



**DAYLIGHT, SUNLIGHT
AND OVERSHADOWING**
IMPACT ON NEIGHBOURING
PROPERTIES

4200 ARC Oxford

ARC

25 January 2024

GIA No: **19180**

PROJECT DATA:

Client **ARC**
Architect **Spratley and Partners**
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REPORT DATA:

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DISCLAIMER:

This report has been prepared for ARC by GIA as their appointed Daylight & Sunlight consultants. It is accurate as at the time of publication and based upon the information we have been provided with as set out in the report. It does not take into account changes that have taken place since the report was written nor does it take into account private information on internal layouts and room uses of adjoining properties unless this information is publicly available.



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1 EXECUTIVE SUMMARY

GIA have assessed the proposed scheme for 4200 ARC Oxford to understand the potential changes in light to the relevant surrounding properties.

- 1.1 GIA have been instructed to undertake a daylight and sunlight assessment in relation to the massing proposal for ARC Oxford located within the jurisdiction of Oxford City Council.
- 1.2 Owing to the generous distance from the most proximate residential neighbours, the analysis has been undertaken using GIA's Phoenix App. This relies on a notional window placement on all neighbouring façades to assess the likely daylight and sunlight impacts.
- 1.3 The daylight, sunlight and overshadowing analysis has been considered by reference to the criteria and methodology within the Building Research Establishment Guidelines (2022), which when published, recognised that it should not form a mandatory set of criteria, rather it should be used to help and inform design.
- 1.4 Overall, based on this assessment, all assessed residential properties and open spaces meet the BRE guidance for daylight, sunlight and overshadowing and further details are provided in Section 5.

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2 THE SITE AND PROPOSAL

THE SITE

- 2.1 Figure 01 below illustrates GIA's understanding of the site and surrounding context.
- 2.2 The image below illustrates the existing buildings on site, which have been used as the basis for our assessments.

PROPOSED DEVELOPMENT

- 2.3 GIA have been issued with a model of the proposed scheme which has been inserted into the surrounding context.
- 2.4 The proposed scheme is illustrated in Figure 02 below.



Figure 01: Aerial Overview of the Site in the Existing Context.

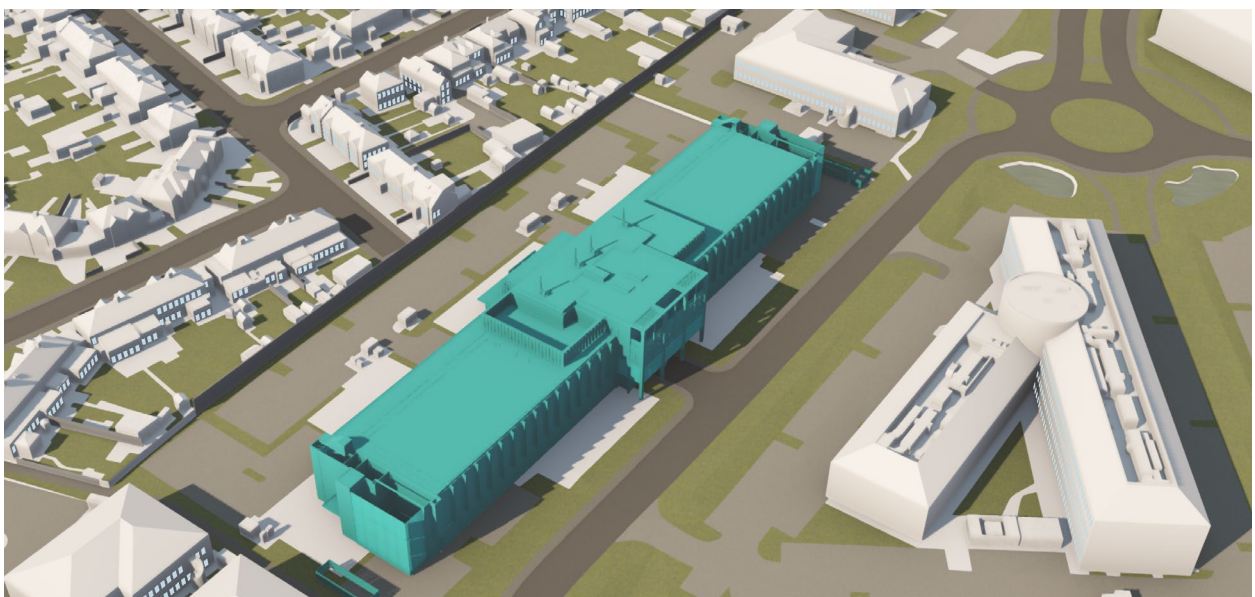


Figure 02: Aerial Overview of the Proposed Development in the Proposed Context.

