BRIEFING NOTE

From:	**Iceni Projects**
Date:	**April 2021**
Title:	**54 George Street, Richmond, TW9 1HJ | Daylight/Sunlight Note**

1. This document provides an overview of the results of the Daylight/Sunlight/Overshadowing (DSO) Assessment undertaken for 54 George Street, Richmond, TW9 1HJ.

Methodology

BRE Guide: Site Layout for Daylight and Sunlight

2. The Building Research Establishment (BRE) Guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, by P J Littlefair 2011 sets out standards for calculating the daylight and sunlight availability both within buildings and open spaces. The BRE Guide gives advice on interior daylighting recommendations, based on British Standard BS 8206 Part 2 and the CIBSE Lighting Guide LG10 Daylighting and Window Design.

3. The daylight and sunlight availability within the proposed building has been calculated according to the standards set out within the BRE Guide. It is worth noting that the guidance figures stated within the BRE Guide are useful in providing a target for designers, consultants and planners, however they should be seen as purely advisory. Acceptable daylight and sunlight levels, for instance, vary significantly depending on site context. Dense urban areas are likely to experience a greater constraint on natural lighting available when compared with suburban and rural locations. For this reason, within urban centres, a higher degree of obstruction is often unavoidable. Appendix F of the BRE Guide suggests that alternative values are often more appropriate for urban areas.

Daylight

4. The BRE guidelines use the Average Daylight Factor calculation (ADF) for the assessment of internal daylight levels. The ADF is a measure of internal daylight illuminance to the outside illuminance expressed as a percentage. The level of daylight considered acceptable for a given room has been determined based on the BS 8206-2 Code of Practice for Daylighting. These ADF standards are as follows:

   - 1.0% for residential bedrooms
   - 1.5% for living rooms
   - 2.0% for kitchens or living rooms with kitchens

Sunlight

5. Sunlight availability is assessed in terms of Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH). APSH refers to the long-term average number of hours within

a year in which direct sunlight reaches the unobscured ground. WPSH refers to the long-term average number of hours within the winter months (21 September to 21 March) in which direct sunlight reaches the unobscured ground. Rooms are considered adequately sunlit if at least one main window facing within 90 degrees due south receives 25% of annual probable sunlight hours during the winter months.

6. To note, the BRE sunlight assessment is only relevant to living rooms with at least one main window facing within 90 degrees due south. Despite this, care should be taken to ensure that other habitable space, including kitchens and bedrooms, receive a reasonable level of sunlight.

Proposed Building Internal Daylight and Sunlight

7. All habitable rooms with windows located on the southern façade of the proposed building have been assessed using the Average Daylight Factor (ADF). These rooms comprise:

   - the living-kitchen-dining (LKD) room and one bedroom of Flat 1, located at the first floor level;
   - the LKD of Flat 7; and
   - the living-dining (LD) room of Flat 8, both located at the second floor level.

8. Daylight performance has been assessed in tandem with acoustic analysis to limit noise ingress into the proposed apartments.

9. The acoustic analysis recommends the use of acoustic glazing to ensure internal noise levels are acceptable. As a result, the light transmission of the proposed glazing is likely to be in the region of 70%, and this has therefore been assumed for this analysis.

10. The rear exterior facade will be made up of the enlarged openings, suitably designed to prevent overlooking but allow daylight penetration. Windows to these openings will be necessary to prevent noise ingress into the balconies. They will be fitted with 180° hinges delivering fully internally opening windows to ensure there is no loss of daylight or sunlight and are presumed open in this analysis. The results of this assessment are shown in the table below:

Dwelling Reference	Floor	Room	Room Use	Room ADF (%)	Target ADF (%)	Comments
Flat 1	First	R1	LKD	1.6	1.5	Meets BRE recommended criteria
		R2	Bedroom	1.6	1.0	
Flat 7	Second	R1	LKD	1.5	1.5	
Flat 8		R1	LD	1.6	1.5	

11. The results above indicate that all four habitable spaces tested will achieve the levels of internal daylight that are compliant with the BRE recommended criteria when utilising acoustic glazing.

12. It is therefore intended that acoustic glass, with an assumed light transmission of at least 70% will be provided for the windows on the building thermal line serving these four rooms. The openings to the enclosed balconies will be glazed but openable, as detailed above, therefore ensuring the light transmission of the glazing provided is maintained at 70%.

