Daylight Report
(Revision 2)

Client: TJAC Southampton Row, LLC
c/o Casson Conder Partnership Architects
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Project: Conversion of 150 Southampton Row, London WC1B 5AL

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About *MES Energy Services*

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MES Energy Services maintains its position at the forefront of changes in building regulations as well as technological advances. Our clients, large or small are therefore assured of a cost effective, cohesive and fully integrated professional service.

About the Author

Alex Hole is the Managing Director of MES Energy Services. Alex has been a Member of the Royal Institution of Chartered Surveyors for over 20 years. He has a degree in Estate Management and a Diploma in Non Domestic Energy Assessment. He is also an accredited SAP & Code for Sustainable Homes Assessor, BREEAM In-Use Auditor and is registered with the Institute of Non Destructive Testing. Alex also heads up the daylighting and Right to Light division of MES.

List of contents

Section 1: Executive Summary

In response to Camden Councils pre-application comments, a strategy has been designed and implemented by the design team to increase the provision of natural daylight in the proposed development. This proposal preserves the existing lightwells to provide maximum benefit to the bedrooms adjacent to these areas.

Our report considers daylight issues against the criteria set out for national discretionary guidance in the BRE publication 'Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011'.

The BRE document refers both to particular amounts of daylight and to methods of setting alternative target values. It is important to note in the introductory page of the guidance that:

"The advice given here is not mandatory and this document should not be seen as an instrument of planning policy"

It also states *"It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location."*

The Code for Sustainable Homes (CSH) also refers to benchmark levels set out in the BRE document however it should be noted that there are no minimum daylight requirements when it come to bedrooms.

Our report considers the amount of light in the proposed development and compares the results to guidance figures.

Our conclusions are that proposed bedrooms within the development benefit from significantly improved daylighting compared to previous layouts in earlier proposals.

The majority of bedrooms comfortably meet or exceed the BRE guidance. Those rooms that fall beneath the guidelines are those at the lower levels, primarily adjacent to the lightwells, as would be expected.

It should be noted that the benchmark figures in the BRE document and British Standard BS8206-2:2008 are for guidance only and are the same targets for new buildings that do not have the same constraints as an existing building. The proposed development at 150 Southampton Row is an existing structure and the proposal should not be considered in the same way as a completely new development.

This building is further constrained by the fact that it is a historic building of architectural significance and therefore the opportunity to introduce further openings is restricted.

It is also important to note that this project is a change of use from commercial to residential and it is generally accepted that the daylighting requirements of residential uses is lower than for commercial uses.

As these proposals do not increase the massing of the existing building there will be no reduction in daylight or sunlight to neighbouring properties.

Section 2: Introduction

The purpose of this report is to assess the natural daylight levels in the bedrooms of the proposed conversion of 150 Southampton Row.

This report considers the daylight issues against the criteria set out for national guidance in the following publications:

- Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 published by the BRE (British Research Establishment).

  The BRE tests are approved by the Department of the Environment and are widely used by local authorities when deciding on development applications.

- BS 8206-2- Code of practice for skylighting.

There are no minimum mandatory requirements for daylighting in Building Regulations for England & Wales but the guidance set out in SLPDS is widely accepted as the approved methodology when calculating light levels in habitable rooms of new developments. The proposed development at 150 Southampton Row is an existing structure and while we have considered the results against the guidance the proposal should not be seen in the same way as a new development.

It is worthy of note that SLPDS was first published in 1991 and BS 8206-2 in 1992. However SLPDS has recently been updated (Oct 2011). We have undertaken this study on the basis of this new guidance document.

Section 3: Description of development

150 Southampton Row, WC1B 5AL is located on the eastern side of Southampton Row (A4200) in the Bloomsbury area of Midtown, near to the junction with Guildford Street.

At present, mixed use accommodation is arranged over basement, ground and seven upper floors.

It is proposed to strategically convert the floors above ground floor back to residential use. Each bedroom will benefit from private ensuite facilities and each apartment will benefit from a shared communal area.

Section 4: Assessment Process

The guidance states that rooms to be assessed should be living rooms, kitchens and bedrooms in residential properties. In non-domestic buildings rooms where occupants 'have a reasonable expectation of daylight' should be assessed. This is not defined, however examples are given in the guidance of spaces that this may include schools, hospitals, hotels and hostels, small workshops and *some* offices.

It is important to note that the numerical values in the guidance are purely advisory and different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

The guidance clearly states that an important issue is whether a neighbouring building "is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light." This is very important when considering development such as this in closely positioned, urban environments.

The two parameters we have assessed are:

- Average Daylight Factor (ADF)
- Daylight Distribution (DD)

Section 5: The amount of daylight in the proposed development:

Average Daylight Factors

The BRE guidance states daylight provision may be checked by using the Average Daylight Factor (ADF). The ADF is a measure of the overall amount of daylight in a space.

BS 8206-2 Code of Practice for Daylighting recommends the following values for residential buildings:

Kitchens	2%
Living Rooms	1.5%
Bedrooms	1%

Other non-habitable rooms need not be assessed.

We have therefore assessed all bedrooms in this building.

The calculation of the average daylight factor takes into account the following variables:

- The diffuse visible transmittance of the glazing (we have assumed a figure of 0.8 for single glazing)
- A maintenance factor, allowing for the effects of dirt
- The net glazed area of the window
- The total area of the room surfaces
- The average reflectance of the rooms (we have assumed a light coloured room with a value of 0.5)
- The angle of the visible sky (taking into account external obstructions). We have allowed for the effects of neighbouring buildings and self shading of the subject building but not for fire escapes and other 'non-building' obstructions.

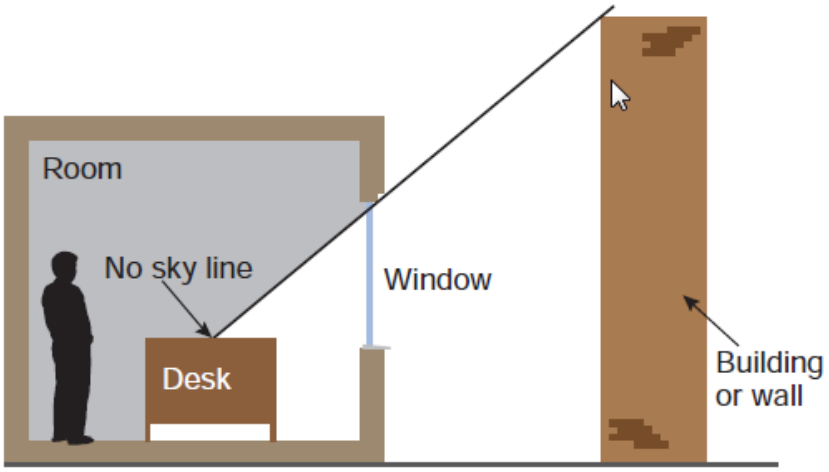
Results

Calculations were undertaken in accordance with the procedures shown in SLPDS. Our results show that rooms to the front and rear of the building and at the higher levels achieve ADF values comfortably above the guidelines. Those rooms at lower levels overlooking the light wells receive lower levels of ADF, as would be expected in a dense, urban location such as this.

Daylight Distribution (No sky line)

If a significant area of the working plane lies beyond the no sky line (ie it receives no direct skylight) then the distribution of daylight in the room will look poor and supplementary electric lighting will be required.

The no sky line effectively divides the points on the working plane (0.85m for residential properties and 0.7m high for offices) that cannot see the sky. Therefore areas beyond the no sky line will receive no direct daylight but will instead be lit from reflected light.



BRE 209

We have shown the position of the no sky line in each of the bedrooms in the Appendix.

Results

Calculations were undertaken in accordance with the procedures shown in SLPSD. Our results show that rooms to the front and rear of the building receive an acceptable amount of skylight (the hatched areas). The amount of skylight received by those rooms at a lower level overlooking the light wells is more limited, as would be expected in a dense, urban location such as this.

Section 6: Notes:

This report has been prepared for the sole use of TJAC Southampton Row, LLC. No representation or warranty (expressed or implied) is given to any other parties. Therefore this report should not be relied upon by any third party and we accept no liability from the use of this report by any other party.

Where full access was not available we have made reasonable estimations of internal layouts, floor area's, window sizes and positions etc.

We are not aware of any conflicts of interest between ourselves and any other party concerning this project.

Appendix

Average Daylight Factor Results:

