwellings have open plan living/ kitchen and dining areas. There are no studies.

The results indicate that daylighting levels within the dwellings are generally very good.

100% of dwellings achieve 4 credits for 80% of the working plane in each kitchen, living room and dining room receiving direct light from the sky.

Full results are detailed in the table in **Appendix A**.

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Revisions:

Rev No.:	Date:	Status/Comments:	Prepared by:	Checked by:
1	14.04.20	Issue for comment	Katy Venables	Ellen Huelin

1.0 Introduction

This report has been commissioned by Ardmore to present the daylighting results for the residential units in Blocks A and B of the Hornsey Town Hall development, Hornsey, N8 and is in accordance with the daylighting criteria of set out in the Comfort section of the Home Quality Mark (HQM) Assessment.

The aim of this issue is:

'To promote good daylighting, thereby improving the occupants' quality of life and reducing the amount of energy used to light the home.'

A dynamic thermal model of the proposed buildings has been constructed using Integrated Environmental Solutions Virtual Environment (IES VE) software. This allows dynamic simulations to be carried out taking into account all particulars that can affect the way a building performs, including local shading, solar and light transmittance of glazing and orientation.

For daylighting, the average daylighting factor will be looked at in particular. This is the average indoor illuminance (from daylight) on the working plane within a room, expressed as a percentage of the simultaneous outdoor illuminance on a horizontal plane under an unobstructed CIE Standard Overcast Sky.

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The report will provide confirmation that the internal conditions within the relevant building areas meet the required criteria and that an approved dynamic modelling software package has been used.

2.0 HQM Daylighting Criteria

Up to 16 credits can be awarded in the Daylighting section of the Home Quality Mark assessment. Credits are awarded where each relevant area meets the following criteria:

- All kitchens achieve a minimum average daylight factor of 2% (6 credits)
- All living rooms, dining rooms and studies achieve a minimum average daylight factor as follows:
 - 1.5% (2 credits)
 - 1.8% (4 credits)
 - 2.0% (6 credits)
- 80% of the working plane in each kitchen, living room, dining room and study receives direct light from the sky. (4 credit)

Where two rooms form part of the same large space (e.g an open plan kitchen-dining room), credits must be awarded based on the average daylight factor for the whole space

3.0 Methodology

The Average Daylight Factor (ADF) is largely dependent on the geometry of the room and the window sizes however other factors such as the internal surface areas of walls, floor, ceiling and number of windows can have an impact the results.

Other important factors include:

- Light transmittance of the glass, including dirt factor & frame factor
- Angle of sky visible from the centre of the window
- Total area of internal surfaces
- Area weighted average reflectance of internal surfaces

A simplified formula for determining the Average Daylight Factor (ADF) is:

$$DF = \frac{A_w \theta}{A (1 - R^2)}$$

$$A (1 - R^2)$$

Where:

A_w = net glazed area of windows or roof lights (m²)

A = total area of all the room surfaces including ceiling, floor, walls and windows (m²)

R = area-weighted average reflectance of the room surfaces

M = a correction factor for dirt

T = light transmittance of glazing (including effects of dirt)

θ = is the angle subtended by the visible sky, in degrees. It is measured in a vertical plane normal to the glass, from the window reference point.

4.0 The Development

The Hornsey Town Hall development is situated in the London Borough of Haringey. A layout showing the proposed development's location is shown in Figure 3.1.

The proposed development will comprise a newly refurbished 3-storey mixed-use Hornsey Town Hall, a mixed-use 2-storey Broadway Annexe, two 7-storey residential buildings - Block A and Block B, and a 2-storey residential mews.

Blocks A and B consists 81 and 40 dwellings respectively.

All dwellings have open plan living/dining/kitchen. There are no studies.

