

**79 SILVER STREET,
READING RG1 2SU**

INTERNAL DAYLIGHT ADEQUACY STUDY

MARCH 2018



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1.0 INTRODUCTION

Delva Patman Redler LLP have been instructed by Chamberwell Investment Services Ltd to prepare an internal daylight adequacy analysis to assess the internal daylight adequacy within the lower ground floor of the proposed s.73 application for 5 additional studios at 79 Silver Street by O'Connell East Architects.

This study has been carried out in accordance with the recommendations of the Building Research Establishment Report "Site Layout Planning for Daylight & Sunlight 2011" (BRE209).

The template drawings, which are attached, illustrate the results for the daylight assessment and identify the drawings used in this study.

2.0 THE PROPOSAL

The s73 application includes the addition of 5 studio rooms to the rear of the lower ground floor.

3.0 POLICY / GUIDELINES

This study has been carried out in accordance with the recommendations of the Building Research Establishment report "Site Layout Planning for Daylight & Sunlight 2011". This is the recognised standard against which daylight and sunlight should be assessed.

The BRE guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the report should not be seen as a part of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design. In certain circumstances the developer or planning authority may wish to use alternative target values.

Whilst technical analysis can be carried out in accordance with numerical guidelines and reported factually by comparison with those guidelines, the final assessment as to whether affected dwellings are left with acceptable amounts of daylight and sunlight in an inner-city context where the findings are to be interpreted in a flexible manner is a matter of subjective opinion.

4.0 METHODOLOGY

The internal daylight adequacy assessments have been undertaken in accordance with the Building Research Establishment (BRE) guidelines "Site Layout Planning for Daylight & Sunlight. A Guide to Good Practice".

The BRE Report advises that to check that adequate daylight is received to new rooms the Average Daylight Factor (ADF) method of assessment can be assessed and compared with the recommendations in *BS 8206-2 Code of practice for daylight*.

The Average Daylight Factor (ADF) method of assessment for internal daylight adequacy calculation assesses the quality and distribution of light within a room served by a window and considers the VSC value, the size and number of the windows and room and the use to which the room is put. ADF assesses actual light distribution within a defined room area whereas the VSC considers potential light. British Standard 8206, Code of Practice for Daylighting recommends ADF values of 1% in bedrooms, 1.5% in living rooms and 2% in kitchens. Multi-purpose rooms like a living/kitchen diner can be considered at 1.5%.



5.0 ASSUMPTIONS MADE

- Average internal reflectance for walls, ceilings and floors set to 0.65 for light coloured surfaces.
- Glazing transmittance for all vertical windows set to 0.68 for standard double glazed units.
- The analysis has been undertaken with the benefit of a wider context site survey and proposed model provided by O'Connell East Architects, along with a floor plan and elevation for the additional rooms.

For the ADF assessment, we used the parameters stated in Table 1.

TABLE 1: PARAMETERS USED IN THE ADF CALCULATIONS

Parameter	Value – Proposed Dwellings
Maintenance factor (dirt on glass)	0.92 – urban residential
Diffuse light transmittance of glazing	0.68 – double glazing
Frame and glazing bar factor	0.8 – metal frame, large pane
Internal surface reflectance	0.65 – average for light coloured rooms

6.0 SIGNIFICANCE CRITERIA

The guidance given by BRE has been used as a basis for the criteria to assess the Development's potential effects.

In describing the significance criteria as set out below, it should be noted that they have been developed to protect residential properties, which are the most sensitive receptors. The BRE Guide also states within 2.1.22 that the ADF method of assessment can be adopted to check that adequate daylight is provided in new rooms.

TABLE 2: BRE DAYLIGHT GUIDANCE USED IN THE ASSESSMENT

Issue	Criteria
Daylight - ADF	A room may be adversely affected if the average daylight factor (ADF) is less than 1% for a bedroom, 1.5% for a living room or 2% for a kitchen.