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 101												
First	R1	Bedroom	W1-L	0.80	0.16	0.00	21.47	77.65	0.50	0.15	0.01	
			W1-U	0.80	2.24	0.00	20.76	77.65	0.50	1.00	0.64	
			W2-L	0.80	0.09	0.00	2.33	77.65	0.50	0.15	0.00	
			W2-U	0.80	1.26	0.00	0.00	77.65	0.50	1.00	0.00	
											0.65	1.0
First	R2	Bedroom	W3-L	0.80	0.08	0.00	6.11	54.51	0.50	0.15	0.00	
			W3-U	0.80	1.14	0.00	6.42	54.51	0.50	1.00	0.14	
			W4-L	0.80	0.04	0.00	5.81	54.51	0.50	0.15	0.00	
			W4-U	0.80	0.58	0.00	3.16	54.51	0.50	1.00	0.04	
			W5-L	0.80	0.05	0.00	5.95	54.51	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	3.26	54.51	0.50	1.00	0.04	
											0.22	1.0
First	R3	Bedroom	W6-L	0.80	0.06	0.00	49.45	57.90	0.50	0.15	0.01	
			W6-U	0.80	0.79	0.00	49.50	57.90	0.50	1.00	0.72	
			W7-L	0.80	0.06	0.00	48.62	57.90	0.50	0.15	0.01	
			W7-U	0.80	0.79	0.00	48.71	57.90	0.50	1.00	0.71	
											1.45	1.0
First	R4	Bedroom	W8-L	0.80	0.06	0.00	48.97	62.34	0.50	0.15	0.01	
			W8-U	0.80	0.79	0.00	49.02	62.34	0.50	1.00	0.66	
			W9-L	0.80	0.06	0.00	47.79	62.34	0.50	0.15	0.01	
			W9-U	0.80	0.79	0.00	46.92	62.34	0.50	1.00	0.64	
											1.32	1.0
FLAT 102												
First	R1	Bedroom	W1-L	0.80	0.06	0.00	46.78	58.82	0.50	0.15	0.01	
			W1-U	0.80	0.79	0.00	45.30	58.82	0.50	1.00	0.65	
			W2-L	0.80	0.06	0.00	47.42	58.82	0.50	0.15	0.01	
			W2-U	0.80	0.79	0.00	46.53	58.82	0.50	1.00	0.67	
											1.33	1.0
First	R2	Bedroom	W3-L	0.80	0.06	0.00	46.67	49.59	0.50	0.15	0.01	
			W3-U	0.80	0.79	0.00	45.73	49.59	0.50	1.00	0.78	
			W4-L	0.80	0.06	0.00	45.51	49.59	0.50	0.15	0.01	
			W4-U	0.80	0.79	0.00	43.95	49.59	0.50	1.00	0.75	
			W5-L	0.80	0.06	0.00	46.04	49.59	0.50	0.15	0.01	
			W5-U	0.80	0.79	0.00	45.06	49.59	0.50	1.00	0.77	
											2.32	1.0
First	R3	Bedroom	W6-L	0.80	0.06	0.00	45.16	60.60	0.50	0.15	0.01	
			W6-U	0.80	0.79	0.00	44.14	60.60	0.50	1.00	0.61	
			W7-L	0.80	0.06	0.00	44.01	60.60	0.50	0.15	0.01	
			W7-U	0.80	0.79	0.00	42.34	60.60	0.50	1.00	0.59	
											1.22	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 103												
First	R1	Bedroom	W1-L	0.80	0.06	0.00	44.55	65.61	0.50	0.15	0.01	
			W1-U	0.80	0.79	0.00	43.50	65.61	0.50	1.00	0.56	
			W2-L	0.80	0.06	0.00	44.52	65.61	0.50	0.15	0.01	
			W2-U	0.80	0.79	0.00	44.35	65.61	0.50	1.00	0.57	
											1.14	1.0
First	R2	Bedroom	W3-L	0.80	0.06	0.00	43.81	68.30	0.50	0.15	0.01	
			W3-U	0.80	0.79	0.00	43.65	68.30	0.50	1.00	0.54	
			W4-L	0.80	0.06	0.00	44.53	68.30	0.50	0.15	0.01	
			W4-U	0.80	0.79	0.00	44.31	68.30	0.50	1.00	0.55	
			W5-L	0.80	0.08	0.00	8.27	68.30	0.50	0.15	0.00	
			W5-U	0.80	1.12	0.00	7.38	68.30	0.50	1.00	0.13	
											1.23	1.0
First	R3	Bedroom	W7-L	0.80	0.05	0.00	8.89	52.87	0.50	0.15	0.00	
			W7-U	0.80	0.67	0.00	7.38	52.87	0.50	1.00	0.10	
			W6-L	0.80	0.05	0.00	6.54	52.87	0.50	0.15	0.00	
			W6-U	0.80	0.67	0.00	0.00	52.87	0.50	1.00	0.00	
											0.10	1.0
FLAT 104												
First	R1	Bedroom	W1-L	0.80	0.06	0.00	5.10	47.61	0.50	0.15	0.00	
			W1-U	0.80	0.83	0.00	0.00	47.61	0.50	1.00	0.00	
											0.00	1.0
First	R2	Bedroom	W2-L	0.80	0.12	0.00	5.04	50.57	0.50	0.15	0.00	
			W2-U	0.80	1.63	0.00	0.00	50.57	0.50	1.00	0.00	
			W3-L	0.80	0.14	0.00	14.16	50.57	0.50	0.15	0.01	
			W3-U	0.80	1.43	0.00	14.32	50.57	0.50	1.00	0.43	
											0.44	1.0
First	R3	Bedroom	W4-L	0.80	0.14	0.00	38.91	51.54	0.50	0.15	0.02	
			W4-U	0.80	1.42	0.00	38.93	51.54	0.50	1.00	1.14	
											1.16	1.0
First	R4	Bedroom	W5-L	0.80	0.14	0.00	41.40	51.25	0.50	0.15	0.02	
			W5-U	0.80	1.42	0.00	41.43	51.25	0.50	1.00	1.23	
											1.24	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 105												
First	R1	Bedroom	W1-L	0.80	0.09	0.00	40.26	59.77	0.50	0.15	0.01	
			W1-U	0.80	0.88	0.00	40.57	59.77	0.50	1.00	0.64	
											0.64	1.0
First	R2	Bedroom	W2-L	0.80	0.09	0.00	39.79	52.82	0.50	0.15	0.01	
			W2-U	0.80	0.88	0.00	39.91	52.82	0.50	1.00	0.71	
											0.72	1.0
First	R3	Bedroom	W3-L	0.80	0.09	0.00	46.59	52.03	0.50	0.15	0.01	
			W3-U	0.80	0.88	0.00	48.05	52.03	0.50	1.00	0.86	
											0.88	1.0
First	R4	Bedroom	W4-L	0.80	0.09	0.00	45.91	56.79	0.50	0.15	0.01	
			W4-U	0.80	0.88	0.00	47.20	56.79	0.50	1.00	0.78	
											0.79	1.0
FLAT 106												
First	R1	Bedroom	W1-L	0.80	0.14	0.00	52.07	51.06	0.50	0.15	0.02	
			W1-U	0.80	1.42	0.00	53.78	51.06	0.50	1.00	1.60	
											1.62	1.0
First	R2	Bedroom	W2-L	0.80	0.14	0.00	52.91	47.40	0.50	0.15	0.03	
			W2-U	0.80	1.42	0.00	54.79	47.40	0.50	1.00	1.75	
											1.78	1.0
First	R3	Bedroom	W3-L	0.80	0.14	0.00	44.82	62.89	0.50	0.15	0.02	
			W3-U	0.80	1.43	0.00	44.27	62.89	0.50	1.00	1.07	
			W4-L	0.80	0.13	0.00	44.19	62.89	0.50	0.15	0.01	
			W4-U	0.80	1.29	0.00	45.13	62.89	0.50	1.00	0.98	
											2.09	1.0
First	R4	Bedroom	W5-L	0.80	0.10	0.00	8.28	54.31	0.50	0.15	0.00	
			W5-U	0.80	1.34	0.00	3.96	54.31	0.50	1.00	0.10	
			W6-L	0.80	0.04	0.00	8.72	54.31	0.50	0.15	0.00	
			W6-U	0.80	0.58	0.00	4.50	54.31	0.50	1.00	0.05	
			W7-L	0.80	0.10	0.00	9.02	54.31	0.50	0.15	0.00	
			W7-U	0.80	1.34	0.00	4.80	54.31	0.50	1.00	0.13	
											0.29	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 201												
Second	R1	Bedroom	W1-L	0.80	0.16	0.00	24.75	79.76	0.50	0.15	0.01	
			W1-U	0.80	2.24	0.00	24.04	79.76	0.50	1.00	0.72	
			W2-L	0.80	0.09	0.00	4.18	79.76	0.50	0.15	0.00	
			W2-U	0.80	1.26	0.00	0.00	79.76	0.50	1.00	0.00	
											0.73	1.0
Second	R2	Bedroom	W3-L	0.80	0.08	0.00	7.38	52.42	0.50	0.15	0.00	
			W3-U	0.80	1.14	0.00	6.04	52.42	0.50	1.00	0.14	
			W4-L	0.80	0.04	0.00	7.55	52.42	0.50	0.15	0.00	
			W4-U	0.80	0.58	0.00	6.27	52.42	0.50	1.00	0.07	
			W5-L	0.80	0.05	0.00	7.67	52.42	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	6.44	52.42	0.50	1.00	0.09	
											0.31	1.0
Second	R3	Bedroom	W6	0.80	0.40	0.00	52.07	59.22	0.50	1.00	0.38	
			W7-L	0.80	0.34	0.00	65.86	59.22	0.50	0.15	0.06	
			W7-U	0.80	1.08	0.00	64.95	59.22	0.50	1.00	1.27	
											1.71	1.0
Second	R4	Bedroom	W8	0.80	0.20	0.00	57.50	63.67	0.50	1.00	0.19	
			W9-L	0.80	0.17	0.00	62.05	63.67	0.50	0.15	0.03	
			W9-U	0.80	0.54	0.00	62.39	63.67	0.50	1.00	0.57	
											0.79	1.0
FLAT 202												
Second	R1	Bedroom	W1	0.80	0.38	0.00	58.72	64.27	0.50	1.00	0.37	
			W2-L	0.80	0.32	0.00	66.43	64.27	0.50	0.15	0.05	
			W2-U	0.80	1.01	0.00	66.57	64.27	0.50	1.00	1.11	
			W3	0.80	0.20	0.00	50.56	64.27	0.50	1.00	0.17	
			W4-L	0.80	0.17	0.00	54.90	64.27	0.50	0.15	0.02	
			W4-U	0.80	0.54	0.00	55.24	64.27	0.50	1.00	0.50	
											2.22	1.0
Second	R2	Bedroom	W5	0.80	0.20	0.00	55.37	51.72	0.50	1.00	0.23	
			W6-L	0.80	0.17	0.00	59.72	51.72	0.50	0.15	0.03	
			W6-U	0.80	0.54	0.00	60.08	51.72	0.50	1.00	0.67	