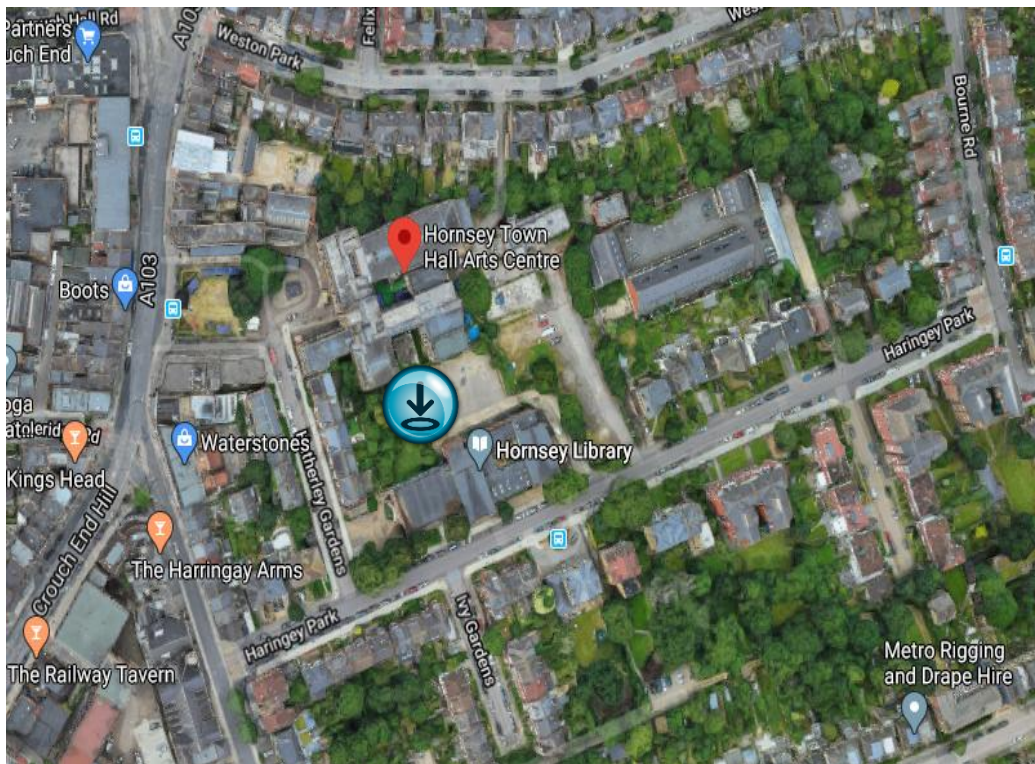


Figure 3.1: Hornsey Town Hall

5.0 Orientation

The orientation of the building can have a big effect on the daylight entering a building. South facing facades are more likely to receive more daylighting in the summer months as they are subject to the sun for longer periods of the day. East and West facades also are subject to the sun, the East facing in the morning, and the West in the afternoon. The North façade will have little exposure to the sun. The sun path diagram below confirms the above:

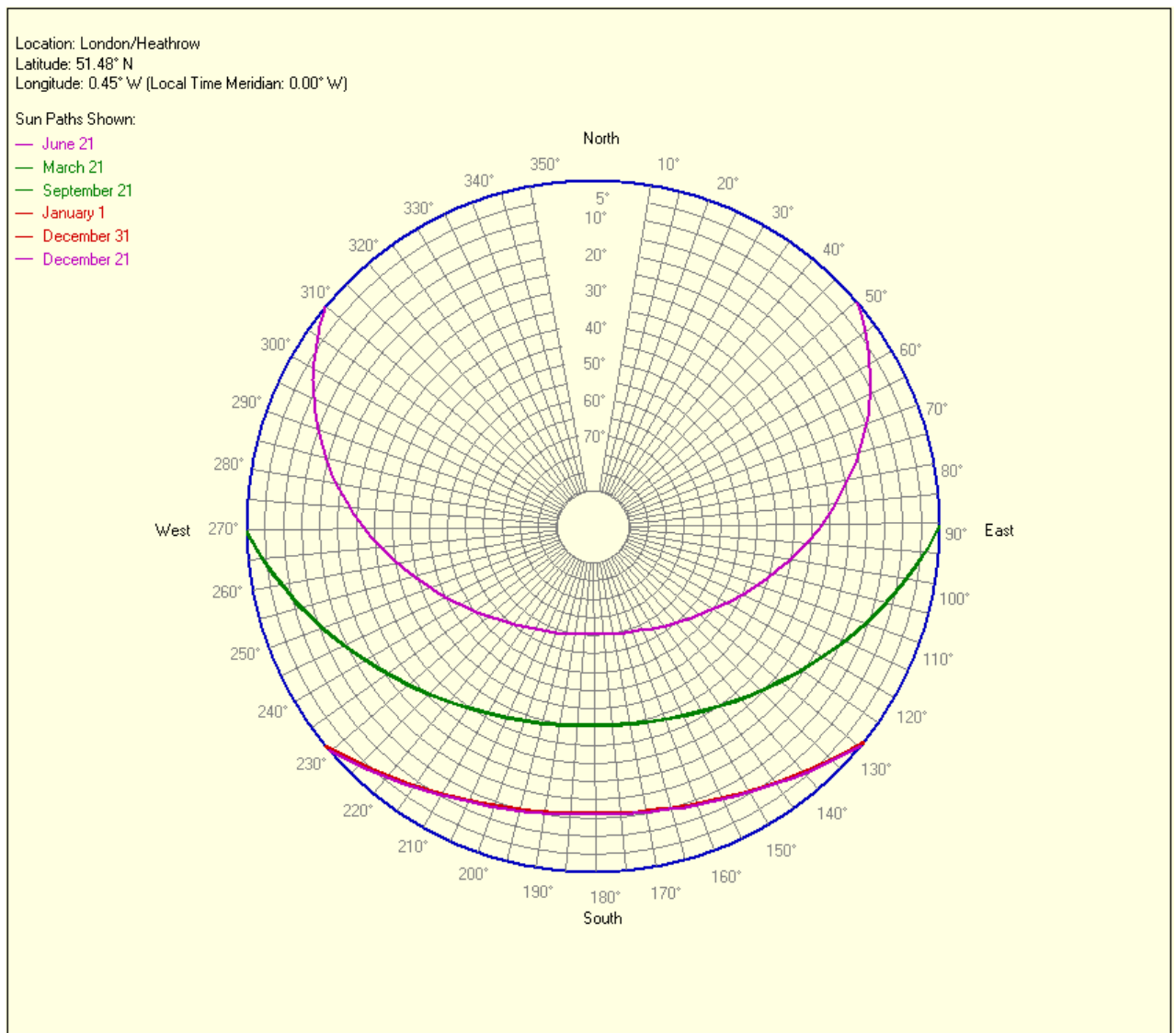


Figure 4.1: Sun path diagram for each season

6.0 The Model

Blocks A and B development were modelled in order to calculate the average daylight factor in each room of the apartments. The model was built in IES Virtual Environment version 2019.0.1.0. This model takes into account a range of issues that could have an impact on the building's performance, including orientation and external shading conditions.

