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Dear Edwina,

Waterfront Square, Reading – Daylight & Sunlight

I write in response to the BRE Client Report entitled 'Review of daylight and sunlight assessment at Norman Place, Reading' ("the BRE Report") dated 7th November 2024. The BRE Report reviews the daylight and sunlight reports submitted with planning application PL/24/0958 prepared by GIA, namely the daylight and sunlight report dated 17 July 2024 and the internal daylight, sunlight and overshadowing report dated 17 July 2024 ("GIA's Reports").

This letter responds to the comments made in the BRE Report. Specifically, it addresses the points raised in paragraph 5.1 of that document.

Standards and guidance used in GIA's Reports

The BRE have confirmed that the guidance (*BR 209, 'Site Layout Planning for Daylight and Sunlight: a guide to good practice'*) widely used by local planning authorities to help determine planning applications is not mandatory and can be interpreted flexibly. The guidance it contains is advisory and is intended to aid good design.

No response has been requested in respect to the approach and methodologies used within GIA's reports.

Scope of GIA's reports

The BRE have reviewed the neighbouring properties assessed within GIA's Reports and are generally in agreement that the properties included within our technical analysis are appropriate.

The assessments in GIA's Reports include cumulative schemes at 55 Vastern Road and Vastern Court in the calculations, which the BRE confirm is a sensible approach.

Summary of main points of note and clarifications in the BRE Report

The BRE have recommended the following:

- Existing balconies and overhanging eaves may exacerbate the relative loss of daylight and sunlight at Thames Court for some windows. This could be investigated further with calculations without the overhangs in place, in line with the advice in the BRE Guidelines (BR 209); and
- Numerical sunlight provision for open spaces at the proposed development are only given for all spaces combined. We suggest individual results should be provided and that the proposed public "Waterfront Square" to the north of the proposal could be analysed as a separate space.

GIA have carried out further detailed assessments in line with the recommendations made by the BRE. The results of the additional assessments are contained within Appendix 03 accompanying this letter and are summarised below.

Existing balconies and overhanging eaves may exacerbate the relative loss of daylight and sunlight at Thames Court for some windows

Paragraph 2.2.13 of the BRE Guidelines states that:

“Existing windows with balconies [or overhanging eaves] above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC, and on the area receiving direct skylight [NSL]. One way to demonstrate this would be to carry out an additional calculation of the VSC and area receiving direct skylight [NSL], for both the existing and proposed situations, without the balcony in place. For example, if the proposed VSC with the balcony was under 0.80 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of light.”

In line with the recommendations in the BRE Guidelines and the BRE Report, GIA have carried out further detailed assessments of Thames Court with the balconies and overhanging eaves removed. The results of both assessment scenarios are shown in Tables 01-02 below, along with the results including balconies.

Name/Address of Building	Percentage of Windows Compliant for VSC Daylight	Percentage of Rooms Compliant for NSL Daylight	Percentage of Rooms Compliant for APSH Sunlight
Thames Court Inc. Balconies/Overhangs	88/100 (88%)	48/48 (100%)	48/48 (100%)
Thames Court Exc. Balconies/Overhangs	89/100 (89%)	48/48 (100%)	48/48 (100%)

Table 01 - Existing v Proposed Scenario: BRE Compliance

Name/Address of Building	Percentage of Windows Compliant for VSC Daylight	Percentage of Rooms Compliant for NSL Daylight	Percentage of Rooms Compliant for APSH Sunlight
Thames Court Inc. Balconies/Overhangs	70/100 (70%)	48/48 (100%)	37/48 (77%)
Thames Court Exc. Balconies/Overhangs	87/100 (87%)	48/48 (100%)	44/48 (92%)

Table 02 - Existing v Proposed + Cumulative Scenario: BRE Compliance

When balconies and overhangs are included, the VSC daylight and APSH sunlight compliance is lower than without the balconies and overhangs in place, whilst the NSL daylight results are the same. Additionally, the magnitude of change is reduced for both assessment scenarios without the balconies or overhangs in place, as shown in Tables 03-06 below:

Name/Address of Building	Negligible (0-19.9%)	Minor Adverse (20-30%)	Moderate Adverse (30-40%)	MajorAdverse (>40%)
Thames Court Inc. Balconies/Overhangs				
VSC Daylight (Windows)	88/100 (88%)	0/100	7/100 (7%)	5/100 (5%)
NSL Daylight (Rooms)	48/48 (100%)	0/48	0/48	0/48
APSH Sunlight (Rooms)	48/48 (100%)	0/48	0/48	0/48
WPSH Sunlight (Rooms)	48/48 (100%)	0/48	0/48	0/48

Table 03 - Existing v Proposed Scenario: Magnitude of daylight and sunlight change

Name/Address of Building	Negligible (0-19.9%)	Minor Adverse (20-30%)	Moderate Adverse (30-40%)	MajorAdverse (>40%)
Thames Court Exc. Balconies/Overhangs				
VSC Daylight (Windows)	89/100 (89%)	3/100 (3%)	6/100 (6%)	2/100 (2%)
NSL Daylight (Rooms)	48/48 (100%)	0/48	0/48	0/48
APSH Sunlight (Rooms)	48/48 (100%)	0/48	0/48	0/48
WPSH Sunlight (Rooms)	48/48 (100%)	0/48	0/48	0/48

Table 04 - Existing v Proposed Scenario: Magnitude of daylight and sunlight change

