



## **DAYLIGHT & SUNLIGHT**

OVERSHADOWING IMPACTS

**East Street, Reading**

**15 March 2019**

GIA No: **11307**

PROJECT DATA:

Client **Studios Investment Management**  
Architect **gdl architecture**  
Project Title **East Street, Reading**  
Project Number **11307**

REPORT DATA:

Report Title **Overshadowing Impacts**  
GIA Department **Daylight & Sunlight**  
Dated **15 March 2019**

Prepared by **JF**  
Checked by **ML**  
Type **Planning**

Revisions	No:	Date:	Notes:	Signed:

SOURCES OF INFORMATION:

Information Received **Rel\_01\_11307\_CAD**  
Release Number **Rel\_02\_13574\_DSD**  
Issue Number **01**  
Site Photos **GIA**  
3D models **Barton Willmore**  
OS Data **FIND Maps**



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OS 100047514

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# 1 BRE GUIDELINES

The Building Research Establishment (BRE) have set out in their handbook 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2011)', guidelines and methodology for the measurement and assessment of daylight and sunlight within proposed buildings.

This document states that it is intended to be used in conjunction with the interior daylight recommendations found within the British Standard BS8206-2:2008 and The Applications Manual on Window Design of the Chartered Institution of Building Services Engineers (CIBSE).

The guide also provides advice on site layout planning to determine the quality of daylight and sunlight within open spaces between buildings.

It is important to note, however, that this document is a guide and that its aim *"is to help rather than constrain the designer"*.

The document provides advice, but also clearly states that it *"is not mandatory and this document should not be seen as an instrument of planning policy."* The report also acknowledges in its introduction that *"in special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."*

It is an inevitable consequence of the built-up urban environment that daylight and sunlight will be more limited in these areas. It is well acknowledged that in such situations there may be many other conflicting and potentially more important planning and urban design matters to consider other than just the provision of ideal levels of daylight and sunlight.

## 1.1 OVERSHADOWING

The BRE guidance in respect of overshadowing of amenity spaces is set out in section 3.3 of the handbook. Here it states as follows:

*"Sunlight in the spaces between buildings has an important impact on the overall appearance and ambiance of a development. It is valuable for a number of reasons:*

- *To provide attractive sunlit views (all year)*
- *To make outdoor activities, like sitting out and children's play more pleasant (mainly during the warmer months)*
- *To encourage plant growth (mainly in spring and summer)*
- *To dry out the ground, reducing moss and slime (mainly during the colder months)*
- *To melt frost, ice and snow (in winter)*
- *To dry clothes (all year)"*

Again, it must be acknowledged that in urban areas the availability of sunlight on the ground is a factor which is significantly controlled by the existing urban fabric around the site in question and so may have very little to do with the form of the development itself. Likewise, there may be many other urban design, planning and site constraints which determine and run contrary to the best form, siting and location of a proposed development in terms of availability of sun on the ground.

### Sun Hours On Ground (SHOG)

In relation to the levels of sunlight within areas of amenity such as gardens, the BRE Guidance states that for a space to appear well sunlit at least half the area should receive at least two hours of sunlight on 21<sup>st</sup> March, which is the equinox. All areas are therefore assessed on this date and a percentage area seeing at least two hours of sunlight is presented.

In understanding the impact of a proposed development, the BRE Guidance states:

*"If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable."*

## 2 CONCLUSIONS

GIA has been instructed to provide a report upon the potential Overshadowing impacts of the proposed scheme in East Street, Reading.

All relevant neighbouring properties facing the proposal have been tested according to BRE's guidance for Vertical Sky Component (VSC) and Annual Probable Sunlight Hours (APSH).

An Overshadowing assessment using the methodologies set out in the BRE guidelines for Sun Hours On Ground (SHOG) was undertaken for the area of communal open space located to the north-west of the proposed massing changes.

### 2.1 CONCLUSIONS ON OVERSHADOWING

GIA was instructed to assess the impact that the proposed scheme would have on the levels of sunlight enjoyed within the Reading International Solidarity Centre (RISC) roof terrace, compared to the consented scheme.

To this end, Sun Hours on Ground assessments have been undertaken with the consented and proposed schemes in place.

The results show that 82% of the roof terrace would receive direct sunlight for two hours or more on the equinox in both scenarios. This is well in excess of BRE's minimum recommendation of 50% for an outdoor amenity area to be well sunlit throughout the year. Therefore, the roof terrace would receive very good levels of sunlight with the proposed massing in place, and these would be unchanged from the consented scenario.

Furthermore, sun exposure assessments have been undertaken on the equinox and summer solstice to provide a better understanding of the amount and distribution of sunlight received throughout the year. These have demonstrated that at least six hours of direct sunlight would be received on the majority of the roof terrace on the equinox, and on the entire space in the summer, in both scenarios.

Overall therefore, the proposed massing would not cause additional overshadowing impacts compared to the consented massing and the RISC roof terrace would still receive excellent sunlight levels.