The first stage of building the model was to produce a 2D template of each floor of the development. The templates were created using floor plans issued by KDS Architects in August 2019.

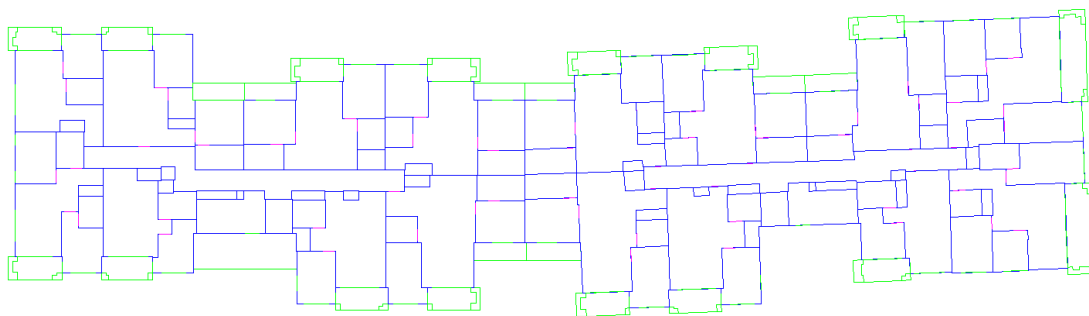


Figure 5.1: IES Virtual Environment 2D template of example floor plan

The next stage was to use the templates in IES and elevations issued by KDS Architects in August 2019 to create the 3D model of each floor culminating in the complete model as shown in Figure 5.2.

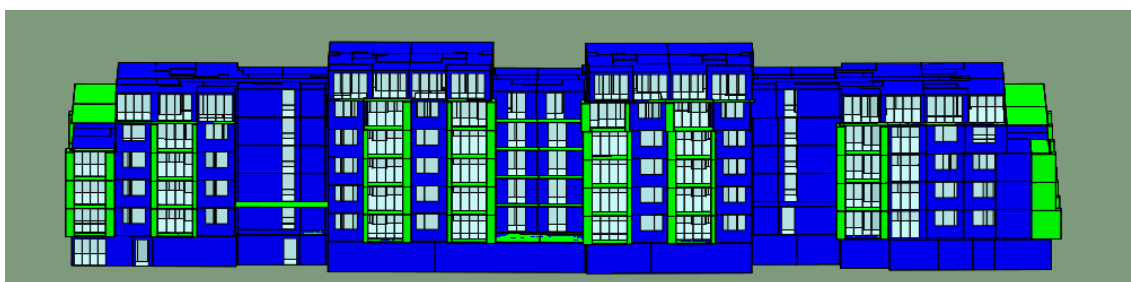


Figure 5.2: IES 3D model of Block A

The local shading (green) was modelled for shading purposes

7.0 Results

The relevant rooms within Blocks A and B of the Hornsey Town Hall development have been assessed against the following criteria set out for daylighting in the Comfort section of the Home Quality Mark Assessment methodology:

- All kitchens achieve a minimum Average Daylight Factor (ADF) of 2% (6 credits)
- All living rooms, dining rooms and studies achieve a minimum average daylight factor as follows:
 - 1.5% (2 credits)
 - 1.8% (4 credits)
 - 2.0% (6 credits)
- 80% of the working plane in each kitchen, living room, dining room and study receives direct light from the sky. (4 credit)

All dwellings have open plan living/ kitchen and dining areas. There are no studies.

The results indicate that daylighting levels within the dwellings are generally very good.

100% of dwellings achieve 4 credits for 80% of the working plane in each kitchen, living room and dining room receiving direct light from the sky.

Full results are detailed in the table in **Appendix A**.