			W7	0.80	0.38	0.00	57.19	51.72	0.50	1.00	0.44	
			W8-L	0.80	0.32	0.00	64.89	51.72	0.50	0.15	0.06	
			W8-U	0.80	1.01	0.00	65.00	51.72	0.50	1.00	1.35	
			W9	0.80	0.20	0.00	49.61	51.72	0.50	1.00	0.21	
			W10-L	0.80	0.17	0.00	54.07	51.72	0.50	0.15	0.03	
			W10-U	0.80	0.54	0.00	54.37	51.72	0.50	1.00	0.61	
											3.64	1.0
Second	R3	Bedroom	W11	0.80	0.20	0.00	53.74	67.28	0.50	1.00	0.17	
			W12-L	0.80	0.17	0.00	58.09	67.28	0.50	0.15	0.02	
			W12-U	0.80	0.54	0.00	58.44	67.28	0.50	1.00	0.50	
			W13	0.80	0.38	0.00	55.61	67.28	0.50	1.00	0.33	
			W14-L	0.80	0.32	0.00	63.32	67.28	0.50	0.15	0.05	
			W14-U	0.80	1.01	0.00	63.38	67.28	0.50	1.00	1.01	
			W15	0.80	0.20	0.00	50.30	67.28	0.50	1.00	0.16	
			W16-L	0.80	0.17	0.00	54.99	67.28	0.50	0.15	0.02	
			W16-U	0.80	0.54	0.00	55.23	67.28	0.50	1.00	0.47	
											2.75	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 203												
Second	R1	Bedroom	W1	0.80	0.40	0.00	47.09	64.81	0.50	1.00	0.31	
			W2-L	0.80	0.34	0.00	60.98	64.81	0.50	0.15	0.05	
			W2-U	0.80	1.08	0.00	60.00	64.81	0.50	1.00	1.07	
											1.43	1.0
Second	R2	Bedroom	W3-L	0.80	0.08	0.00	10.23	57.84	0.50	0.15	0.00	
			W3-U	0.80	1.12	0.00	9.22	57.84	0.50	1.00	0.19	
											0.19	1.0
Second	R3	Bedroom	W4-L	0.80	0.05	0.00	9.77	53.08	0.50	0.15	0.00	
			W4-U	0.80	0.67	0.00	2.35	53.08	0.50	1.00	0.03	
			W5-L	0.80	0.05	0.00	11.01	53.08	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	10.13	53.08	0.50	1.00	0.14	
											0.17	1.0
FLAT 204												
Second	R1	Bedroom	W1-L	0.80	0.06	0.00	6.93	50.31	0.50	0.15	0.00	
			W1-U	0.80	0.83	0.00	7.04	50.31	0.50	1.00	0.12	
											0.13	1.0
Second	R2	Bedroom	W2-L	0.80	0.12	0.00	7.02	53.10	0.50	0.15	0.00	
			W2-U	0.80	1.63	0.00	7.00	53.10	0.50	1.00	0.23	
			W3-L	0.80	0.06	0.00	18.28	53.10	0.50	0.15	0.00	
			W3-U	0.80	1.52	0.00	18.94	53.10	0.50	1.00	0.58	
											0.81	1.0
Second	R3	Bedroom	W4-L	0.80	0.06	0.00	45.78	50.04	0.50	0.15	0.01	
			W4-U	0.80	1.51	0.00	46.37	50.04	0.50	1.00	1.49	
											1.50	1.0
Second	R4	Bedroom	W5-L	0.80	0.06	0.00	48.55	50.31	0.50	0.15	0.01	
			W5-U	0.80	1.51	0.00	49.12	50.31	0.50	1.00	1.57	
											1.58	1.0
FLAT 205												
Second	R1	Bedroom	W1-L	0.80	0.03	0.00	49.35	61.32	0.50	0.15	0.00	
			W1-U	0.80	0.93	0.00	50.05	61.32	0.50	1.00	0.81	
											0.82	1.0
Second	R2	Bedroom	W2-L	0.80	0.03	0.00	49.33	52.24	0.50	0.15	0.01	
			W2-U	0.80	0.93	0.00	50.06	52.24	0.50	1.00	0.95	
											0.96	1.0
Second	R3	Bedroom	W3-L	0.80	0.03	0.00	60.11	51.89	0.50	0.15	0.01	
			W3-U	0.80	0.93	0.00	61.21	51.89	0.50	1.00	1.17	
											1.18	1.0
Second	R4	Bedroom	W4-L	0.80	0.03	0.00	59.97	57.72	0.50	0.15	0.01	
			W4-U	0.80	0.93	0.00	61.08	57.72	0.50	1.00	1.05	
											1.06	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 206												
Second	R1	Bedroom	W1-L	0.80	0.06	0.00	63.62	51.14	0.50	0.15	0.01	
			W1-U	0.80	1.51	0.00	64.62	51.14	0.50	1.00	2.03	
											2.04	1.0
Second	R2	Bedroom	W2-L	0.80	0.06	0.00	64.49	46.33	0.50	0.15	0.01	
			W2-U	0.80	1.51	0.00	65.42	46.33	0.50	1.00	2.27	
											2.28	1.0
Second	R3	Bedroom	W3-L	0.80	0.06	0.00	47.81	63.87	0.50	0.15	0.01	
			W3-U	0.80	1.52	0.00	47.58	63.87	0.50	1.00	1.21	
			W4-L	0.80	0.06	0.00	46.54	63.87	0.50	0.15	0.01	
			W4-U	0.80	1.52	0.00	46.96	63.87	0.50	1.00	1.19	
											2.41	1.0
Second	R4	Bedroom	W5-L	0.80	0.10	0.00	11.24	55.93	0.50	0.15	0.00	
			W5-U	0.80	1.34	0.00	9.71	55.93	0.50	1.00	0.25	
			W6-L	0.80	0.04	0.00	11.80	55.93	0.50	0.15	0.00	
			W6-U	0.80	0.58	0.00	10.29	55.93	0.50	1.00	0.11	
			W7-L	0.80	0.10	0.00	12.23	55.93	0.50	0.15	0.00	
			W7-U	0.80	1.34	0.00	10.68	55.93	0.50	1.00	0.27	
											0.64	1.0
FLAT 301												
Third	R1	Bedroom	W1-L	0.80	0.16	0.00	29.16	79.80	0.50	0.15	0.01	
			W1-U	0.80	2.24	0.00	28.56	79.80	0.50	1.00	0.86	
			W2-L	0.80	0.09	0.00	6.36	79.80	0.50	0.15	0.00	
			W2-U	0.80	1.26	0.00	3.73	79.80	0.50	1.00	0.06	
											0.93	1.0
Third	R2	Bedroom	W3-L	0.80	0.08	0.00	9.45	52.40	0.50	0.15	0.00	
			W3-U	0.80	1.14	0.00	8.82	52.40	0.50	1.00	0.20	
			W4-L	0.80	0.04	0.00	9.67	52.40	0.50	0.15	0.00	
			W4-U	0.80	0.58	0.00	9.09	52.40	0.50	1.00	0.11	
			W5-L	0.80	0.05	0.00	9.81	52.40	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	9.23	52.40	0.50	1.00	0.13	
											0.44	1.0
Third	R3	Bedroom	W6	0.80	0.41	0.00	57.07	59.22	0.50	1.00	0.42	
			W7-L	0.80	0.28	0.00	72.12	59.22	0.50	0.15	0.05	
			W7-U	0.80	1.04	0.00	70.42	59.22	0.50	1.00	1.33	
											1.80	1.0
Third	R4	Bedroom	W8	0.80	0.20	0.00	60.60	63.81	0.50	1.00	0.21	
			W9-L	0.80	0.14	0.00	66.08	63.81	0.50	0.15	0.02	
			W9-U	0.80	0.52	0.00	65.89	63.81	0.50	1.00	0.58	
											0.81	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 302												
Third	R1	Bedroom	W1	0.80	0.38	0.00	64.04	66.80	0.50	1.00	0.39	
			W2-L	0.80	0.26	0.00	72.97	66.80	0.50	0.15	0.05	
			W2-U	0.80	0.97	0.00	72.47	66.80	0.50	1.00	1.13	
			W3	0.80	0.20	0.00	54.64	66.80	0.50	1.00	0.18	
			W4-L	0.80	0.14	0.00	59.16	66.80	0.50	0.15	0.02	
			W4-U	0.80	0.52	0.00	59.33	66.80	0.50	1.00	0.49	
											2.25	1.0
Third	R2	Bedroom	W5	0.80	0.20	0.00	59.26	51.72	0.50	1.00	0.25	
			W6-L	0.80	0.14	0.00	64.03	51.72	0.50	0.15	0.03	
			W6-U	0.80	0.52	0.00	64.07	51.72	0.50	1.00	0.69	
			W7	0.80	0.38	0.00	62.69	51.72	0.50	1.00	0.49	
			W8-L	0.80	0.26	0.00	71.31	51.72	0.50	0.15	0.06	
			W8-U	0.80	0.97	0.00	70.91	51.72	0.50	1.00	1.42	
			W9	0.80	0.20	0.00	54.21	51.72	0.50	1.00	0.23	
			W10-L	0.80	0.14	0.00	58.38	51.72	0.50	0.15	0.03	
			W10-U	0.80	0.52	0.00	58.69	51.72	0.50	1.00	0.63	
											3.83	1.0
Third	R3	Bedroom	W11	0.80	0.20	0.00	57.91	67.39	0.50	1.00	0.19	
			W12-L	0.80	0.14	0.00	62.43	67.39	0.50	0.15	0.02	
			W12-U	0.80	0.52	0.00	62.56	67.39	0.50	1.00	0.52	
			W13	0.80	0.38	0.00	61.33	67.39	0.50	1.00	0.37	
			W14-L	0.80	0.26	0.00	69.62	67.39	0.50	0.15	0.04	
			W14-U	0.80	0.97	0.00	69.31	67.39	0.50	1.00	1.07	
			W15	0.80	0.20	0.00	54.32	67.39	0.50	1.00	0.17	
			W16-L	0.80	0.14	0.00	58.95	67.39	0.50	0.15	0.02	
			W16-U	0.80	0.52	0.00	59.12	67.39	0.50	1.00	0.49	
											2.89	1.0
FLAT 303												
Third	R1	Bedroom	W1	0.80	0.41	0.00	52.83	64.76	0.50	1.00	0.36	
			W2-L	0.80	0.28	0.00	66.88	64.76	0.50	0.15	0.05	
			W2-U	0.80	1.04	0.00	65.52	64.76	0.50	1.00	1.13	
											1.53	1.0
Third	R2	Bedroom	W3-L	0.80	0.08	0.00	13.20	57.96	0.50	0.15	0.00	
			W3-U	0.80	1.12	0.00	12.60	57.96	0.50	1.00	0.26	
											0.26	1.0
Third	R3	Bedroom	W5-L	0.80	0.05	0.00	14.32	54.61	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	13.90	54.61	0.50	1.00	0.18	
			W4-L	0.80	0.05	0.00	14.02	54.61	0.50	0.15	0.00	
			W4-U	0.80	0.67	0.00	11.41	54.61	0.50	1.00	0.15	
											0.34	1.0

