URBAN LIGHT SURVEYORS

Essential Living

Detailed Daylight & Sunlight Report

5a King Street, London TW1 3SD

November 2024

Contents

Appendices

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For and on behalf of Urban Light Surveyors Limited

URBAN LIGHT SURVEYORS

Regulated by RICS

1. Introduction and Scope of Report

1.1 Urban Light Surveyors are instructed by Essential Living to consider Daylight & Sunlight amenity matters associated with a Prior Approval application for conversion of the existing building at 5a King Street, London TW1 3SD from Class E (commercial) to Class C3 (residential).

1.2 The formal description of the development is as follows:

"Prior approval application in accordance with Class G, Part 3 of Schedule 2 of the General Permitted Development Order 2015 (as amended) for the proposed use of the first and second floors as a residential dwelling."

1.3 Given there is no change to the existing massing being proposed, this report will consider daylight and sunlight provision for future occupants of the proposed dwellings only.

Figure 1: site location plan showing proposed development site (outlined red) in context

1.4 Class G conditions require *'the provision of adequate natural light in all habitable rooms of the dwellinghouses'* and this report demonstrates compliance with that requirement.

2. Executive Summary

2.1 Through careful and considered design the range of detailed technical assessments have confirmed that all habitable rooms would provide adequate natural light for all future occupants.

2.2 The Proposed Development therefore satisfies the regulatory requirement in the GPDO regulations relating to natural light and as such concluded as acceptable on these grounds.

3. Legislation & Best Practice Guidance

The Town and Country Planning (Permitted Development and Miscellaneous Amendments) (England) (Coronavirus) Regulations 2020 ("the GPDO")

3.1 The application is under Class G of Part 3 of Schedule 2 of the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) ("GPDO"), which states:

G.1 Development permitted by Class G is subject to the following conditions.

(d) Before beginning development, the developer must apply to the local planning authority for a determination as to whether the prior approval of the authority will be required as to—

...

*(iv) the provision of **adequate natural light** in all habitable rooms of the dwellinghouses;*

National Planning Policy

National Planning Policy Framework 2023 ("the NPPF")

3.2 There are no national planning policies directly relating to daylight, sunlight and overshadowing. However, Chapter 11 of the NPPF deals with "Making effective use of land." Under the sub-heading "Achieving appropriate densities" it states at paragraph 125:

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125. Area-based character assessments, design guides and codes and masterplans can be used to help ensure that land is used efficiently while also creating beautiful and sustainable places. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities and ensure that developments make optimal use of the potential of each site.

In these circumstances; ...

(c) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework.

*In this context, when considering applications for housing, **authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight where they would otherwise inhibit making efficient use of the site** (as long as the resulting scheme would provide acceptable living standards).*

National Planning Practice Guidance 2019 "the NPPG"

3.3 The NPPG is an online resource for planning practitioners. In respect to wider planning considerations in assessing appropriate levels of sunlight and daylight, the document titled 'Effective Use of Land' states at paragraph 007 under "planning for higher density development" (Reference ID 66-007-20190722):

All developments should maintain acceptable living standards.

What this means in practice, in relation to assessing ***appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design****.*

For example in areas of high-density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings.

In such situations good design (such as giving careful consideration to a building's massing and layout of habitable rooms) will be necessary to help make the best use of the site and maintain acceptable living standards.

Ministry of Housing, Communities & Local Government Guidance "Effective use of land" (22 July 2019)

"All developments should maintain acceptable living standards.

What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design.

For example, in areas of high-density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings."

Local Planning Policy

Greater London Authority: The London Plan

3.4 Policy D6 "Housing Quality & Standards" states:

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*D The design of development should provide **sufficient** daylight and sunlight daylight and sunlight to new and surrounding housing that is **appropriate for its context**, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space.*

London Borough of Richmond Upon Thames: Adopted Local Plan (July 2018)

3.5 Policy LP8 "Amenity and Living Conditions" states:

All development will be required to protect the amenity and living conditions for occupants of new, existing, adjoining and neighbouring properties.

The Council will:

ensure the design and layout of buildings enables good standards of daylight and sunlight to be achieved in new development and in existing properties affected by new development; where existing daylight and sunlight conditions are already substandard, they should be improved where possible;

Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice, BR 209 2022 Edition ("The 2022 BRE Guidelines") & BS EN 17037:2018 "Daylight in Buildings".