3 BUILDING RESEARCH ESTABLISHMENT

'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice'
(2022)

- 3.1 The BRE Guidelines (2022) note that the document 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).
- 3.2 The BRE Guidelines provides two methodologies for daylight assessment of neighbouring properties, namely;
 - The Vertical Sky Component (VSC); and
 - The No Sky Line (NSL).
- 3.3 For daylight to be compliant (in accordance with figure 20 of the Guide), both the VSC and NSL tests have to be met.
- 3.4 The VSC indicatively assesses the view of the sky dome from the centre point of a window, whilst the NSL considers the view of the sky from tabletop height on the working plane within a room and considers any mitigating windows also serving that room.
- 3.5 Where room uses are unknown, the BRE Guide does not recommend using the No Sky Line test and therefore the Vertical Sky Component Test will suffice for this kind of study.
- 3.6 The BRE Guidelines also provide a methodology for how sunlight to neighbouring properties should be calculated by way of the Annual Probable Sunlight Hours ('APSH') methodology. The availability of sunlight to rooms which face within 90° of due south is assessed for the summer months (March 21st - September 21st) as well as the winter months (the remaining six months of the year).

4 DAYLIGHT & SUNLIGHT IMPACTS TO NEIGHBOURING PROPERTIES

This section details the daylight and sunlight impacts in relation to the relevant properties neighbouring the Site.

- 4.1 A three-dimensional computer model of the Site and surrounding properties has been utilised to carry out the daylight and sunlight simulations.
- 4.2 We have ascertained the uses of the neighbouring properties based on external observations and a VOA search undertaken in October 2023. Our understanding of the neighbouring property uses is shown in Figure 03.
- 4.3 The BRE document places greater weight on the impacts to residential properties over commercial properties given the latter's reliance on artificial light. It suggests that only residential properties need to be considered. Therefore, GIA have only assessed the residential parts of properties which surround the site.
- 4.4 GIA have considered the residential properties to the west of the site on Frederick and Phipps Road as relevant for assessment. These are displayed in the map below
- 4.5 The scope of buildings assessed has been determined as a reasonable zone which considers both the scale of the proposed scheme and the proximity of those buildings which surround and face the site.
- 4.6 No significant effects are anticipated beyond the area considered.
- 4.7 Using automated generative processes, within our Phoenix App, we have inserted windows which will indicate the potential daylight and sunlight impacts to neighbouring building façades.



Figure 03: Surrounding Property Uses.

SURROUNDING PROPERTIES

- 4.8 We have included images within this report that identify the level of BRE compliance by reference to the VSC and APSH studies.
- 4.9 We have included images that illustrate the existing and the proposed VSC and APSH values.
- 4.10 Where the windows on the BRE images are highlighted in green BRE compliance is met.
- 4.11 Underneath each of the figures there is an image reference that denotes if the image is showing BRE compliance, the existing VSC or APSH values or the proposed VSC or APSH values.

Daylight

- 4.12 All assessed properties meet the BRE criteria for the BRE test for VSC.
- 4.13 This is displayed in Figures 04-06 below.
- 4.14 As discussed in Paragraph 1.2 on Page 2, windows have been placed in notional positions that are of standard sizes and do not fully reflect the true position of the windows on the facades of some properties.