MES Calculations (Average Daylight Factor)

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FLAT 304												
Third	R1	Bedroom	W1-L	0.80	0.06	0.00	8.69	63.74	0.50	0.15	0.00	
			W1-U	0.80	0.83	0.00	7.89	63.74	0.50	1.00	0.11	
											0.11	1.0
Third	R2	Bedroom	W2-L	0.80	0.11	0.00	8.68	63.21	0.50	0.15	0.00	
			W2-U	0.80	1.55	0.00	7.88	63.21	0.50	1.00	0.21	
			W3-L	0.80	0.15	0.00	23.88	63.21	0.50	0.15	0.01	
			W3-U	0.80	1.42	0.00	25.16	63.21	0.50	1.00	0.60	
											0.82	1.0
Third	R3	Bedroom	W4-L	0.80	0.67	0.00	56.04	54.63	0.50	0.15	0.11	
			W4-U	0.80	1.40	0.00	57.35	54.63	0.50	1.00	1.57	
											1.68	1.0
Third	R4	Bedroom	W5-L	0.80	0.67	0.00	58.52	59.67	0.50	0.15	0.11	
			W5-U	0.80	1.40	0.00	59.89	59.67	0.50	1.00	1.50	
											1.60	1.0
Third	R5	Bedroom	W6-L	0.80	0.68	0.00	63.96	51.07	0.50	0.15	0.14	
			W6-U	0.80	1.42	0.00	65.37	51.07	0.50	1.00	1.94	
											2.08	1.0
FLAT 305												
Third	R1	Bedroom	W1-L	0.80	0.68	0.00	68.36	54.03	0.50	0.15	0.14	
			W1-U	0.80	1.42	0.00	69.53	54.03	0.50	1.00	1.95	
											2.09	1.0
Third	R2	Bedroom	W2-L	0.80	1.34	0.00	72.47	62.73	0.50	0.15	0.25	
			W2-U	0.80	2.80	0.00	73.12	62.73	0.50	1.00	3.48	
											3.73	1.0
Third	R3	Bedroom	W3-L	0.80	0.15	0.00	48.03	42.08	0.50	0.15	0.03	
			W3-U	0.80	1.42	0.00	47.68	42.08	0.50	1.00	1.72	
											1.75	1.0
Third	R4	Bedroom	W4-L	0.80	0.15	0.00	48.16	66.32	0.50	0.15	0.02	
			W4-U	0.80	1.42	0.00	48.50	66.32	0.50	1.00	1.11	
											1.13	1.0
Third	R5	Bedroom	W5-L	0.80	0.10	0.00	14.59	67.36	0.50	0.15	0.00	
			W5-U	0.80	1.34	0.00	13.58	67.36	0.50	1.00	0.29	
			W6-L	0.80	0.04	0.00	15.35	67.36	0.50	0.15	0.00	
			W6-U	0.80	0.58	0.00	14.55	67.36	0.50	1.00	0.13	
			W7-L	0.80	0.10	0.00	16.01	67.36	0.50	0.15	0.00	
			W7-U	0.80	1.34	0.00	15.09	67.36	0.50	1.00	0.32	
											0.75	1.0

MES Calculations (Average Daylight Factor)

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FLAT 401												
Fourth	R1	Bedroom	W1-L	0.80	0.16	0.00	34.89	79.80	0.50	0.15	0.01	
			W1-U	0.80	2.24	0.00	34.53	79.80	0.50	1.00	1.03	
			W2-L	0.80	0.09	0.00	8.55	79.80	0.50	0.15	0.00	
			W2-U	0.80	1.26	0.00	7.22	79.80	0.50	1.00	0.12	
											1.17	1.0
Fourth	R2	Bedroom	W3-L	0.80	0.08	0.00	12.36	54.05	0.50	0.15	0.00	
			W3-U	0.80	1.14	0.00	13.06	54.05	0.50	1.00	0.29	
			W4-L	0.80	0.04	0.00	12.61	54.05	0.50	0.15	0.00	
			W4-U	0.80	0.58	0.00	13.43	54.05	0.50	1.00	0.15	
			W5-L	0.80	0.05	0.00	12.80	54.05	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	13.52	54.05	0.50	1.00	0.18	
											0.63	1.0
Fourth	R3	Bedroom	W6-L	0.80	0.23	0.00	78.20	59.22	0.50	0.15	0.05	
			W6-U	0.80	1.28	0.00	77.31	59.22	0.50	1.00	1.78	
											1.83	1.0
Fourth	R4	Bedroom	W7-L	0.80	0.23	0.00	78.14	61.76	0.50	0.15	0.05	
			W7-U	0.80	1.04	0.00	72.94	61.76	0.50	1.00	1.31	
											1.35	1.0
FLAT 402												
Fourth	R1	Bedroom	W1-L	0.80	0.23	0.00	77.84	60.11	0.50	0.15	0.05	
			W1-U	0.80	1.04	0.00	72.69	60.11	0.50	1.00	1.34	
											1.38	1.0
Fourth	R2	Bedroom	W2-L	0.80	0.46	0.00	77.74	47.31	0.50	0.15	0.12	
			W2-U	0.80	2.07	0.00	75.71	47.31	0.50	1.00	3.54	
											3.66	1.0
Fourth	R3	Bedroom	W3-L	0.80	0.46	0.00	76.50	62.45	0.50	0.15	0.09	
			W3-U	0.80	2.07	0.00	74.63	62.45	0.50	1.00	2.64	
											2.73	1.0
FLAT 403												
Fourth	R1	Bedroom	W1-L	0.80	0.23	0.00	73.91	67.10	0.50	0.15	0.04	
			W1-U	0.80	1.28	0.00	73.46	67.10	0.50	1.00	1.50	
											1.54	1.0
Fourth	R2	Bedroom	W2-L	0.80	0.08	0.00	18.25	58.53	0.50	0.15	0.00	
			W2-U	0.80	1.12	0.00	18.49	58.53	0.50	1.00	0.38	
											0.38	1.0
Fourth	R3	Bedroom	W3-L	0.80	0.05	0.00	18.11	52.62	0.50	0.15	0.00	
			W3-U	0.80	0.67	0.00	14.09	52.62	0.50	1.00	0.19	
			W4-L	0.80	0.05	0.00	19.09	52.62	0.50	0.15	0.00	
			W4-U	0.80	0.67	0.00	19.39	52.62	0.50	1.00	0.26	
											0.46	1.0

MES Calculations (Average Daylight Factor)