3.6 The BRE Guidelines are a national set of best practice recommendations to help achieve good daylight and sunlight access within buildings and the open spaces between them. It is intended to be used in conjunction with BS EN 17037:2018, which focusses on interior daylighting within a new building(s).

3.7 Most Local Planning Authorities refer to the 2022 BRE Guidelines in their policy documents when considering Daylight and Sunlight matters.

3.8 The 2022 BRE Guidelines specifically identify change of use and basements as "hard to light" due to their inherent constraints and therefore requiring appropriate flexibility when determining adequacy of daylight and sunlight.

Conclusion on Planning Policy and Guidance

3.9 As set out above, all levels of legislation, planning policy and guidance support the optimisation of highly sustainable/ accessible sites such as this. In this context, it is necessary to ensure that development is high-quality and delivers benefits for both new and existing communities.

3.10 Planning decision makers should apply default daylight and sunlight standards sensitively and flexibly so that such assessments do not prevent appropriate development coming forward on the right sites.

3.11 The default guidelines are inherently flexible and based on a specific set of circumstances.

3.12 As such terms such as “adequate” and “appropriate” when considering Daylight and Sunlight provision will inevitably alter depending on the specific set of wider circumstances and constraints.

3.13 For example, the BRE guidelines recognise that “change of use” development places constraints on the designer outside of their control in respect of the existing windows, building orientation/ arrangements etc.

4. Information Relied Upon

Existing Buildings/Surrounding Buildings

4.1 The immediate surroundings and the existing site were modelled using photogrammetry 3D data provided by AccuCities, reference: "004361_King Street_Twickenham_HD_MASTER" received 30 October 2024, augmented with desktop research and a site inspection.

Proposed Buildings

4.2 The Proposed Development was represented by layouts provided by Essential Land on 6 November 2024:

- 1470-ALN-KS-01-D-A-800 Proposed Elevations BOUND.dwg
- 1470-ALN-KS-01-D-A-100 Proposed Plans BOUND.dwg

4.3 The analyses were run in 'SOL', a specialist professional Daylight and Sunlight software developed specially for the purposes of conducting these types of assessment.

4.4 SOL has been accepted in various planning appeals and is widely considered to be a highly accurate and robust means of conducting the assessments set out in the BRE Guidelines.

5. Approach and Methodology

5.1 The information set out in Section 4 above was used to produce a 3D assessment model representing the neighbouring, existing and proposed buildings in AutoCAD.

5.2 A set of technical studies were undertaken using 'SOL', a specialist plug tool for AutoCAD written by especially for the purposes of undertaking daylight and sunlight assessments by Dr Malcolm MacPherson, Dr Martin Howarth and Paul Fletcher of Waterslade Ltd.

5.3 SOL is considered to be accurate and a well-established software for assessing light, having been accepted in numerous planning inquiries throughout the UK.

5.4 The BRE Guidance (2022) and British Standard BS EN 17037:2018 have formed the basis of the technical assessments undertaken and reported on.

5.5 Our interpretation of the principles established by these documents is set out below.

Daylight & Sunlight Principles

5.6 The BRE Guidelines – Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice, Third Edition (2022) are well established and are adopted by most planning authorities as a scientific and empirical method for measuring daylight and sunlight in order to provide objective data upon which to apply the relevant planning policies.

5.7 The default targets set out in the BRE Guidelines are predicated on a typical low-rise suburban environment with generous distance to height ratios. Therefore they recognise that decision makers should not rigidly apply these default standards in all cases and may apply more contextually appropriate alternative targets.

5.8 Paragraph 1.6 in the Introduction of the Guidelines states:

"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 developer.

Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design.

In special circumstances the developer or planning authority may wish to use different target values.

For example, in an 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. "

5.9 The 'flexibility' recommended in the BRE Guidelines is a suggestion that a decision maker must consider the specific characteristics of each case being considered when determining whether alternative targets should be adopted.

Daylighting

5.10 In respect of daylighting, the BRE Guidelines adopt different methods of measurement depending on whether the assessment is for the impact on existing neighbouring buildings or for measuring the adequacy of natural light provision within new buildings.

5.11 The methods of measurement for natural light provision within new development are summarised below. As set out at paragraph 1.3 above, this report does not consider daylight and sunlight effects of the Proposed Development as there is no change to massing of the existing building.