7.0 DEVELOPMENT CONDITIONS

An analysis of the impact to the proposed building layouts (the site conditions) has been undertaken based on the proposals provided by O'Connell East Architects.

The site is in an urban location with residential properties to the south and also to the west across Silver Street. To the north are commercial offices and to the east are residential properties but these are set well back from the property boundary.

The findings from the technical assessments can be seen from the results, both in graphical and tabular form, in the Technical Appendices A - B.



8.0 RESULTS – COMPLETED DEVELOPMENT

INTERNAL DAYLIGHT ADEQUACY – AVERAGE DAYLIGHT FACTOR (ADF)

The full results of the daylight analysis are presented in Appendix B in tabular form. A summary of the results of the Average Daylight Factor (ADF) analysis on the relevant lower ground floor studio rooms are presented in the Table 3 below. This identifies where habitable rooms/windows are left with adequate light.

TABLE 3: NUMBER OF ROOMS EXPERIENCING DAYLIGHT IMPACTS AS A RESULT OF THE DEVELOPMENT (ADF METHOD)

Address	Total Number of Rooms Tested	Number of Rooms Meeting BRE Guidelines for ADF	Number of Rooms Experiencing Adverse Impacts
Total	5	5	0

Table 3 shows that all 5 habitable rooms within the development proposals will fully and comfortably comply with the BRE Guidelines for daylight in ADF terms.

9.0 CONCLUSIONS

The site is in an urban location with residential properties to the south and also to the west across Silver Street. To the north are commercial offices and to the east are residential properties but these are set well back from the property boundary.

To assess the potential effects of the refurbishment in terms of internal daylight adequacy the primary method of assessment used for reporting has been the Average Daylight Factor (ADF) method of analysis.

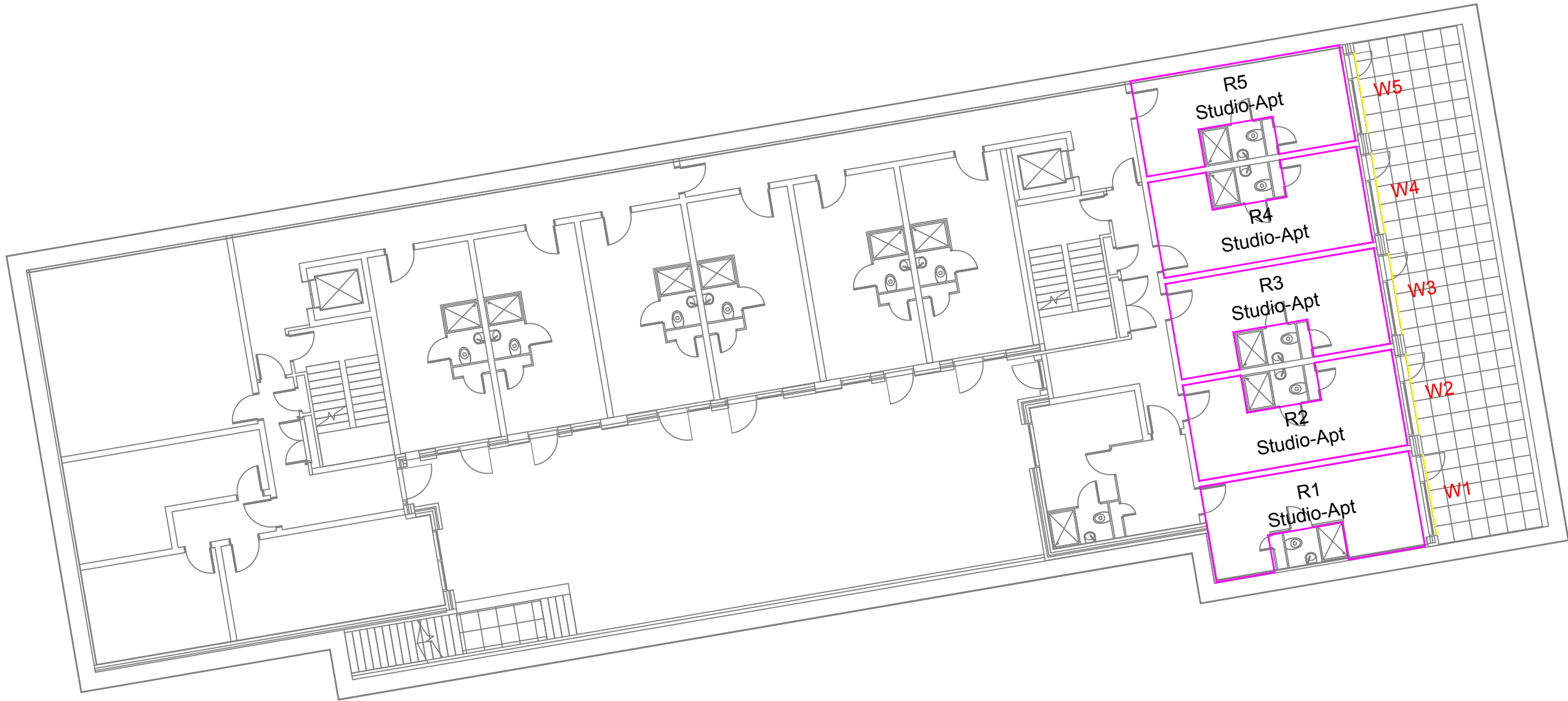
The internal daylight adequacy analysis illustrates full and comfortable compliance of the BRE Guidelines.