Name/Address of Building	Negligible (0-19.9%)	Minor Adverse (20-30%)	Moderate Adverse (30-40%)	MajorAdverse (>40%)
Thames Court Inc. Balconies/Overhangs				
VSC Daylight (Windows)	70/100 (70%)	14/100 (14%)	8/100 (8%)	8/100 (8%)
NSL Daylight (Rooms)	48/48 (100%)	0/48	0/48	0/48
APSH Sunlight (Rooms)	37/48 (77%)	3/48 (6%)	3/48 (6%)	2/48 (5%)
WPSH Sunlight (Rooms)	41/48 (85%)	0/48	0/48	7/48 (15%)

Table 05 - Existing v Proposed + Cumulative Scenario: Magnitude of daylight and sunlight change

Name/Address of Building	Negligible (0-19.9%)	Minor Adverse (20-30%)	Moderate Adverse (30-40%)	MajorAdverse (>40%)
Thames Court Exc. Balconies/Overhangs				
VSC Daylight (Windows)	87/100 (87%)	4/100 (4%)	7/100 (7%)	2/100 (2%)
NSL Daylight (Rooms)	48/48 (100%)	0/48	0/48	0/48
APSH Sunlight (Rooms)	44/48 (92%)	0/48	0/48	1/48 (2%)
WPSH Sunlight (Rooms)	45/48 (94%)	0/48	0/48	3/48 (6%)

Table 06 - Existing V's Proposed + Cumulative Scenario: Level of daylight and sunlight change

The results of the additional assessments confirm that the change in daylight and sunlight to some windows and rooms at Thames Court in both scenarios is exacerbated by the existing overhanging eaves and balconies.

Overall, the effect on daylight and sunlight to Thames Court is limited. In GIA's opinion, this is a minor adverse effect and therefore does not alter the conclusions of GIA's original report.

Individual areas of sunlight provision for open spaces to be provided, including the proposed public “Waterfront Square” to be analysed as a separate space

In line with the recommendations in the BRE Report, GIA have carried out further detailed assessments of the proposed areas of open space to demonstrate the compliance of each individual space. The spaces have been defined using the landscape character areas plan, which includes the requested ‘Waterfront Square’ to the north of the development. The landscape plan accompanies this letter within Appendix 04.

The BRE Guidelines recommend that for a proposed open space to be adequately sunlit it should receive at least two hours of sunlight across at least half of its area on 21 March. Table 07 and Figure 01 below present a summary of the compliance results for each individual area and for all areas combined:

Name of open space	Compliance (21 st March)	Date the area achieves the recommended two hours of sunlight to 50% of the space
Waterfront Square (WS)	57%	19 th March
Mews Street (MS)	63%	All year
Vastern Road (VR)	100%	18 th January
Podium Garden (PG)	0%	15 th May
Kitchen Garden (KG)	72%	26 th February
All areas combined	60%	11 th March