8.0 Appendix 1

Block A Results

Room	ADF %	View of Sky %	Kitchen ADF Credits	Living room ADF Credits	Total Credits
AN 01 - 1 Living/Kitchen/Hallway	3.20%	100	6	6	16
AN 02 - 2 Living/Kitchen/Hallway	5.80%	100	6	6	16
AN 03 - 1 Living/Kitchen/Hallway	5.80%	96	6	6	16
AN 04 - 2 Living/Kitchen/Hallway	1.60%	93	0	2	6
AN 06 - 2 Living/Kitchen/Hallway	1.90%	99	0	4	8
AN 07 - 2 Living/Kitchen/Hallway	1.90%	96	0	4	8
AN 08 - 1 Living/Kitchen/Hallway	2.40%	99	6	6	16
AN 09 - 2 Living/Kitchen/Hallway	4.00%	91	6	6	16
AN 10 - 2 Living/Kitchen/Hallway	1.80%	100	0	4	8
AN 11 - 1 Living/Kitchen/Hallway	3.20%	100	6	6	16
AN 12 - 2 Living/Kitchen/Hallway	5.80%	100	6	6	16
AN 13 - 1 Living/Kitchen/Hallway	5.80%	96	6	6	16
AN 14 - 2 Living/Kitchen/Hallway	2.60%	96	6	6	16
AN 15 - 2 Living/Kitchen/Hallway	2.10%	100	6	6	16
AN 16 - 2 Living/Kitchen/Hallway	1.90%	99	0	4	8
AN 17 - 2 Living/Kitchen/Hallway	1.90%	96	0	4	8
AN 18 - 1 Living/Kitchen/Hallway	2.40%	99	6	6	16
AN 21 - 1 Living/Kitchen/Hallway	3.20%	100	6	6	16
AN 22 - 2 Living/Kitchen/Hallway	5.80%	100	6	6	16
AN 23 - 1 Living/Kitchen/Hallway	5.80%	96	6	6	16
AN 24 - 2 Living/Kitchen/Hallway	2.60%	96	6	6	16
AN 25 - 2 Living/Kitchen/Hallway	2.10%	100	6	6	16
AN 26 - 2 Living/Kitchen/Hallway	1.90%	99	0	4	8
AN 27 - 2 Living/Kitchen/Hallway	1.90%	96	0	4	8
AN 28 - 1 Living/Kitchen/Hallway	2.40%	99	6	6	16
AN 31 - 2 Living/Kitchen/Hallway	4.90%	98	6	6	16
AN 32 - 3 Living/Kitchen/Hallway	3.00%	100	6	6	16
AN 33 - 2 Living/Kitchen/Hallway	2.10%	100	6	6	16
AN 34 - 2 Living/Kitchen/Hallway	1.90%	99	0	4	8
AN 35 - 2 Living/Kitchen/Hallway	1.90%	96	0	4	8
AN 36 - 1 Living/Kitchen/Hallway	2.40%	99	6	6	16
AN 41 - 1 Living/Kitchen/Hallway	6.90%	100	6	6	16
AN 42 - 2 Living/Kitchen/Hallway	5.70%	100	6	6	16
AN 43 - 1 Living/Kitchen/Hallway	2.50%	100	6	6	16
AN 44 - 2 Living/Kitchen/Hallway	2.70%	100	6	6	16
AN 45 - 2 Living/Kitchen/Hallway	2.40%	95	6	6	16

AN 46 - 3 Living/Kitchen/Hallway	4.80%	100	6	6	16
AN 47 - 2 Living/Kitchen/Hallway	2.80%	100	6	6	16
AN 48 - 3 Living/Kitchen/Hallway	4.60%	100	6	6	16
AS 01 - 1 Living/Kitchen/Hallway	2.30%	99	6	6	16
AS 02 - 2 Living/Kitchen/Hallway	1.80%	97	0	4	8
AS 03 - 2 Living/Kitchen/Hallway	2.10%	95	6	6	16
AS 04 - 2 Living/Kitchen/Hallway	2.20%	97	6	6	16
AS 05 - 2 Living/Kitchen/Hallway	3.20%	100	6	6	16
AS 06 - 3 Living/Kitchen/Hallway	5.20%	98	6	6	16
AS 07 - 3 Living/Kitchen/Hallway	4.70%	100	6	6	16
AS 08 - 1 Living/Kitchen/Hallway	2.70%	97	6	6	16
AS 11 - 1 Living/Kitchen/Hallway	2.30%	99	6	6	16
AS 12 - 2 Living/Kitchen/Hallway	1.80%	97	0	4	8
AS 13 - 2 Living/Kitchen/Hallway	2.10%	95	6	6	16
AS 14 - 2 Living/Kitchen/Hallway	2.20%	97	6	6	16
AS 15 - 2 Living/Kitchen/Hallway	2.20%	100	6	6	16
AS 16 - 3 Living/Kitchen/Hallway	5.20%	98	6	6	16
AS 17 - 3 Living/Kitchen/Hallway	4.70%	100	6	6	16
AS 18 - 1 Living/Kitchen/Hallway	2.70%	97	6	6	16
AS 21 - 1 Living/Kitchen/Hallway	2.30%	99	6	6	16
AS 22 - 2 Living/Kitchen/Hallway	1.80%	97	0	4	8
AS 23 - 2 Living/Kitchen/Hallway	2.10%	95	6	6	16
AS 24 - 2 Living/Kitchen/Hallway	2.20%	97	6	6	16
AS 25 - 2 Living/Kitchen/Hallway	1.50%	100	0	2	6
AS 26 - 2 Living/Kitchen/Hallway	5.50%	85	6	6	16
AS 27 - 1 Living/Kitchen/Hallway	2.20%	100	6	6	16
AS 28 - 1 Living/Kitchen/Hallway	2.70%	97	6	6	16
AS 28 - 2 Living/Kitchen/Hallway	4.90%	96	6	6	16
AS 31 - 1 Living/Kitchen/Hallway	2.30%	99	6	6	16
AS 32 - 2 Living/Kitchen/Hallway	1.80%	97	0	4	8
AS 33 - 2 Living/Kitchen/Hallway	2.10%	95	6	6	16
AS 34 - 2 Living/Kitchen/Hallway	2.20%	97	6	6	16
AS 35 - 2 Living/Kitchen/Hallway	1.70%	100	0	2	6
AS 36 - 2 Living/Kitchen/Hallway	2.80%	97	6	6	16
AS 37 - 1 Living/Kitchen/Hallway	4.60%	100	6	6	16
AS 38 - 1 Living/Kitchen/Hallway	2.70%	97	6	6	16
AS 41 - 3 Living/Kitchen/Hallway	5.40%	100	6	6	16
AS 42 - 2 Living/Kitchen/Hallway	4.00%	100	6	6	16
AS 43 - 3 Living/Kitchen/Hallway	5.00%	100	6	6	16
AS 44 - 2 Living/Kitchen/Hallway	2.10%	95	6	6	16
AS 45 - 2 Living/Kitchen/Hallway	2.10%	95	6	6	16
AS 46 - 2 Living/Kitchen/Hallway	2.70%	94	6	6	16
AS 47 - 1 Living/Kitchen/Hallway	6.30%	100	6	6	16
AS 48 - 1 Living/Kitchen/Hallway	6.20%	100	6	6	16
AS 49 - 1 Living/Kitchen/Hallway	3.20%	100	6	6	16

