

Interior Daylight Analysis

Wellington Road



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Interior Daylight Analysis

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Executive Summary

Overview

An analysis of the daylight conditions of the Wellington Road development has been carried out.

The daylighting analysis has been calculated and assessed according to the BRE guidance "Site layout planning for daylight and sunlight – A guide to good practice" revised third edition published in 2022.

The daylighting analysis as per BR209 3rd edition (2022) shows that:

- 100% of the rooms achieve the Spatial Daylight Autonomy (sDA) criteria over at least 50% of the assessment grid.
- 100% of the dwellings have at least one room that can receive a total of at least 1.5 hours of sunlight on 21st March.

Please note that the BRE report is a guide for good practice and not an assessment of "Pass" and "Fail". Therefore, the failure to meet the recommended values do not indicate that the development is unsuitable.

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Introduction

The aim of this assessment report is to analyse the interior daylight and sunlight conditions experienced within habitable spaces at Wellington Road, in the Wokingham Borough Council. The proposal comprises A full planning application to provide 21 no. Class C3 units, including related ancillary functions, amenity space, landscaping, car and cycle parking and refuse storage. The development is located in the Wokingham Borough Council with a total GIA of approx. 1,207 m².

The daylighting analysis has been calculated and assessed according to the BRE guidance "Site layout planning for daylight and sunlight – A guide to good practice" third edition 2022. The calculations are based on plans of the proposed development provided by Kendall Kingscott, issued in April 2025.

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BRE Guidelines (2022)

Daylight Performance Criteria

The table below confirms the required illuminance level thresholds for each room type.

Room	Bedroom	Kitchen/Living/Dining
Illuminance threshold (lx)	100	150

In order to achieve compliance, the Spatial Daylight Autonomy sDA should be calculated. Definitions are shown below:

- Daylight Autonomy (DA) is the percentage of time that a point in a space can expect to achieve or exceed an illuminance threshold (see previous table) from daylight alone.
- Spatial Daylight Autonomy sDA defines the percentage of the task plane which receives at least a specified illuminance level (e.g., 100 lux for bedrooms), for at least 50% of the annual occupied hours i.e., the percentage of the task plane which can achieve a DA of 50%.

Sunlight

A dwelling, or habitable space that has a particular requirement for sunlight, will appear reasonably sunlit provided that at least one main window wall faces within 90° of due south and a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. This is assessed at the inside centre of the window(s); sunlight received by different windows can be added provided they occur at different times and sunlight hours are not double counted.

Interior Daylight Analysis

Wellington Road

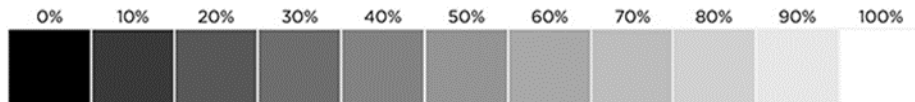
Methodology

Basis for calculations

The daylight conditions of the residential units have been calculated using a daylight simulation software. The following values have been used for the daylight calculations

- Area weighted reflectance of the room surface (ceiling, floor walls and windows) of 0.50*
- Correction factor for dirt of 1, which corresponds to vertical glazing that can be cleaned easily
- Glass transmission factor of 0.65 (double glazing with low emissivity coating)
- Working Plane of 0.85m above the floor
- The assessment grid excluded a band of 0.3m from the walls in line with BR209

*0.50 surface reflectance refers to a grey colour (see image below). Painting the wall and ceiling surface white can achieve an average reflectance of more than 0.50.



Assessed areas

The scheme consists of 21 residential units in total. As recommended by the BRE, the daylight conditions of the kitchen/living/dining and bedrooms will be analysed in all units.

Assessed criteria

As described in the previous section, assessment factors demonstrating compliance with the third (2022) edition of the BR209 document will be demonstrated. Therefore, the following criteria have been assessed:

- Spatial Daylight Autonomy (sDA)
- Sunlight

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Results

Interior daylight results.

The Spatial Daylight Autonomy (sDA) and sunlight results are shown in Appendix B.