### 3 SITE OVERVIEW

#### Consented Scenario

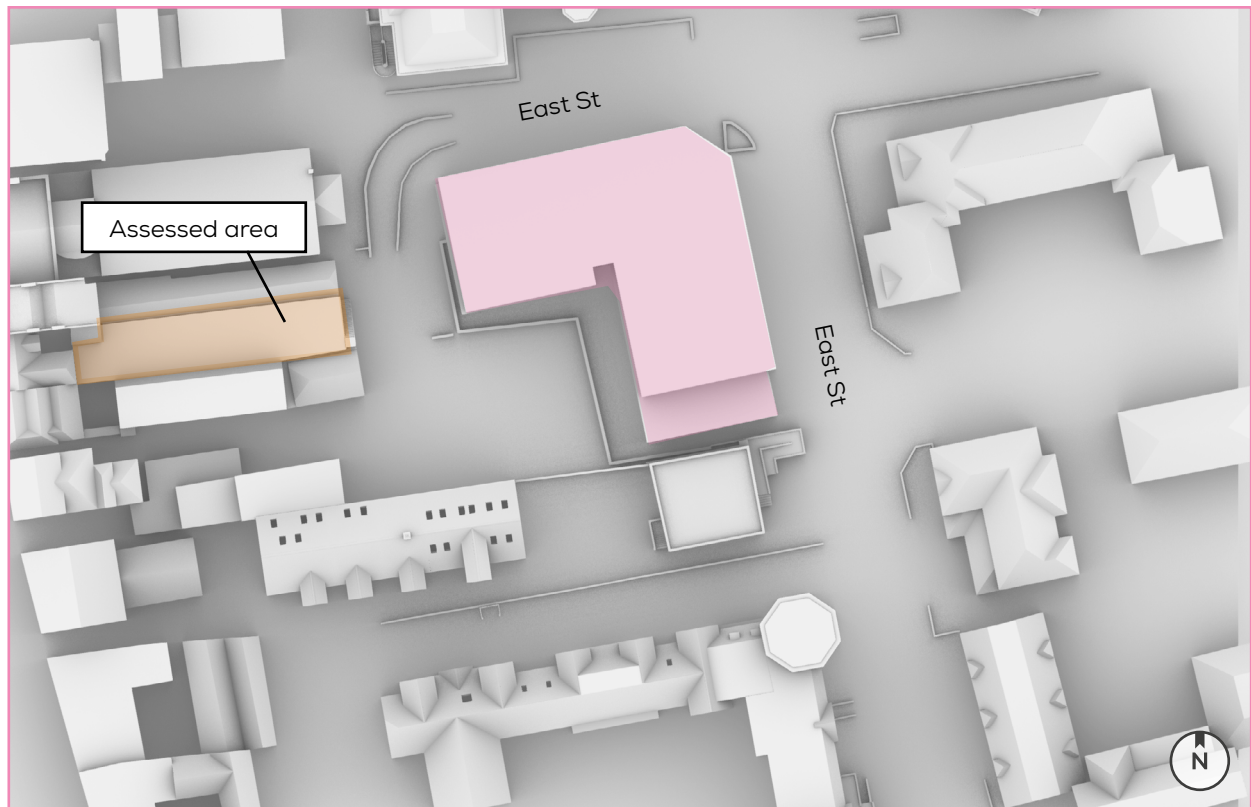


Fig. 01: Site Overview - Consented Scenario - Top view

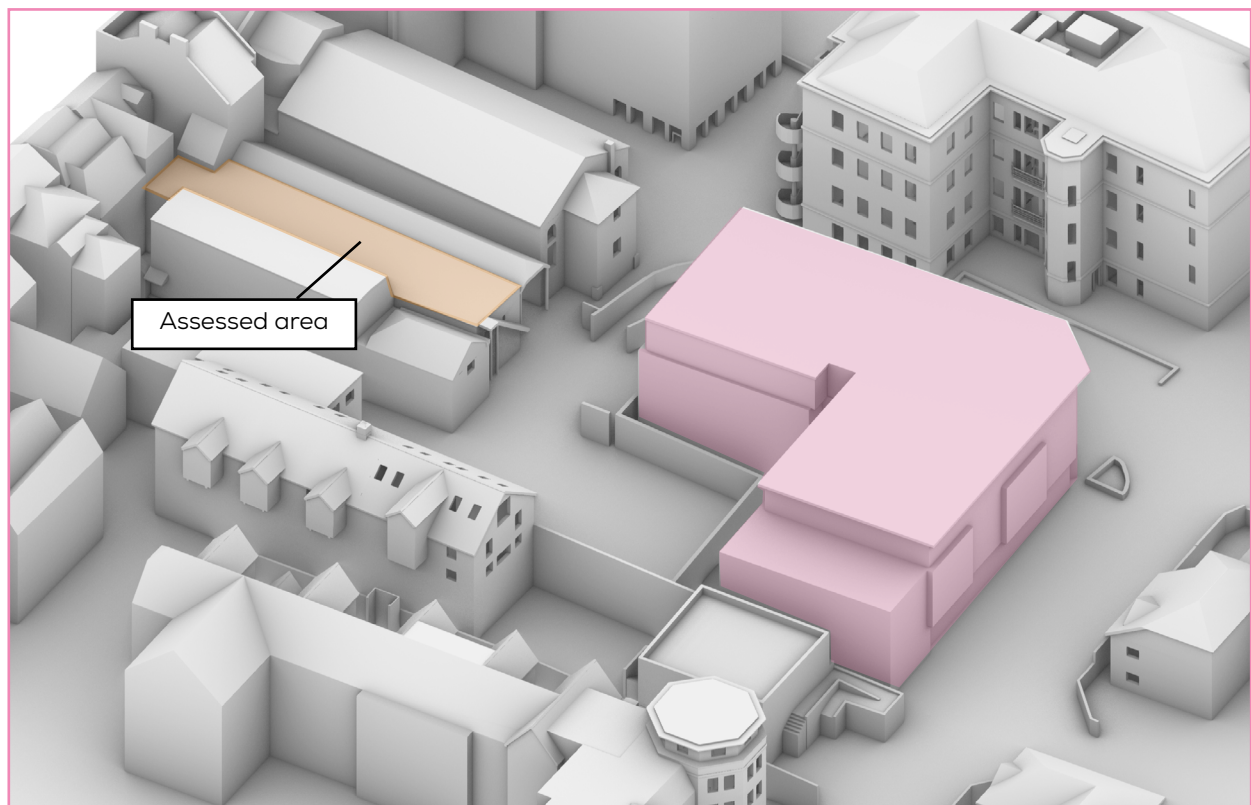


Fig. 02: Site Overview - Consented Scenario - Perspective view