<u>New Development</u>

5.12 Section 2.1 of the BRE guidance (New Development) recommends that general illumination from skylight in proposed new buildings be checked using the methods set out in BS EN 17037:2018 "*Daylight in Buildings*".

5.13 BS EN 17037 makes use of target illuminances, by use of either direct prediction using hourly climate data ("Climate Based Daylight Modelling" also referred to as "CBDM") or estimated using daylight factors. Both methods seek to measure the overall amount of daylight in a space.

5.14 The recommendations are based around the illuminances that would be met or exceeded over half the room, over half of the daylight hours over the year.

5.15 BS EN 17037 gives a range of recommendations for 'high', 'medium' and 'minimum' daylight provision.

5.16 The UK National Annex gives further recommendations and data for daylight provision in the UK and Channel Islands.

5.17 The UK National Annex of BS EN 17037 gives minimum recommended values for locations where a predominantly daylit appearance is not achievable; giving examples of basement rooms, significant external obstruction and, as relevant in these circumstances, existing buildings being converted into dwellings.

5.18 The BRE Guidelines advise that room reflectances considerably influence the assessment and therefore realistic values must be used in the calculations and that these should be stated and specified in the design of the building.

5.19 The layout and location of spaces and rooms, taking into account their use/ demand for natural light are other key factors to consider at the design stage.

5.20 The BRE Guidelines recommend avoiding, where possible, locating windows serving habitable rooms at internal corners, basements or adjacent extensions/ projections i.e. where they would be obstructed.

5.21 The BRE Guidelines state that living rooms and kitchens need more daylight than bedrooms and therefore recommend siting these in the less obstructed areas in situations where a choice needs to be made. They also suggest, again subject to practicality, locating areas without a special requirement for daylight, e.g. bathrooms, stairwells, garages and storage areas in the most obstructed areas.

5.22 External reflectances also help improve daylighting conditions within new buildings. Lighter coloured building materials and ground finishes are suggested; however these are subject to geometrical limitations and maintenance considerations.

5.23 Balconies and overhangs are often a necessary feature of new building design, especially where access to public amenity spaces is limited. These will inevitably have a negative effect to light entering windows located beneath them, especially where there are also significant obstructions opposite.

5.24 The BRE Guidelines suggest that well designed balconies offer pleasant amenity for future occupants and provide useful solar shading to help mitigate overheating risk, factors which need to be considered on balance against their inevitable limiting effect to daylight entering rooms located nearby.

Daylight Measure, New Build: Target Illuminance

5.25 As summarised above, BS EN 17037 sets out two methods for assessing and predicting illuminance levels within new buildings.

5.26 Of the two approaches, we have applied the more accurate "Climate Based Daylight Modelling" method, which is based on existing/ proposed geometry, local climatic weather files and surface reflectances both internal and external.

5.27 As can be seen, there are several influencing factors outside the control of the designer, i.e. degree of existing obstructions and their surface reflectances/ finishes. As such there will be varying degrees of daylighting potential dependent on the inherent context/ site location.

5.28 The default BS EN 17037 target daylight recommendations are as follows:

Table A.1 — Recommendations of daylight provision by daylight openings in vertical and inclined surface

Level of recommendation for vertical and inclined daylight opening	**Target illuminance** E_T lx	**Fraction of space for target level** $F_{plane,\%}$	**Minimum target illuminance** E_{TM} lx	**Fraction of space for minimum target level** $F_{plane,\%}$	**Fraction of daylight hours** $F_{time,\%}$
Minimum	300	50 %	100	95 %	50 %
Medium	500	50 %	300	95 %	50 %
High	750	50 %	500	95 %	50 %
NOTE Table A.3 gives target daylight factor (D_T) and minimum target daylight factor (D_{TM}) corresponding to target illuminance level and minimum target illuminance, respectively, for the CEN capital cities.					

Table A.2 — Recommendations of daylight provision by daylight openings in a horizontal surface

Level of recommendation for horizontal daylight opening	**Target illuminance** E_T lx	**Fraction of space for target level** $F_{plane,\%}$	**Fraction of daylight hours** $F_{time,\%}$
Minimum	300	95 %	50 %
Medium	500	95 %	50 %
High	750	95 %	50 %
NOTE Tables A.3 and A.4 give target daylight factor (D_T) corresponding to target illuminance level for the CEN capital cities. Note, that for spaces with horizontal daylight openings, there is no minimum target illuminance recommendations. Table A.4 is only for horizontal daylight openings with diffusing material.			

