



## **NEW CITY COURT**

### **DAYLIGHT, SUNLIGHT & OVERSHADOWING REPORT**

GPE (St Thomas Street) Limited

**21 June 2022**

Planning Appeal Reference:

**APP/A5840/W/22/3290473**  
And

**APP/A5840/W/22/3290483**

Planning Application Reference:

**18/AP/4039 and 21/AP/1361**

PROJECT DATA:

Client **GPE (St Thomas Street) Limited**  
Architect **Allford Hall Monaghan Morris**  
Project Title **New City Court**  
Project Number **8684**

REPORT DATA:

Report Title **Daylight, Sunlight & Overshadowing Technical Note**  
Dated **21 June 2022**  
Draft **FINAL**  
Prepared by **Gordon Ingram Associates**

This document has been prepared by Gordon Ingram Associates (GIA) as a technical report in support of the appeals for New City Court.

Planning Appeal Reference: **APP/A5840/W/22/3290473 and APP/A5840/W/22/3290483**  
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# 1 INTRODUCTION

- 1.1 This Report has been prepared by Gordon Ingram Associates (GIA) to assist Mr Goddard in responding to points raised in the Statements of Case prepared by the London Borough of Southwark Council ("LBS"), dated March 2022 (CD-I.03 and CD-I.04) and the Statement of Case prepared by Historic England, dated March 2022 (CD-I.05).
- 1.2 GIA were instructed by the Appellant in June 2018 to provide consultancy on daylight and sunlight matters in relation to the redevelopment of the New City Court site. During the course of both applications, GIA provided technical analysis and supporting documents to assess the impact of both the 2018 and 2021 Schemes on the daylight and sunlight amenity in neighbouring properties and amenity spaces and also the performance of the proposed amenity spaces in terms of sunlight availability. The following documents were submitted to LBS in relation to the respective planning applications:

INQUIRY CD REF.	DOC TITLE	NOTES
<b>2018 Application</b>		
CDA.10	ES Part 1: Main Text (Dec 2018)	Superseded by CDA.57
CDA.38	Daylight and Sunlight Guy's Chapel (April 2019)	
CDA.43	Daylight and Sunlight Overshadowing Assessment (June 2019)	DSO assessment in relation to London Bridge Station Public Plaza, News Building Public Plaza, communal amenity areas within Shard Place and front open space at 9 St Thomas St
CDA.44	NCC & Southwark Cathedral – Daylight and Sunlight (March 2019)	DSO Assessment in relation to the windows, rooms and courtyard of Southwark Cathedral
CDA.47	Effect on stained glass windows at Guys Hospital Chapel	
CDA.48	ES Addendum and Appendices (March 2020)	Replaced CDA.10, but superseded by CDA.57
CDA.57	ES Addendum (June 2020)	Supersedes and replaces CDA.48
<b>2021 Application</b>		
CDB.12	ES Part 1: Main Text	Superseded by CDB.63
CDB.60	Daylight and Sunlight images September 2021 update	Images of Iris Brooke House and Orchard Isle House
CDB.63	ES Chapter 13 – September 2021 Update	
CDB.64	ES Appendix 13.2 – Daylight and Sunlight (September 2021)	Appendix containing updated assessment figures
CDB.84	Updated ES Table 13.8 – Effects to VSC and Surrounding Sensitive Receptors (October 2021)	Appendix relating to ES updates

- 1.4 A technical issue is not raised in relation to the daylight, sunlight and overshadowing assessments submitted in support of the planning applications. However, LBS' Statements of Case note that, when taken together with other issues, the impacts to daylight and sunlight to neighbouring properties arising from the 2018 and 2021 Schemes should be considered in the planning balance.

## SCOPE AND STRUCTURE OF REPORT

- 1.5 Within this Report, GIA has addressed the following points of harm alleged by LBS and Historic England which relate to daylight and sunlight:
- The impacts of the 2018 and 2021 Schemes on daylight and sunlight amenity in surrounding residential and student accommodation;
  - Overshadowing of the ground floor amenity areas proposed within the 2018 and 2021 Schemes;
  - The impacts of the 2021 Scheme to sunlight within the amenity on St Thomas Street; and
  - The quality of light in Guy's Chapel as a result of the 2018 and 2021 Schemes.
- 1.6 A detailed description of the Site and surrounding area and the descriptions of development is provided in the Proof of Evidence of Mr Goddard and not repeated herein.
- 1.7 Since the submission of the Appeals, the BRE published the new edition of '*Site layout planning for daylight and sunlight: a guide to good practice*' on the 9th of June 2022. This replaces the 2011 version of the same guidance and is to be read in conjunction with BS EN 17037 "*Daylight in buildings*". A summary of the methodologies within the BRE Guidelines is provided at Appendix 01 which also explains some of the terminology used in this Report and defines frequently used abbreviations (e.g. VSC, NSL, APSH, etc).
- 1.8 In the course of preparing this Report, the context model has been updated to a higher level of accuracy with new information following a recent site visit in June 2022.
- 1.9 GIA is considering the changes within the latest edition of the BRE Guidelines and expects to provide an Addendum to each scheme's Environmental Statement. This will be submitted to the Planning Inspectorate as soon as available. It is not anticipated that the new guidelines will change the methodology; the results of the assessments; or alter the conclusions of the current ES chapters.

## PLANNING HISTORY & SCHEME EVOLUTION

- 1.10 GIA were instructed by the Appellant in June 2018 to provide consultancy on daylight and sunlight matters in relation to the redevelopment of the New City Court site.
- 1.11 GIA attended a number of design team meetings to review scheme options for the 2018 and 2021 applications to optimise the daylight and sunlight amenity, i.e. to ensure that daylight, sunlight and overshadowing impacts to relevant neighbouring receptors were limited and that adequate sunlight was provided to proposed amenity spaces. It is not anticipated that the new guidelines will change the methodology; the results of the assessments; or alter the conclusions of the current ES chapters.

## 2018 AND 2021 PLANNING APPLICATION

- 1.12 Both the 2018 and 2021 planning applications (LBS Refs: 18/AP/4039 and 21/AP/1361) were submitted with an ES Chapter which examined the impacts of the developments on daylight, sunlight in neighbouring properties and overshadowing within existing and proposed amenity spaces.
- 1.13 In both cases, the Chapters (CDA.57 and CDB.63) demonstrate that while some impacts to neighbouring windows and rooms would fall outside the nationally applicable recommendations within the BRE Guidelines 2011, the 2018 and 2021 Schemes would provide “sufficient” daylight and sunlight to surrounding properties and avoid “the unacceptable loss of daylight and/or sunlight amenity” in line with the London Plan 2021 (CDD.021) and the LBS Residential Design Standards SPD (CDE.07).
- 1.14 During the course of both applications, GIA responded on several queries from the Case Officer and third party representations in relation to impacts on Borough Market, Southwark Cathedral and Shard Place.

## 2 STATEMENTS OF CASE

### LBS COMMITTEE RESOLUTION

- 2.1 In their Committee Reports (CDI.06 and CDI.07), LBS identified two primary reasons for refusal had it determined the applications – heritage and townscape. It was however considered by LBS that the impact of both schemes to daylight and sunlight to surrounding properties did not comply with development plan policies (para 137 of CDI.06 and para 132 of CDI.07) and as worded (identically in both Reports) below:

*Incidences of minor, moderate and major adverse effects to neighbour amenity have been identified in terms of daylight and sunlight reductions caused by the proposal. These cannot be mitigated, and would require the massing of the proposal to be reduced if they are to be lessened. The harms would likely not have been considered sufficient to warrant refusal of an otherwise acceptable application, however the council's evidence would suggest that the Inspector should consider these incidences of harm as part of the planning balance of the harms and benefits of the proposal.*

- 2.2 The impacts to daylight and sunlight to surrounding properties is not considered so harmful that it would warrant a reason for refusal on either application, rather the Inspector is invited to consider the impacts or harm as part of the planning balance.

### LONDON BOROUGH OF SOUTHWARK'S STATEMENT OF CASE

- 2.3 LBS issued their Statements of Case (CDI.03 and CDI.04) to the Planning Inspectorate and Appellant in March 2022. In part 4 of Section 8 in both documents, LBS set out their case in relation to the harm arising from the impacts of the development on surrounding properties. In consideration of the proposed amenity spaces, the Council's Statement of Case for the 2018 Scheme (CDI.03) states at paragraph 8.23.7:

*The proposal includes new public space at its base, but the attractiveness and spatial qualities of this space and the pedestrian experience would be reduced as a result of overshadowing of significant parts of the proposed landscaping at ground level and constraints on the sense of openness due to the tower's overbearing scale and curved northern façade.*

- 2.4 In terms of the 2021 Scheme, the Council's Statement of Case (CDI.04) notes at paragraph 8.23.7 in relation the proposed amenity space:

*The proposal includes new public space at its base however, parts of the proposed landscaping at ground level within the colonnade would be enclosed by the tower above and therefore have a reduced sense of openness, while the tower would overshadow the public realm adjacent to St Thomas Street which reduces the attractiveness of the public space and the pedestrian experience.*

- 2.5 In its consideration of daylight and sunlight matters at para 8.35 of CDI.03 (2018 Scheme) and para 8.31 of CDI.04 (2021 Scheme), the Statements of Case state the following paragraph:

*The massing of the tower would cause a significant reduction in daylight to surrounding residential and student housing properties, a noticeable reduction in sunlight to nearby residential units, and overshadowing of the public realm. These adverse impacts on daylight and sunlight are not considered by the Council to be so severe as to give rise to a separate reason for refusal of the scheme, however the adverse impacts are material considerations that weigh against the scheme and need to be included in the planning balance.*

- 2.6 This Report will review the daylight impacts to neighbouring residential and student accommodation; sunlight in neighbouring residential accommodation; overshadowing within the proposed amenity spaces in both the 2018 and 2021 Schemes and finally, the impact of the 2021 Scheme on the public realm adjacent to St Thomas Street.

### HISTORIC ENGLAND'S STATEMENT OF CASE

- 2.7 In the Statement of Case by Historic England (CDI.05), reference is made to the impact of the 2018 and 2021 Schemes on Guy's Chapel, as follows:

*The proposed tall building in both schemes is also likely to have a harmful impact on the quality of light into the listed building, particularly within the central chapel of the west wing.*

- 2.8 This Report will consider the impact arising from the 2018 and 2021 Schemes to the quality of light within the central chapel.