Overall therefore, the scheme proposals by O'Connell East Architects will full recognise and observe the intentions of Planning Policy and BRE Guidance 209 in internal daylight adequacy terms.

Delva Patman Redler LLP

APPENDIX A
LOCATION DRAWING
17167/LOC/800





Indicative

NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING:

Floor Plan

Room Layouts

Unit Layouts

W1/08

Window Tested
Daylight only

W1/08

Window Tested
Daylight &
Sunlight

SOURCE DATA

Drawings Used:
Proposed Scheme & Surrounding Buildings:
Oconnell East Architects:
Dwg No's: 1609_79 Silver Street_3D Model
(received 16.03.2018)

NOTES

Standard Double Glazed Transmittance
value of 65% used for ADF assessments.

Cross Hatched Rooms do not comply with
BS 8206-2:2008.

REV	Description	Drawn	Ch'kd	Date
DELVA PATMAN REDLER Chartered Surveyors 				
Thavies Inn House 3-4 Holborn Circus London EC1N 2HA 020 7936 3668 www.delvapatmanredler.co.uk The Plaza 100 Old Hall Street Liverpool L3 9QJ 0151 242 0980 info@delvapatmanredler.co.uk				
TITLE: 79 SILVER STREET REASING RG1 2SU - DAYLIGHT ANALYSIS				
DRAWING: 79 Silver Street Daylight Analysis Key Window Locations - - Level -1				
DRAWN: MJ		JOB NO:		
SCALE: 1:150@A3		17167		
DATE: 16/03/2018				
DWG NO:		LOC/800		REV:
				-

Level -1 Floor Plan

APPENDIX B

INTERNAL DAYLIGHT ADEQUACY ANALYSIS RESULTS TABLE



Dwg No	Address	Floor Level	Room Name	Window ID	ADF (Room) %age	Pass Rate %age	Condition
-	79 Silver Street	Level -1	Studio-Apt/R1	W1	2.00%	1.50%	Pass
-			Studio-Apt/R2	W2	2.22%	1.50%	Pass
-			Studio-Apt/R3	W3	2.26%	1.50%	Pass
-			Studio-Apt/R4	W4	2.26%	1.50%	Pass
-			Studio-Apt/R5	W5	2.11%	1.50%	Pass

Dwg No	Address	Floor Level	Room Name	Window ID	ADF (Room) %age	Pass Rate %age	Condition
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