5.29 BS EN 17037 also contains the UK National Annex, which sets out alternative targets for dwellings in locations where a predominantly daylit appearance is not achievable, i.e. "hard to light". These alternative default targets are set out below.

Table NA.1 — Values of target illuminance for room types in UK dwellings

Room type	Target illuminance E_T (lx)
Bedroom	100
Living room	150
Kitchen	200

5.30 The BRE Guidelines recommend that where a room has shared use the decision maker can use discretion, for example the target for a living room can be used for a combined living/kitchen/dining space if the kitchen is not treated as a habitable space.

Sunlighting

5.31 As for daylighting, the BRE Guidelines adopt different methods of measurement depending on whether the assessment is being undertaken to judge the impact on existing neighbouring buildings or the adequacy of natural light provision within new buildings.

5.32 There are separate methods for assessing sunlight provision to external spaces such as parks, sitting out areas and gardens.

New Development

5.33 Section 3.1 of the BRE guidance (New Development) recommends that access to sunlight in interiors be checked using the methods set out in BS EN 17037:2018 "*Daylight in Buildings*".

5.34 BS EN 17037 recommends assessment of direct sunlight exposure on a selected date between February 1 and March 21, assuming a cloudless sky. For dwellings, it recommends that at least one habitable room achieves the targets.

5.35 The BRE Guidelines state (at paragraph 3.1.2):

"In housing, the main requirement for sunlight is in living rooms, where it is valued at any time of day but especially in the afternoon. Sunlight is also required in conservatories.

It is viewed as less important in bedrooms and in kitchens, where people prefer it in the morning rather than the afternoon."

5.36 The BRE Guidelines therefore suggest using March 21 (equinox) as the assessment day and to aim for the living area as the habitable room to achieve the target, as arguably this is where sunlight would be most valued.

5.37 As for daylight, BS EN 17037 gives a range of recommendations for 'high', 'medium' and 'minimum' sunlight provision.

Sunlight Measure, New Build: Target Sunlight Exposure

5.38 BRE Guidelines set out that site layout is the most important factor affecting the duration of sunlight in buildings, more specifically site orientation and degree of overshadowing.

5.39 With respect to orientation, the BRE Guidelines state (at paragraph 3.1.6):

"A south-facing window will, in general, receive most sunlight, while a north facing one will only receive it on a handful of occasions (early morning and late evening in summer).

...

Sensitive layout design of flats will attempt to ensure that each individual dwelling has at least one main living room which can receive a reasonable amount of sunlight. In both flats and houses, a sensible approach is to try to match internal room layout with window wall orientation."

5.40 With respect to overshadowing, the BRE Guidelines make recommendations mainly with regards to the layout of new buildings, however existing third-party buildings and obstructions will of course have an influence.

5.41 The inherent site orientation and degree of overshadowing are outside the control of the designer and the BRE Guidelines accept that it is not always feasible to have all living areas facing south, especially in denser development when seeking to make most efficient use of the available site area.

5.42 The default BS EN 17037 target sunlight recommendations are as follows:

Table A.6 — Recommendation for daily sunlight exposure

Level of recommendation for exposure to sunlight	Sunlight exposure
Minimum	**1,5 h**
Medium	**3,0 h**
High	**4,0 h**

Flexibility

5.43 As set out in the BRE Guidelines and BS EN 17037:2018, these default recommendations are "purely advisory" (paragraph F1) and "should be interpreted flexibly" (paragraph 1.6).

5.44 This does not mean that the default recommendations and targets within the Guidelines can be disregarded but, instead, any 'flexibility' that is applied after applying the default recommendations should be founded on sound scientific principles that can be objectively supported and justified.

5.45 The location of the site in a dense part of London with neighbouring properties in close proximity and change of use nature mean it is appropriate to apply the UK National Annex of BS EN 17037:2018.

6. Assessment Results and Commentary: Amenity Provision within the Proposed Development

Proposed Dwellings

6.1 As set out above, CBDM assessments have been undertaken in accordance with the UK National Annex (BS EN 17037), as well as Sunlight Exposure assessments to each of the proposed habitable rooms within the residential dwellings (i.e. living areas and bedrooms). As set out in the BRE Guidance, the living room target of 150lx has been applied to combined areas.