### 3 IMPACTS TO NEIGHBOURING PROPERTIES

- 3.1 The ES Chapter for the 2018 Scheme (CDA.57) notes that the scheme would result in minor adverse impact to daylight in four properties; moderate adverse impact to daylight in six properties and moderate adverse impact to sunlight in two properties.
- 3.2 The ES Chapter for the 2021 Scheme (CDB.63) notes that the scheme would result in minor adverse impact to daylight in nine properties; moderate adverse impact to daylight in eight properties; and moderate to major adverse impact to daylight in one property. In terms of sunlight, one property would experience a minor adverse impact while a further three properties would experience moderate adverse impacts.

#### Residential Accommodation

- 3.3 Having reviewed the daylight and sunlight results for both the 2018 and 2021 Schemes, the impacts to daylight amenity in neighbouring residential properties are found to be acceptable based on one or more of the following grounds:
- Architectural features (overhanging balconies or protruding side returns) exist which restrict daylight to rooms lit by windows beneath / beside them in accordance with paragraphs 2.2.13 and 3.2.11 of the BRE Guidelines 2022;
  - Percentage reductions in daylight (VSC and NSL) are generally minor i.e. less than a 30% reduction on the existing value;
  - The retained VSC values are in the region of a mid-teen or higher which both the GLA<sup>1</sup> and the Planning Inspectorate<sup>2</sup> have in relation to other schemes identified as an “acceptable” level of VSC for an inner urban environment such as the location of the Appeal Site.
- 3.4 The impacts to daylight and the retained values in either of the proposed scenarios are common in dense urban environments where there is a close relationship between buildings. In such circumstances, often daylight values are already lower in the existing scenario and consequently, even modest developments are likely to result in a breach of the BRE Guidelines. The 2018 and 2021 Schemes do not produce VSC values which are out of kilter with what is considered acceptable on other Central London sites (as an example, see the footnoted GLA and Planning Inspectorate decisions).
- 3.5 One property (The Old King’s Head Public House) is located to the immediate south of the Appeal Site. With the 2018 Scheme, the windows and rooms in the property generally see an improvement on the existing daylight values. With the 2021 Scheme, the windows and rooms experience reductions beyond the recommendations of the BRE Guidelines. The upper floors of the property are understood to serve residential accommodation which is ancillary to the commercial use on the lower floors.
- 3.6 In terms of sunlight, very few of the properties which are relevant for sunlight assessment (in that they are within 90-degrees of due south) experience impacts beyond the recommendations of the BRE Guidelines. As with daylight, impacts to sunlight often occur where there are existing architectural features such as projecting wings that restrict the receipt of sunlight.
- 3.7 The expectation for sunlight, particularly winter sunlight, should be considered in the context of the urban grain in this location and the relationship with the neighbouring

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1 GLA Refs: D&P/3698/03 (para 120) and GLA/3776a/03 (para 429)

2 PINS Ref: APP/E5900/W/17/3171437 (para 112)

buildings. It is very challenging to be compliant with the winter sunlight test given the dense, urban character of the area and position of the sun in the sky during this period.

#### **Student Accommodation**

- 3.8 It is acknowledged that the 2018 and 2021 Schemes will cause a noticeable reduction to the daylight amenity within the student housing blocks located to the south of the Appeal Site. As outlined above, the dense urban environment in Central London and relationship with neighbouring development sites means that even small increases in the massing of buildings is likely to result in impacts to the daylight amenity in some neighbouring properties.
- 3.9 The student accommodation is located in this area given the proximity to King's College London ("KCL") and Guy's Hospital. There are a number of campuses in the Southwark which are associated with KCL and which are located in similar dense urban environments which have similar relationships with neighbouring buildings. We have reviewed the daylight amenity of student accommodation in Southwark and have found a range of VSC values in these buildings. The retained VSC values to Orchard Lisle House, Iris Brook House and Shepherd's House are found in existing student accommodation in Southwark.
- 3.10 It is clear therefore that the 2018 and 2021 Schemes do not produce VSC values which are unusual in comparison with other to student housing blocks in Southwark.

#### **Summary**

- 3.11 The impacts to daylight and sunlight amenity in neighbouring residential properties are in line with what would be expected in dense urban environments in Central London where the expectation for natural light is inevitably lower.
- 3.12 Where impacts to daylight occur the impacts are either minor or the retained VSC values are contextually appropriate and are in line with what has been found acceptable by the GLA and the Planning Inspectorate in their assessment of schemes in similar locations. In many cases, daylight and sunlight impacts occur to windows and rooms which are already obstructed by existing architectural features such as projecting wings. In terms of the student accommodation, the retained values are similar to what already exists in other student housing blocks in the borough.
- 3.13 It is clear that LBS recognise these factors and perceive the daylight and sunlight impacts to neighbouring properties in a similar way given that they have stated that a reason for refusal cannot be substantiated on these grounds.

## 4 SUNLIGHT TO AMENITY SPACES

- 4.1 Both the 2018 and 2021 Schemes deliver amenity space which is commensurate with the commercial nature of the development. In both Schemes, amenity space is provided at ground floor. The LBS Statements of Case for the respective schemes highlight the sunlight availability within the proposed amenity spaces in the 2018 and 2021 Schemes and the impact of the 2021 Scheme on the public realm adjacent to St Thomas Street.

### 2018 Scheme

- 4.2 In the 2018 Scheme, the ground floor amenity space is provided in two separate spaces, the first being the main courtyard (Area 1) and the second area (Area 2) which includes the entrance to New City Court, the walkway to the main courtyard and the east courtyard.
- 4.3 It is not anticipated that the entrance area and the walkway to the main courtyard have a specific requirement for sunlight given that one is a point of entry and the other is for the movement of pedestrian traffic. The key areas of focus should be the main courtyard and to a lesser extent the east courtyard.

### OVERSHADOWING ASSESSMENT - PROPOSED OPEN SPACE SUN HOURS ON GROUND - BRE COMPLIANCE - 21<sup>ST</sup> MARCH



Fig. 01: Ground Floor Plan -Top view

- 4.4 The main courtyard performs very well by providing two-hours of direct sunlight to 73% of the space on 21st March. The smaller east courtyard does not achieve two-hours of direct sunlight to at least 50% of the area (this being that BRE recommendation); however, in the summer months when the area is most likely to be used, it performs very well and generally achieves between three and six hours of direct sunlight. The main courtyard will continue to be the primary amenity space associated with the commercial development in that it offers high level of direct sunlight throughout the entire year.
- 4.5 Furthermore a public terrace is proposed within the 2018 scheme at levels 5-6 along with a private roof terrace. We have not tested these areas as they are expected to perform very well given their position and orientation.