## Proposed Scenario

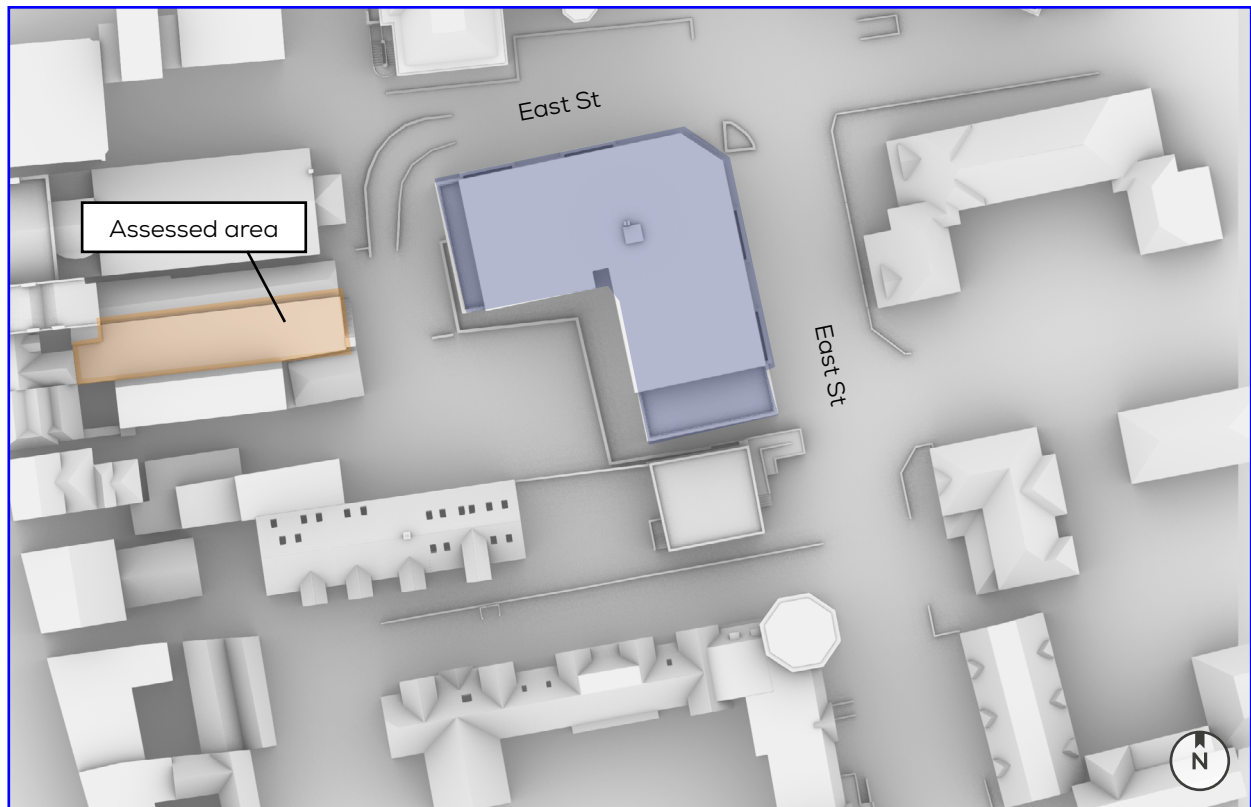


Fig. 03: Site Overview - Proposed Scenario - Top view

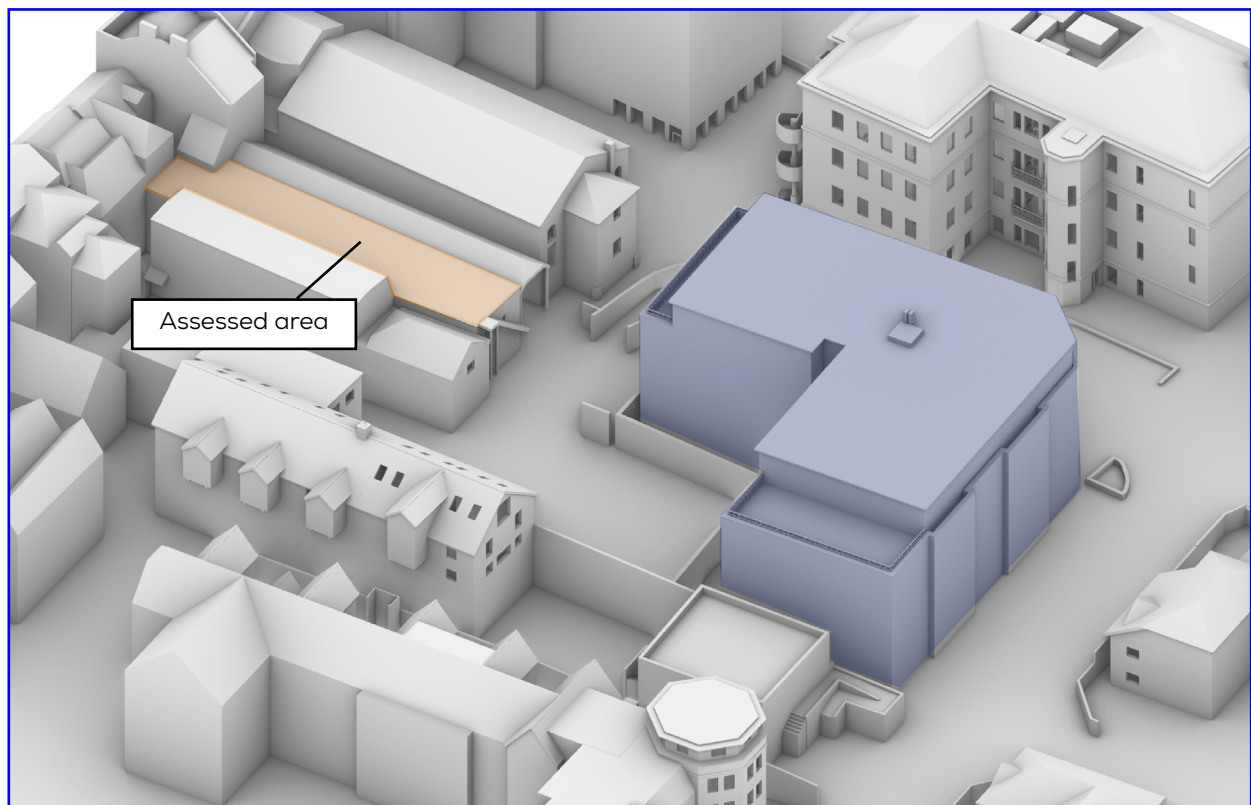


Fig. 04: Site Overview - Proposed Scenario - Perspective view