Block B Results

Room	ADF %	View of Sky %	Kitchen ADF Credits	Living room ADF Credits	Total Credits
B 01 - 2 Living/Kitchen/Hallway	2.2	95	6	6	16
B 02 - 2 Living/Kitchen/Hallway	2.5	100	6	6	16
B 03 - 2 Living/Kitchen/Hallway	5.7	99	6	6	16
B 04 - 2 Living/Kitchen/Hallway	2.6	99	6	6	16
B 11 - 1 Living/Kitchen/Hallway	2.2	100	6	6	16
B 12 - 1 Living/Kitchen/Hallway	2.1	100	6	6	16
B 13 - 2 Living/Kitchen/Hallway	2.6	100	6	6	16
B 14 - 2 Living/Kitchen/Hallway	3.3	100	6	6	16
B 15 - 2 Living/Kitchen/Hallway	6.6	99	6	6	16
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B 22 - 2 Living/Kitchen/Hallway	2.2	95	6	6	16
B 23 - 2 Living/Kitchen/Hallway	2.1	95	6	6	16
B 24 - 2 Living/Kitchen/Hallway	3.3	100	6	6	16
B 25 - 2 Living/Kitchen/Hallway	6.6	99	6	6	16
B 26 - 2 Living/Kitchen/Hallway	2.6	99	6	6	16
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B 45 - 2 Living/Kitchen/Hallway	6.6	99	6	6	16
B 46 - 2 Living/Kitchen/Hallway	2.6	99	6	6	16
B 51 - 2 Living/Kitchen/Hallway	3.3	100	6	6	16
B 52 - 2 Living/Kitchen/Hallway	2.2	95	6	6	16
B 53 - 2 Living/Kitchen/Hallway	2.1	95	6	6	16
B 54 - 2 Living/Kitchen/Hallway	3.3	100	6	6	16
B 55 - 2 Living/Kitchen/Hallway	6.6	99	6	6	16
B 56 - 2 Living/Kitchen/Hallway	2.6	99	6	6	16
B 61 - 2 Living/Kitchen/Hallway	3.3	100	6	6	16
B 62 - 2 Living/Kitchen/Hallway	2.1	95	6	6	16
B 63 - 2 Living/Kitchen/Hallway	2.1	95	6	6	16

B 64 - 2 Living/Kitchen/Hallway	3.3	100	6	6	16
B 65 - 2 Living/Kitchen/Hallway	6.6	99	6	6	16
B 66 - 2 Living/Kitchen/Hallway	2.6	99	6	6	16

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BUILDING SERVICES DESIGN CONSULTANTS

Part of



WHITECODE GROUP



Ardmore Construction Limited

Katy Venables
Whitecode Consulting
26-27 The Hill
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Gravesend
Kent
DA11 2EU

16/10/2024

Dear Katy

Re: Hornsey Town Hall HQM Beta Post Construction.

With regards to the HQM Assessment for Blocks A, B and The Mews at the Hornsey Town Hall development, we write to formally confirm the following:

Recreational Space

All dwellings have been constructed in accordance with the design drawings and schedules by KDS Associates Ltd. Each apartment has a balcony or terrace at least 5m² and a depth of at least 1.5m.

Managing the Impacts of Rainfall

We confirm that the drainage has been installed in accordance with the design and specifications provided by Bradbrook Consulting. {COMPANY} have ownership and responsibility for the long-term operation and maintenance of all SuDS for the design life of the development.

Daylighting

We confirm that the dwellings have been constructed in accordance with design stage proposals. No changes to windows or layout has occurred since the daylight calculations were undertaken by Whitecode Consulting, therefore their calculations remain valid.

Ventilation

We confirm that the ventilation strategy has been implemented in accordance with Whitecode Consulting's design stage drawings and specifications.

Decentralised Energy

We confirm that we have installed CHP boilers and PV in accordance with the LZC recommendations made in the Energy Strategy produced by Sweco in February 2018.

Impact on Air Quality

We confirm that we have installed a Bosch CE70-2NA CHP engine and Hoval Ultragas 800D gas boiler to deliver heating and hot water to the dwellings. This is in accordance with the design drawings and specifications prepared by Whitecode Consulting.