Table 07 - Proposed Sunlight Amenity to Open Spaces

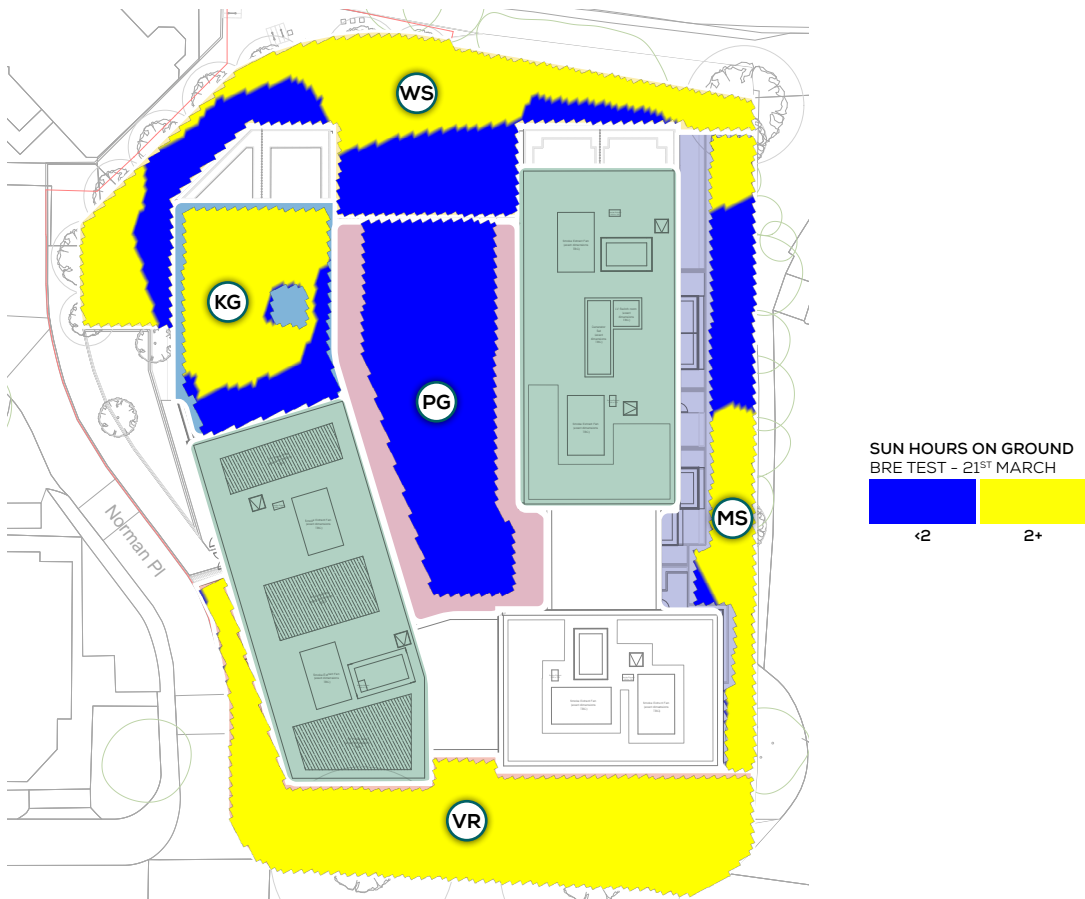


Figure 01 - Proposed Sunlight Amenity to Open Spaces

Four of the five (80%) proposed open spaces achieve the recommended two hours of direct sunlight to 50% of the area on 21 March. The total compliance for all of the areas combined is 60%. This is a 4% improvement when compared to the findings in the internal daylight, sunlight and overshadowing report dated 17 July 2024. This is because the assessment areas have been redefined to follow the landscape character areas plan, as recommended by the BRE.

The Podium Garden (PG) is the only proposed open space that does not meet the recommendations on 21 March. Figure 02 below shows that this space will achieve the recommended two hours of direct sunlight to 50% of the space on 15 May, and will continue through until late July when the space is more likely to be in use.

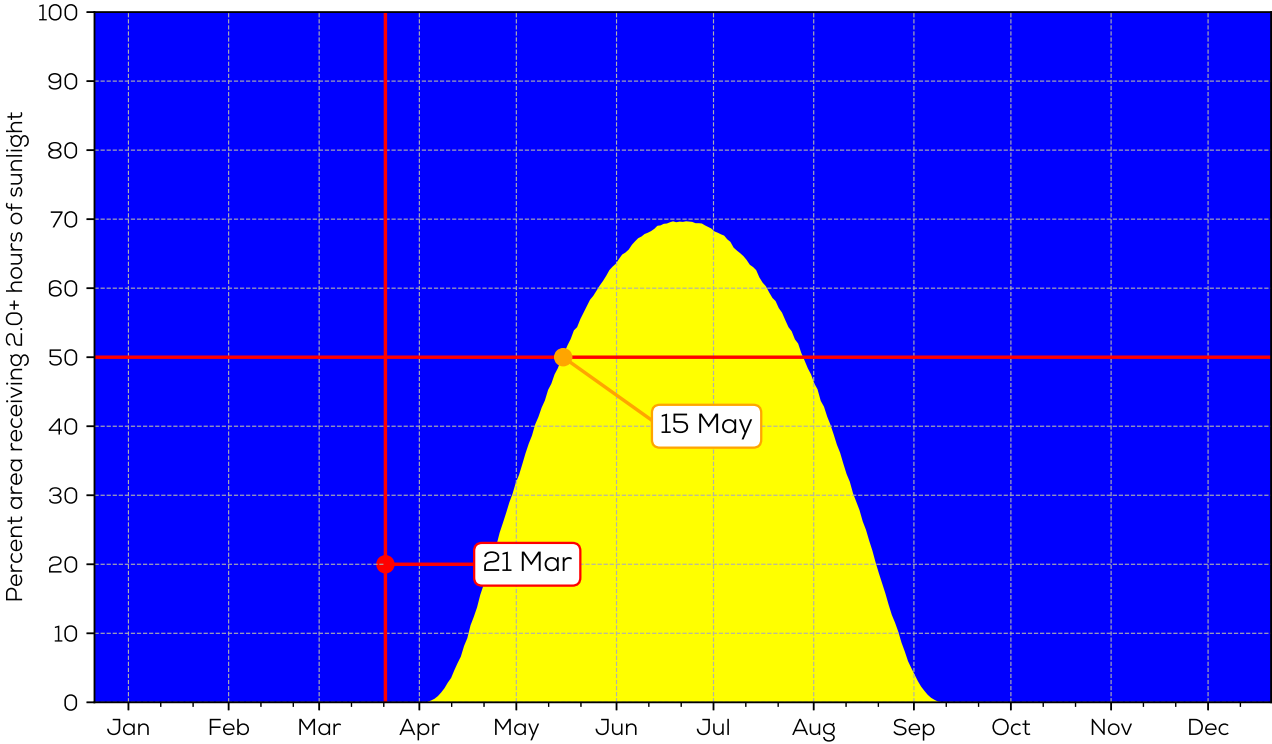


Figure 02 - Proposed Sunlight Amenity to Podium Garden

The Podium Garden (PG) is designed to serve a different purpose, and offers a quiet more shaded space to compliment the roof terrace (KG) and public realm areas (WS/MS/VR). The occurrence of sunlight levels lower than recommendation is typical of a courtyard configuration closed to the south, and it is accepted that this space will have a lower expectation for sunlight. A degree of flexibility therefore ought to be used in applying the BRE recommendations for this space.

To respond to the lower levels of sunlight access at podium level in the courtyard, it was decided to include additional amenity at roof level (KG), which has excellent access to sunlight throughout the year. The Kitchen Garden is therefore considered the main space where residents would make the most of sunlight, however, as demonstrated by the sun exposure diagrams in Figures 03-04 below, the Podium Garden would see in excess of three hours of sunlight to the majority of the space in the summer (21 June).