#### OVERSHADOWING ASSESSMENT - PROPOSED OPEN SPACE SUNLIGHT EXPOSURE - 21<sup>ST</sup> MARCH

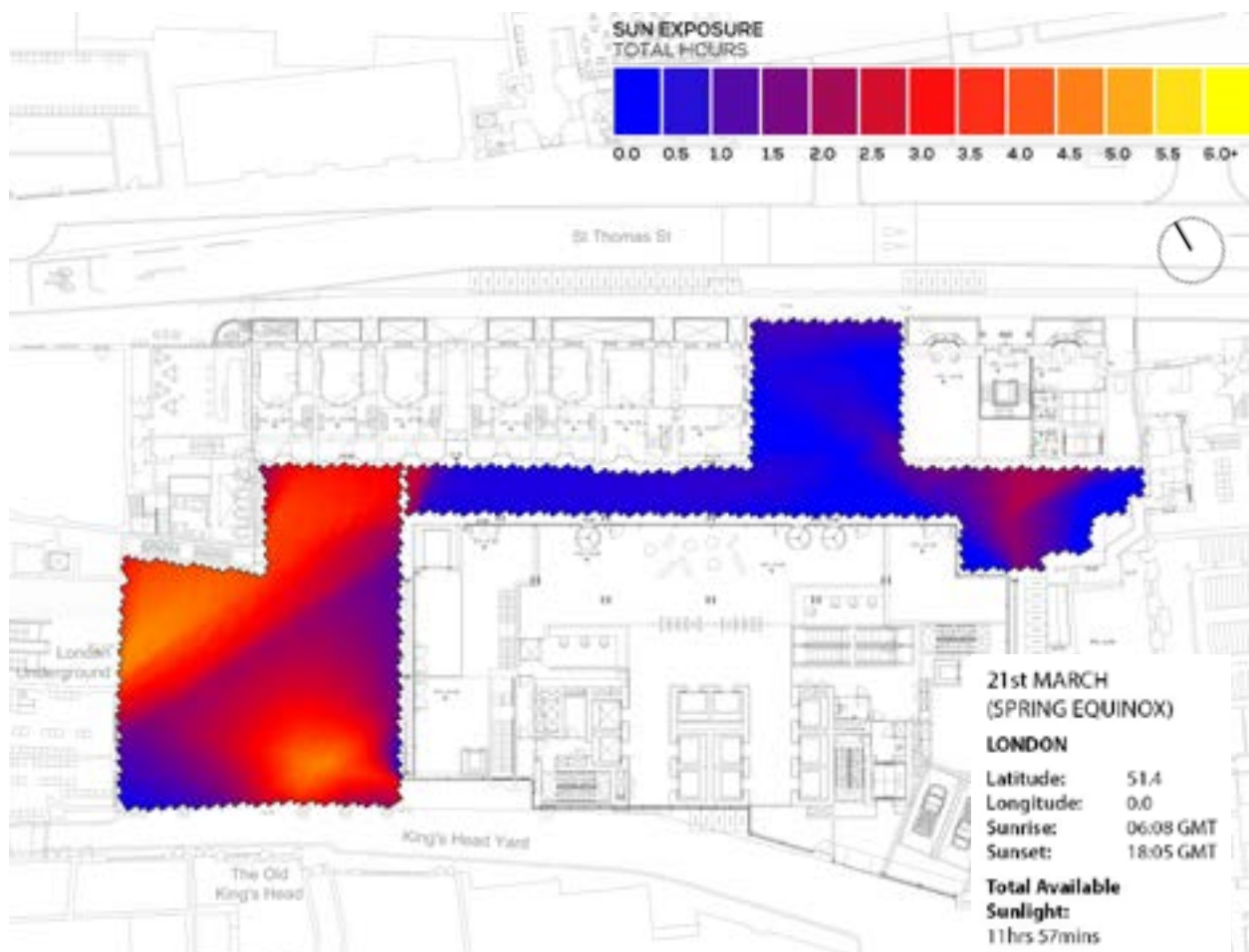


Fig. 02: Ground Floor Plan -Top view

OVERSHADOWING ASSESSMENT - PROPOSED OPEN SPACE  
SUNLIGHT EXPOSURE - 21<sup>ST</sup> JUNE

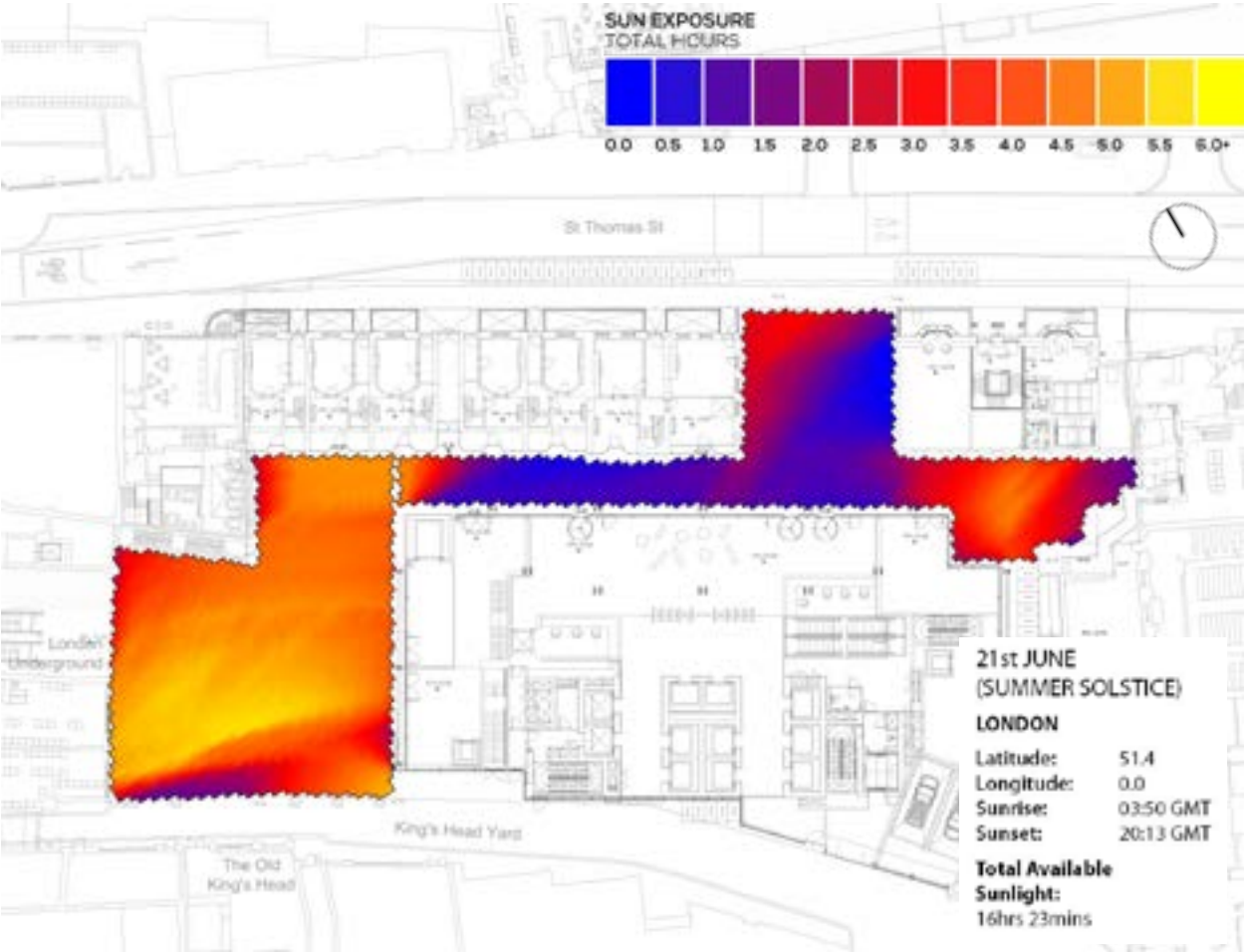


Fig. 03: Ground Floor Plan -Top view



### 2021 Scheme

- 4.6 The 2021 Scheme provides one external amenity space at ground floor level to the west of the Site. The position of the Proposed Development is partly to the south of the amenity space which results in 24% of the area seeing at least two-hours of direct sunlight on 21st March.
- 4.7 When considering the Sun Exposure assessments, the area is sunlit throughout the course of the year and performs particularly well in the summer months when it is most likely to be in use. The Scheme will also benefit from the south facing terrace at Level 03 and the roof terrace which is available to the affordable workspace tenants and a public terrace at roof level. Again, we have not tested these areas which are expected to perform very well given their position and orientation.
- 4.8 The 2021 Scheme provides public realm within the footprint of the building (the Gallery) and we refer to Mr. Allford's evidence to describe the design of this space and in particular the height, openness and pedestrian experience. We would not assess such areas against the BRE Guidelines which is intended to be used for external areas only.