Access and Space

We confirm that the dwellings have been constructed in accordance with KDS Architects design drawings. Room functionality within the dwellings can be easily adapted within the dwellings while still maintaining compliance with the nationally described space standard. Additionally, none of the internal walls are load bearing. The dimensions of the rooms and communal areas are compliant to M4(2) and M4(3) adaptable.

Recyclable Waste

We confirm that general, recyclable and food waste storage has been provided in accordance with Haringey Council's Local Plan policy requirements. Haringey Council collect mixed recycling. Each dwelling has been provided with a recycling bin fixed in a kitchen base unit which has a capacity of at least 30 litres for 1 and 2 bedroom dwellings and 40 litres for 3+ bedroom dwellings.

As Haringey Council also provide a kitchen waste collection service, we have also provided each dwelling with a 10 litres food waste caddy located in the kitchen.

Aftercare

We confirm that the dwellings are covered by a building warranty, from {COMPANY NAME} who is a member of and fully complies with "The Consumer Code for Home Builders".

Smart Homes

We confirm that the dwellings have been constructed in accordance with the design stage proposals provided in Whitecode Consulting's drawings and specifications. All dwellings have connection to broadband and digital TV.

Additionally, we confirm that sensors and transmitters have been installed in each dwelling with capability for the following:

- Monitoring the home's electricity and primary heating fuel consumption.
- Monitoring internal temperature levels in the main living room
- Self-charging (e.g. fixed to incoming mains supply or supplies).

The installed sensors and transmitters wirelessly link with {name of accessible device model} that displays information to the occupant. The device displays current and cumulative electricity consumption, primary heating fuel consumption and internal temperature levels (over a weekly, monthly and yearly basis) and has cost factors inputted into the device so that current cost and account balance information can be displayed.

Should you have any queries, please do not hesitate to contact the undersigned.

Yours sincerely

Elliot Bacon



For and on behalf of Ardmore Construction

Hornsey Town Hall Mews

Average Daylight Calculations

Prepared for Ardmore

10687-S-ADC-0002

Revision 1

5th June 2020



WHITECODE DESIGN ASSOCIATES

BUILDING SERVICES DESIGN CONSULTANTS

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A further 4 credits can be awarded where results indicate that 80% of the working plane in each relevant room receives direct light from the sky.

100% of dwellings achieve the full 12 credits as both kitchens and living/ dining rooms achieve an ADF of at least 2%.

100% of dwellings achieve 4 credits for 80% of the working plane in each kitchen, living room and dining room receiving direct light from the sky.

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Revisions:

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1	05.06.2020	Issue for comment	Katy Venables	Ellen Huelin

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Other important factors include:

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- Total area of internal surfaces
- Area weighted average reflectance of internal surfaces

A simplified formula for determining the Average Daylight Factor (ADF) is:

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$$A (1 - R^2)$$

Where:

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M = a correction factor for dirt

T = light transmittance of glazing (including effects of dirt)

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4.0 The Development

The Hornsey Town Hall development is situated in the London Borough of Haringey. A layout showing the proposed development's location is shown in Figure 3.1.

The proposed development will comprise a newly refurbished 3-storey mixed-use Hornsey Town Hall, a mixed-use 2-storey Broadway Annexe, two 7-storey residential buildings - Block A and Block B, and a 2-storey residential mews.

The Mews consists 9 dwellings.

All dwellings have open plan living/dining/kitchen. There are no studies.