## 4 OVERSHADOWING IMPACT ASSESSMENTS

### OVERSHADOWING ASSESSMENT - CONSENTED SCENARIO SUN HOURS ON GROUND - BRE COMPLIANCE

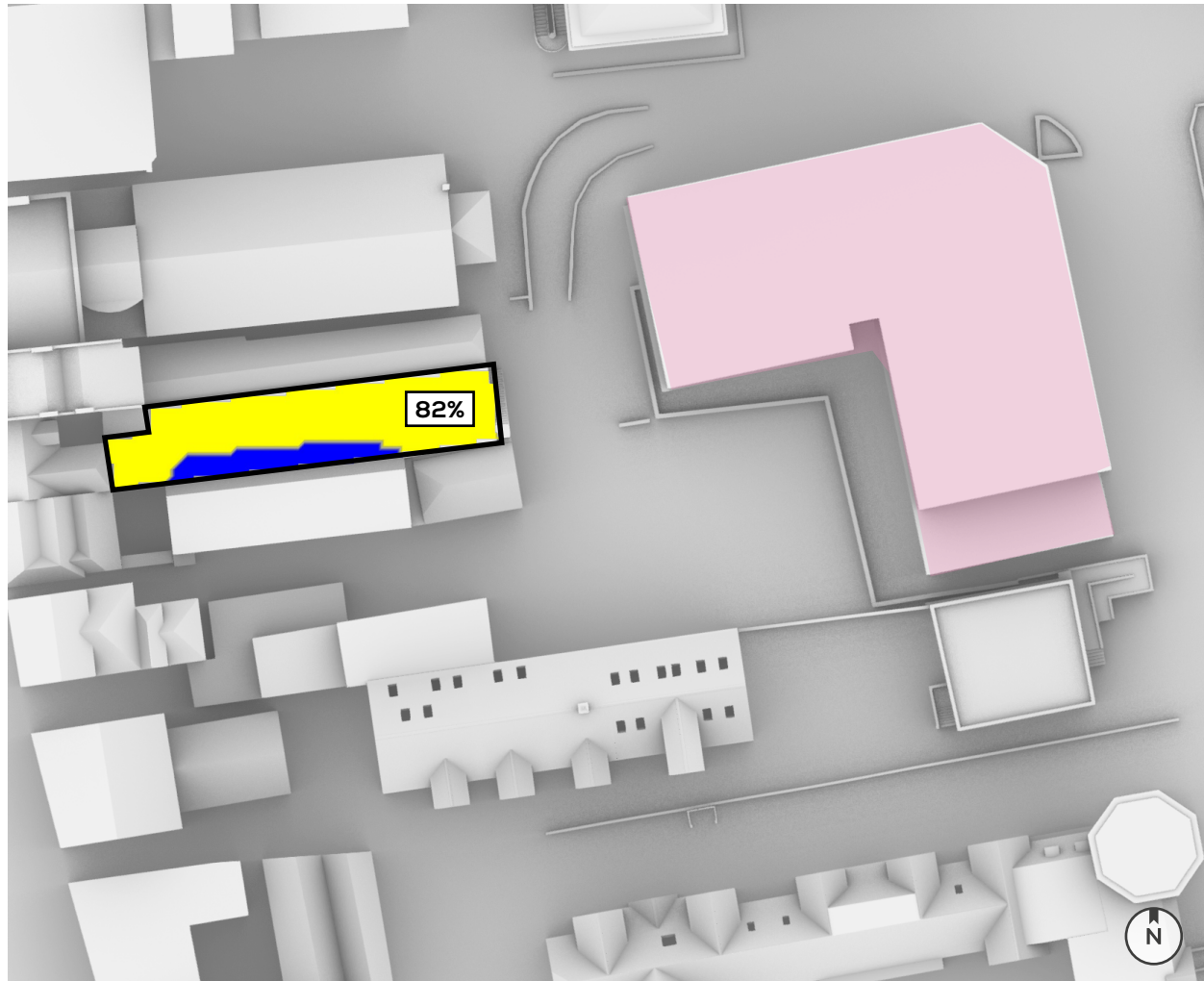
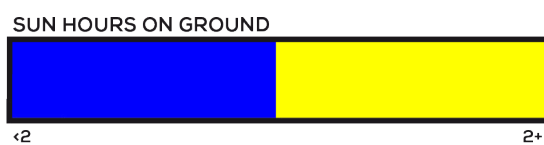