### OVERSHADOWING ASSESSMENT - PROPOSED OPEN SPACE SUN HOURS ON GROUND - BRE COMPLIANCE

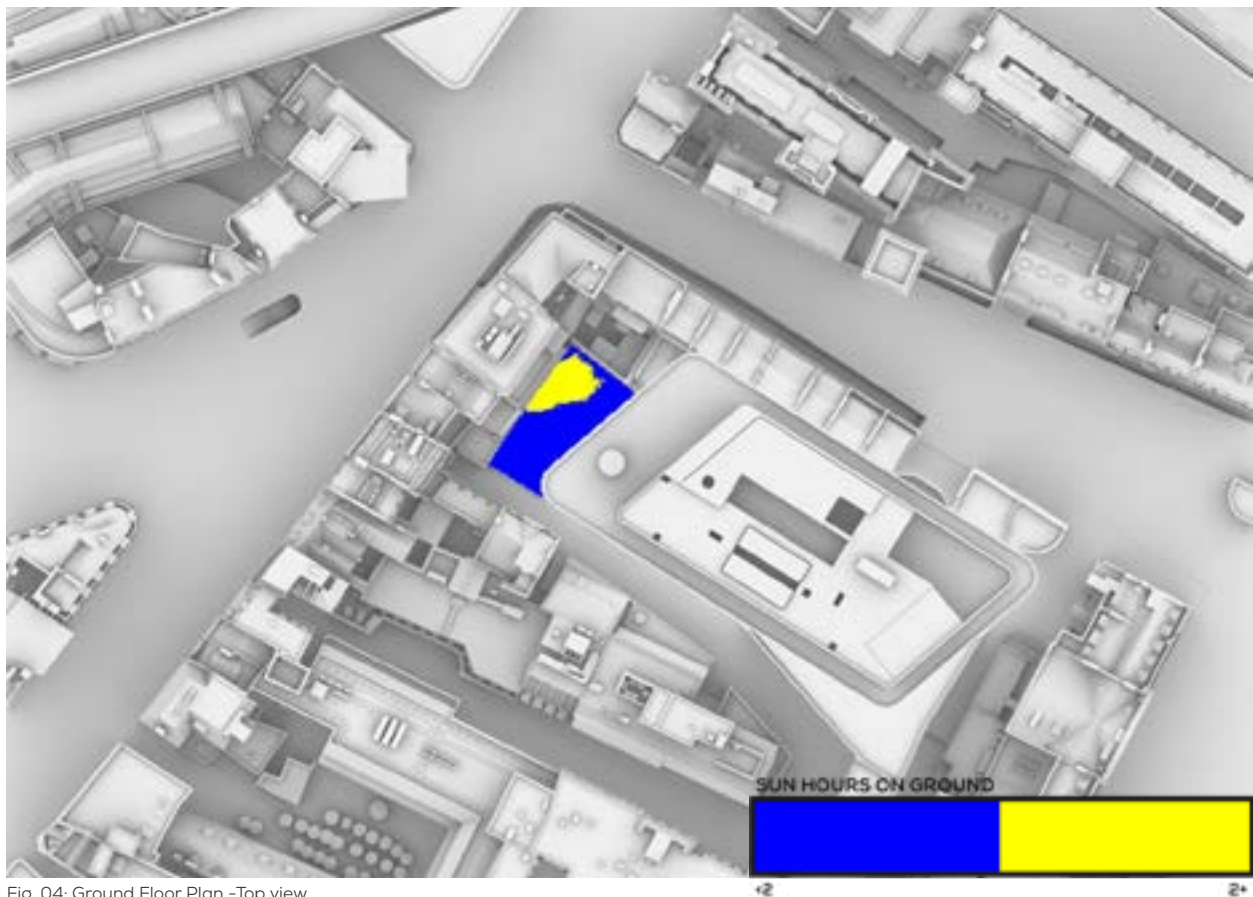


Fig. 04: Ground Floor Plan -Top view

OVERSHADOWING ASSESSMENT - PROPOSED OPEN SPACE  
SUNLIGHT EXPOSURE - 21<sup>ST</sup> MARCH

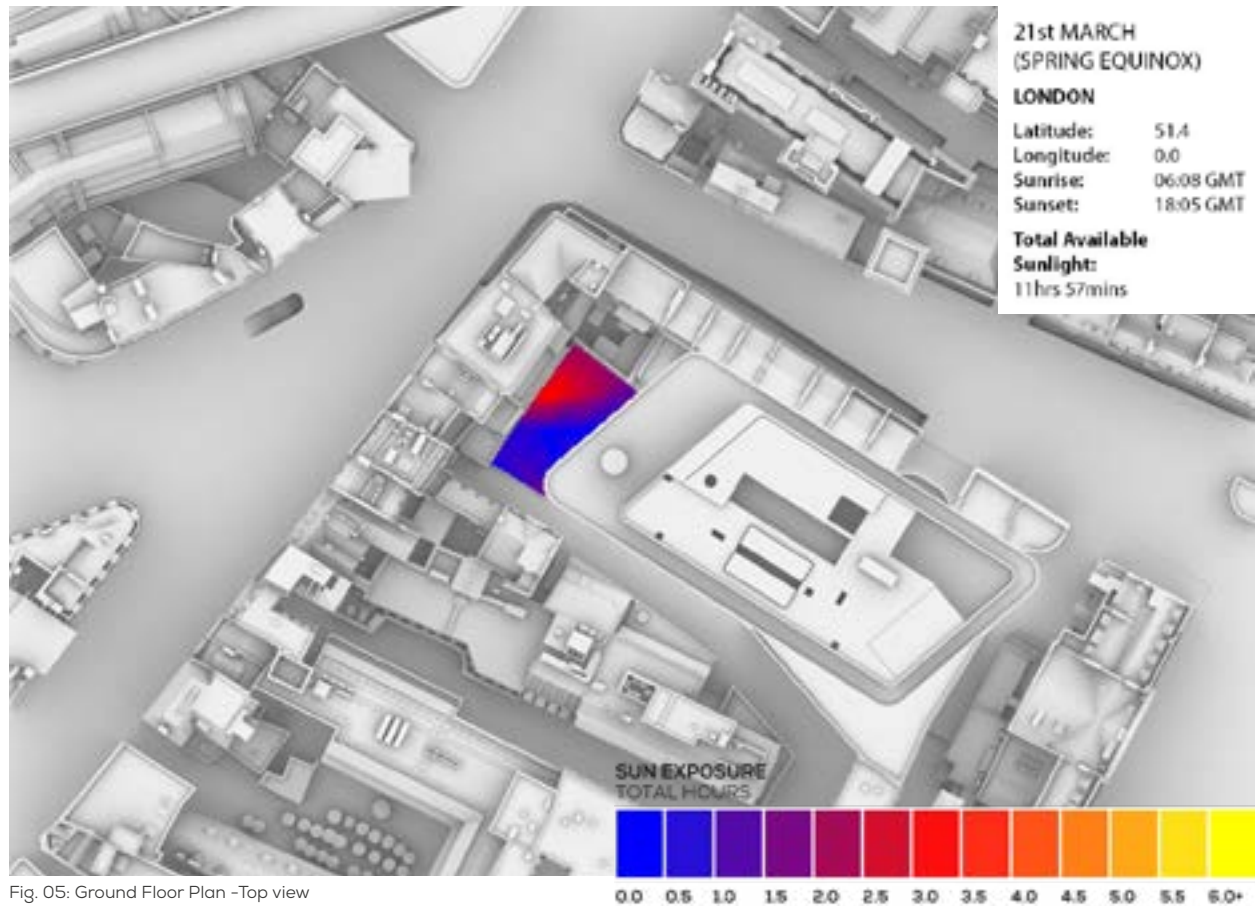


Fig. 05: Ground Floor Plan -Top view

OVERSHADOWING ASSESSMENT - PROPOSED OPEN SPACE  
SUNLIGHT EXPOSURE - 21<sup>ST</sup> JUNE

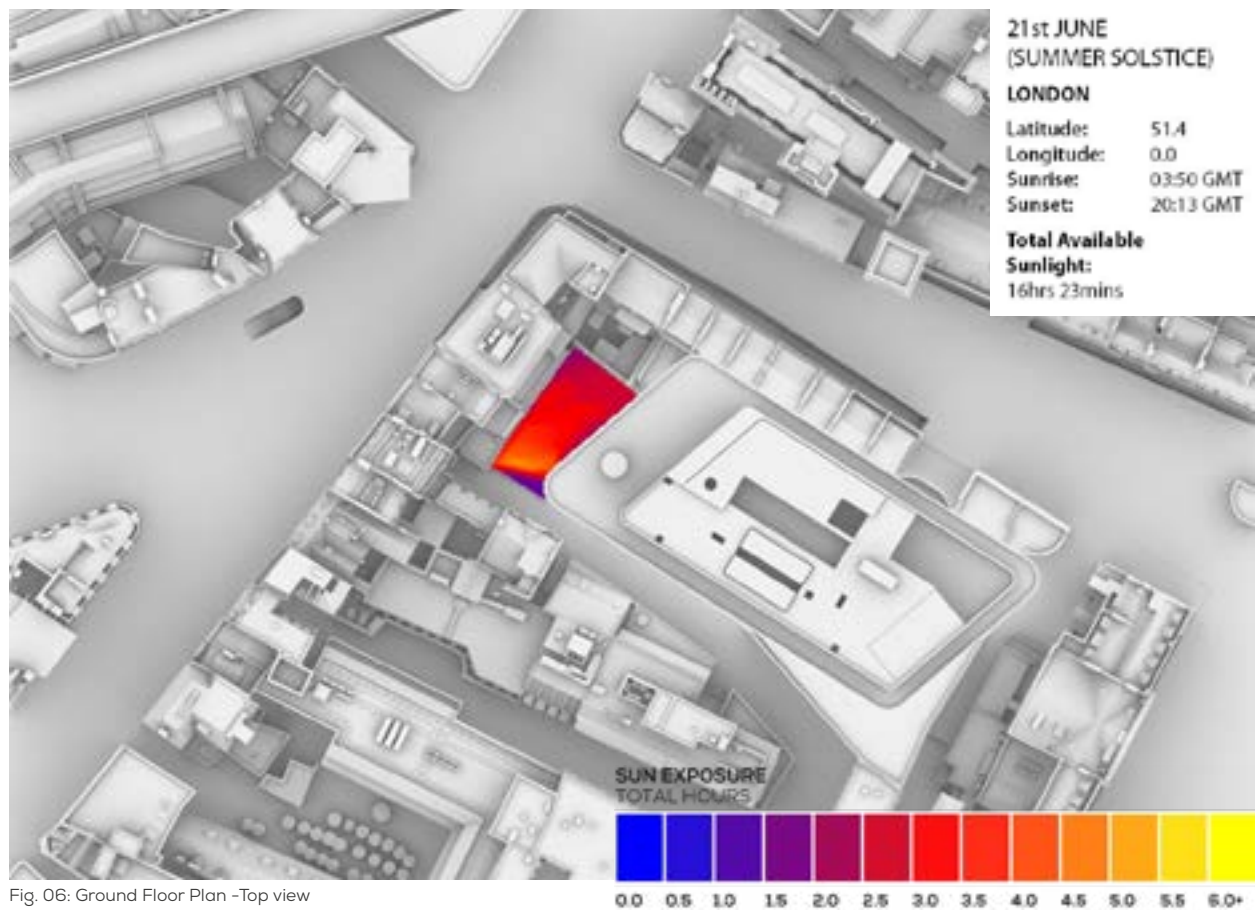


Fig. 06: Ground Floor Plan -Top view

- 4.9 It is considered that the proposed amenity spaces in both the 2018 and 2021 Schemes perform well and “avoid harmful and uncomfortable environmental impacts including...overshadowing” in line with Policy P17 (Tall buildings) of the Southwark Plan 2022 (CDE.01).

### Impacts to Neighbouring Public Realm

- 4.10 In respect of the 2021 Scheme, the Council’s Statement of Case (CDI.04) notes at paragraph 8.23.7 in relation the proposed amenity space:

*The proposal includes new public space at its base however...while the tower would overshadow the public realm adjacent to St Thomas Street which reduces the attractiveness of the public space and the pedestrian experience.*

- 4.11 The area adjacent to St Thomas Street was tested for overshadowing as part of the planning application. A follow up site visit in June 2022 confirmed that the area is not an amenity space that would need to be tested under the recommendations of the BRE Guidelines. As shown on the photos from June 2022, the area is cordoned off and not maintained. The marketing particulars for the office building (Collegiate House) adjoining the area confirm that it is the car park serving the offices. At the time of the June 2022 site visit, it was being used as a car park. Consequently, we do not consider that it is an area of public realm that would need to be assessed for sunlight availability.



Fig. 07: Sun Hours on Ground - Existing



Fig. 08: Sun Hours on Ground - Proposed 2021 Scheme





Fig. 09: GIA photos from site visit, June 2022



Fig. 10: Site photographs, July 2016

## 5 GUY'S CHAPEL

5.1 This property is located to the east of the Site. In the Statement of Case by Historic England (CDI.05), it is alleged at paragraph 6.21 that *"the proposed tall building in both schemes is also likely to have a harmful impact on the quality of light into the listed building, particularly within the central chapel of the west wing."*

5.2 LBS recognise that there is no strict requirement to assess the daylight and sunlight amenity of non-residential uses unless they are buildings of special uses<sup>3</sup> where there is a requirement for natural light. While it is not considered that the chapel has a special requirement for daylight and sunlight, we have considered any reductions in daylight and sunlight amenity arising from the 2018 and 2021 Schemes.

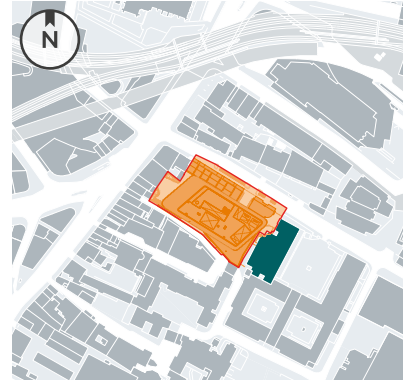


Fig. 11: Property location key plan (green)

5.3 Historic floor plans have been obtained for this property which have formed the basis of our technical assessments. Since completing the technical assessments enclosed with the ES Chapters (CDA.57 and CDB.63), the model of the Chapel has been updated to a higher level of accuracy with new information following a recent site visit in June 2022. Windows at ground floor are closed and have therefore been removed from the technical analysis.

### 2018 Scheme

No. of Windows	No. of Rooms	Compliant for VSC	Compliant for NSL	Compliant for APSH
23	3	12/23 (52%)	3/3 (100%)	12/12 (100%)

5.4 Of the 23 windows tested for VSC, 12 will remain BRE compliant. The remaining 11 windows are located at second and third floor on the western elevation of the Chapel facing towards the Proposed Development and will experience major reductions in VSC i.e. up to 59.4% reduction. The 2018 Scheme meets the recommendations for NSL as outlined in the BRE Guidelines.



Fig. 12: Ground floor windows in Guy's Chapel (June 2022)

### 2021 Scheme

No. of Windows	No. of Rooms	Compliant for VSC	Compliant for NSL	Compliant for APSH
23	3	12/23 (52%)	2/3 (66%)	12/12 (100%)

5.5 The 2021 Scheme has the same compliance rate as the 2018 Scheme for VSC albeit the percentage reduction to the impacted windows is greater i.e. up to 81.4%. The central chapel will also experience a major adverse impact to daylight distribution with a reduction in NSL of 41.6%.