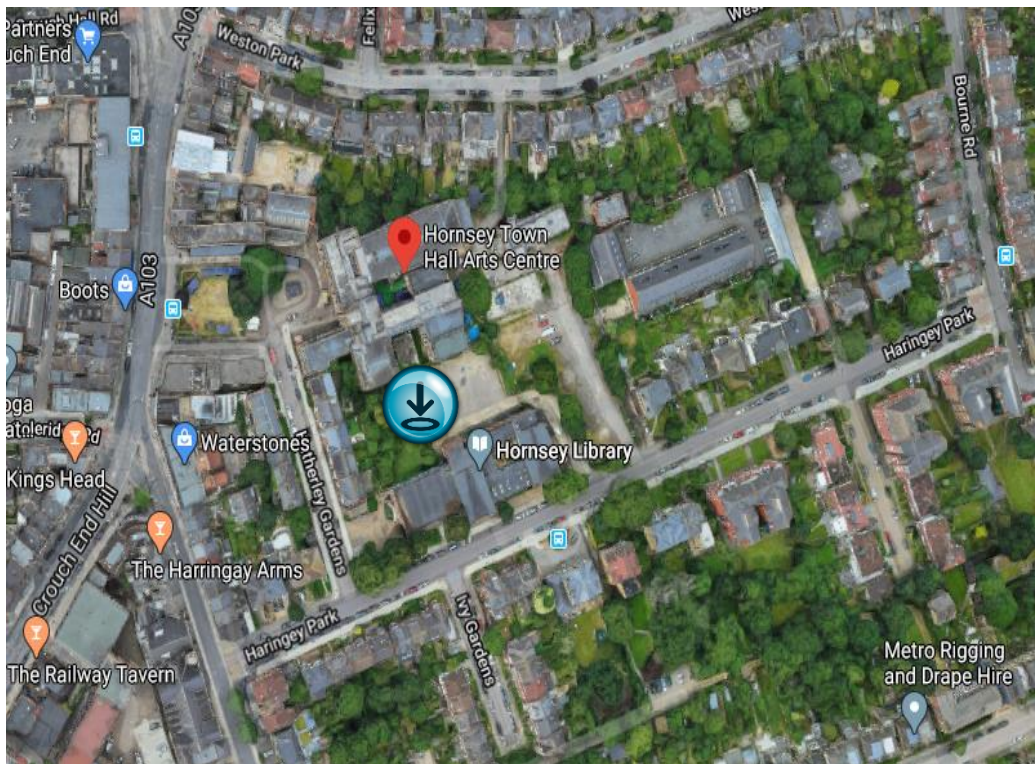


Figure 3.1: Hornsey Town Hall

5.0 Orientation

The orientation of the building can have a big effect on the daylight entering a building. South facing facades are more likely to receive more daylighting in the summer months as they are subject to the sun for longer periods of the day. East and West facades also are subject to the sun, the East facing in the morning, and the West in the afternoon. The North façade will have little exposure to the sun. The sun path diagram below confirms the above:

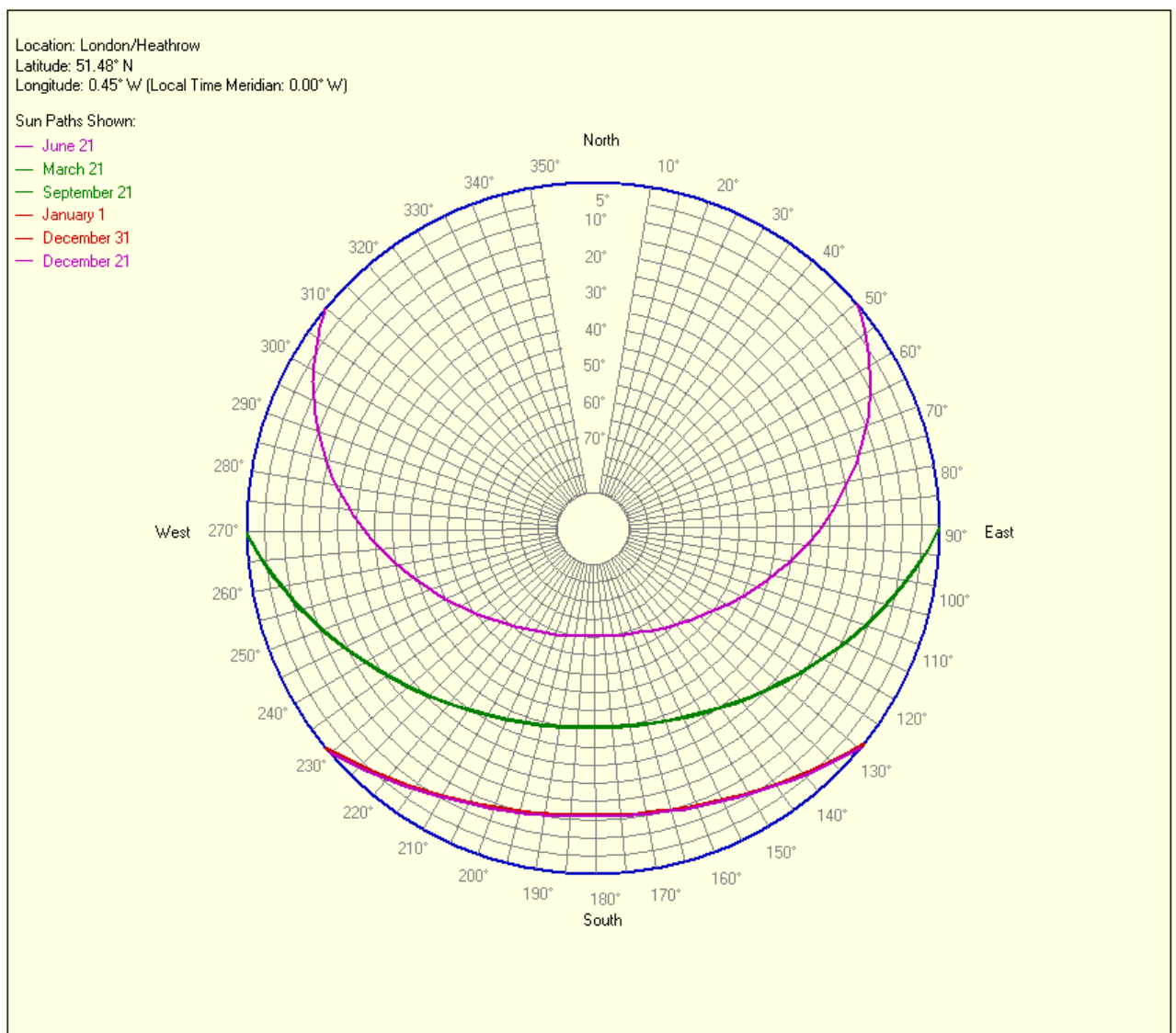


Figure 4.1: Sun path diagram for each season

6.0 The Model

The Mews were modelled in order to calculate the average daylight factor in each room of the apartments. The model was built in IES Virtual Environment version 2019.0.1.0. This model takes into account a range of issues that could have an impact on the building's performance, including orientation and external shading conditions.

The first stage of building the model was to produce a 2D template of each floor of the development. The templates were created using floor plans issued by KDS Architects in August 2019.