Illustrations of the Daylight Autonomy are presented in Appendix A.

The following number of rooms meet the BRE recommendations.

Spatial Daylight Autonomy (sDA)	Total No. of rooms analysed	Rooms meeting the sDA criteria.		Rooms below sDA threshold	
		No.	%	No.	%
Bedrooms	23	23	100.0%	0	0.0%
Kitchen/Living/Dining	21	21	100.0%	0	0.0%
Total	44	44	100.0%	0	0.0%

Sunlight criteria	Total No. of dwellings analysed	Dwellings meeting the Sunlight criteria.		Dwellings below Sunlight threshold	
		No.	%	No.	%
Flats	21	21	100.0%	0	0.0%

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Conclusions

The daylighting analysis as per BR209 3rd edition (2022) shows that:

- 100% of the rooms achieve the Spatial Daylight Autonomy (sDA) criteria over at least 50% of the assessment grid.
- 100% of the dwellings have at least one room that can receive a total of at least 1.5 hours of sunlight on 21st March.

Please note that the BRE report is a guide for good practice and not an assessment of “Pass” and “Fail”. Therefore, the failure to meet the recommended values do not indicate that the development is unsuitable.

Interior Daylight Analysis

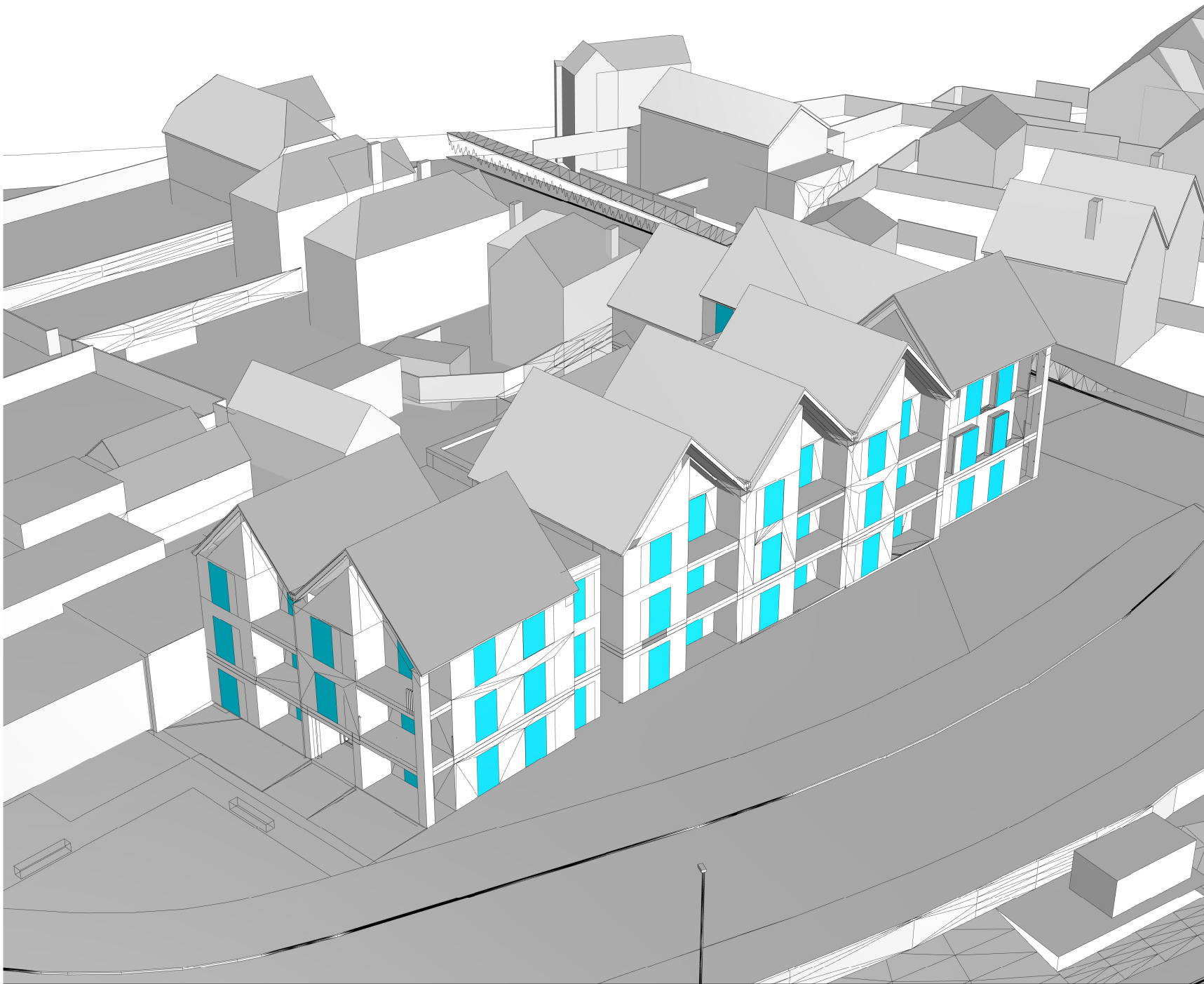
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Appendix A