<sup>3</sup> Planning Committee Report, Sainsbury Outpatient Pharmacy, Solomon Centre, Guy's Hospital (LBS Ref: 20/AP/3101) - para 89

## Existing Condition

- 5.6 Given the relationship with the existing building on the Appeal Site, none of the windows which face either of the Proposed Developments will meet the BRE's recommended 27% VSC which is a value they consider will mean that "enough skylight should still be reaching the window of the existing building". It is considered by the BRE that "this value of VSC typically supplies enough daylight to a standard room when combined with a window of normal dimensions, with glass area around 10% or more of the floor area".
- 5.7 The BRE Guidelines go on to state that "if the VSC, with the new development in place, is both less than 27% and less than 0.80 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear gloomier, and electric lighting will be needed more of the time." By this rationale, the existing VSC results would mean that the existing chapel would have a requirement for electric lighting in the existing scenario.
- 5.8 If the BRE Guidelines on VSC were applied stringently to Guy's Chapel, it would only be possible to add a very modest single storey extension (3.3m floor height) to part of the existing roof before breaching the recommendations for VSC. By introducing a modest roof extension to part of the existing building fronting St Thomas Street (as depicted in Figure 13 below), it would result in impacts just below the BRE's threshold of 20%. Any massing beyond this would result in breaches of the BRE Guidelines in respect of VSC.
- 5.9 Given the close relationship between Guy's Chapel and the Appeal Site, a significantly lower scheme than either the 2018 and 2021 Schemes would result in similar impacts to the chapel i.e. in practice, additional massing on upper floors would not make a meaningful difference in VSC values because of the proximity of the chapel windows to the Appeal Site.

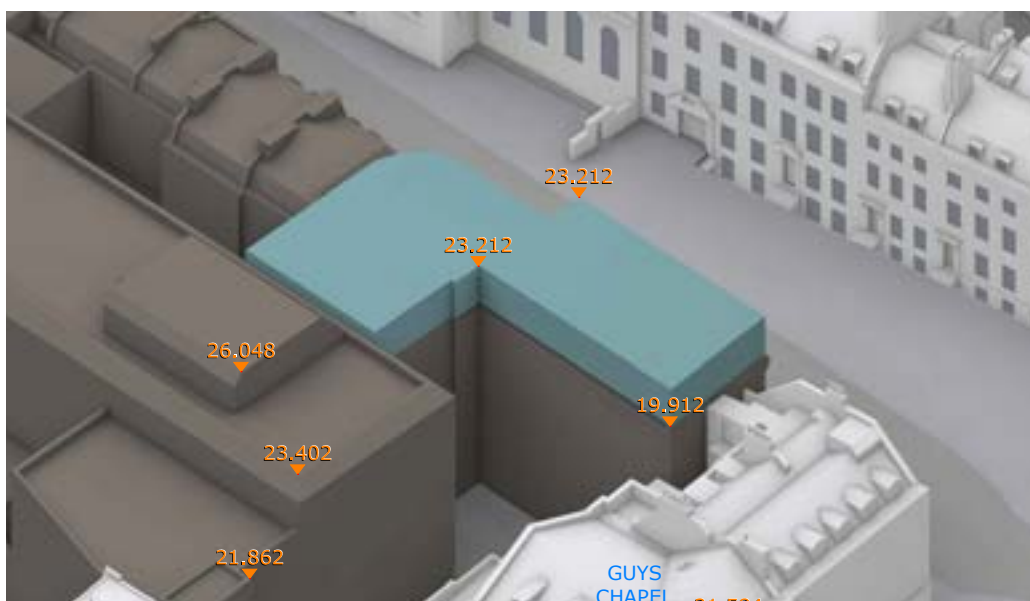


Fig. 13: Hypothetical single storey extension within the BRE's 20% reduction tolerance for VSC



- 5.10 It is clear therefore that in dense urban environments where neighbouring buildings are in close proximity, it is challenging to introduce additional massing without causing a reduction in daylight and sunlight amenity by reference to the BRE Guidelines.
- 5.11 Furthermore, whilst there will be a reduction in skylight to the windows facing onto the development site, it is clear from the NSL results that the negative affect on these windows will be mitigated by the presence of other windows not facing the site. We consider that the overall quality of light within the Chapel will not be unduly compromised. Furthermore, the non-domestic and transitory use of the Chapel would mean that the functionality of the building is unlikely to be adversely affected by any reduction in skylight to the rear windows.
- 5.12 All windows which are relevant for sunlight assessment (in that they are oriented within 90-degrees of due south) will meet the BRE's recommendations for annual and winter sunlight.

## 6 CONCLUSION

- 6.1 This Report has been prepared to provide additional information to address points raised by LBS and Historic England in respect of daylight, sunlight and overshadowing impacts from the redevelopment of New City Court.
- 6.2 A technical issue is not raised in relation to the daylight, sunlight and overshadowing assessments submitted in support of the planning applications. This Report has therefore been prepared to assist the Inspector when considering the planning balance.
- 6.3 Given the relationship between buildings in dense urban areas in Central London and particularly in the case of the Appeal Site, it is challenging to create even modest roof extensions without causing a reduction in daylight or sunlight amenity to some properties (i.e. Guy's Chapel) beyond the recommendations of the BRE Guidelines. Notwithstanding that, we consider that the quality of light within the chapel will not meaningfully change given the mitigation provided by windows which face away from the Appeal Site.
- 6.4 In terms of sunlight availability to the proposed amenity spaces, it is demonstrated that both the 2018 and 2021 Schemes deliver amenity space which is commensurate with the commercial nature of the development. In both Schemes, a number of public and private amenity spaces are provided both at ground floor level and in terraces at upper levels and on the roof. All of the amenity spaces will have access to sunlight at the Spring Equinox and will perform particularly well in the summer months when the spaces are most likely to be in use.
- 6.5 The area on St Thomas Street questioned by LBS is not considered to be an area of public realm which requires particular light levels for its use (private car parking) and would not have been assessed had we known this at the time.
- 6.6 This Report addresses the issues outlined in the Statements of Case by both LBS and Historic England. It confirms that the impacts to daylight and sunlight amenity in neighbouring residential properties are in line with what would be expected in dense urban environments in Central London where the expectation for natural light is inevitably lower.
- 6.7 Where impacts to daylight occur the impacts are either minor or the retained VSC values are contextually appropriate and are in line with what has been found acceptable by the GLA and the Planning Inspectorate in their assessment of schemes in similar locations. In many cases, daylight and sunlight impacts occur to windows and rooms which are already obstructed by existing architectural features such as projecting wings / balconies. In terms of the student accommodation, the retained values are similar to what already exists in other student housing blocks in the borough.



# APPENDIX 01

## SUMMARY OF BRE GUIDELINES 2022

### **BUILDING RESEARCH ESTABLISHMENT: SITE LAYOUT PLANNING FOR DAYLIGHT AND SUNLIGHT: A GUIDE TO GOOD PRACTICE 3RD EDITION (2022) ("BRE GUIDELINES")**

- <sup>1</sup> The following section details the numerical guidelines for assessing daylight and sunlight outlined within section 2.2.23 (and figure 20) and 3.2.13 of the BRE Guidelines 2022. We have provided some observations throughout this section which we believe are important to consider when using the BRE Guidelines to calculate changes in daylight and sunlight condition. In doing so, we will illustrate that while the BRE Guidelines offer a starting point to assess daylight and sunlight impacts, they do not provide an illustration of the "real life" light condition.
- <sup>2</sup> The BRE Guidelines provide two methodologies for daylight assessment of impacts to existing properties, namely;
  - The Vertical Sky Component (VSC); and
  - The No Sky Line (NSL).
- <sup>3</sup> The BRE Guidelines provides one method of sunlight assessment, the Annual Probable Sunlight Hours (APSH).
- <sup>4</sup> Each of the above assessments are discussed in detail in the following pages.

### Vertical Sky Component (VSC)

- 5 The Vertical Sky Component (VSC) method is described in the BRE Guidelines as the;

*"This is a measure of the amount of light reaching a window. It is 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."*<sup>4</sup>

- 6 In simple terms, the VSC calculates the skylight falling on a vertical plane (i.e. window) in the circumstance of an overcast sky (CIE standard). The VSC is quantified as a percentage of the amount of light reaching a window straight from the sky.
- 7 The strict 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).<sup>5</sup>
- 8 The image in Figure 14 indicatively illustrates the VSC analysis. The existing buildings are solidly pictured with the proposed scheme semi-transparent in the foreground.
- 9 This form of assessment does not take account of context or detailed matters such as window size, room use, room size, window number or dual aspect rooms. This assessment also assumes that all obstructions to the sky are 100% non-reflective.

4 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 6

5 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, para 2.2.7 and 2.2.23

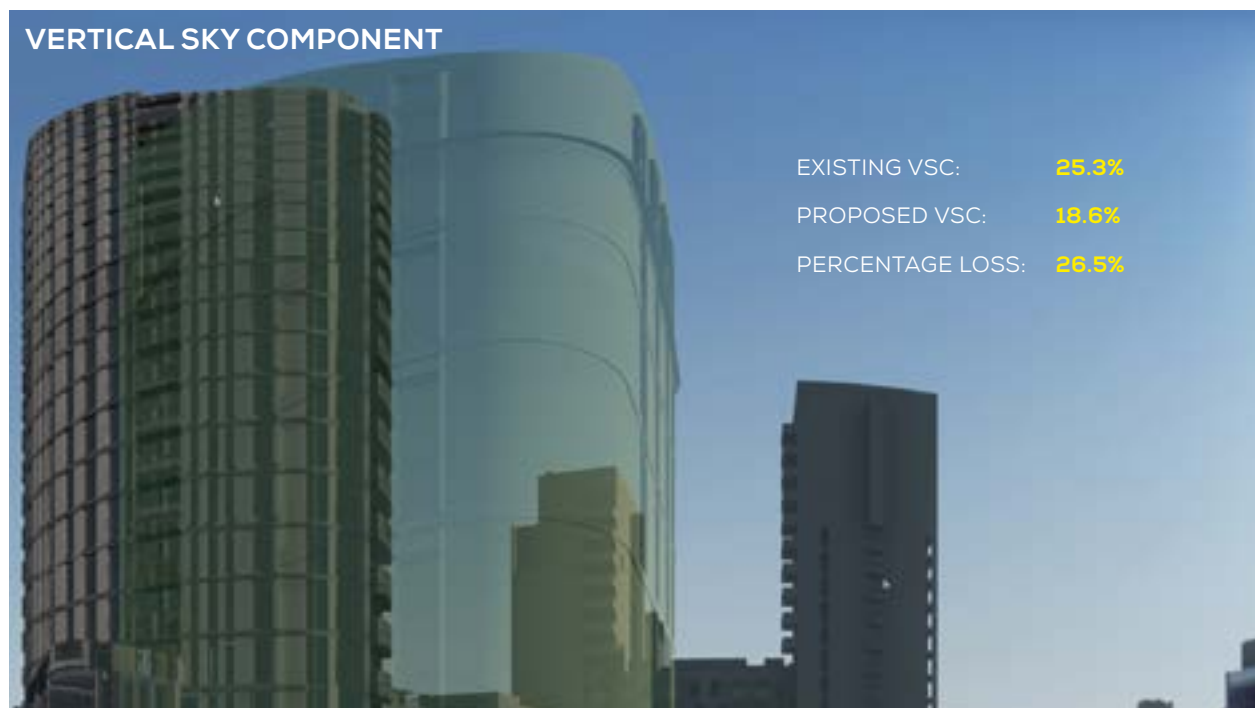


Fig. 14: Vertical Sky Component (VSC) indicative analysis



- 10 In the images below, we provide an example of how the VSC methodology does not necessarily paint an accurate picture of the experiential change in daylight condition. Figure 15 shows three windows of different size serving three rooms of identical size. In each case, the windows will have equal VSC values given that VSC is a measurement of the amount of sky visible from the centre point of a window.
- 11 The three rooms will experience a very different daylight environment because of the varying window sizes serving each one. Figure 16 depicts how window size affects the distribution of daylight within a room despite each window having an identical VSC value. This highlights that while the VSC methodology is a reasonable starting point to assess daylight, it does not accurately depict the change likely to be experienced with the room.