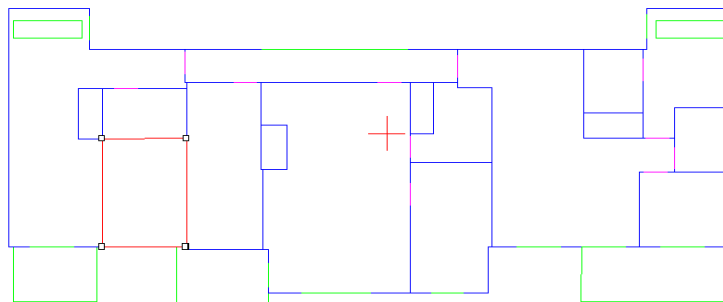


Figure 5.1: IES Virtual Environment 2D template of example floor plan

The next stage was to use the templates in IES and elevations issued by KDS Architects in August 2019 to create the 3D model of each floor culminating in the complete model as shown in Figure 5.2.

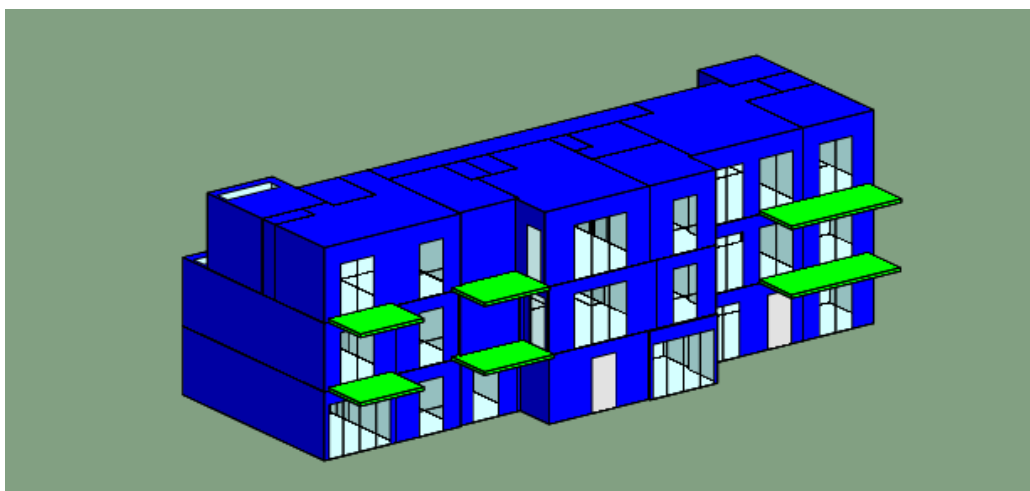


Figure 5.2: IES 3D model of The Mews

The local shading (green) was modelled for shading purposes

7.0 Results

The relevant rooms within The Mews of the Hornsey Town Hall development have been assessed against the following criteria set out for daylighting in the Comfort section of the Home Quality Mark Assessment methodology:

- All kitchens achieve a minimum Average Daylight Factor (ADF) of 2% (6 credits)
- All living rooms, dining rooms and studies achieve a minimum average daylight factor as follows:
 - 1.5% (2 credits)
 - 1.8% (4 credits)
 - 2.0% (6 credits)
- 80% of the working plane in each kitchen, living room, dining room and study receives direct light from the sky. (4 credit)

All dwellings have open plan living/ kitchen and dining areas. There are no studies.

The results indicate that daylighting levels within the dwellings are good. 100% of dwellings achieve the full 12 credits as both kitchens and living/ dining rooms achieve an ADF of at least 2%.

100% of dwellings achieve 4 credits for 80% of the working plane in each kitchen, living room and dining room receiving direct light from the sky.

Full results are detailed in the table in **Appendix A**.

8.0 Appendix 1

The Mews Results

Room	ADF %	View of Sky %	Kitchen ADF Credits	Living room ADF Credits	Total Credits
PM001 Bedroom	2.40%	100%	6	6	16
PM001 Living/ kitchen	3.60%	10%	6	6	16
PM002 Bedroom 1	6.20%	100%	6	6	16
PM002 Bedroom 2	7.00%	100%	6	6	16
PM002 Living/ Kitchen	2.10%	100%	6	6	16
PM003 Bedroom 1	2.00%	100%	6	6	16
PM003 Bedroom 2	4.60%	100%	6	6	16
PM003 Living/ Kitchen	2.80%	100%	6	6	16
PM101 Bedroom	2.70%	100%	6	6	16
PM101 Living/ Kitchen	3.30%	100%	6	6	16
PM102 Bedroom	2.20%	100%	6	6	16
PM102 Living/ Kitchen	2.30%	100%	6	6	16
PM103 Bedroom 1	5.80%	100%	6	6	16
PM103 Bedroom 2	4.70%	100%	6	6	16
PM103 Living/ Kitchen	2.80%	99%	6	6	16
PM201 Bedroom	5.40%	100%	6	6	16
PM201 Living/ Kitchen	3.40%	100%	6	6	16
PM202 Bedroom	3.10%	100%	6	6	16
PM202 Living/ Kitchen	3.50%	100%	6	6	16
PM203 Bedroom	3.9%	100%	6	6	16
PM203 Living/ Kitchen	2.70%	99%	6	6	16

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