6.2 With regards to sunlight, as set out in the BRE Guidelines, any rooms facing significantly north of due east or west are unlikely / not expected to meet the default recommendations. As set out in the BRE guidance in respect of new development, the main requirement for sunlight is in living rooms and therefore the sunlight results have been reported with this focus.

6.3 Given the nature of change of use development, design constraints are posed by the existing building, a feature recognised in the UK National Annex, which describes these as often being "hard to light".

6.4 The results of the assessments are at appendix 1. With regard to the CBDM analysis the following variables were applied:

• Internal Walls – 0.6	• Internal Ceilings – 0.8
• Internal floors – 0.4	• Internal reveals – 0.8
• External walls/ reveals – 0.6	• Balconies – 0.2
• Surroundings and ground - 0.2	• Glazing bar correction – as drawn
• Glazing Transmittance – 0.68	• Maintenance Factor – 0.92 / 0.76 (no/overhang)

Daylight

CBDM ANALYSIS	KITCHENS	LIVING AREAS	BEDROOMS
Target	**200lx, 50% Area, 50% Time**	**150x, 50% Area, 50% Time**	**100lx, 50% Area, 50% Time**
Rooms Assessed	1	1	4
Meeting Target	1	1	4

Percentage (by room type)	100%	100%	100%
Percentage (overall)	100%		

CBDM Summary

6.5 All habitable rooms would achieve the advisory CBDM recommendations for their use.

Sunlight

SE	KITCHENS	LIVING AREAS	BEDROOMS
Target	**1.5h Sunlight Exposure (March 21)**		
Rooms Assessed	1	1	4
Meeting Target	1	1	4
Percentage (by room type)	100%	100%	100%
Percentage (overall)	100%		

6.6 As set out in the BRE guidance, sunlight exposure is subject to many influential factors outside the control of the designer, such as the fixed annual sunpath and relationship with existing obstructions.

6.7 The BRE guidance therefore advises that the aim should be to minimise the number of solely north facing dwellings whilst accepting that it may not be possible to achieve this in practice.

SE Summary

6.8 All habitable rooms would achieve the advisory SE recommendations for their use.

Overall Conclusion: CBDM & SE

6.9 The UK National Annex of BS EN 17037 states that existing buildings are being converted to dwellings are often "hard to light". In this context, the proposed development represents an exemplary level of daylight and sunlight performance given the various constraining factors discussed above.