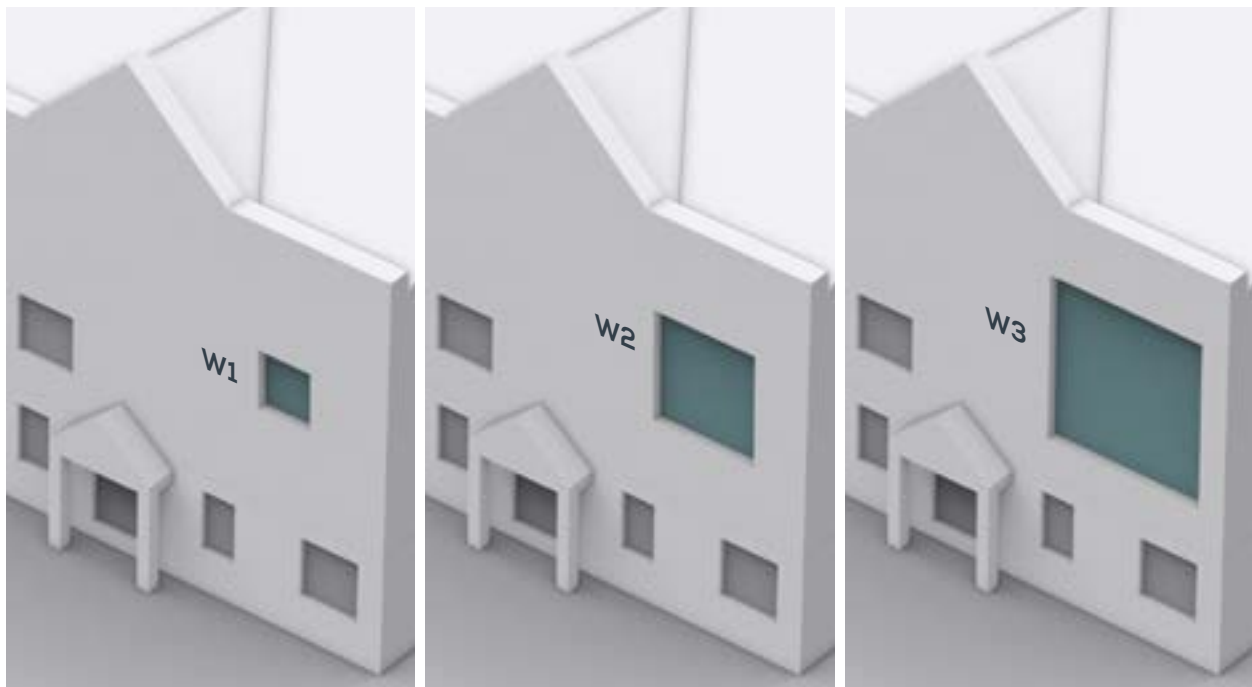


Fig. 15: Vertical Sky Component (VSC) indicative analysis

#### DAYLIGHT FACTOR STUDIES FOR SAMPLE ROOMS WITH SAME VSC

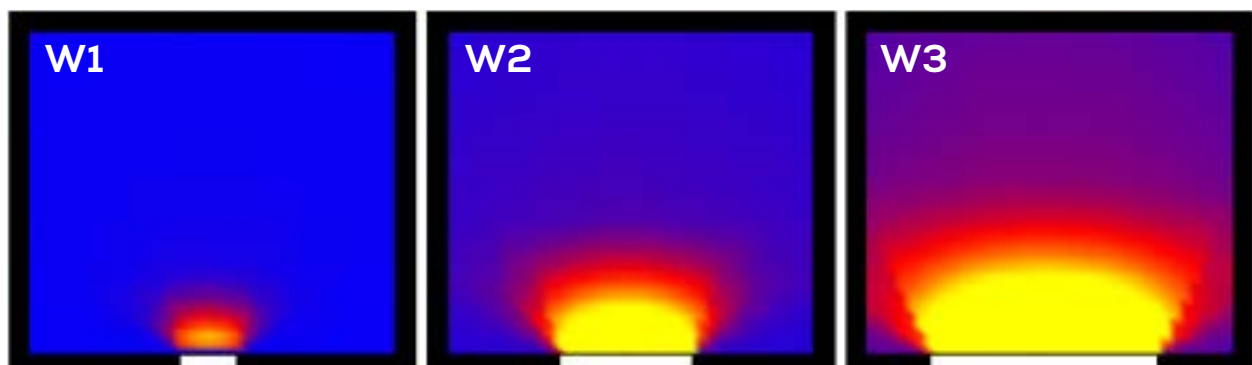


Fig. 16: Comparative radiance analysis

**No Sky Line (NSL)**

- 12 The No Sky Line (NSL) or Daylight Distribution (DD) method is described as “the outline on the working plane of the area from which no sky can be seen.”<sup>6</sup>
- 13 In summary, the NSL calculation assesses where the sky can and cannot be seen from inside a room at the working plane, “in houses the working plane is assumed to be horizontal and 0.85m high”<sup>7</sup>.
- 14 The Guidelines state that “Where room layouts are known (for example if they are available on the local authority’s planning portal), the impact on the daylighting distribution in the existing building should be found by plotting the no sky line in each of the main rooms”<sup>8</sup>. While the NSL calculation considers the size and configuration of a room, it is not generally recommended where room layouts are unknown. It is industry practice, however, to assume room sizes and configurations in order to calculate any movement of the no sky line.
- 15 The change in position of the NSL between the existing and proposed scenario is then calculated. This change is illustrated on a contour plot, an example of which can be found in Figure 17.
- 16 The BRE Guidelines state at paragraph 2.2.11 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.”<sup>9</sup>*
- 17 In simple terms this calculation plots where the sky can and cannot be seen within a room at table top height. If the NSL experiences more than a 20% change from the existing situation then, in accordance with the strict application of the national numerical values, the change in daylight would be noticeable to the occupants.
- 18 This assessment takes the number and size of windows serving a room into account however, there is no qualitative assessment of the light in the room, only where sky can or cannot be seen.
- 19 Figure 18 articulates that even a minor single storey extension may result in a significant reduction in NSL, but it does not accurately depict the change in light likely to be experienced within the room.

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6 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 6