Appendix A - Illustrations



Project Name:

Wellington Road

Drawing Name

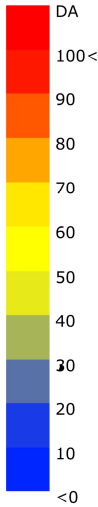
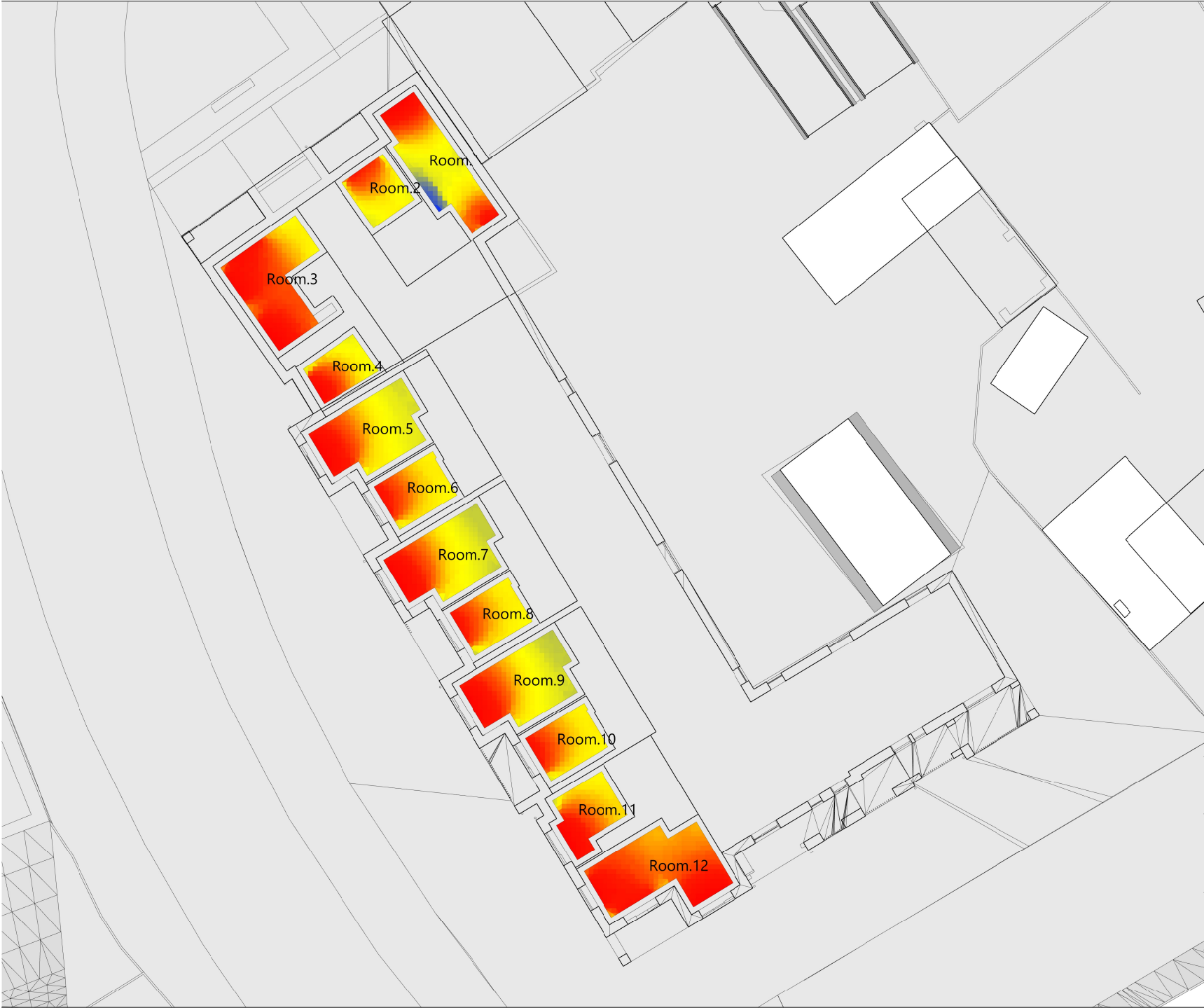
Proposed development