Overall the vast majority of the proposed spaces will be excellently sunlit throughout the year and the design has been carefully considered for access to sunlight. As a result, the only area seeing lower levels of sunlight is the proposed Podium Garden courtyard which would see good levels of sunlight in the summer. On balance, the proposed development is considered to provide future residents and visitors good access to a variety of well sunlit communal open spaces to enjoy throughout the year.

The conclusions within this letter do not materially alter those in the GIA Reports.

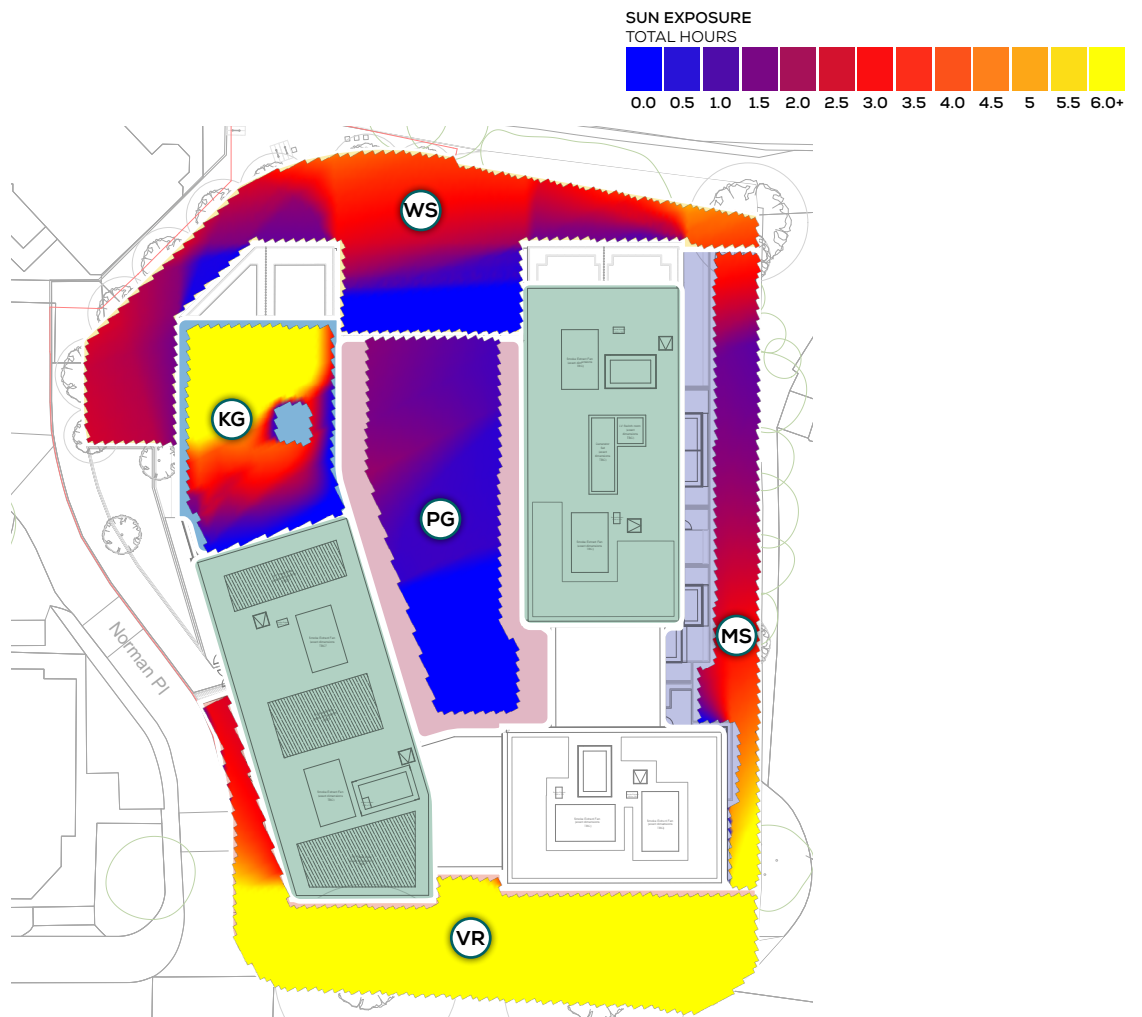


Figure 03 - Proposed Sunlight Exposure: 21 March

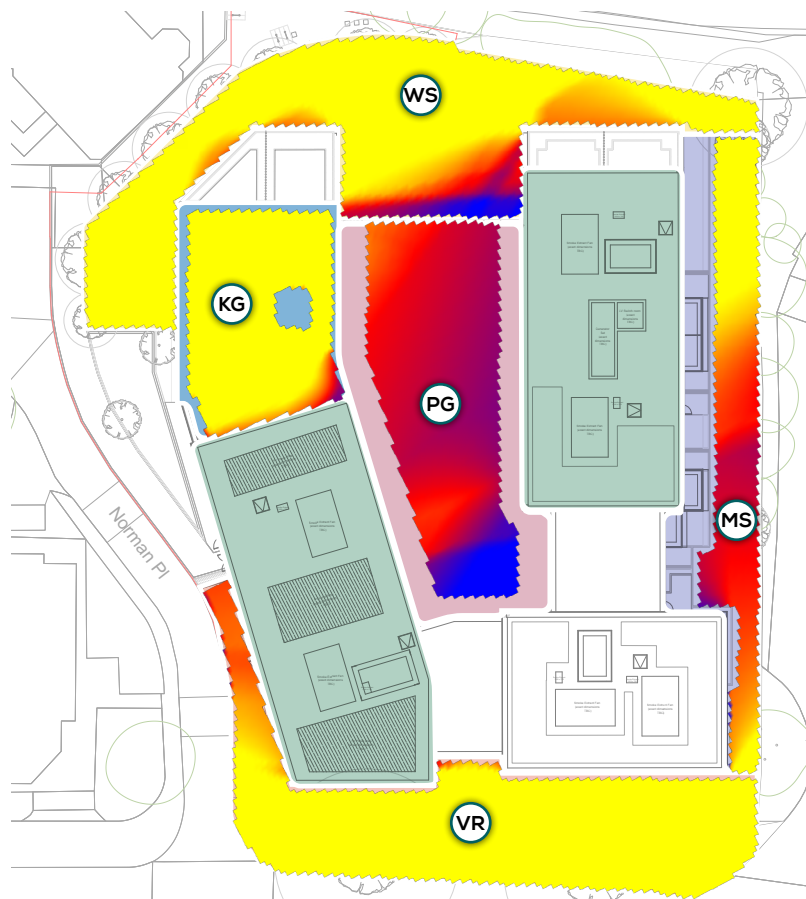


Figure 04 - Proposed Sunlight Exposure: 21 June

Conclusion

GIA have reviewed the contents of the BRE Report, and have addressed the two additional clarifications that are requested. The comments in the BRE Report and results of the additional analysis requested do not alter the conclusions of GIA's Reports, which the BRE have confirmed they are generally in agreement with.

We would restate that the effect of the Proposed Development upon surrounding residential properties is considered acceptable in context, and the levels of daylight and sunlight achieved within the Proposed Development are in line with the expectations of a large-scale residential development.

I trust that the above is clear and sufficient for your current purposes.

Yours sincerely,

For and on behalf of GIA



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Encl. Appendix 01&02 – Appendix inc Assumptions & Principles of Daylight and Sunlight

Appendix 03 – Results & Contours

Appendix 04 – Landscape Character Areas Plan

DISCLAIMER:

N.B This report has been prepared for Packaged Living by GIA as their appointed Daylight & Sunlight consultants. This report is intended solely for Packaged Living and may contain confidential information. No part or whole of its contents may be disclosed to or relied upon by any Third Parties without the express written consent of GIA. 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.

APPENDIX 01

ASSUMPTIONS

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01

- A 1.1 The context model has been produced using our VU.CITY platform. GIA have extracted the required area, creating a 3D model with an overall building tolerance of up to 150mm. The relevant windows have been added to the VU.CITY model from site photographs, observations and brick counting.

02

- A 1.2 GIA have sought to create the most accurate 3D model possible based on the data available, however, a degree of tolerance should be applied.

03

- A 1.3 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. There may be properties outside of the considered scope that are affected by the scheme, however, no significant effects are anticipated.