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FLAT 404												
Fourth	R1	Bedroom	W1-L	0.80	0.06	0.00	11.40	52.32	0.50	0.15	0.00	
			W1-U	0.80	0.83	0.00	11.18	52.32	0.50	1.00	0.19	
											0.19	1.0
Fourth	R2	Bedroom	W2-L	0.80	0.11	0.00	11.60	53.67	0.50	0.15	0.00	
			W2-U	0.80	1.55	0.00	11.11	53.67	0.50	1.00	0.34	
			W3-L	0.80	0.28	0.00	32.30	53.67	0.50	0.15	0.03	
			W3-U	0.80	1.29	0.00	35.20	53.67	0.50	1.00	0.91	
											1.28	1.0
Fourth	R3	Bedroom	W4-L	0.80	0.67	0.00	60.67	53.15	0.50	0.15	0.12	
			W4-U	0.80	1.27	0.00	61.82	53.15	0.50	1.00	1.58	
											1.70	1.0
Fourth	R4	Bedroom	W5-L	0.80	0.67	0.00	63.35	55.56	0.50	0.15	0.12	
			W5-U	0.80	1.27	0.00	64.51	55.56	0.50	1.00	1.58	
											1.70	1.0
Fourth	R5	Bedroom	W6-L	0.80	0.68	0.00	69.21	51.30	0.50	0.15	0.15	
			W6-U	0.80	1.29	0.00	70.19	51.30	0.50	1.00	1.89	
											2.04	1.0
FLAT 405												
Fourth	R1	Bedroom	W1-L	0.80	0.68	0.00	73.05	59.23	0.50	0.15	0.13	
			W1-U	0.80	1.29	0.00	73.66	59.23	0.50	1.00	1.72	
											1.85	1.0
Fourth	R2	Bedroom	W2-L	0.80	0.67	0.00	74.12	61.88	0.50	0.15	0.13	
			W2-U	0.80	1.27	0.00	74.54	61.88	0.50	1.00	1.64	
											1.77	1.0
Fourth	R3	Bedroom	W3-L	0.80	0.67	0.00	74.70	53.80	0.50	0.15	0.15	
			W3-U	0.80	1.27	0.00	75.04	53.80	0.50	1.00	1.90	
											2.04	1.0
Fourth	R4	Bedroom	W4-L	0.80	0.28	0.00	50.63	69.25	0.50	0.15	0.03	
			W4-U	0.80	1.29	0.00	51.33	69.25	0.50	1.00	1.02	
			W5-L	0.80	0.10	0.00	19.65	69.25	0.50	0.15	0.00	
			W5-U	0.80	1.34	0.00	19.71	69.25	0.50	1.00	0.41	
			W6-L	0.80	0.04	0.00	20.69	69.25	0.50	0.15	0.00	
			W6-U	0.80	0.58	0.00	21.10	69.25	0.50	1.00	0.19	
											1.66	1.0
Fourth	R5	Bedroom	W7-L	0.80	0.10	0.00	21.43	47.28	0.50	0.15	0.01	
			W7-U	0.80	1.34	0.00	21.58	47.28	0.50	1.00	0.65	
											0.66	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 501												
Fifth	R1	Bedroom	W1-L	0.80	0.16	0.00	42.10	79.80	0.50	0.15	0.01	
			W1-U	0.80	2.24	0.00	41.81	79.80	0.50	1.00	1.25	
			W2-L	0.80	0.09	0.00	11.53	79.80	0.50	0.15	0.00	
			W2-U	0.80	1.26	0.00	11.15	79.80	0.50	1.00	0.19	
											1.46	1.0
Fifth	R2	Bedroom	W3-L	0.80	0.08	0.00	16.80	53.01	0.50	0.15	0.00	
			W3-U	0.80	1.14	0.00	17.52	53.01	0.50	1.00	0.40	
			W4-L	0.80	0.04	0.00	17.30	53.01	0.50	0.15	0.00	
			W4-U	0.80	0.58	0.00	18.05	53.01	0.50	1.00	0.21	
			W5-L	0.80	0.05	0.00	17.37	53.01	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	18.16	53.01	0.50	1.00	0.25	
											0.86	1.0
Fifth	R3	Bedroom	W6-L	0.80	0.19	0.00	78.38	59.22	0.50	0.15	0.04	
			W6-U	0.80	0.83	0.00	78.53	59.22	0.50	1.00	1.17	
											1.21	1.0
Fifth	R4	Bedroom	W7-L	0.80	0.19	0.00	78.13	61.76	0.50	0.15	0.04	
			W7-U	0.80	0.83	0.00	78.34	61.76	0.50	1.00	1.12	
			W8-L	0.80	0.19	0.00	77.88	61.76	0.50	0.15	0.04	
			W8-U	0.80	0.83	0.00	78.15	61.76	0.50	1.00	1.12	
											2.31	1.0
FLAT 502												
Fifth	R1	Bedroom	W1-L	0.80	0.19	0.00	77.63	59.79	0.50	0.15	0.04	
			W1-U	0.80	0.83	0.00	77.96	59.79	0.50	1.00	1.15	
											1.19	1.0
Fifth	R2	Bedroom	W2-L	0.80	0.19	0.00	77.29	47.31	0.50	0.15	0.05	
			W2-U	0.80	0.83	0.00	77.71	47.31	0.50	1.00	1.45	
			W3-L	0.80	0.19	0.00	76.95	47.31	0.50	0.15	0.05	
			W3-U	0.80	0.83	0.00	77.45	47.31	0.50	1.00	1.44	
											3.00	1.0
Fifth	R3	Bedroom	W4-L	0.80	0.19	0.00	76.61	63.66	0.50	0.15	0.04	
			W4-U	0.80	0.83	0.00	77.20	63.66	0.50	1.00	1.07	
			W5-L	0.80	0.19	0.00	76.34	63.66	0.50	0.15	0.04	
			W5-U	0.80	0.83	0.00	76.99	63.66	0.50	1.00	1.07	
											2.21	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 503												
Fifth	R1	Bedroom	W1-L	0.80	0.19	0.00	76.11	60.78	0.50	0.15	0.04	
			W1-U	0.80	0.83	0.00	76.82	60.78	0.50	1.00	1.12	
											1.15	1.0
Fifth	R2	Bedroom	W2-L	0.80	0.19	0.00	75.92	70.67	0.50	0.15	0.03	
			W2-U	0.80	0.83	0.00	76.68	70.67	0.50	1.00	0.96	
			W3-L	0.80	0.08	0.00	26.41	70.67	0.50	0.15	0.00	
			W3-U	0.80	1.12	0.00	28.32	70.67	0.50	1.00	0.48	
											1.47	1.0
Fifth	R3	Bedroom	W4-L	0.80	0.05	0.00	28.60	56.15	0.50	0.15	0.00	
			W4-U	0.80	0.67	0.00	30.04	56.15	0.50	1.00	0.38	
			W5-L	0.80	0.05	0.00	25.69	56.15	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	26.73	56.15	0.50	1.00	0.34	
											0.73	1.0
FLAT 504												
Fifth	R1	Bedroom	W1-L	0.80	0.06	0.00	15.18	47.00	0.50	0.15	0.00	
			W1-U	0.80	0.83	0.00	14.84	47.00	0.50	1.00	0.28	
											0.28	1.0
Fifth	R2	Bedroom	W2-L	0.80	0.11	0.00	15.62	47.43	0.50	0.15	0.01	
			W2-U	0.80	1.55	0.00	14.77	47.43	0.50	1.00	0.52	
			W3-L	0.80	0.25	0.00	43.40	47.43	0.50	0.15	0.04	
			W3-U	0.80	1.13	0.00	47.43	47.43	0.50	1.00	1.21	
											1.76	1.0
Fifth	R3	Bedroom	W4-L	0.80	0.54	0.00	53.12	56.72	0.50	0.15	0.08	
			W4-U	0.80	1.03	0.00	58.63	56.72	0.50	1.00	1.13	
			W5-L	0.80	0.54	0.00	70.33	56.72	0.50	0.15	0.11	
			W5-U	0.80	1.03	0.00	72.88	56.72	0.50	1.00	1.41	
											2.73	1.0
Fifth	R4	Bedroom	W6-L	0.80	0.54	0.00	71.49	58.06	0.50	0.15	0.11	
			W6-U	0.80	1.03	0.00	73.96	58.06	0.50	1.00	1.40	
			W7-L	0.80	0.54	0.00	74.63	58.06	0.50	0.15	0.11	
			W7-U	0.80	1.03	0.00	76.01	58.06	0.50	1.00	1.44	
											3.05	1.0
Fifth	R5	Bedroom	W8-L	0.80	1.09	0.00	75.46	52.01	0.50	0.15	0.25	
			W8-U	0.80	2.06	0.00	76.85	52.01	0.50	1.00	3.24	
											3.49	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 505												
Fifth	R1	Bedroom	W1-L	0.80	1.09	0.00	78.06	61.73	0.50	0.15	0.22	
			W1-U	0.80	2.06	0.00	78.76	61.73	0.50	1.00	2.80	
											3.02	1.0
Fifth	R2	Bedroom	W2-L	0.80	0.54	0.00	69.36	57.76	0.50	0.15	0.10	
			W2-U	0.80	1.03	0.00	72.11	57.76	0.50	1.00	1.37	
			W3-L	0.80	1.09	0.00	81.81	57.76	0.50	0.15	0.25	
			W3-U	0.80	2.06	0.00	82.43	57.76	0.50	1.00	3.13	
			W4-L	0.80	0.54	0.00	77.57	57.76	0.50	0.15	0.12	
			W4-U	0.80	1.03	0.00	78.62	57.76	0.50	1.00	1.49	
											6.46	1.0
Fifth	R3	Bedroom	W5-L	0.80	0.29	0.00	52.68	62.83	0.50	0.15	0.04	
			W5-U	0.80	1.29	0.00	53.27	62.83	0.50	1.00	1.16	
			W6-L	0.80	0.10	0.00	27.24	62.83	0.50	0.15	0.01	
			W6-U	0.80	1.34	0.00	28.22	62.83	0.50	1.00	0.64	
											1.85	1.0
Fifth	R4	Bedroom	W7-L	0.80	0.04	0.00	27.98	52.09	0.50	0.15	0.00	
			W7-U	0.80	0.58	0.00	29.31	52.09	0.50	1.00	0.35	
			W8-L	0.80	0.10	0.00	28.81	52.09	0.50	0.15	0.01	
			W8-U	0.80	1.34	0.00	29.70	52.09	0.50	1.00	0.82	
											1.18	1.0
FLAT 601												
Sixth	R1	Bedroom	W1-L	0.80	0.16	0.00	51.24	81.03	0.50	0.15	0.02	
			W1-U	0.80	2.24	0.00	52.28	81.03	0.50	1.00	1.54	
			W2-L	0.80	0.09	0.00	17.01	81.03	0.50	0.15	0.00	
			W2-U	0.80	1.26	0.00	18.04	81.03	0.50	1.00	0.30	
											1.86	1.0
Sixth	R2	Bedroom	W3-L	0.80	0.08	0.00	23.61	53.39	0.50	0.15	0.01	
			W3-U	0.80	1.14	0.00	25.34	53.39	0.50	1.00	0.58	
			W4-L	0.80	0.04	0.00	24.33	53.39	0.50	0.15	0.00	
			W4-U	0.80	0.58	0.00	26.11	53.39	0.50	1.00	0.30	
			W5-L	0.80	0.05	0.00	24.22	53.39	0.50	0.15	0.00	
			W5-U	0.80	0.67	0.00	26.01	53.39	0.50	1.00	0.35	
											1.24	1.0
Sixth	R3	Bedroom	W6-L	0.80	0.19	0.00	83.60	60.83	0.50	0.15	0.04	
			W6-U	0.80	0.87	0.00	83.28	60.83	0.50	1.00	1.28	
											1.32	1.0
Sixth	R4	Bedroom	W7-L	0.80	0.19	0.00	83.57	58.15	0.50	0.15	0.04	
			W7-U	0.80	0.87	0.00	83.28	58.15	0.50	1.00	1.33	
											1.38	1.0

MES Calculations (Average Daylight Factor)