Date:

19/06/2025

Drawing Number:

11260_A_01



Project Name:

Wellington Road

Drawing Name

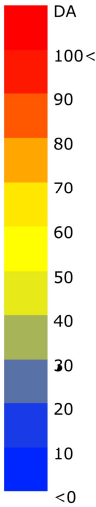
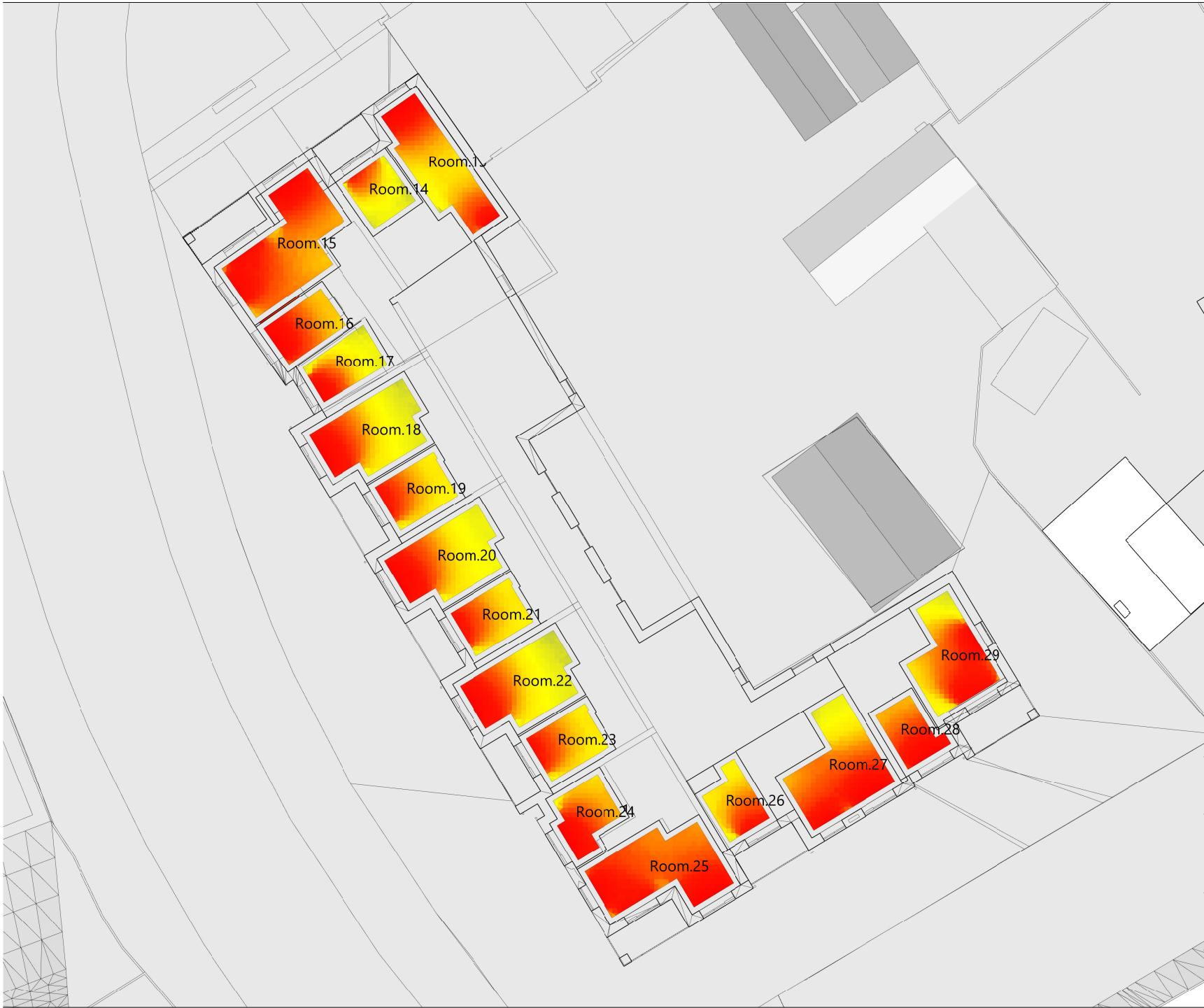
Ground floor