04

- A 1.4 The property uses have been ascertained by reference to a Valuation Office Agency search and based upon external observations from a site visit.

05

- A 1.5 GIA have obtained full or partial floor plans for the following properties:
- Thames Court
- A 1.6 These layouts have been incorporated into our 3D computer model. It is reasonable to assume that these layouts have been implemented, however, GIA would require access to confirm this.

06

- A 1.7 Where GIA have not been able to source detailed internal floor-plans reasonable assumptions as to the internal layouts of the rooms behind the fenestration have been made. This is normal practice where access to adjoining properties is undesirable in terms of development confidentiality. Unless the building form dictates otherwise, we assume a standard 4.2m deep room (14ft) for residential properties.

07

- A 1.8 Floor levels have been assumed for adjoining properties as access has not been obtained. This dictates the level of the working plane which is the point at which the No Sky Line assessments are carried out.

08

- A 1.9 GIA have discounted rooms that appear to be or are confirmed to be bathrooms, hallways, circulation space etc. These rooms are not considered to be habitable and thus do not require assessment in accordance with the BRE Guidelines.

APPENDIX 02

PRINCIPLES OF DAYLIGHT, SUNLIGHT & OVERSHADOWING

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The Building Research Establishment (BRE) have set out in their handbook 'Site Layout Planning for Daylight & Sunlight: A Guide to Good Practice 3rd edition (2022)', guidelines and methodology for the measurement and assessment of daylight, sunlight and overshadowing.

BACKGROUND & CONTEXT

A 2.1 The quality of daylight and sunlight amenity as well as the overshadowing of open spaces is often stipulated within planning policy for protection or enhancement and a concern for adjoining owners and other interested parties.

A 2.2 The BRE Guidelines provide advice on site layout planning to determine the quality of daylight and sunlight both within buildings and reaching open spaces.

A 2.3 The BRE Guidelines note that the document is intended to be used in conjunction with the interior daylight recommendations found within the British Standard Daylight in buildings, BS EN 17037 and the CIBSE Publication LG 10 Daylighting – a guide for designers.

A 2.4 Whilst the BRE Guidelines are typically referred to for daylight sunlight and overshadowing matters within the planning process, they were not intended to be used as an instrument of planning policy, nor were the figures intended to be fixedly applied to all locations.