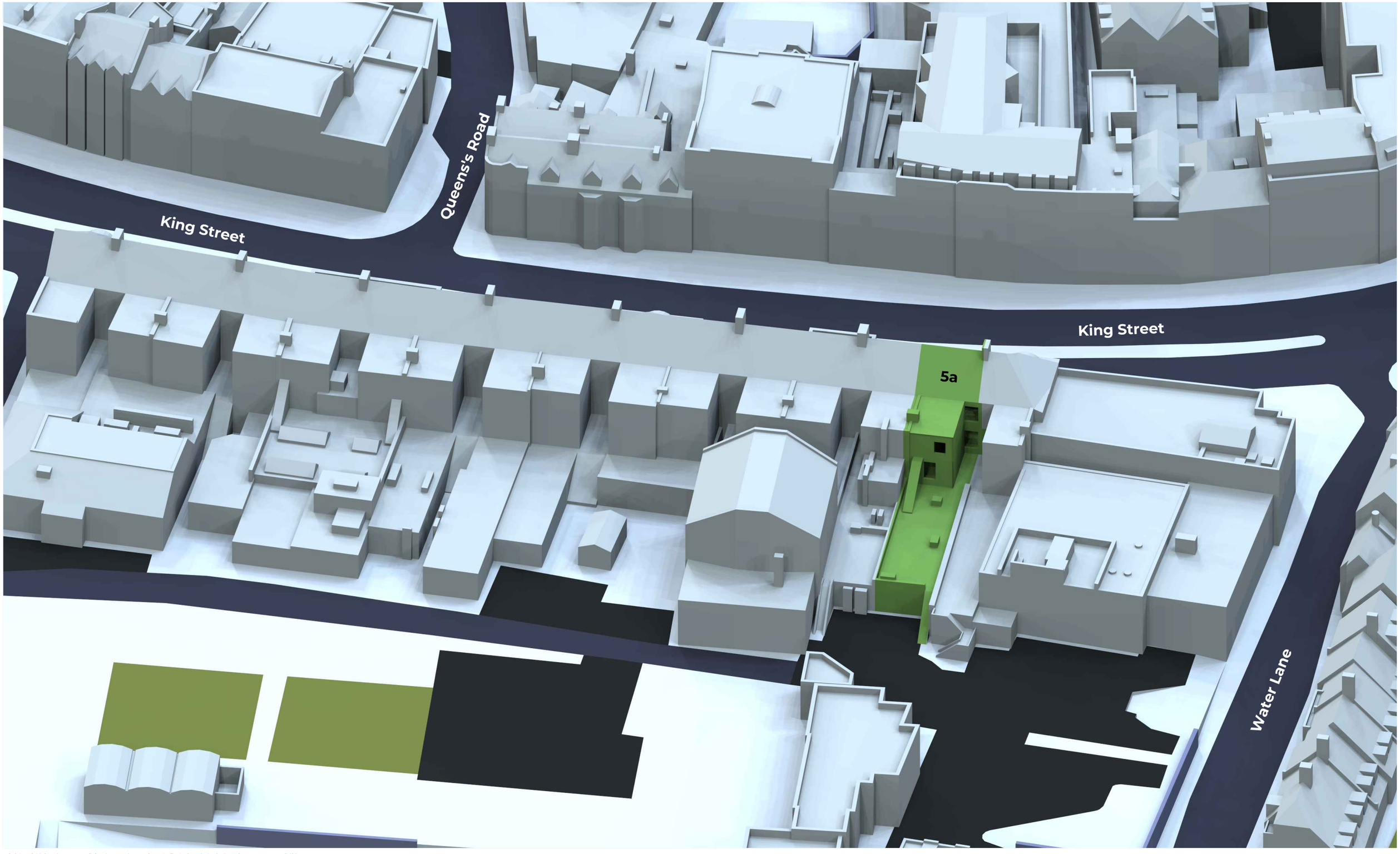
7. Summary and Conclusions

7.1 The range of assessments demonstrated full accordance with the BRE/ UK National Annex recommendations for daylight and sunlight by careful and considerate design which took on board natural light provision from the outset despite significant constraints outside the control of the designer i.e. fixed apertures and orientation of the existing building, together with the dense urban context.

7.2 The assessment results therefore confirm the proposed dwellings would provide adequate natural light for future occupants, by refence to national and local planning policies and best practice guidance.

7.3 The Proposed Development is therefore concluded as adherent with local, regional and national planning policy related to Daylight and Sunlight and therefore also meeting the regulatory requirement set out in the GPDO for adequate natural light in all habitable rooms.