13. Based on the results presented here, this option will ensure that all four of the rooms tested will achieve the recommended level of internal daylight, in line with the BRE guidance.

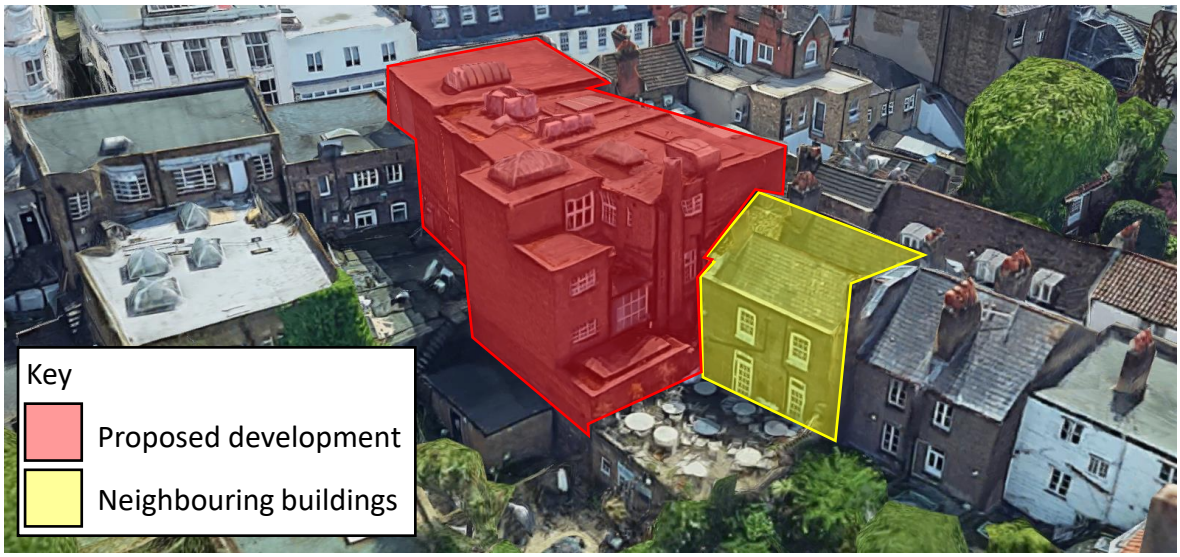
14. In addition, the south-facing windows that serve the proposed living room spaces of Flats 1, 7 and 8 have been assessed in terms of access to sunlight. These windows have been assessed using the Annual Probable Sunlight Hours (APSH) and Winter Probable Sunlight Hours (WPSH) measures. The results of this assessment are shown in the table below.

Dwelling Reference	Floor	Room	Room Use	Maximum APSH Achieved	Target APSH	Maximum WPSH Achieved	Target WPSH	Comments
Flat 1	First	R1	LKD	35	25	5	5	Meets BRE recommended criteria
Flat 7	Second	R1	LKD	44	25	12	5	
Flat 8		R1	LD	15	25	3	5	Below BRE recommended criteria

15. The living room spaces of Flats 1 and 7 are both found to be served by at least one main south-facing window that achieves the recommended level of sunlight.

16. The level of sunlight found to be received by the main south-facing window of Flat 8 is below the BRE recommended target. This results from a combination of the use of enclosed balconies, which are required for the mitigation of overlooking from and to the pub garden terrace located to the south of the building, as well as the presence of the existing buildings to the south of the proposed development along Brewers Lane.

17. The windows serving the identified room of Flat 8 face directly onto the existing buildings located to the south west of the proposed development site, as shown in the image below. The proposed development site is highlighted in red in the image below, whilst the neighbouring buildings onto which the identified windows face are highlighted in yellow.



18. Due to the proximity of the existing buildings to the proposed windows serving the identified rooms, much of the view from these windows is obstructed by the massing of the buildings located to the south west. It should be noted, however, that the level of sunlight achieved within this room is considered to be consistent with those associated with urban locations, in line with BRE guidance. Therefore, it is considered that the proposed design, which employs enclosed balconies, will ensure that the potential for overlooking both from and into the pub garden terrace is minimised as far as possible, whilst also ensuring that acceptable levels of sunlight are achieved within the proposed habitable spaces.

19. Based on the results outlined above, it can be concluded that the proposed scheme will achieve acceptable levels of internal daylight and sunlight, in line with levels expected for dwellings located within an urban context.