A 2.5 In the introduction of 'Site Layout Planning for daylight and sunlight (2022)', section 1.6 (page 7), states that:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design (see Section 5). In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".

A 2.6 Paragraph 2.2.3 (page 14) of the document states:

"Note that numerical values given here are purely advisory. Different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints".

A 2.7 The numerical criteria suggested by the BRE are therefore designed to provide industry advice/guidance to plan/design with daylight in mind. Alternative values may be appropriate in certain circumstances such as highly dense urban areas. The BRE approach to creating alternative criteria is detailed within Appendix F of the Document.

A 2.8 Paragraph 2.2.2 (page 14) of the BRE Guidelines states:

"intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens, and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas, and garages need not be analysed."

A 2.9 Although primarily designed to be used for residential properties, the BRE Guidelines continue to state that they may be applied to any existing non-residential buildings where there may be a reasonable expectation of daylight including; schools, hospitals, hotels and hostels, small workshops, and some offices.

A 2.10 Many Local Planning Authorities consider daylight and sunlight an important factor for determining planning applications. Policies refer to both the protection of daylight and sunlight amenity within existing properties and areas of amenity as well as the creation of proposed dwellings and spaces with high levels of daylight and sunlight amenity.

A 2.11 Although Local Authorities will look to the BRE Guide to understand impacts it is their Planning Policies that will determine whether the changes in light should be a reason for refusal at planning.

A 2.12 It is an inevitable consequence of the built-up urban environment that daylight and sunlight will be more limited in dense urban 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.

A 2.13 The following sections extract relevant sections from the Guide.

EFFECTS TO DAYLIGHT

A 2.14 The BRE Guidelines provide two methodologies for daylight impact assessment, namely;

- 1 The Vertical Sky Component (VSC); and
- 2 The No Sky Line (NSL).

Vertical Sky Component (VSC)

A 2.15 The Vertical Sky Component (VSC) method is described in the Glossary of BRE Guidelines as the:

“Ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from a CIE standard overcast sky, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. Usually the ‘given vertical plane’ is the outside of a window wall. The VSC does not include reflected light, either from the ground or from other buildings”

A 2.16 Put simply, the VSC provides an assessment of the amount of skylight falling on a vertical plane (generally a window) directly from the sky, in the circumstance of an overcast sky (CIE standard).

A 2.17 The national numerical value target “ideal” for VSC is 27%. The BRE Guidelines advise that upon implementation of a development, a window should retain a VSC value of 27% or at least 0.8 of its former value (i.e. no more than a 20% change) as per paragraph 2.2.23 of the Guide.

A 2.18 This form of assessment does not take account of window size, room use, room size, window number or dual aspect rooms. The assessment also assumes that all obstructions to the sky are 100% non-reflective thereby omitting the consideration of reflection and considering only the light coming directly from the sky.

A 2.19 The VSC calculation is undertaken in both the existing and proposed scenarios so as to make a comparison.

A 2.20 The image in Figure 01 depicts a Waldram Diagram which can be used to calculate the VSC. The existing buildings are solidly pictured with the proposed scheme semi-transparent in the foreground.

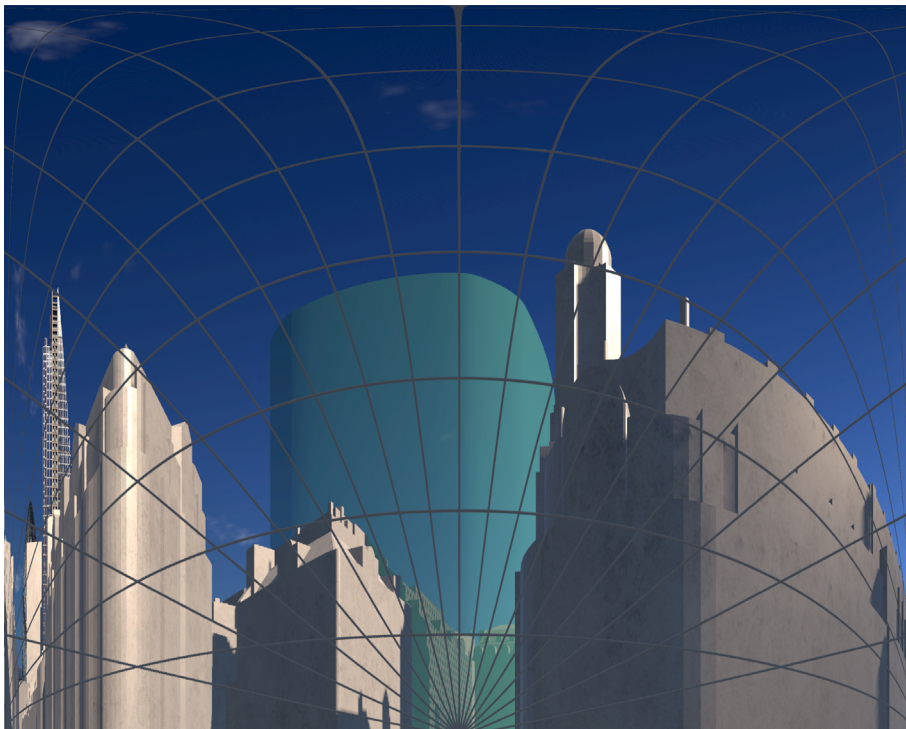


Figure 01: Waldram diagram

No Sky Line (NSL)