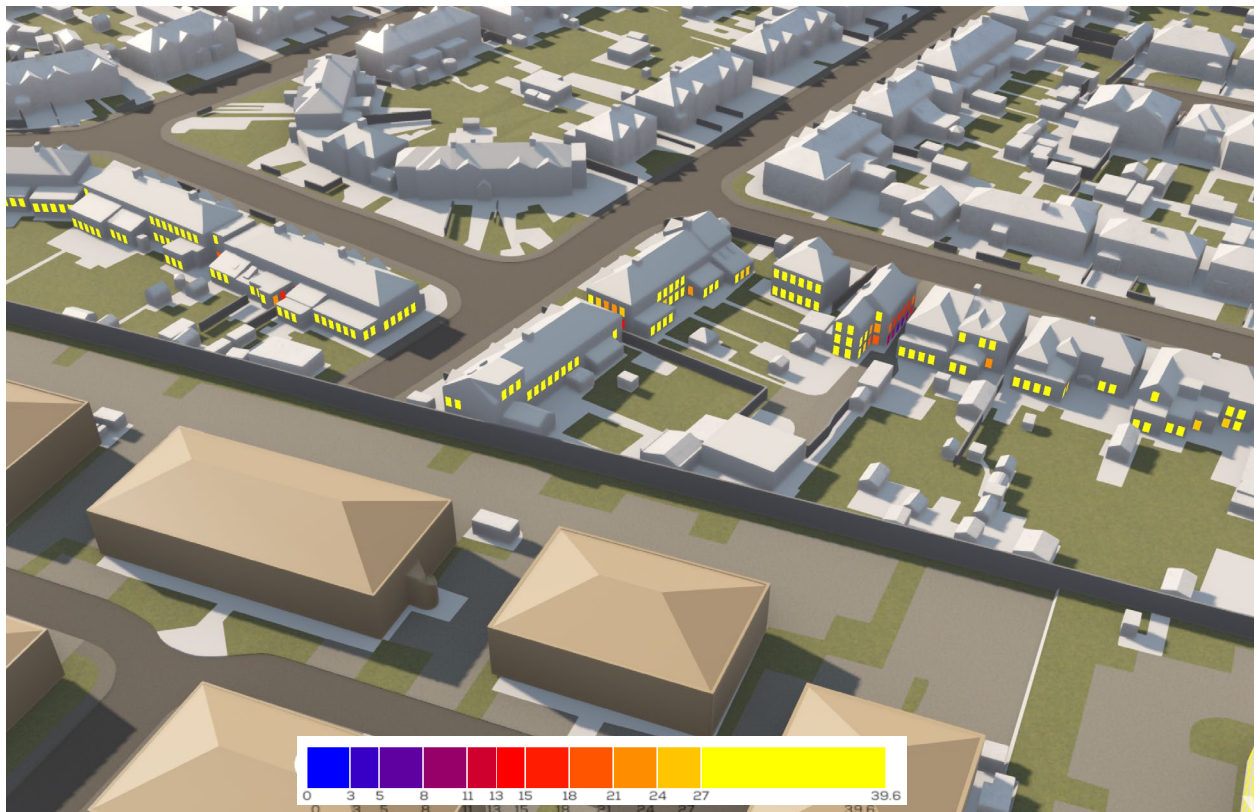


Figure 04: Existing VSC levels

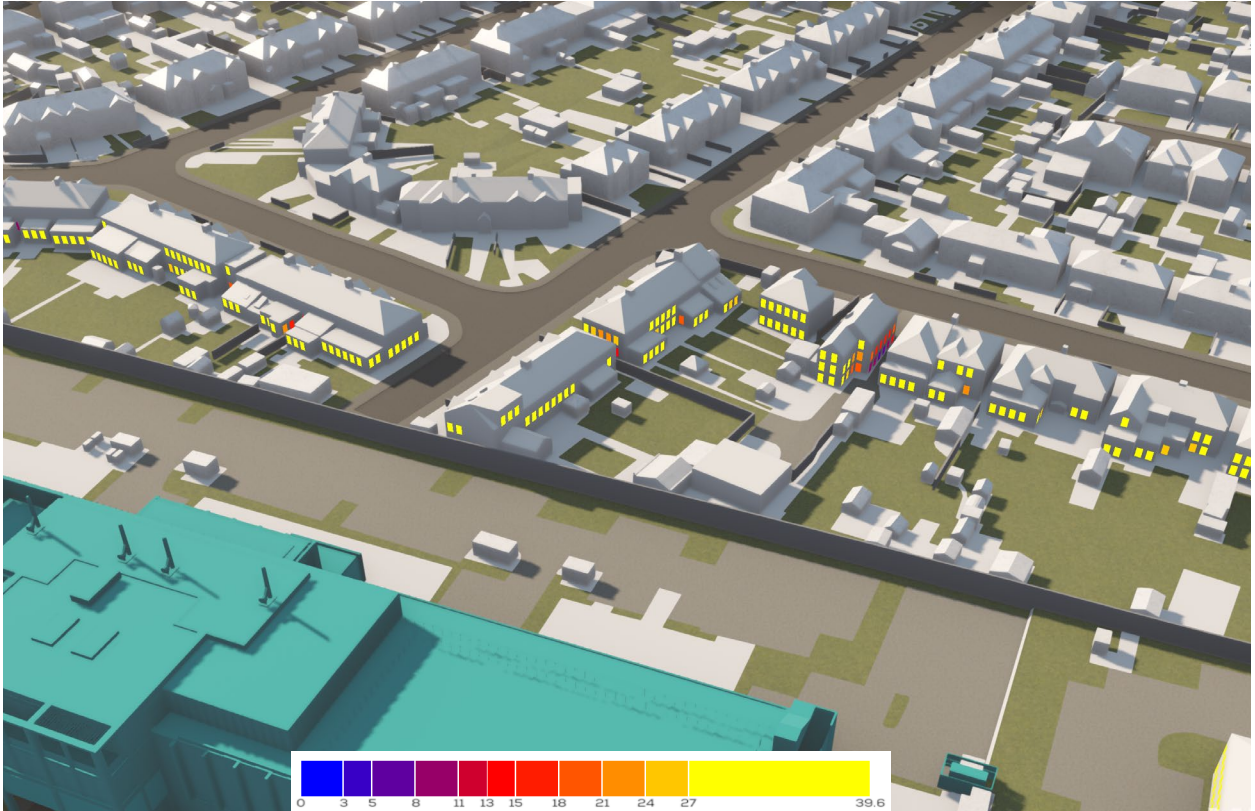


Figure 05: Proposed VSC

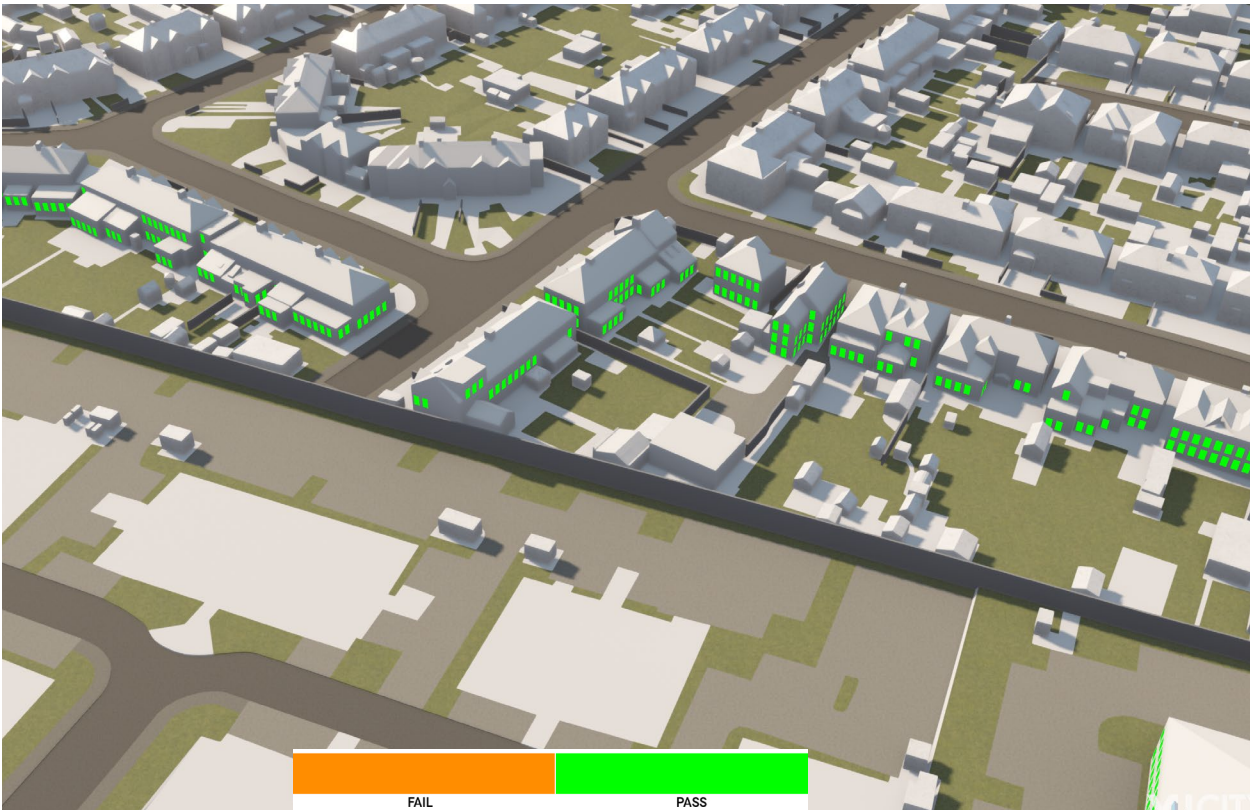


Figure 06: BRE compliance (VSC).

Sunlight

- 4.15 All assessed properties meet the BRE criteria for the BRE test for APSH.
- 4.16 This is displayed in Figures 07-09.
- 4.17 As discussed in Paragraph 1.2 on Page 2, windows have been placed in notional positions that are of standard sizes and do not fully reflect the true position of the windows on the facades of some properties.