Date:

19/06/2025

Drawing Number:

11260_B_01



Project Name:

Wellington Road

Drawing Name

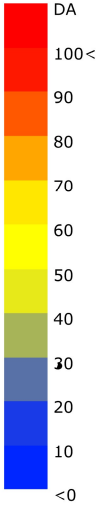
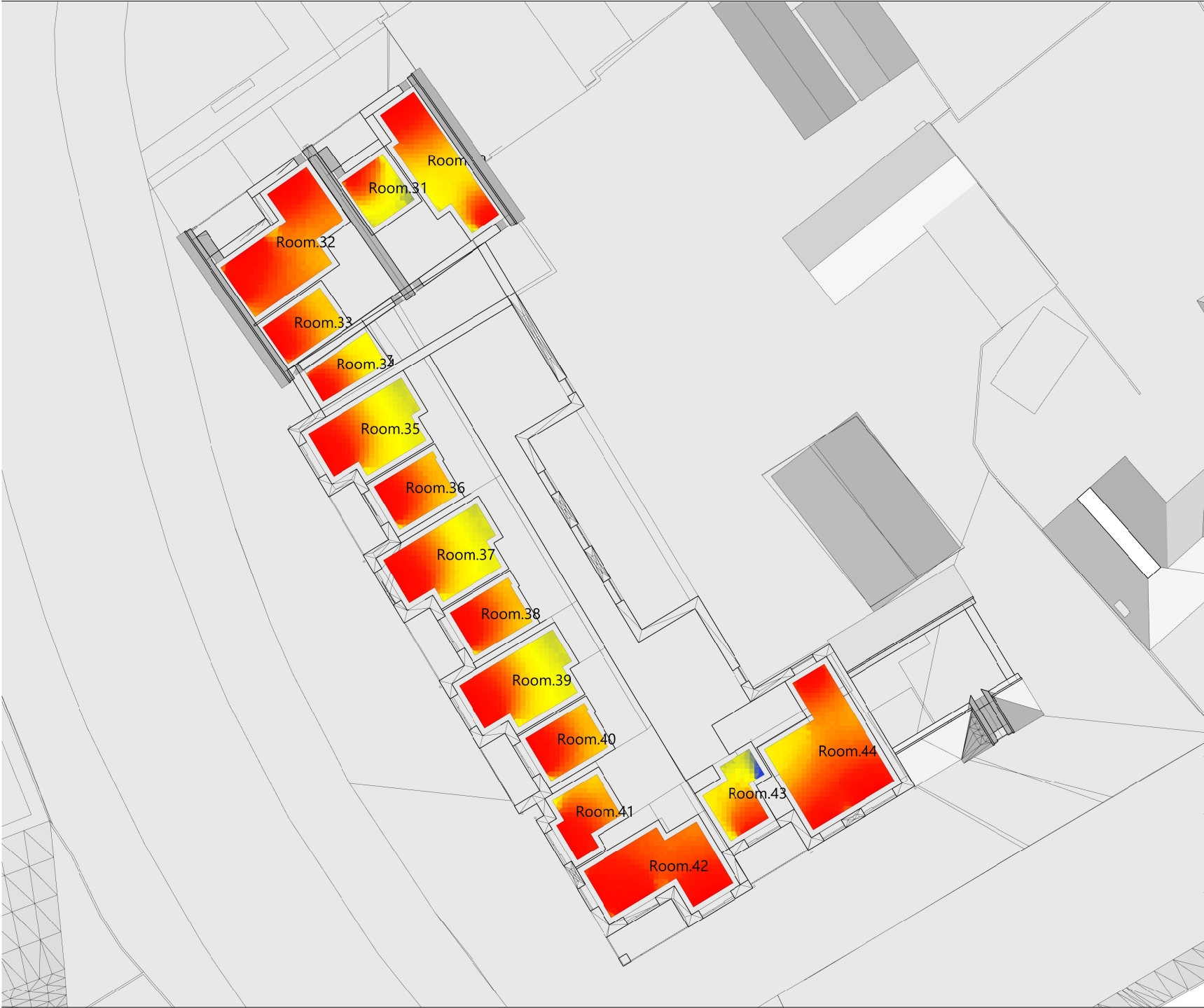
First floor