Fig. 05: Consented overshadowing - BRE compliance





OVERSHADOWING ASSESSMENT - PROPOSED SCENARIO  
SUN HOURS ON GROUND - BRE COMPLIANCE

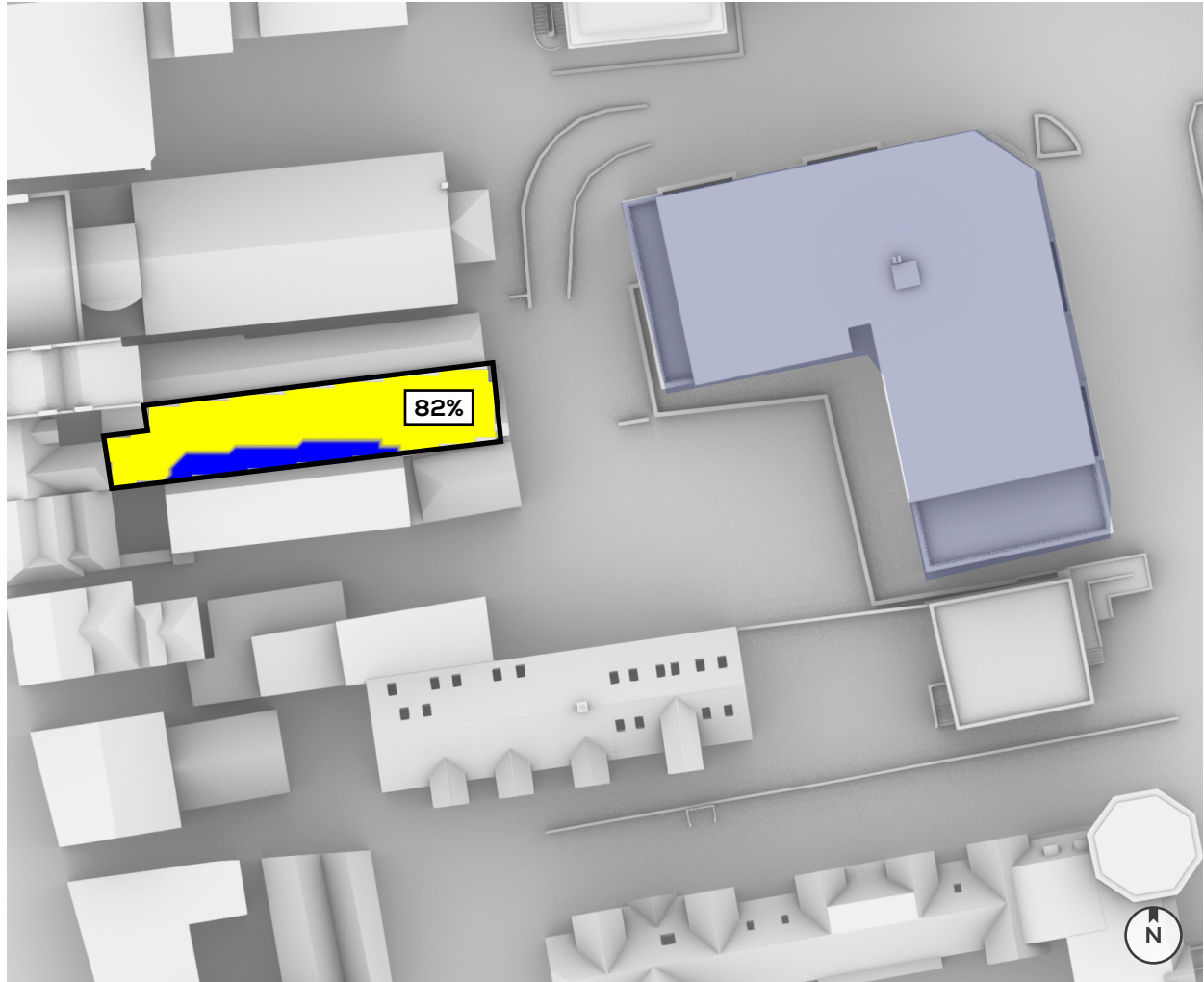
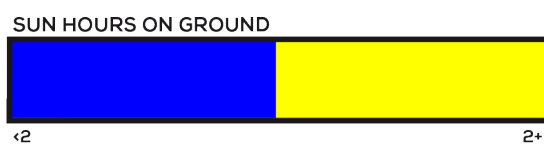