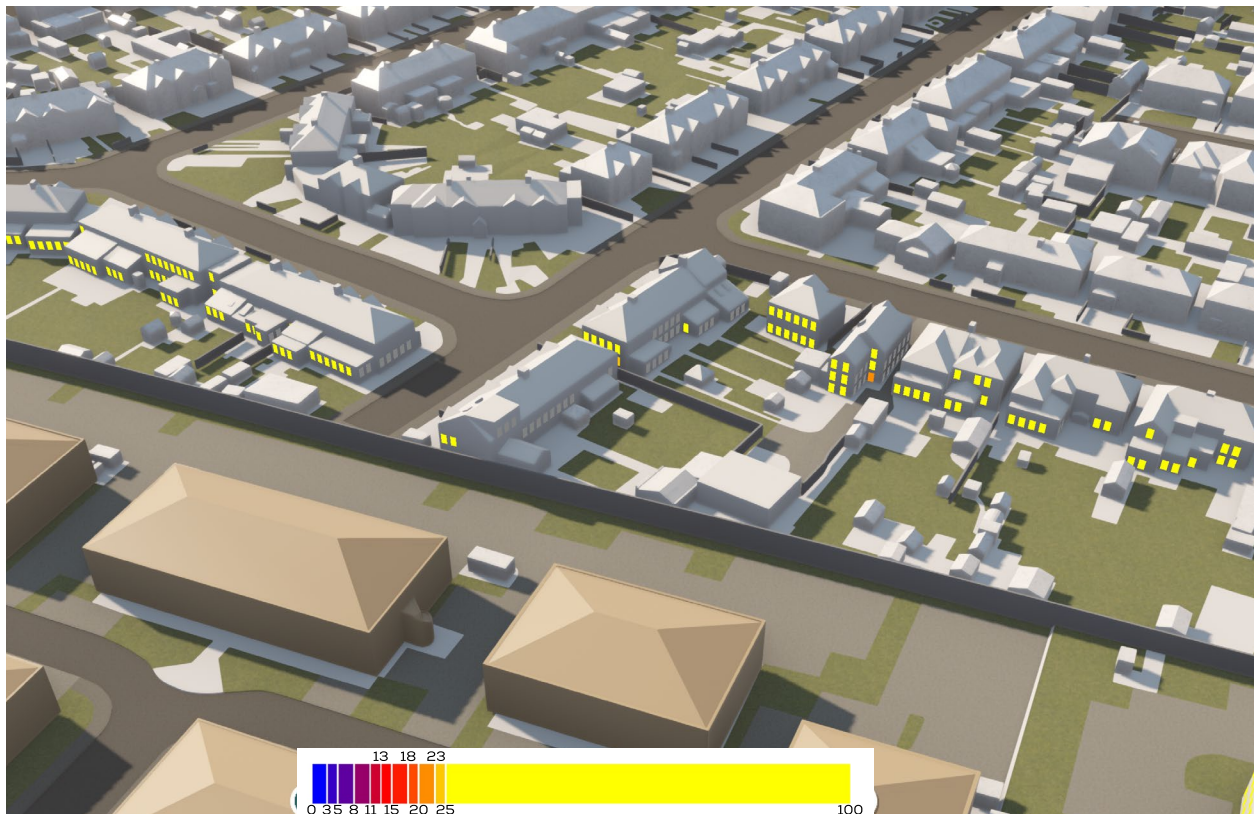


Figure 07: Existing APSH levels

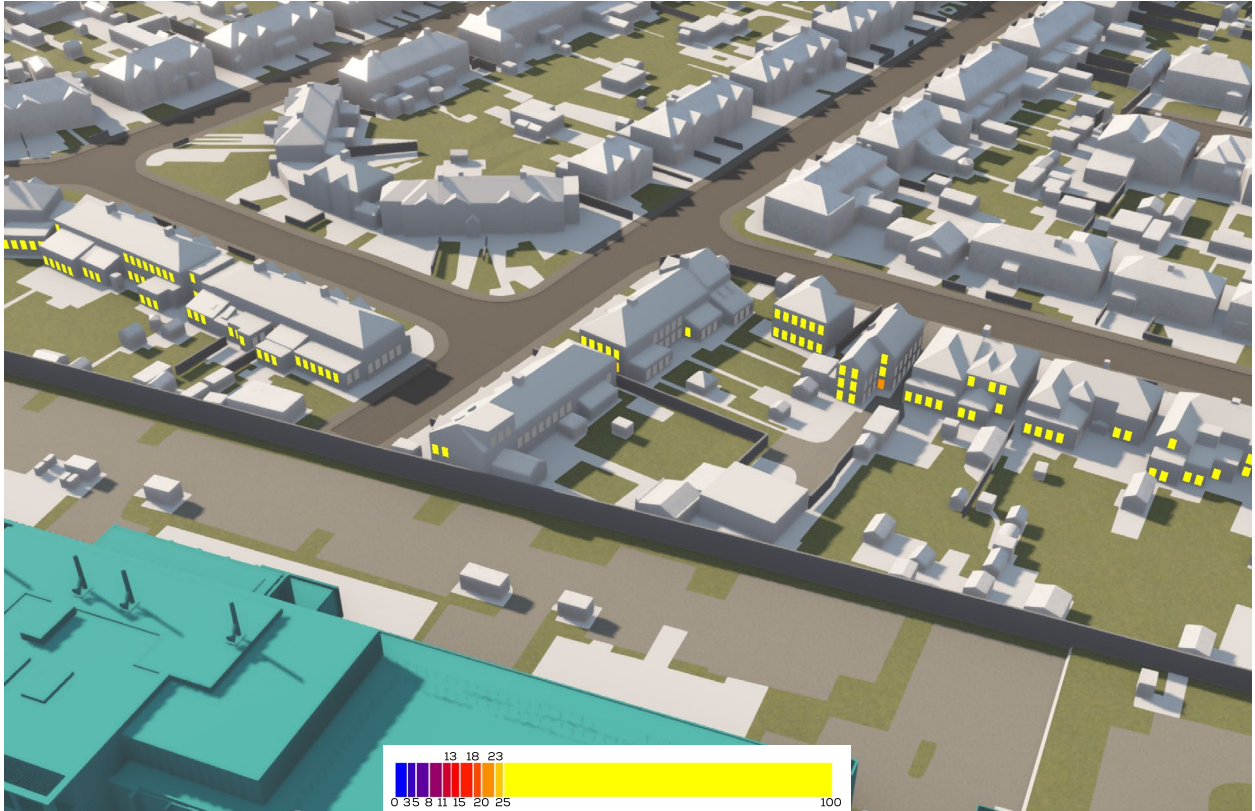


Figure 08: Proposed values APSH



Figure 09: BRE compliance.