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FLAT 602												
Sixth	R1	Bedroom	W1-L	0.80	0.19	0.00	83.53	57.20	0.50	0.15	0.04	
			W1-U	0.80	0.87	0.00	83.28	57.20	0.50	1.00	1.36	
			W2-L	0.80	0.19	0.00	83.48	57.20	0.50	0.15	0.04	
			W2-U	0.80	0.87	0.00	83.28	57.20	0.50	1.00	1.36	
											2.80	1.0
Sixth	R2	Bedroom	W3-L	0.80	0.19	0.00	83.41	47.44	0.50	0.15	0.05	
			W3-U	0.80	0.87	0.00	83.28	47.44	0.50	1.00	1.64	
			W4-L	0.80	0.19	0.00	83.37	47.44	0.50	0.15	0.05	
			W4-U	0.80	0.87	0.00	83.28	47.44	0.50	1.00	1.64	
											3.38	1.0
Sixth	R3	Bedroom	W5-L	0.80	0.19	0.00	83.34	50.12	0.50	0.15	0.05	
			W5-U	0.80	0.87	0.00	83.28	50.12	0.50	1.00	1.55	
			W6-L	0.80	0.19	0.00	83.31	50.12	0.50	0.15	0.05	
			W6-U	0.80	0.87	0.00	83.28	50.12	0.50	1.00	1.55	
											3.19	1.0
FLAT 603												
Sixth	R1	Bedroom	W1-L	0.80	0.19	0.00	83.27	61.40	0.50	0.15	0.04	
			W1-U	0.80	0.87	0.00	83.28	61.40	0.50	1.00	1.26	
											1.30	1.0
Sixth	R2	Bedroom	W2-L	0.80	0.19	0.00	83.25	68.87	0.50	0.15	0.04	
			W2-U	0.80	0.87	0.00	83.28	68.87	0.50	1.00	1.13	
			W3-L	0.80	0.08	0.00	42.37	68.87	0.50	0.15	0.01	
			W3-U	0.80	1.12	0.00	47.34	68.87	0.50	1.00	0.82	
											1.99	1.0
Sixth	R3	Bedroom	W4-L	0.80	0.05	0.00	40.42	52.96	0.50	0.15	0.01	
			W4-U	0.80	0.67	0.00	42.99	52.96	0.50	1.00	0.58	
			W5-L	0.80	0.05	0.00	34.75	52.96	0.50	0.15	0.01	
			W5-U	0.80	0.67	0.00	36.82	52.96	0.50	1.00	0.50	
											1.09	1.0
FLAT 604												
Sixth	R1	Bedroom	W1-L	0.80	0.12	0.00	22.50	46.06	0.50	0.15	0.01	
			W1-U	0.80	1.63	0.00	22.93	46.06	0.50	1.00	0.87	
											0.88	1.0
Sixth	R2	Bedroom	W2-L	0.80	0.67	0.00	79.81	62.35	0.50	0.15	0.14	
			W2-U	0.80	1.25	0.00	83.10	62.35	0.50	1.00	1.78	
											1.91	1.0
Sixth	R3	Bedroom	W3-L	0.80	0.67	0.00	80.57	53.13	0.50	0.15	0.16	
			W3-U	0.80	1.25	0.00	83.37	53.13	0.50	1.00	2.09	
											2.26	1.0
Sixth	R4	Bedroom	W4-L	0.80	0.68	0.00	82.13	52.54	0.50	0.15	0.17	
			W4-U	0.80	1.27	0.00	83.82	52.54	0.50	1.00	2.16	
											2.33	1.0

MES Calculations (Average Daylight Factor)

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FLAT 605												
Sixth	R1	Bedroom	W1-L	0.80	0.68	0.00	79.87	50.19	0.50	0.15	0.17	
			W1-U	0.80	1.27	0.00	82.03	50.19	0.50	1.00	2.21	
											2.39	1.0
Sixth	R2	Bedroom	W2-L	0.80	0.67	0.00	84.70	51.77	0.50	0.15	0.18	
			W2-U	0.80	1.25	0.00	85.28	51.77	0.50	1.00	2.20	
											2.37	1.0
Sixth	R3	Bedroom	W3-L	0.80	0.67	0.00	84.80	65.86	0.50	0.15	0.14	
			W3-U	0.80	1.25	0.00	85.35	65.86	0.50	1.00	1.73	
			W4-L	0.80	0.30	0.00	55.77	65.86	0.50	0.15	0.04	
			W4-U	0.80	1.27	0.00	56.81	65.86	0.50	1.00	1.17	
											3.08	1.0
Sixth	R4	Bedroom	W5-L	0.80	0.10	0.00	41.76	44.50	0.50	0.15	0.01	
			W5-U	0.80	1.34	0.00	45.75	44.50	0.50	1.00	1.47	
			W6-L	0.80	0.04	0.00	39.14	44.50	0.50	0.15	0.01	
			W6-U	0.80	0.58	0.00	41.48	44.50	0.50	1.00	0.57	
			W7-L	0.80	0.03	0.00	33.42	44.50	0.50	0.15	0.00	
			W7-U	0.80	0.37	0.00	34.81	44.50	0.50	1.00	0.31	
											2.38	1.0
FLAT 701												
Seventh	R1	Bedroom	W1-L	0.80	0.16	0.00	60.15	83.92	0.50	0.15	0.02	
			W1-U	0.80	2.24	0.00	61.77	83.92	0.50	1.00	1.76	
			W2-L	0.80	0.09	0.00	26.49	83.92	0.50	0.15	0.00	
			W2-U	0.80	1.26	0.00	28.74	83.92	0.50	1.00	0.46	
											2.24	1.0
Seventh	R2	Bedroom	W3-L	0.80	0.08	0.00	34.19	52.44	0.50	0.15	0.01	
			W3-U	0.80	1.15	0.00	36.34	52.44	0.50	1.00	0.85	
			W4-L	0.80	0.10	0.00	34.92	52.44	0.50	0.15	0.01	
			W4-U	0.80	1.34	0.00	36.98	52.44	0.50	1.00	1.01	
											1.88	1.0
Seventh	R3	Bedroom	W5-L	0.80	0.04	0.00	77.76	54.06	0.50	0.15	0.01	
			W5-U	0.80	0.41	0.00	77.60	54.06	0.50	1.00	0.62	
											0.63	1.0
Seventh	R4	Bedroom	W6-L	0.80	0.09	0.00	84.21	51.13	0.50	0.15	0.02	
			W6-U	0.80	0.87	0.00	83.91	51.13	0.50	1.00	1.52	
											1.54	1.0
FLAT 702												
Seventh	R1	Bedroom	W1-L	0.80	0.13	0.00	84.77	59.53	0.50	0.15	0.03	
			W1-U	0.80	1.25	0.00	84.35	59.53	0.50	1.00	1.89	
											1.92	1.0
Seventh	R2	Bedroom	W2-L	0.80	0.11	0.00	74.98	44.26	0.50	0.15	0.03	
			W2-U	0.80	0.59	0.00	74.06	44.26	0.50	1.00	1.05	
			W3-L	0.80	0.21	0.00	84.41	44.26	0.50	0.15	0.06	
			W3-U	0.80	1.15	0.00	82.62	44.26	0.50	1.00	2.29	
			W4-L	0.80	0.11	0.00	74.98	44.26	0.50	0.15	0.03	
			W4-U	0.80	0.59	0.00	74.06	44.26	0.50	1.00	1.05	
											4.51	1.0

MES Calculations (Average Daylight Factor)

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FLAT 703												
Seventh	R1	Bedroom	W1-L	0.80	0.13	0.00	84.71	52.26	0.50	0.15	0.03	
			W1-U	0.80	1.28	0.00	84.35	52.26	0.50	1.00	2.20	
											2.23	1.0
Seventh	R2	Bedroom	W2-L	0.80	0.10	0.00	85.26	49.71	0.50	0.15	0.03	
			W2-U	0.80	0.98	0.00	85.48	49.71	0.50	1.00	1.80	
											1.83	1.0
Seventh	R3	Bedroom	W3-L	0.80	0.03	0.00	72.23	64.17	0.50	0.15	0.01	
			W3-U	0.80	0.31	0.00	72.14	64.17	0.50	1.00	0.37	
			W4-L	0.80	0.08	0.00	54.93	64.17	0.50	0.15	0.01	
			W4-U	0.80	1.12	0.00	54.39	64.17	0.50	1.00	1.01	
											1.40	1.0
Seventh	R4	Bedroom	W5-L	0.80	0.11	0.00	63.38	51.27	0.50	0.15	0.02	
			W5-U	0.80	1.49	0.00	66.86	51.27	0.50	1.00	2.07	
											2.09	1.0
FLAT 704												
Seventh	R1	Bedroom	W1-L	0.80	0.12	0.00	33.79	45.80	0.50	0.15	0.01	
			W1-U	0.80	1.63	0.00	36.42	45.80	0.50	1.00	1.38	
			W2-L	0.80	0.06	0.00	32.62	45.80	0.50	0.15	0.01	
			W2-U	0.80	0.83	0.00	35.26	45.80	0.50	1.00	0.69	
											2.09	1.0
Seventh	R2	Bedroom	W3-L	0.80	0.72	0.00	86.97	61.17	0.50	0.15	0.16	
			W3-U	0.80	2.18	0.00	86.80	61.17	0.50	1.00	3.31	
											3.47	1.0
Seventh	R3	Bedroom	W4-L	0.80	0.72	0.00	87.09	51.29	0.50	0.15	0.19	
			W4-U	0.80	2.18	0.00	86.85	51.29	0.50	1.00	3.95	
											4.14	1.0
Seventh	R4	Bedroom	W5-L	0.80	0.72	0.00	86.62	50.17	0.50	0.15	0.20	
			W5-U	0.80	2.18	0.00	86.55	50.17	0.50	1.00	4.02	
											4.22	1.0
FLAT 705												
Seventh	R1	Bedroom	W1-L	0.80	0.72	0.00	86.75	50.11	0.50	0.15	0.20	
			W1-U	0.80	2.18	0.00	86.61	50.11	0.50	1.00	4.03	
											4.23	1.0
Seventh	R2	Bedroom	W2-L	0.80	1.08	0.00	87.67	47.19	0.50	0.15	0.32	
			W2-U	0.80	3.29	0.00	87.25	47.19	0.50	1.00	6.49	
											6.81	1.0
Seventh	R3	Bedroom	W3-L	0.80	0.36	0.00	85.83	53.27	0.50	0.15	0.09	
			W3-U	0.80	1.08	0.00	85.57	53.27	0.50	1.00	1.84	
											1.94	1.0
Seventh	R4	Bedroom	W4-L	0.80	0.10	0.00	60.61	48.20	0.50	0.15	0.02	
			W4-U	0.80	1.34	0.00	62.89	48.20	0.50	1.00	1.87	
			W5-L	0.80	0.04	0.00	51.73	48.20	0.50	0.15	0.01	
			W5-U	0.80	0.58	0.00	54.39	48.20	0.50	1.00	0.69	
			W6-L	0.80	0.10	0.00	51.48	48.20	0.50	0.15	0.02	
			W6-U	0.80	1.34	0.00	53.75	48.20	0.50	1.00	1.60	
											4.21	1.0