Date:

19/06/2025

Drawing Number:

11260_B_02



Project Name:
Wellington Road

Drawing Name
Second floor

Date:
19/06/2025

Drawing Number:
11260_B_03

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Appendix B

Appendix B- Results (as per third edition 2022)

Interior Daylight (BR209-2022 Edition)

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Property			Daylight Factor			Sunlight Hours			
Floor	Flat - Room	No.	DA target (%)	sDA (%)	Compliance	Windows	Required Sunlight (No of hrs)	Calculated Sunlight (No of hrs)	Compliance
Ground floor	Flat 1 - KLD	Room.1	50	89.5	Pass	W1a, W1b	1.5	3.0	Pass
	Flat 1 - Bedroom	Room.2	50	100.0	Pass	W2	1.5	2.0	
	Flat 2 - KLD	Room.3	50	100.0	Pass	W3a, W3b, W3c	1.5	8.0	Pass
	Flat 2 - Bedroom	Room.4	50	100.0	Pass	W4	1.5	6.0	
	Flat 3 - KLD	Room.5	50	97.2	Pass	W5a, W5b	1.5	8.0	Pass
	Flat 3 - Bedroom	Room.6	50	100.0	Pass	W6	1.5	7.0	
	Flat 4 - KLD	Room.7	50	85.2	Pass	W7a, W7b	1.5	7.0	Pass
	Flat 4 - Bedroom	Room.8	50	100.0	Pass	W8	1.5	6.0	
	Flat 5 - KLD	Room.9	50	84.7	Pass	W9a, W9b	1.5	7.0	Pass
	Flat 5 - Bedroom	Room.10	50	100.0	Pass	W10	1.5	7.0	
	Flat 6 - KLD	Room.11	50	100.0	Pass	W11	1.5	7.0	Pass
	Flat 6 - Bedroom	Room.12	50	100.0	Pass	W12a, W12b, W12c	1.5	9.0	

Interior Daylight (BR209-2022 Edition)