Appendix 1
Assessment Drawings and Results Tables



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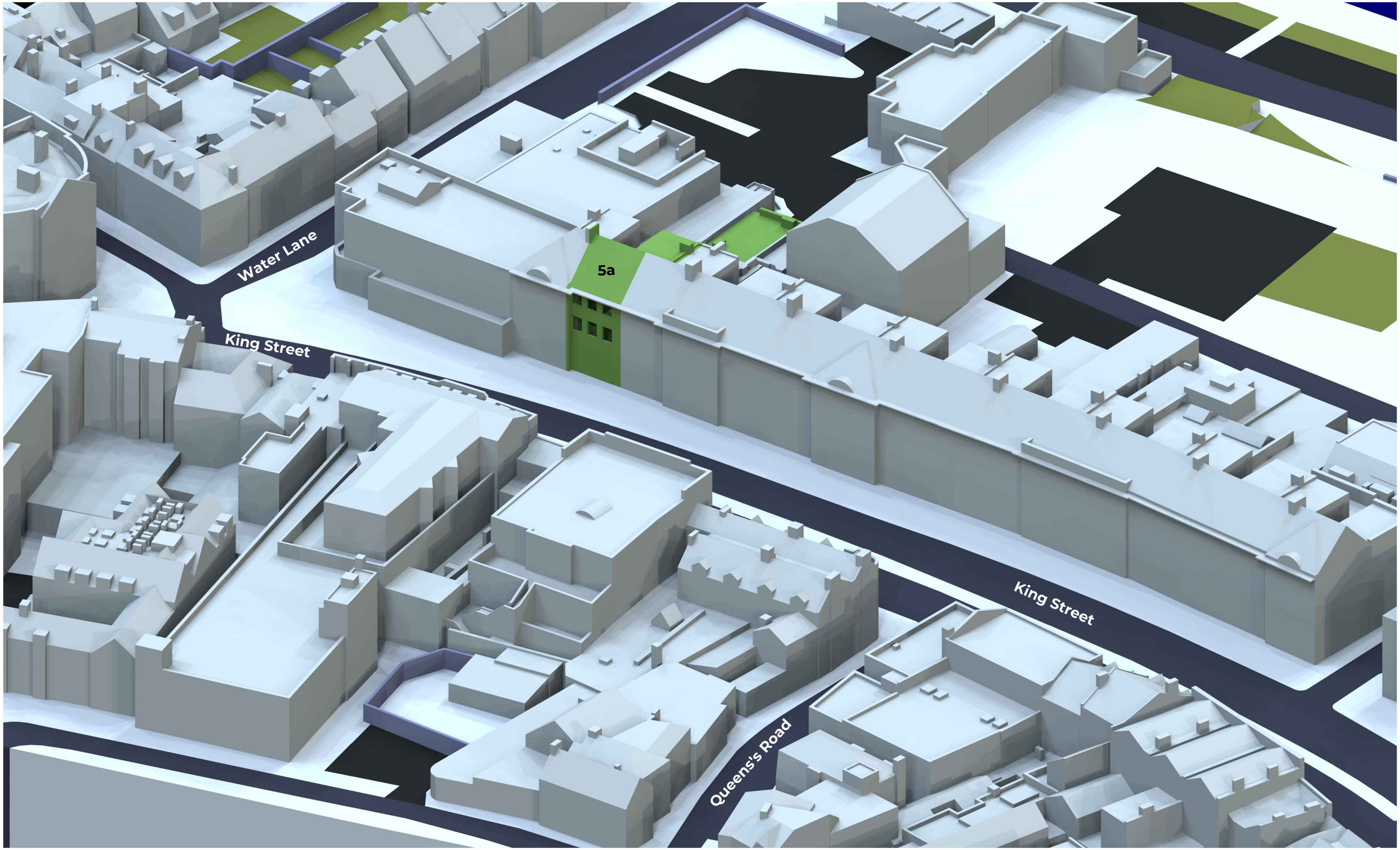
205 Clerkenwell Workshops, 27-21 Clerkenwell Close, Farringdon, EC1R 0AT

existing
proposed
surrounding
consent

project	title	surrounding	existing	proposed	consent
5a King Street, Twickenham	**3D view 1 of proposed**	Accucities photogrametry model received 30 October 2024	Accucities photogrametry model received 30 October 2024	Proposed drawings received 06 November 2024, 14070-ALN-KS-01-D-A-100 Proposed Plans BOUND.DWG, 14070-ALN-KS-01-D-A-100 Proposed Elevations BOUND.DWG	n/a