- A 2.21 In addition to the VSC, the BRE recommends the NSL method of assessment where internal layouts are known. Whilst the VSC provides information on the quantum of light reaching a window, the NSL seeks to provide information on how well this light is distributed within the room. The NSL is sometimes also referred to as ‘Daylight Distribution’ for this reason.
- A 2.22 The NSL is defined in the Glossary of the Guide as “the outline on the working plane of the area from which no sky can be seen.” and so the NSL is effectively an assessment of sky visibility within a room. As stated already, the calculation is undertaken across the working plane which in accordance with paragraph 2.2.10 “in houses [...] is assumed to be horizontal and 0.85m high”.
- A 2.23 Again, both the existing and proposed positions are calculated and presented alongside any change in position of the NSL. The results can then be presented in table format or else illustrated on a contour plot if required, an example of which can be found in Figure 02 below.

A 2.24 The BRE Guidelines state at paragraph 2.211 that:

“If, following construction of a new development, the no sky line moves so that the area of the existing room, which does receive direct skylight, is reduced to less than 0.8 times its former value this will be noticeable to the occupants, and more of the room will appear poorly lit. This is also true if the no sky line encroaches on key areas like kitchen sinks and worktops.”

- A 2.25 In accordance with the strict application of the national numerical values, therefore the change in daylight would be noticeable to the occupants should the NSL experience a loss of NSL greater than 20%.
- A 2.26 It is relevant to note that this assessment takes the number and size of windows serving a room into account as well as the shape of the room but, being concerned only with sky visibility and the distribution of light, does not consider the quantum of light reaching the room.

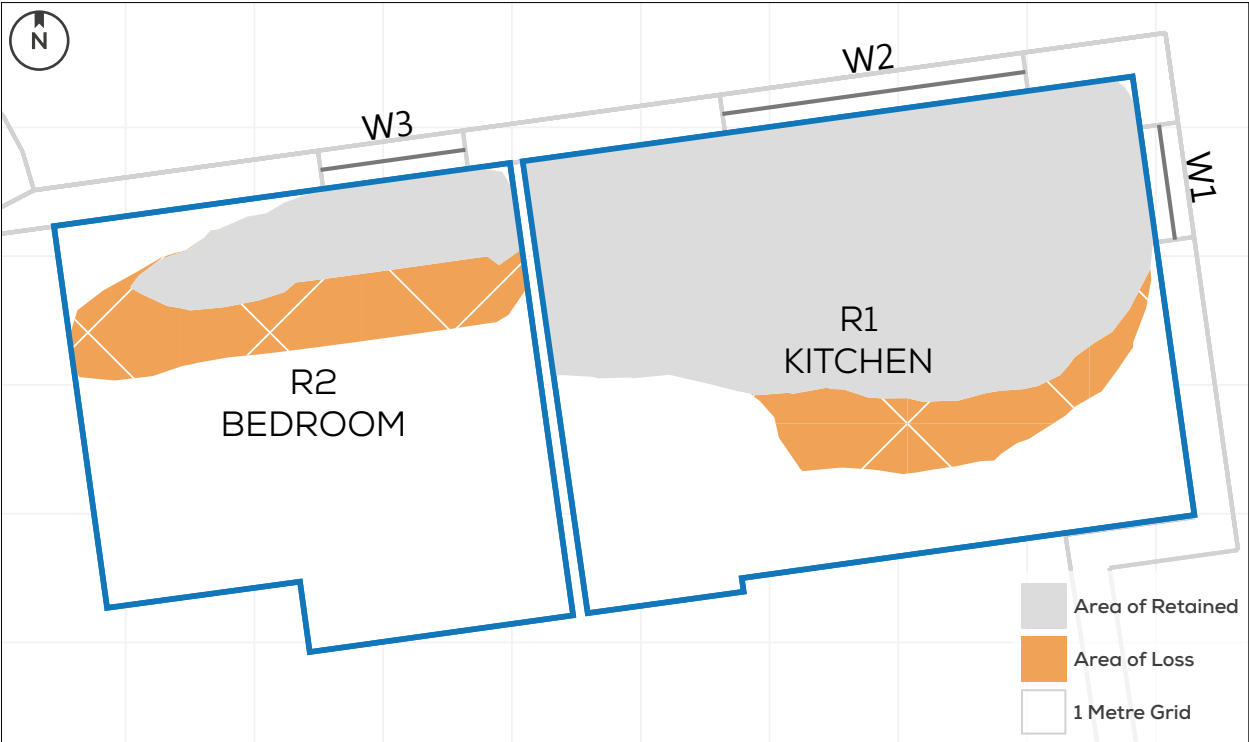


Figure 02: Example NSL diagram

Decision Chart (Figure 20 of the BRE Guide)

A 2.27 The flowchart in Figure 03 illustrates the steps and criteria outlined within the BRE Guidelines to understand whether the daylighting (VSC and NSL) may be significantly affected.