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Property			Daylight Factor			Sunlight Hours			
Floor	Flat - Room	No.	DA target (%)	sDA (%)	Compliance	Windows	Required Sunlight (No of hrs)	Calculated Sunlight (No of hrs)	Compliance
First Floor	Flat 7 - KLD	Room.13	50	100.0	Pass	W13a, W13b	1.5	5.0	Pass
	Flat 7 - Bedroom	Room.14	50	100.0	Pass	W14	1.5	0.0	
	Flat 8 - KLD	Room.15	50	100.0	Pass	W15a, W15b, W15c	1.5	8.0	Pass
	Flat 8 - Bedroom 1	Room.16	50	100.0	Pass	W16	1.5	8.0	
	Flat 8 - Bedroom 2	Room.17	50	100.0	Pass	W17	1.5	7.0	Pass
	Flat 9 - KLD	Room.18	50	98.7	Pass	W18a, W18b	1.5	8.0	
	Flat 9 - Bedroom	Room.19	50	100.0	Pass	W19	1.5	7.0	Pass
	Flat 10 - KLD	Room.20	50	100.0	Pass	W20a, W20b	1.5	8.0	
	Flat 10 - Bedroom	Room.21	50	100.0	Pass	W21	1.5	6.0	Pass
	Flat 11 - KLD	Room.22	50	95.7	Pass	W22a, W22b	1.5	8.0	
	Flat 11 - Bedroom	Room.23	50	100.0	Pass	W23	1.5	7.0	Pass
	Flat 12 - KLD	Room.24	50	100.0	Pass	W24	1.5	7.0	
	Flat 12 - Bedroom	Room.25	50	100.0	Pass	W25a, W25b, W25c	1.5	9.0	Pass
	Flat 13 - KLD	Room.26	50	100.0	Pass	W26	1.5	6.0	
	Flat 13 - Bedroom	Room.27	50	100.0	Pass	W27a, W27b	1.5	9.0	Pass
	Flat 14 - KLD	Room.28	50	99.5	Pass	W28	1.5	9.0	
	Flat 14 - Bedroom	Room.29	50	100.0	Pass	W29a, W29b	1.5	9.0	Pass

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Property			Daylight Factor			Sunlight Hours			
Floor	Flat - Room	No.	DA target (%)	sDA (%)	Compliance	Windows	Required Sunlight (No of hrs)	Calculated Sunlight (No of hrs)	Compliance
Second Floor	Flat 15 - KLD	Room.30	50	100.0	Pass	W30a, W30b	1.5	6.0	Pass
	Flat 15 - Bedroom	Room.31	50	100.0	Pass	W31	1.5	0.0	
	Flat 16 - KLD	Room.32	50	100.0	Pass	W32a, W32b, W32c	1.5	8.0	Pass
	Flat 16 - Bedroom 1	Room.33	50	100.0	Pass	W33	1.5	3.0	
	Flat 16 - Bedroom 2	Room.34	50	100.0	Pass	W34	1.5	8.0	Pass
	Flat 17 - KLD	Room.35	50	99.8	Pass	W35a, W35b	1.5	9.0	
	Flat 17 - Bedroom	Room.36	50	100.0	Pass	W36	1.5	8.0	Pass
	Flat 18 - KLD	Room.37	50	99.8	Pass	W37a, W37b	1.5	9.0	
	Flat 18 - Bedroom	Room.38	50	100.0	Pass	W38	1.5	8.0	Pass
	Flat 19 - KLD	Room.39	50	99.5	Pass	W39a, W39b	1.5	9.0	
	Flat 19 - Bedroom	Room.40	50	100.0	Pass	W40	1.5	8.0	Pass
	Flat 20 - KLD	Room.41	50	100.0	Pass	W541	1.5	8.0	
	Flat 20 - Bedroom	Room.42	50	100.0	Pass	W42a, W42b, W42c	1.5	9.0	Pass
	Flat 21 - KLD	Room.43	50	100.0	Pass	W43	1.5	9.0	
	Flat 21 - Bedroom	Room.44	50	94.9	Pass	W44a, W44b, W44c	1.5	9.0	Pass
			Total number of rooms		44			Total number of units	21
			Pass		44			Pass	21
					100.0%				100.0%
			Fail		0			Fail	0
					0.0%				0.0%