Overshadowing

- 4.18 All assessed properties meet the BRE criteria for the BRE test for overshadowing (SHOG).
- 4.19 This is displayed in Figures 10-13 below.

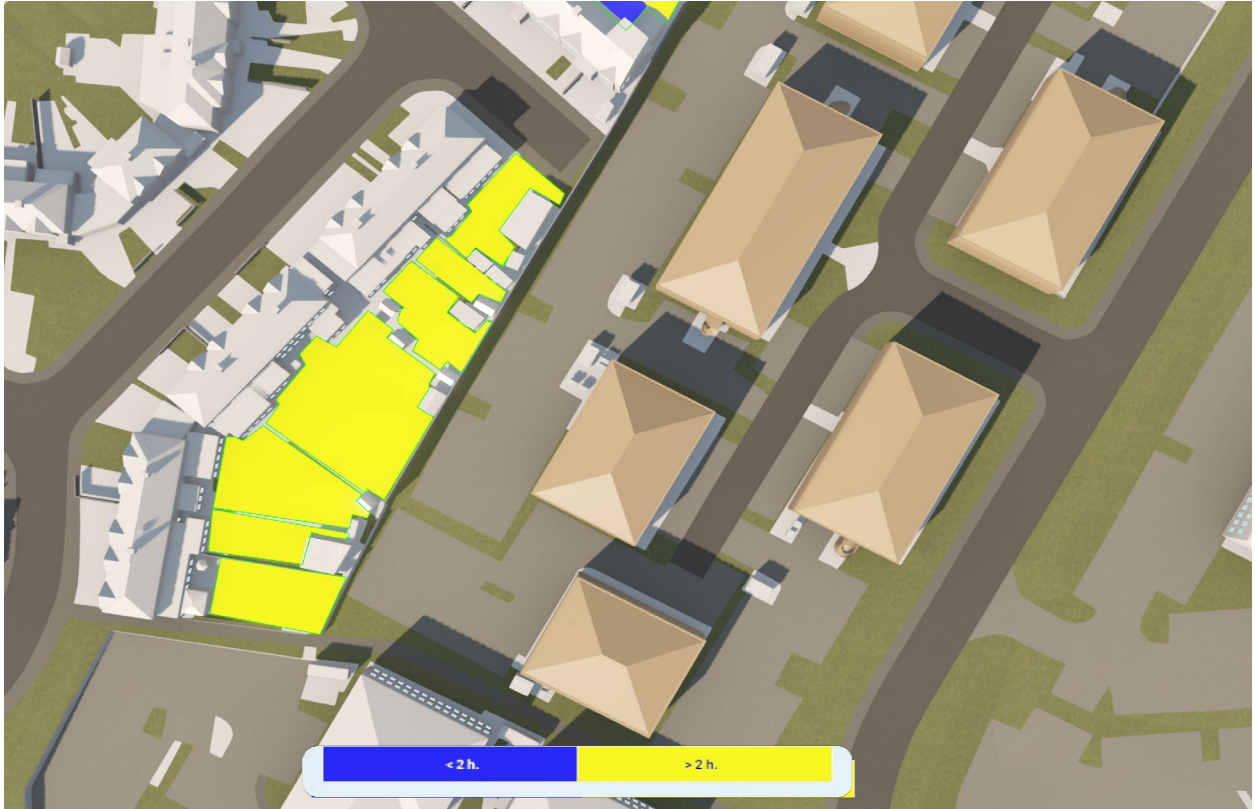


Figure 10: Existing SHOG levels

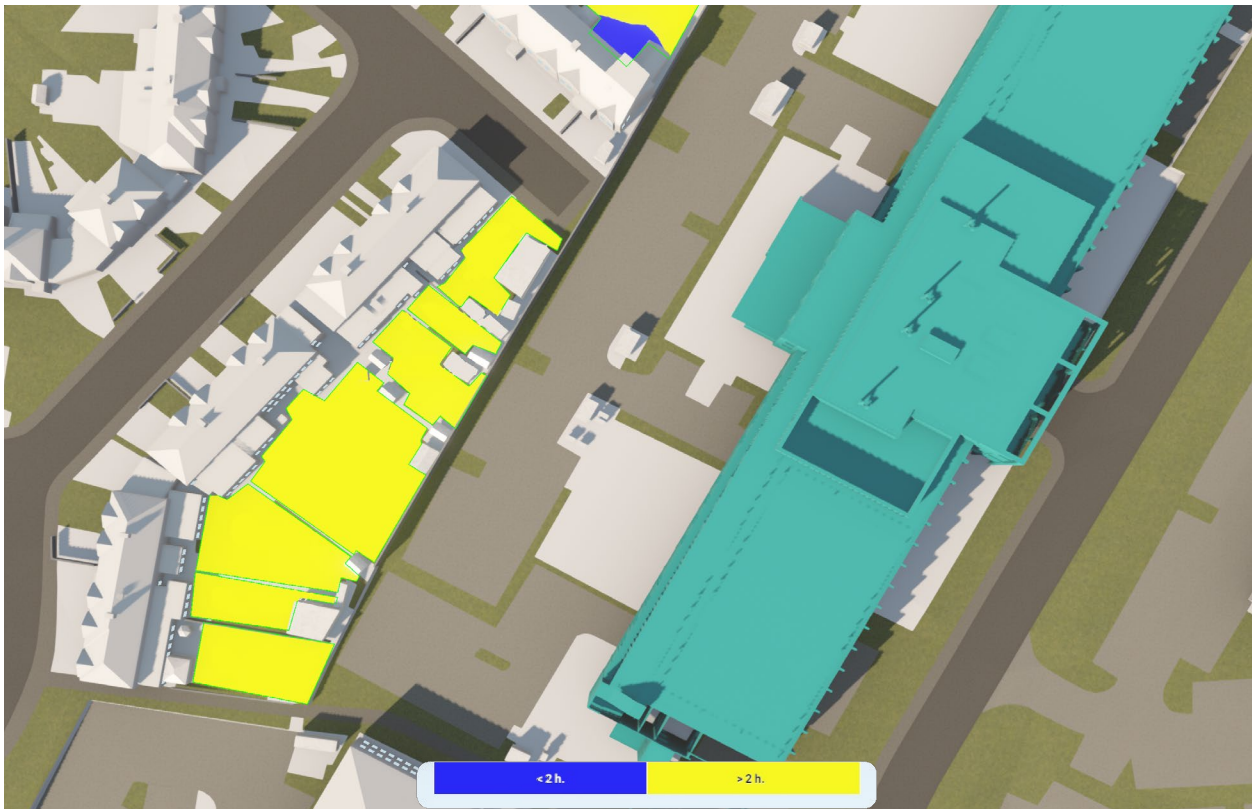


Figure 11: Proposed SHOG levels.