Fig. 06: Proposed Overshadowing - BRE compliance



OVERSHADOWING ASSESSMENT - CONSENTED SCENARIO  
21<sup>ST</sup> MARCH - SUN EXPOSURE

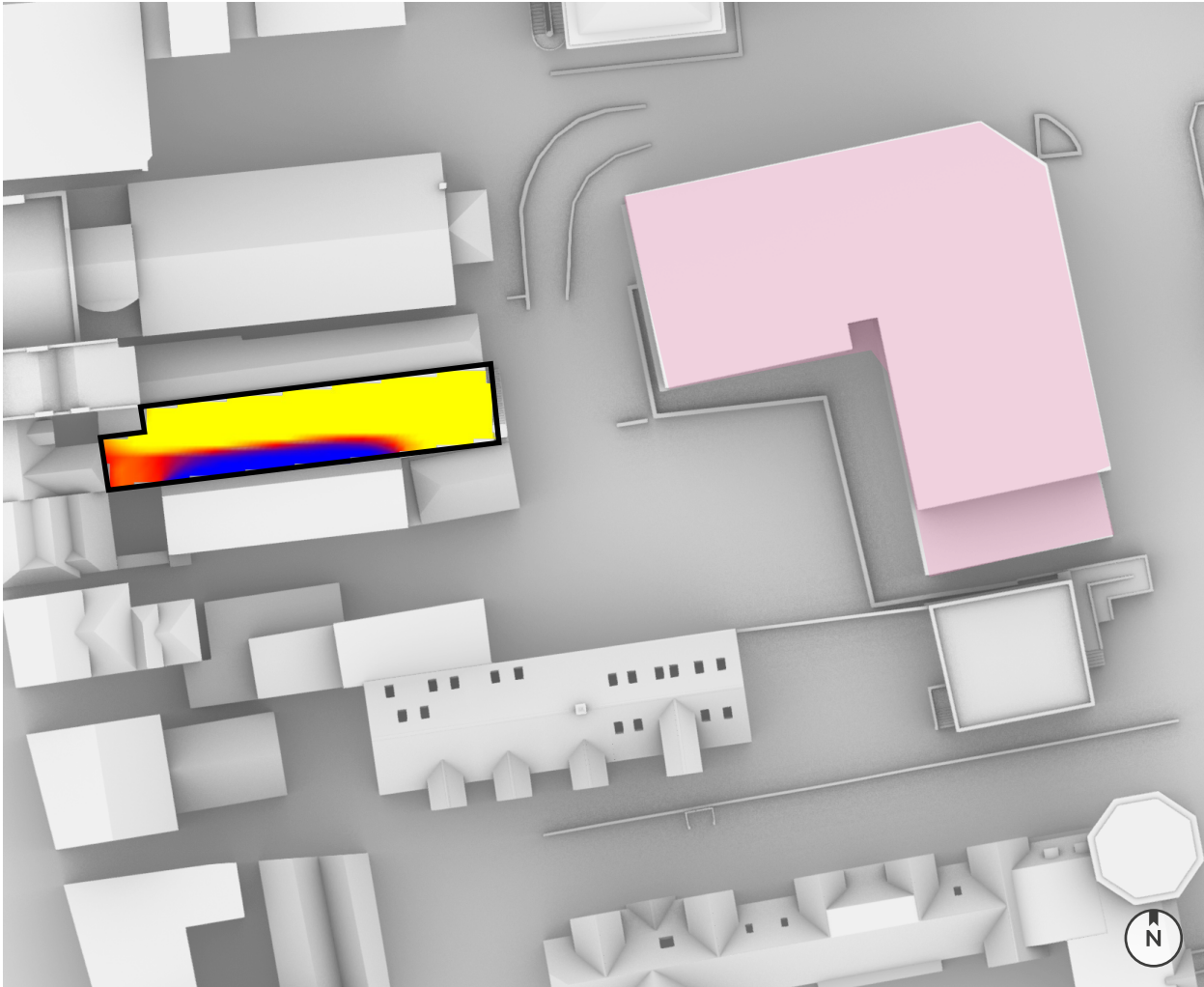
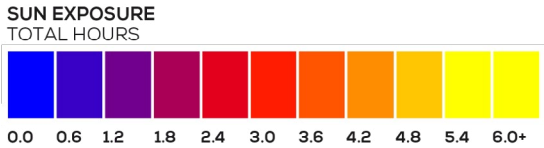