7 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 16 para 2.2.10

8 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 15 para 2.2.10

9 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 16 para 2.2.11

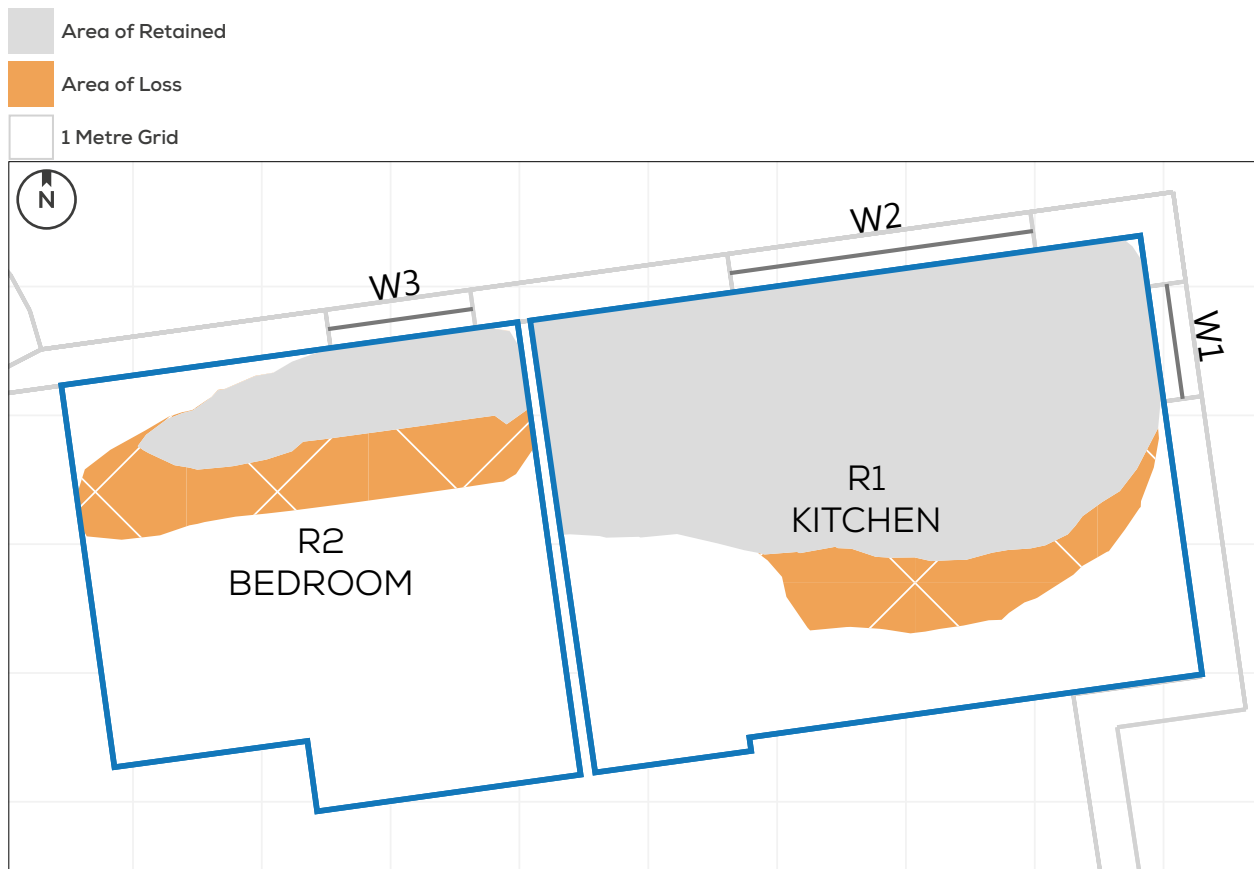


Fig. 17: Example NSL Contour Plot

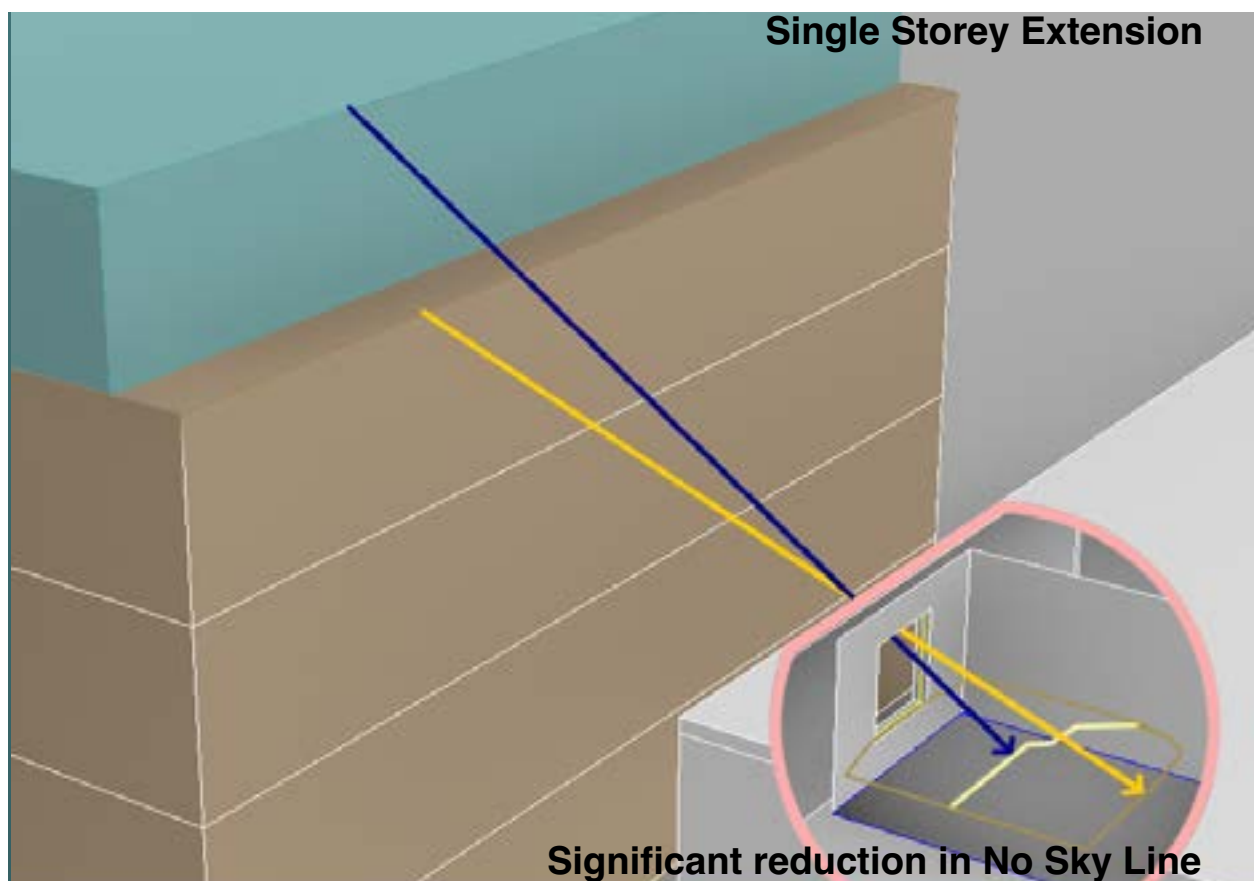


Fig. 18: Example of movement of NSL

### Decision Chart (Figure 20 of the BRE Guide)

- <sup>20</sup> The flowchart in Figure 20<sup>10</sup> illustrates the steps and criteria outlined within the BRE Guidelines to understand whether the daylighting (VSC and NSL) has been significantly affected.
- <sup>21</sup> Almost invariably when this methodology is applied in a town centre or more generally in an urban context the flowchart will point to “*daylight likely to be significantly affected*” when the real-life experiential change in light may not appear to be even noticeably affected.
- <sup>22</sup> The section at Figure 19<sup>11</sup> provides an example of the angle measurement subtended by a new development. This is the starting point provided within the BRE Guidelines from which to assess whether daylighting is likely to be significantly affected by new development. It is clear from the image that this principle has not been developed with urban town centre locations in mind.<sup>12</sup>

- <sup>10</sup> Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, Figure 20 p. 18
- <sup>11</sup> Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, Figure 14 p. 15
- <sup>12</sup> Appeal Ref: APP/E5900/W/17/3171437 para 108

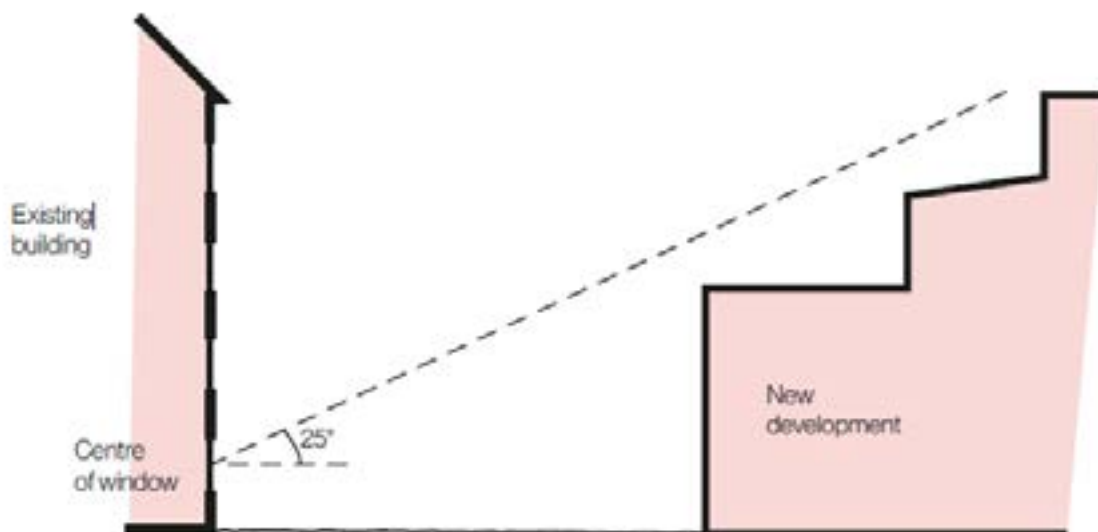


Fig. 19: BRE VSC diagram (Figure 14): Section in plane perpendicular to the affected window wall

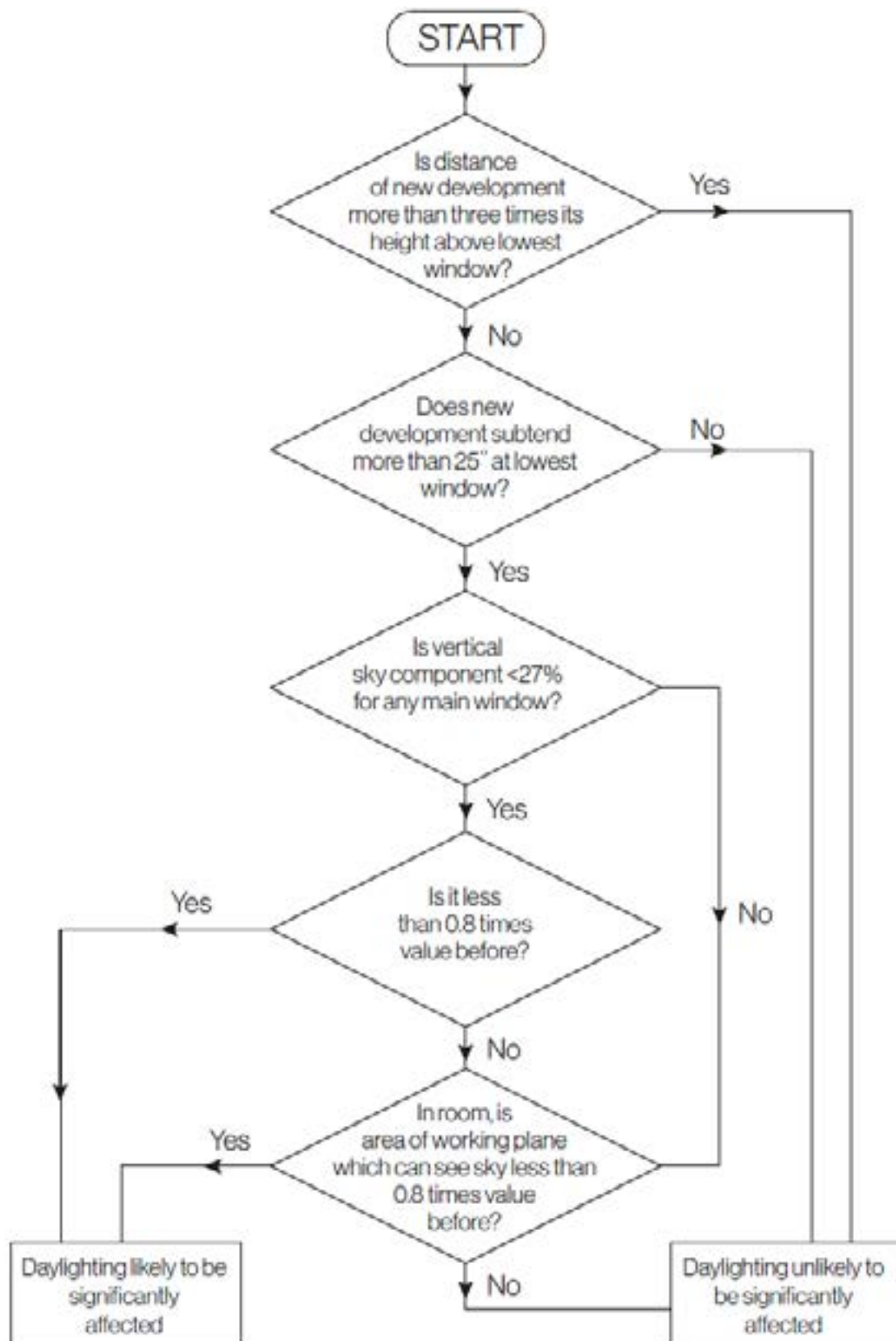


Fig. 20: BRE Decision Chart (Figure 20): diffuse daylight in existing buildings. This does not include an assessment of rights to light issues, which a developer may need to consider separately