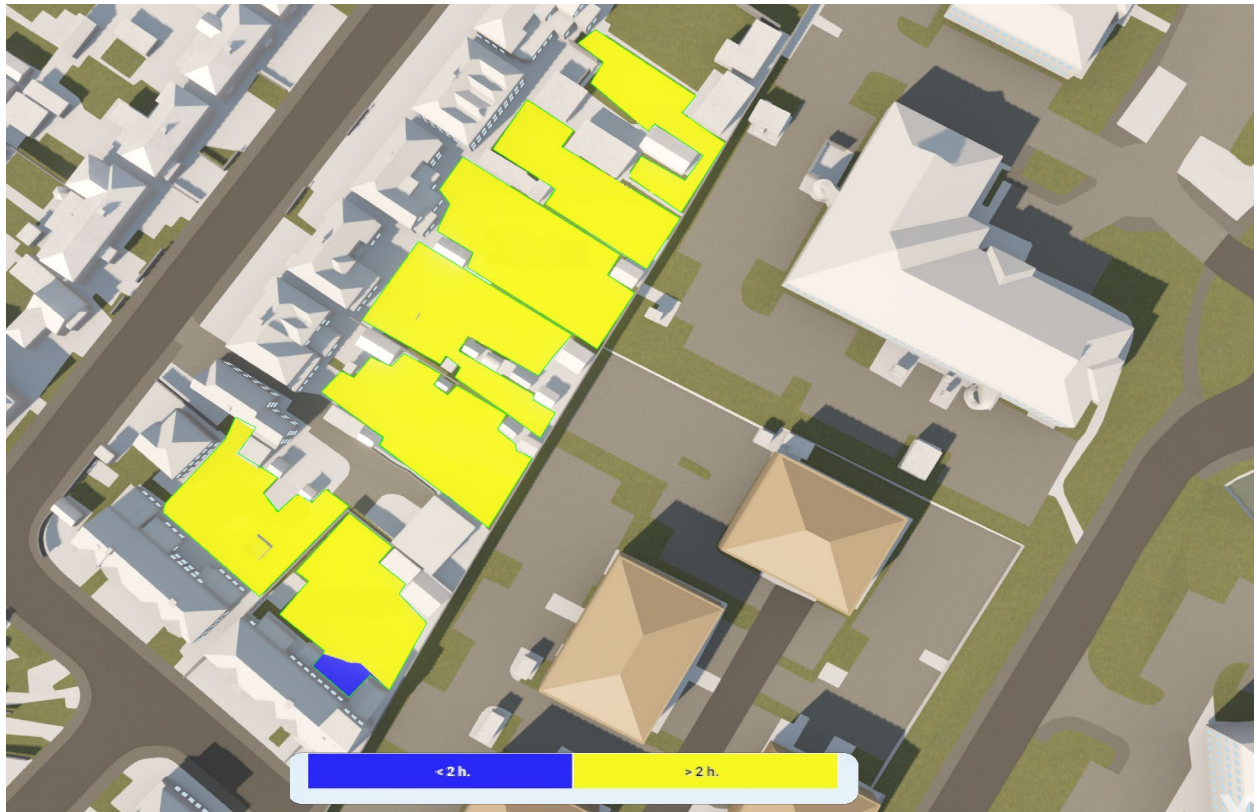


Figure 12: Existing SHOG levels

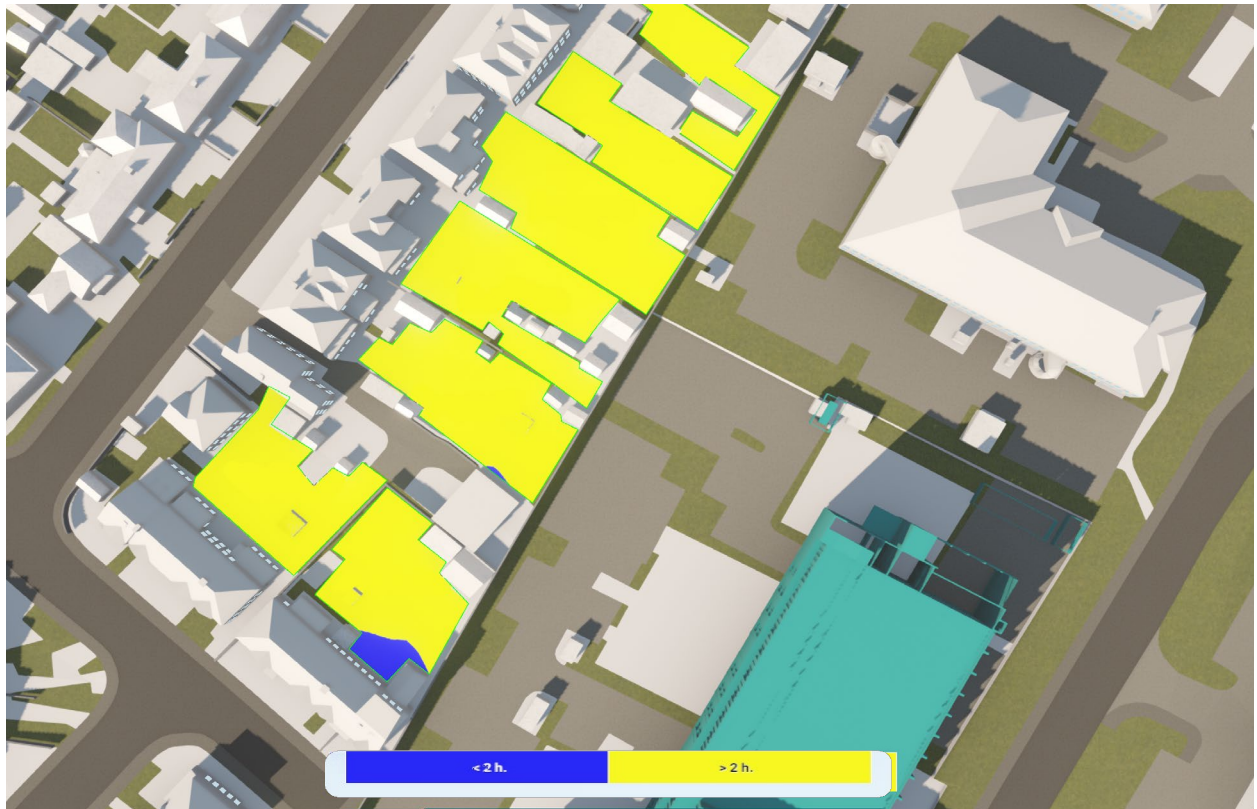


Figure 13: Proposed SHOG levels.

5 CONCLUSIONS

GIA have undertaken a daylight, sunlight and overshadowing assessment on the 4200 ARC Oxford Site.

- 5.1 GIA have undertaken due diligence to understand the neighbouring property uses and have considered all of the relevant neighbouring properties for daylight, sunlight and overshadowing analysis.
- 5.2 In association with the current massing proposal, it is considered that the daylight, sunlight and overshadowing impacts will not be noticeable for all of the pertinent neighbours surrounding the site and no further detailed testing is considered necessary.



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