Fig. 07: Consented Sunlight Exposure in March

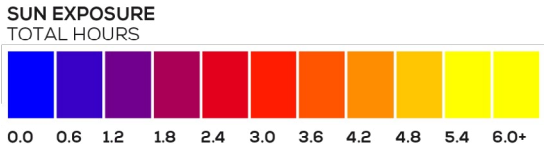


21st MARCH  
(SPRING EQUINOX)  
**LONDON**  
Latitude: 51.4  
Longitude: 0.0  
Sunrise: 06:08 GMT  
Sunset: 18:05 GMT  
**Total Available Sunlight:**  
11hrs 57mins

OVERSHADOWING ASSESSMENT - PROPOSED SCENARIO  
 21<sup>ST</sup> MARCH - SUN EXPOSURE



Fig. 08: Proposed Sunlight Exposure in March



21st MARCH  
(SPRING EQUINOX)  
**LONDON**  
Latitude: 51.4  
Longitude: 0.0  
Sunrise: 06:08 GMT  
Sunset: 18:05 GMT  
**Total Available Sunlight:**  
11hrs 57mins

OVERSHADOWING ASSESSMENT - CONSENTED SCENARIO  
 21<sup>ST</sup> JUNE - SUN EXPOSURE

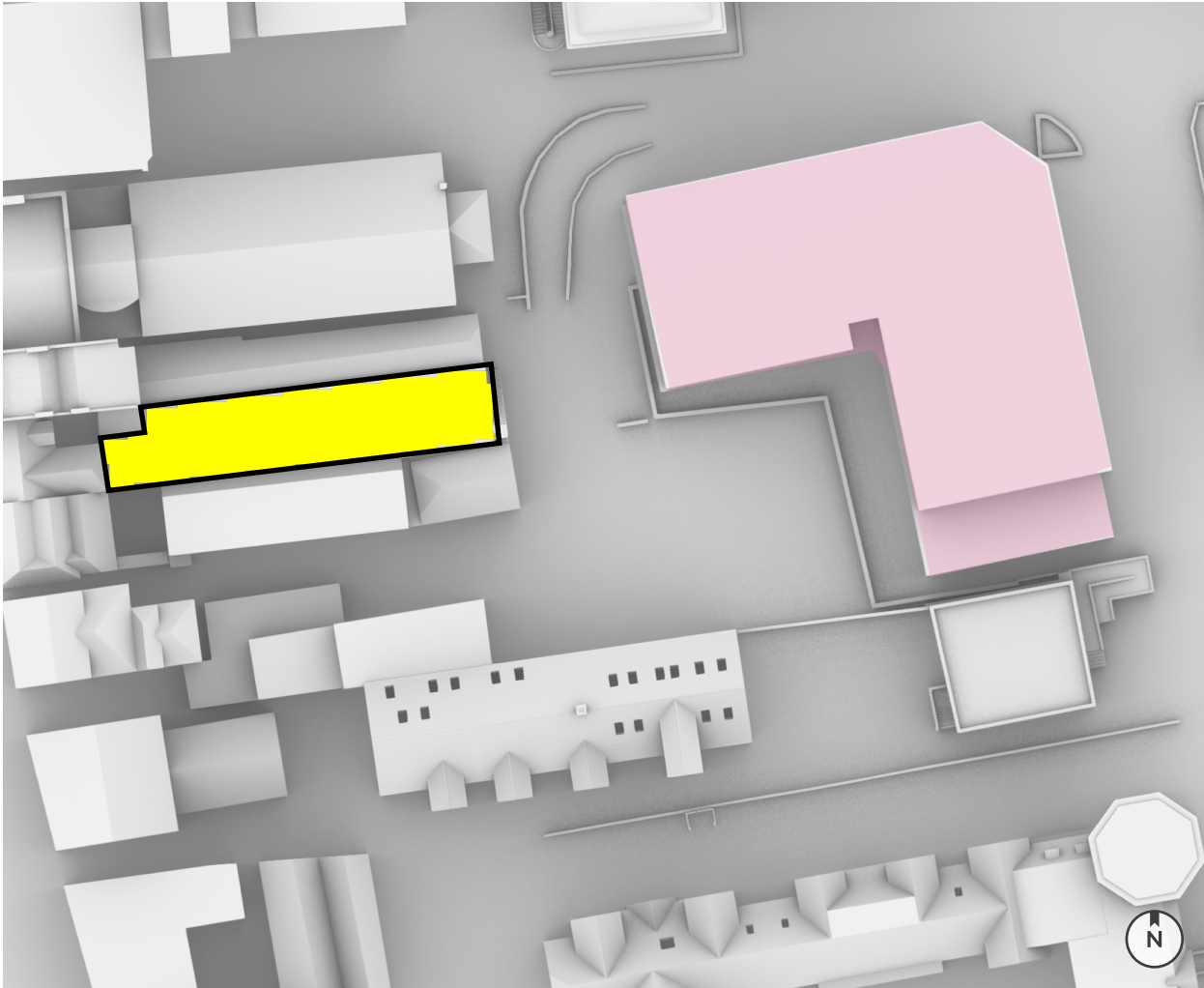
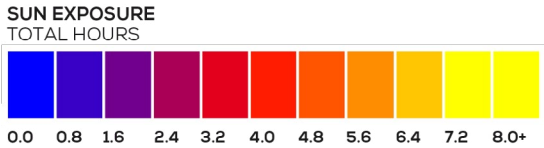