MES Calculations (Average Daylight Factor)

Floor Ref.	Room Ref.	Room Use	Window Ref.	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Proposed	Target value
FLAT 801												
Eighth	R1	Bedroom	W1-L	0.80	0.16	0.00	85.09	85.42	0.50	0.15	0.03	
			W1-U	0.80	2.26	0.00	87.55	85.42	0.50	1.00	2.47	
											2.50	1.0
Eighth	R2	Bedroom	W2-L	0.80	0.03	0.00	53.39	52.57	0.50	0.15	0.01	
			W2-U	0.80	0.44	0.00	61.06	52.57	0.50	1.00	0.54	
			W3-L	0.80	0.10	0.00	53.05	52.57	0.50	0.15	0.02	
			W3-U	0.80	1.34	0.00	60.10	52.57	0.50	1.00	1.64	
											2.20	1.0
Eighth	R3	Bedroom	W4	0.80	0.94	0.00	84.01	61.72	0.50	1.00	1.37	
											1.37	1.0
FLAT 802												
Eighth	R1	Bedroom	W1	0.80	0.64	0.00	77.41	76.40	0.50	1.00	0.69	
			W2	0.80	0.64	0.00	77.41	76.40	0.50	1.00	0.69	
											1.38	1.0
Eighth	R2	Bedroom	W3-L	0.80	0.10	0.00	81.81	56.56	0.50	0.15	0.02	
			W3-U	0.80	1.35	0.00	84.56	56.56	0.50	1.00	2.16	
											2.18	1.0
Eighth	R3	Bedroom	W4-L	0.80	0.08	0.00	60.08	59.55	0.50	0.15	0.01	
			W4-U	0.80	1.12	0.00	61.59	59.55	0.50	1.00	1.24	
			W5	0.80	0.94	0.00	87.82	59.55	0.50	1.00	1.48	
											2.73	1.0

Daylight Distribution (no sky line) contours:

NOTES

NO.	REVISON	DATE
A	Updated floor plans	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

MES ENERGY SERVICES
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Beacon Hill Office Park
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Notts. NG24 2TN
01636 653 055
www.mesenergyservices.co.uk

CLIENT
Halstead Associates
1 Athenaeum Road
Whetstone

PROJECT
150 Southampton Row
Greater London
N20 9AA
-

DRAWING TITLE
Daylight Distribution
First floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
01

SCALE
NTS

NOTES

NO.	REVISON	DATE
A	Updated floor plans	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

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PROJECT
150 Southampton Row
Greater London
N20 9AA
-

DRAWING TITLE
Daylight Distribution
Second floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
02

SCALE
NTS

NOTES

NO.	REVISON	DATE
A	Updated floor plans	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

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Halstead Associates
1 Athenaeum Road
Whetstone

PROJECT
150 Southampton Row
Greater London
N20 9AA
-

DRAWING TITLE
Daylight Distribution
Third floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
03

SCALE
NTS

NOTES

NO.	REVISION	DATE
A	Updated floor plans	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

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Halstead Associates
1 Athenaeum Road
Whetstone

PROJECT
150 Southampton Row
Greater London
N20 9AA
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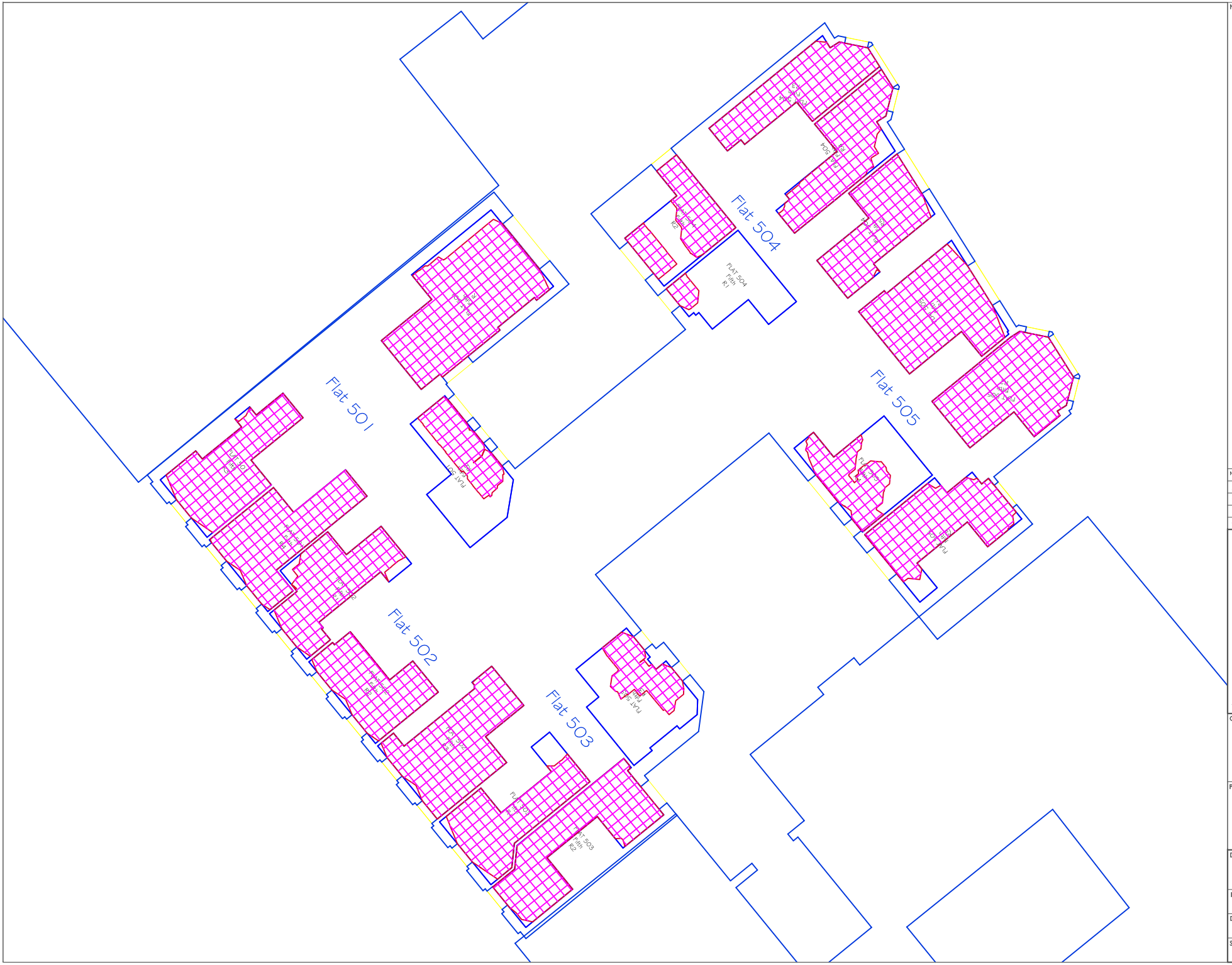
DRAWING TITLE
Daylight Distribution
Fourth floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
04

SCALE
NTS



NOTES

NO.	REVISON	DATE
A	Updated floor plans	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

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Whetstone

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Greater London
N20 9AA
-

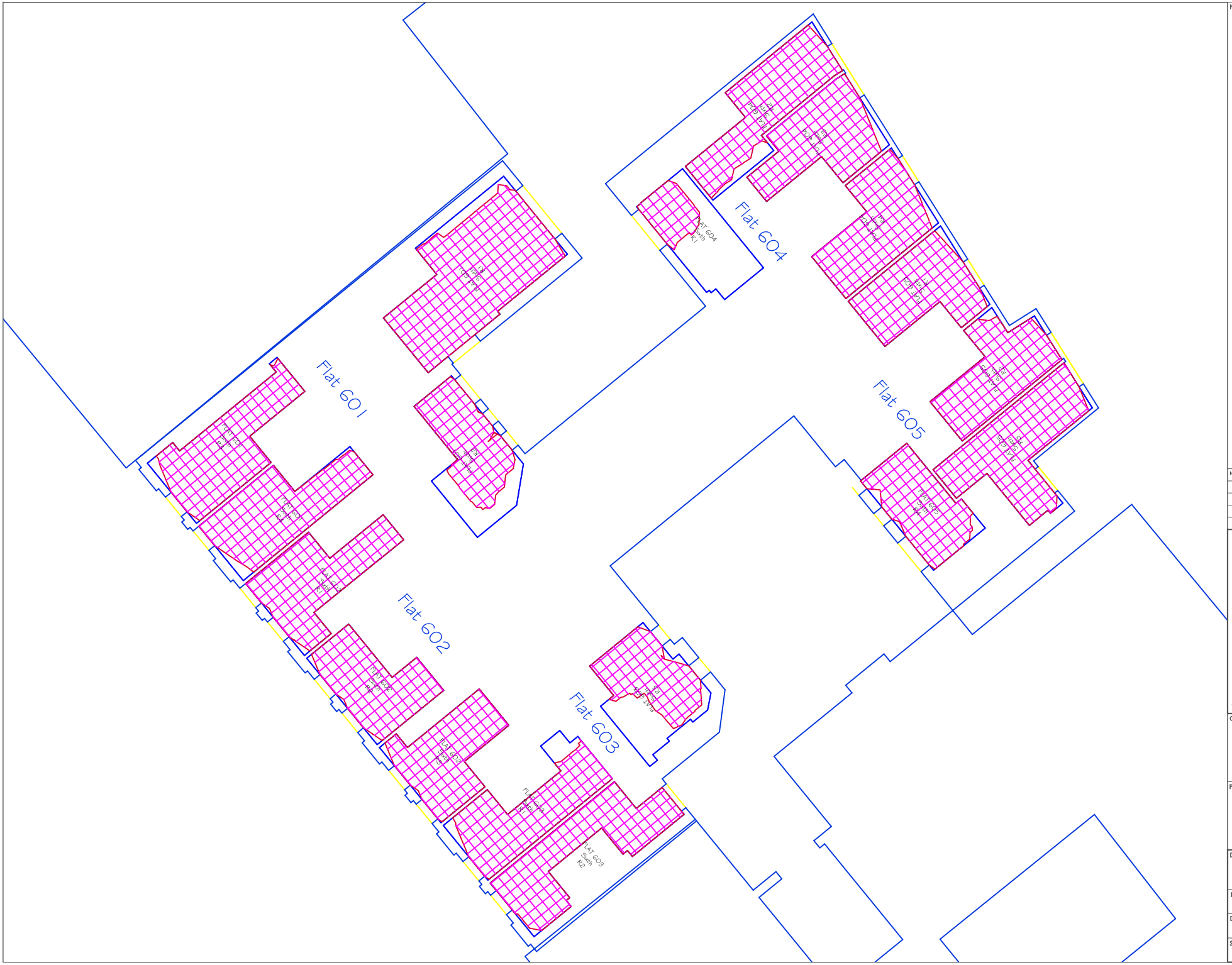
DRAWING TITLE
Daylight Distribution
Fifth floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
05