**Annual Probable Sunlight Hours (APSH)**

- 23 Sunlight is measured using a sun indicator which contains 100 spots, each representing 1% of Annual Probable Sunlight Hours (APSH).
- 24 Where no obstruction exists the total annual unobstructed total number of sunlight hours in London is 1486 hours.
- 25 The number of spots is calculated for both the whole year and during the winter period (21<sup>st</sup> September to 21<sup>st</sup> March), prior to an obstruction and after the obstruction is put in place. This provides a percentage of APSH for each of the time periods for each window assessed.
- 26 The BRE Guidelines set out the overall methodology and criteria for the assessment of sunlight in Chapter 3. The BRE Guidelines state:
- "all main living rooms of dwellings...should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun."*<sup>13</sup>
- "If the main living room to a dwelling has a main window facing within 90° of due north, but a secondary window facing within 90° of due south, sunlight to the secondary window should be checked."*<sup>14</sup>
- "If a room can receive more than one quarter of annual probable sunlight hours (APSH), including at least 5% of APSH in the winter months between 21 September and 21 March, then it should still receive enough sunlight."*<sup>15</sup>
- Any reduction in sunlight access below this level should be kept to a minimum. If the available sunlight hours are both less than the amount above and less than 0.8 times their former value, either over the whole year or just during the winter months (21 September – 21 March), then the occupants of the existing building will notice the loss of sunlight; if the overall annual loss is greater than 4% of APSH, the room may appear colder and less cheerful and pleasant."*<sup>16</sup>
- 27 The BRE Guidelines provide that for existing buildings, the sunlight to a window may be adversely affected if a point at the centre of a window receives:
- Less than 25% of the APSH during the whole year, of which 5% APSH must be in the winter period; and
  - Receives less than 0.8 times its former sunlight hours in either time period; and
  - Has a reduction in sunlight for the whole year of more than 4% APSH.<sup>17</sup>
- 28 In the images opposite, We have provided an example of how this is assessed through the practice of counting the sun spots.
- 29 In Figures 21 and 22, the number of spots is calculated for both the whole year and also during the winter period (21<sup>st</sup> September to 21<sup>st</sup> March) prior to an obstruction and after the obstruction is put in place.
- 30 In this scenario, the proposed development will result in a good level of APSH (37% against the BRE's target of 25%). It is only in the winter months where a

13 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 24 para 3.2.3

14 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 25 para 3.2.5

15 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 25 para 3.2.6

16 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 25 para 3.2.7

17 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 25 para 3.2.6



transgression occurs given that the sun is lower in the sky. Despite good levels of retained sunlight throughout the year, the winter sunlight transgression results in a breach when strictly applying the methodology within the BRE Guidelines.

- 31 This test does not consider surrounding context or how sunlight is experienced in the remainder of the year.
- 32 In locations which have an urban character, it can be challenging to meet the target for sunlight within the BRE Guidelines.

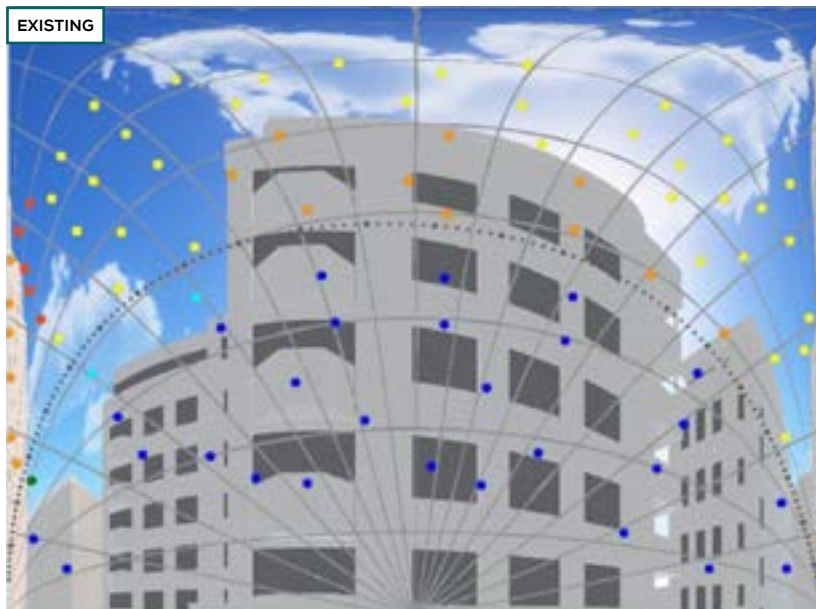


Fig. 21: Existing APSH: 43% Existing WPSH: 3%

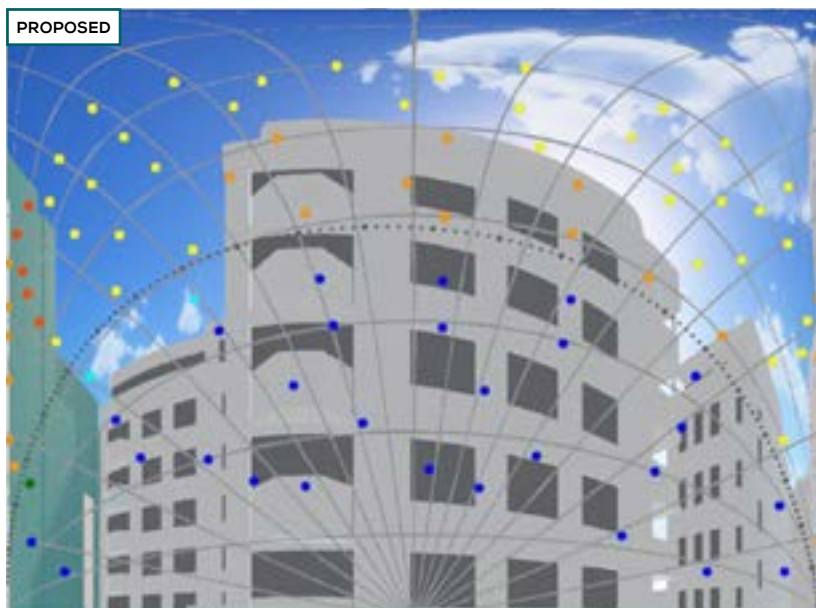


Fig. 22: Proposed APSH 37% Proposed WPSH: 2%

#### Sun Analysis Key:

- Winter sun restricted by the existing buildings
- Summer sun restricted by the existing buildings
- No impact to Winter sun
- No impact to Summer sun
- Winter sun restricted by the Proposed Development
- Summer sun restricted by the Proposed Development

## BRE GUIDELINES: ADDITIONAL DAYLIGHT & SUNLIGHT CONSIDERATIONS

- 33 The BRE Guidelines note that the document is intended to be used in conjunction with the interior Daylight recommendations found within the British Standard EN 17037.
- 34 The BRE Guidelines also provide advice on site layout planning to determine the quality of daylight and sunlight within open spaces between buildings.
- 35 It is important to note, however, that this document is a guide and states that its aim *"is to help rather than constrain the designer"*<sup>18</sup>.
- 36 The BRE Guidelines provide advice, but also clearly state that it *"is not mandatory and this document should not be seen as an instrument of planning policy."* The BRE Guidelines also acknowledge in its introduction that *"it is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location."*
- 37 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.
- 38 The BRE Guidelines provide alternative assessments to understand the impact on a neighbouring property in such situations.
- 39 The relevant assessments for the purpose of my Proof are detailed within the BRE Guidelines and summarised below.

### Daylight and Sunlight - VSC and APSH to Rooms: specific examples

- 40 As outlined within the BRE Guidelines the VSC value is calculated for each window; however –
- "If a room has two or more windows of equal size, the mean of their VSC's may be taken"*<sup>19</sup>.
- 41 In cases where a room is served by two or more windows of the same or different sizes, the VSC value to the room has been calculated by applying an average weighting calculation to understand the VSC value to the room. The formula used is as follows;
- $$\frac{\sum(V_n \cdot A_n)}{\sum A_n}$$
- Where:
- V = window VSC  
A = window area  
n = the number of windows
- 42 It is my opinion that this is a reasonable method to follow in that it follows the principles of the BRE Guidelines.
- 43 The BRE Guidelines provide a methodology to calculate APSH in relation to the room and window.

18 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 7 para 1.6

19 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 15 para 2.2.6



*"Care needs to be taken in applying this guideline to rooms with multiple windows. Except where the windows are in opposite walls, the annual probable sunlight hours cannot simply be added together. If the calculation method used does not avoid double counting of sunlight through multiple windows, the annual probable sunlight hours for the best sunlit window should be taken."<sup>20</sup>*

- 44 Evaluating per-room Probable Sunlight Hours is meant to be carried out with diagrams and acetate overlays, which makes accounting for individual spots challenging, if not impossible. APSH assessments are now typically calculated using specialised computer software, assessing rooms with multiple windows is generally done somewhat differently (and more accurately) than what is suggested in the BRE Guidelines.

### **Setting Alternative Target Values for Skylight and Sunlight analysis**

- 45 The BRE Guidelines dedicates a full appendix (Appendix F) to alternative values and how they can be derived.
- 46 F1 notes:
- Sections 2.1, 2.2 and 2.3 give numerical target values in assessing how much light from the sky is blocked by obstructing buildings. These values are purely advisory and different targets may be used based on the special requirements of the proposed development or its location. Such alternative targets may be generated from the layout dimensions of existing development.<sup>21</sup>*
- 47 Within Appendix F of the BRE Guidelines, a table is provided which details how one could derive alternative VSC values. As is evident from paragraph F1, alternative values can be applied to the VSC, NSL and APSH studies.
- 48 Table F1 provides a method of deriving a VSC value based on an obstruction angle. Table F1 of the BRE Guidelines references the Equivalent VSCs, spacing-to-height ratios and boundary parameters corresponding to particular obstruction angles between rows of buildings.
- 49 Table F1 denotes that an obstruction angle of 25° equates to a VSC of 27%; to achieve a VSC value of 18%, the obstruction must subtend 40°.
- 50 This is a simple method that does not take account for the variation in height and distance of obstructions on an average streetscape.
- 51 On the basis of table F1 in Appendix F of the BRE Guidelines, calculating the VSC, NSL and APSH values for an area to derive the appropriate alternative value is a more accurate process. This is also in line with the approach provided within Appendix F of the BRE Guidelines.

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20 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 25 para 3.2.8

21 Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press, p 85 para F1



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