Fig. 09: Consented Sunlight Exposure in June



21st JUNE  
(SUMMER SOLSTICE)  
**LONDON**  
Latitude: 51.4  
Longitude: 0.0  
Sunrise: 03:50 GMT  
Sunset: 20:13 GMT  
**Total Available Sunlight:**  
16hrs 23mins



OVERSHADOWING ASSESSMENT - PROPOSED SCENARIO  
21<sup>ST</sup> JUNE - SUN EXPOSURE

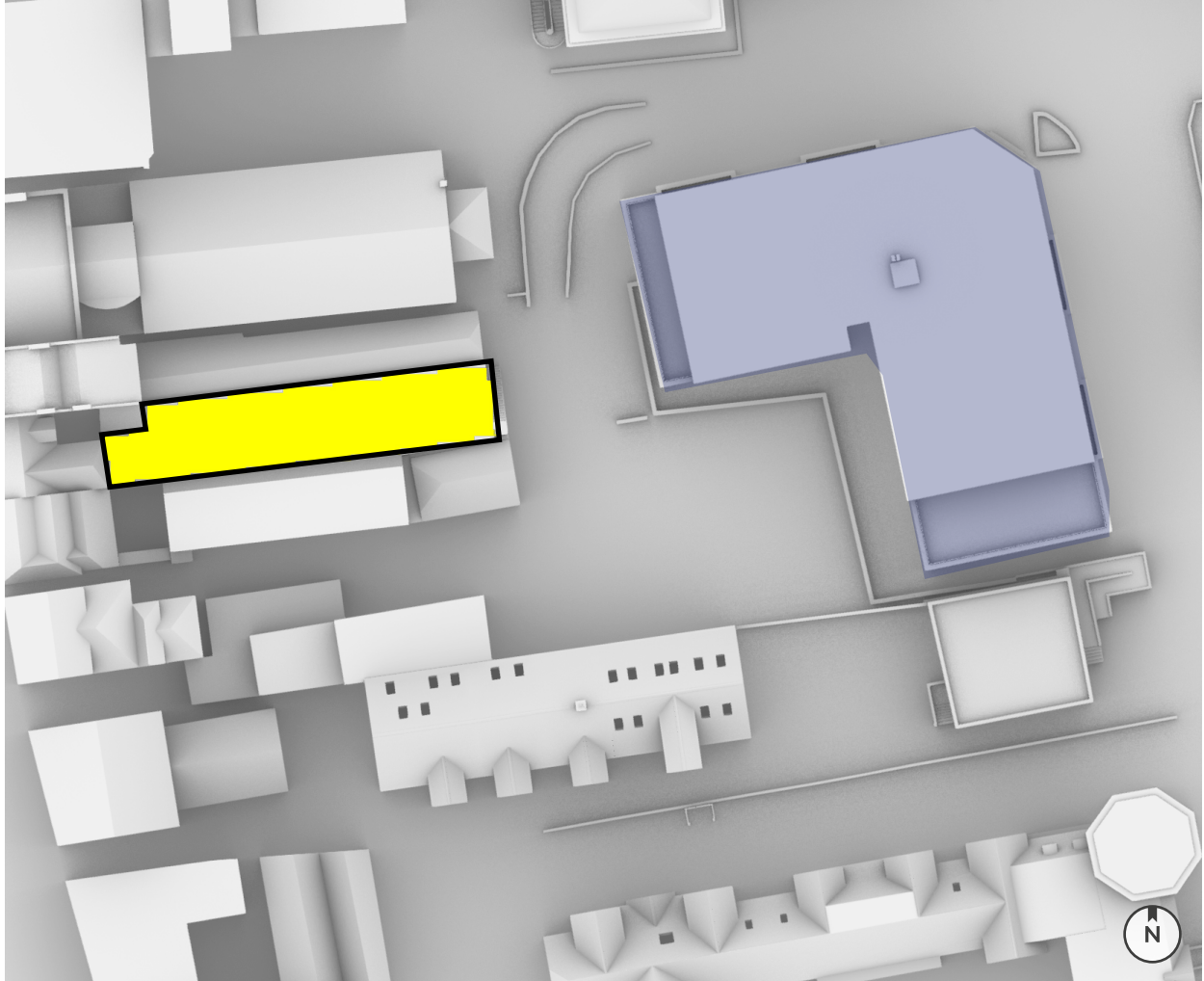


Fig. 10: Proposed Sunlight Exposure in June

SUN EXPOSURE  
TOTAL HOURS



0.0 0.6 1.2 1.8 2.4 3.0 3.6 4.2 4.8 5.4 6.0+

21st JUNE  
(SUMMER SOLSTICE)

**LONDON**

Latitude: 51.4  
Longitude: 0.0  
Sunrise: 03:50 GMT  
Sunset: 20:13 GMT

**Total Available  
Sunlight:**  
16hrs 23mins

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