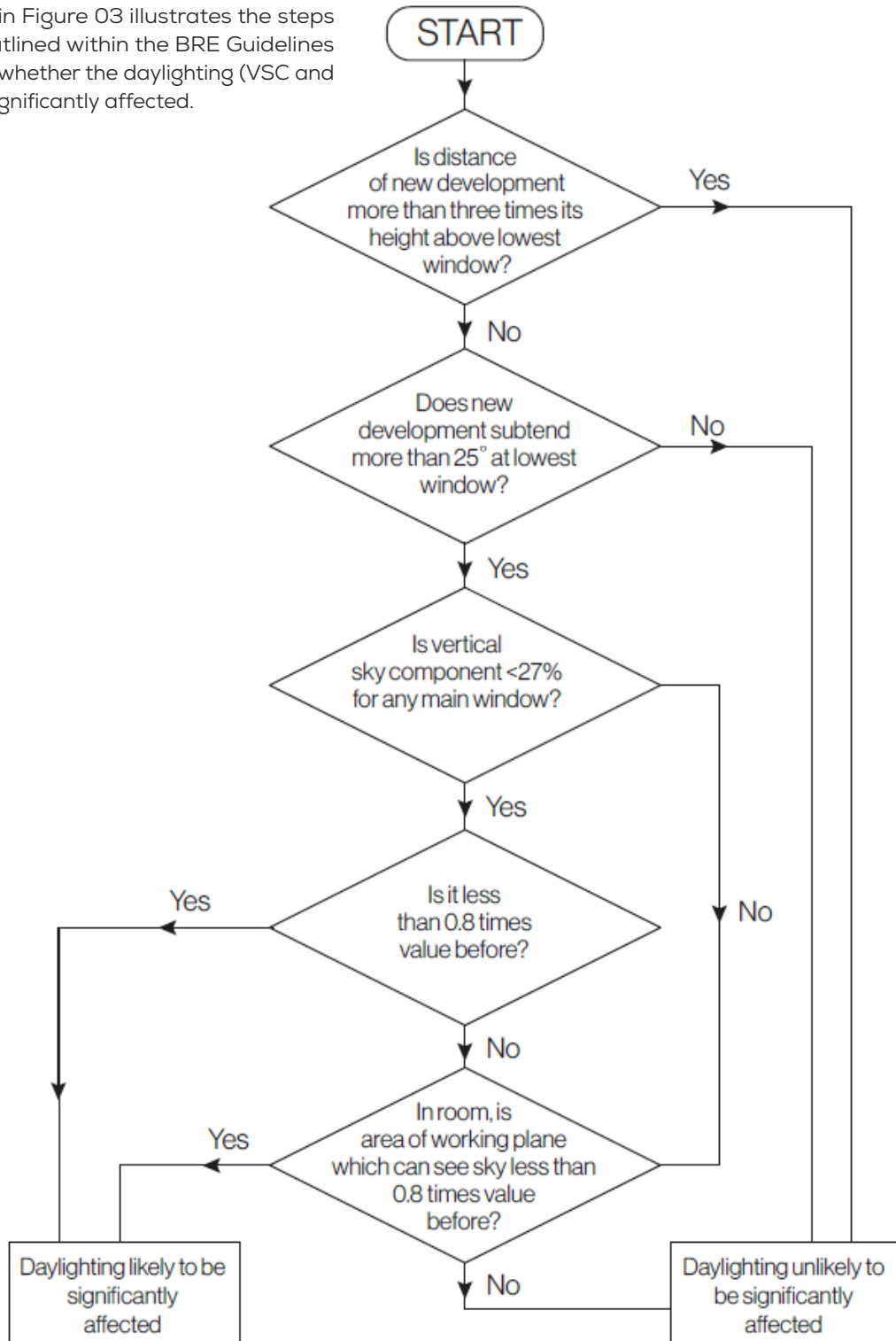


Figure 03: BRE Decision Chart (Figure 20): diffuse daylight in existing buildings. This does not include an assessment of rights to light issues, which a developer may need to consider separately

EFFECTS TO SUNLIGHT

Annual Probable Sunlight Hours (APSH)

A 2.28 The BRE Guidance suggests that to understand sunlight impacts to a property, an assessment of Annual Probable Sunlight Hours (APSH) is undertaken. The APSH is defined in the Glossary as:

“the long-term average of the total number of hours during a year in which direct sunlight reaches the unobstructed ground (when clouds are taken into account)”

A 2.29 Expanding on the above within the Guidance, long-term averages were used to position 100 spots in the sky, representative of sunlight over the whole year. Correlating to the probability of the sun to shine, the majority of these (70) are at times to the six-months containing summer (from spring equinox to autumn equinox) which 30 are the ‘winter’ months from autumn equinox to spring. The APSH is calculated though calculating how many of these ‘spots’ can be seen from a location (normally a window) both overall and how many of these are during the winter months.

A 2.30 To understand the potential sunlight impacts therefore, all windows facing within 90 degrees of due south and overlooking the development are generally assessed for APSH.

A 2.31 The BRE Guidelines set out the overall methodology and criteria for the assessment of Sunlight in Chapter 3. The BRE Guidelines state in paragraph 3.2.3 and 3.2.5:

“To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90 degrees of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.”

“A point at the centre of the window on the outside face of the window wall may be taken.”

A 2.32 In interpreting the results, the BRE Guidance states in summary 3.2.13 that:

“If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March, and*
- receives less than 0.8 times its former sunlight hours during either period; and*
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.”*

A 2.33 The image in Figure 04 depicts the APSH sun spots overlaid on a Waldram Diagram. The existing buildings are solidly pictured with the proposed scheme semi-transparent in the foreground. The yellow spots indicate summer sun and the blue spots indicate winter sun.