SCALE
NTS



NOTES

NO.	REVISON	DATE
A	Updated floor plan	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

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N20 9AA
-

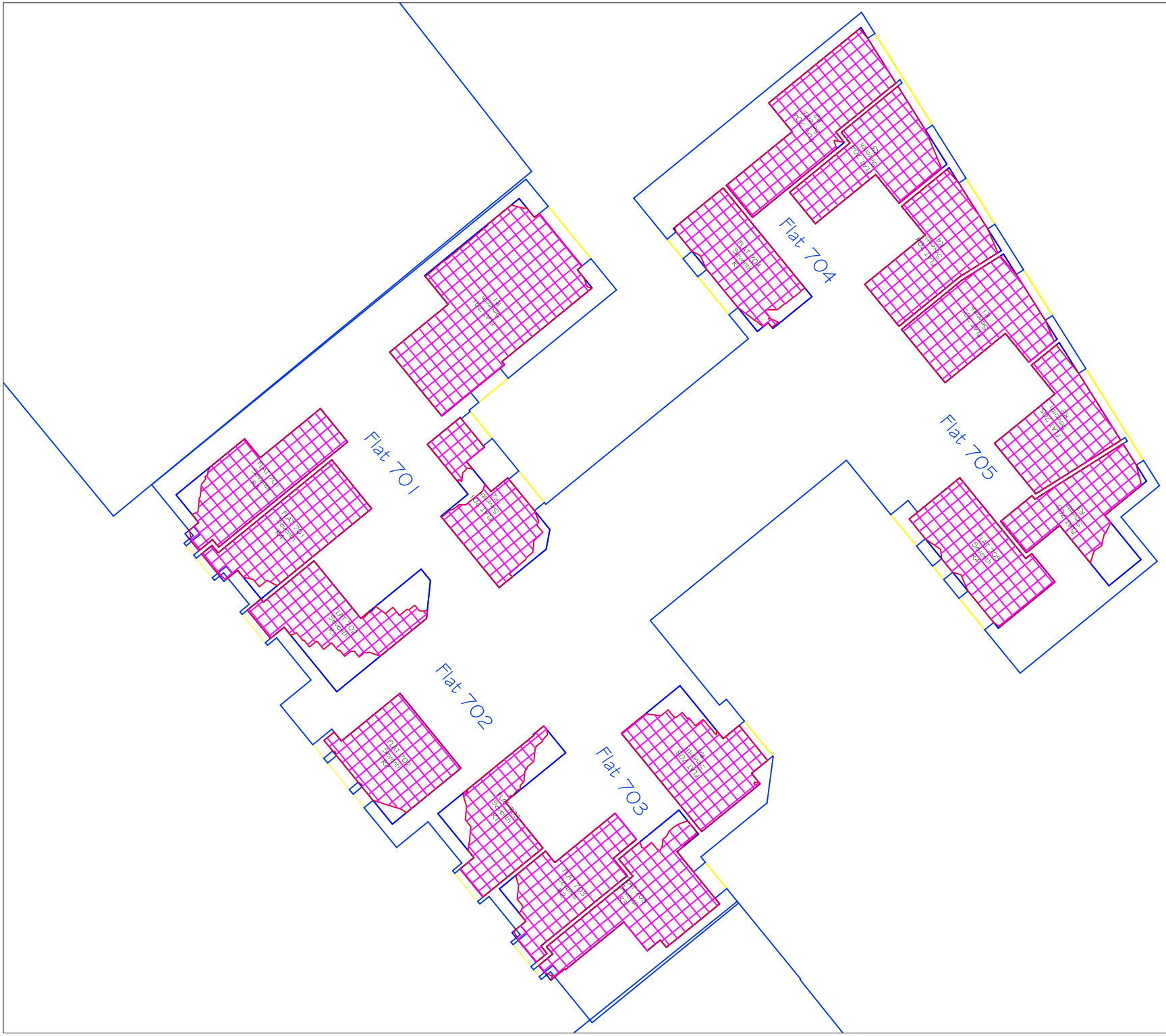
DRAWING TITLE
Daylight Distribution
Sixth floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
06

SCALE
NTS



NOTES

NO.	REVISION	DATE
A	Updated floor plan	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

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Whetstone

PROJECT
150 Southampton Row
Greater London
N20 9AA
-

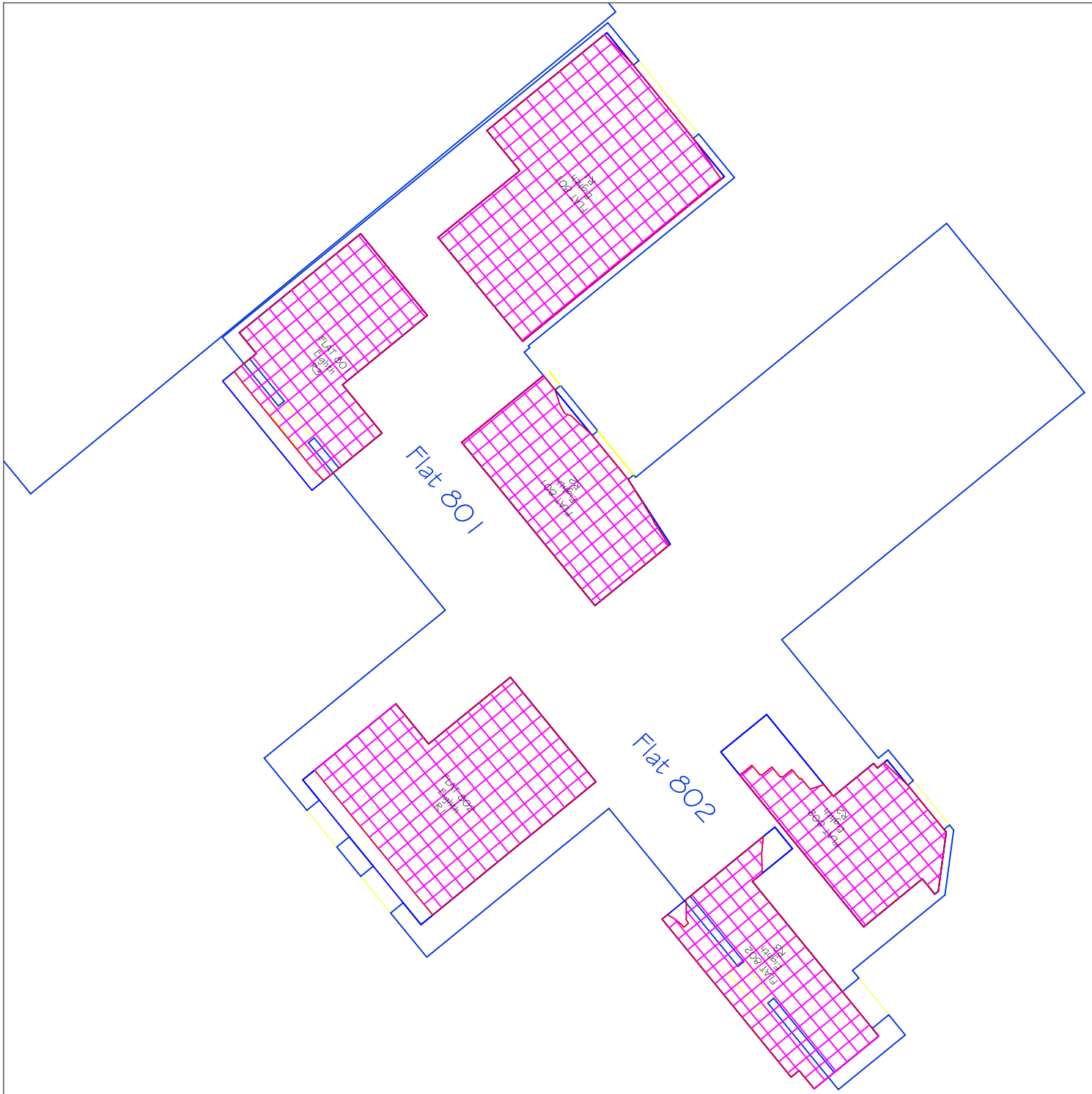
DRAWING TITLE
Daylight Distribution
Seventh floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
07

SCALE
NTS



NOTES

NO.	REVISON	DATE
A	Updated floor plan	26/07
B	New layout with light wells	04/10
C	-	-
D	-	-

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CLIENT
Halstead Associatesm
1 Athenaeum Road
Whetstone

PROJECT
150 Southampton Row
Greater London
N20 9AA
-

DRAWING TITLE
Daylight Distribution
Eighth floor

PROJECT REFERENCE

DATE
26/07/12

DRAWING NO.
08

SCALE
NTS