date 07 Nov 2024

scale **n/a** **no** KI01_01 01



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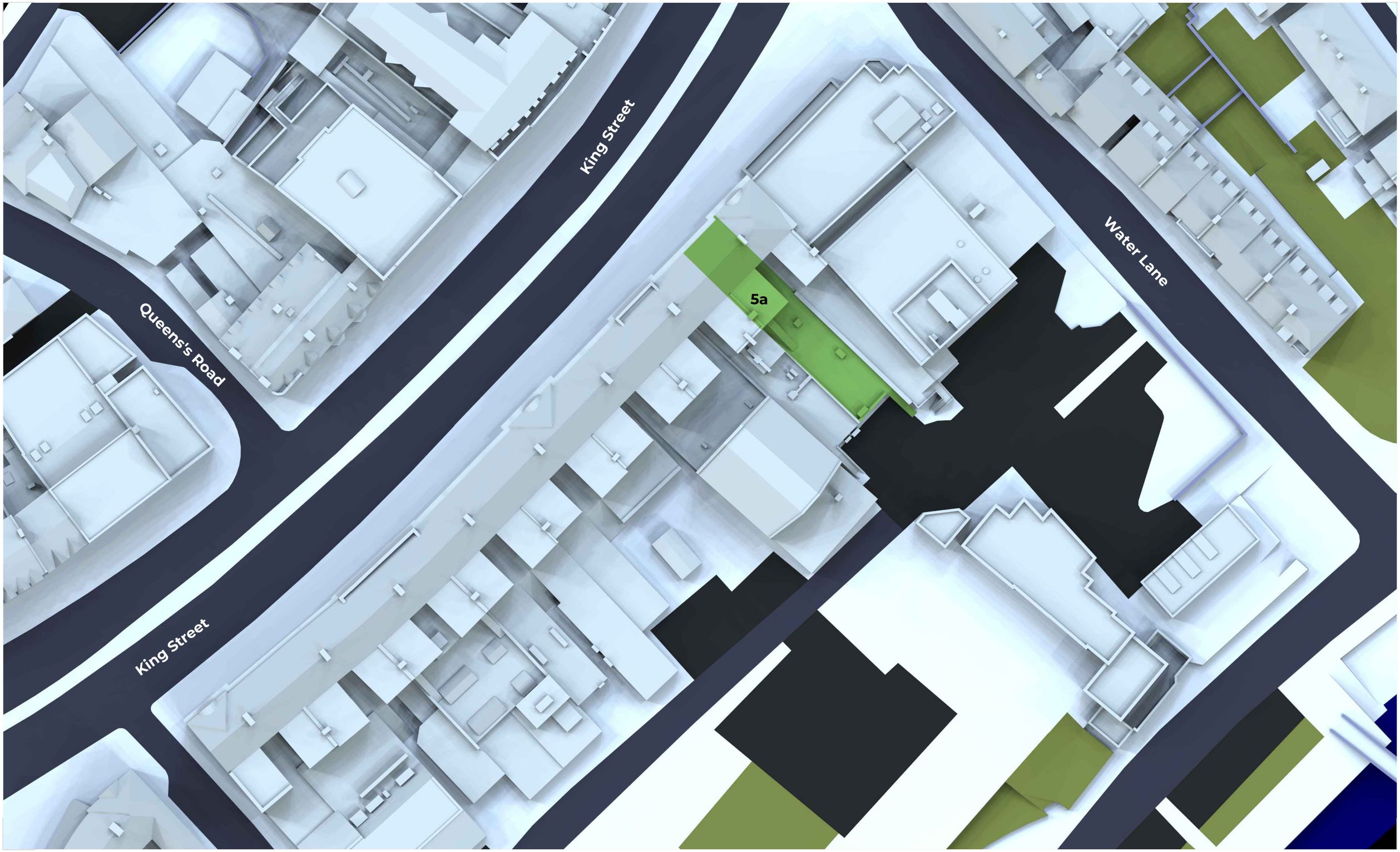
existing
proposed
surrounding
consent

project	title	surrounding	existing	proposed	consent
5a King Street, Twickenham	**3D view 2 of proposed**	Accucities photogrametry model received 30 October 2024	Accucities photogrametry model received 30 October 2024	Proposed drawings received 06 November 2024, 14070-ALN-KS-01-D-A-100 Proposed Plans BOUND.DWG, 14070-ALN-KS-01-D-A-100 Proposed Elevations BOUND.DWG	n/a
date 07 Nov 2024					
scale **n/a**	**no** KI01_01 02				



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existing
proposed
surrounding
consent

project	title	surrounding	existing	proposed	consent
5a King Street, Twickenham	**Plan view of proposed**	Accucities photogrametry model received 30 October 2024	Accucities photogrametry model received 30 October 2024	Proposed drawings received 06 November 2024, 14070-ALN-KS-01-D-A-100 Proposed Plans BOUND.DWG, 14070-ALN-KS-01-D-A-100 Proposed Elevations BOUND.DWG	n/a
date 07 Nov 2024					
scale **n/a**	**no** KI01_01 03				

1st floor

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Daylight Illuminance falsecolour Lux

0-5 lux
5-10 lux
10-25 lux
25-50 lux
50-100 lux
100-150 lux
150-200 lux
>200 lux

project	title	surrounding	existing	proposed	consent
5a King Street, Twickenham	**Internal CBDM results for 5a King Street, Twickenham**	Accucities photogrametry model received 30 October 2024	Accucities photogrametry model received 30 October 2024	Proposed drawings received 06 November 2024, 14070-ALN-KS-01-D-A-100 Proposed Plans BOUND.DWG, 14070-ALN-KS-01-D-A-100 Proposed Elevations BOUND.DWG	n/a
date 07 Nov 2024					
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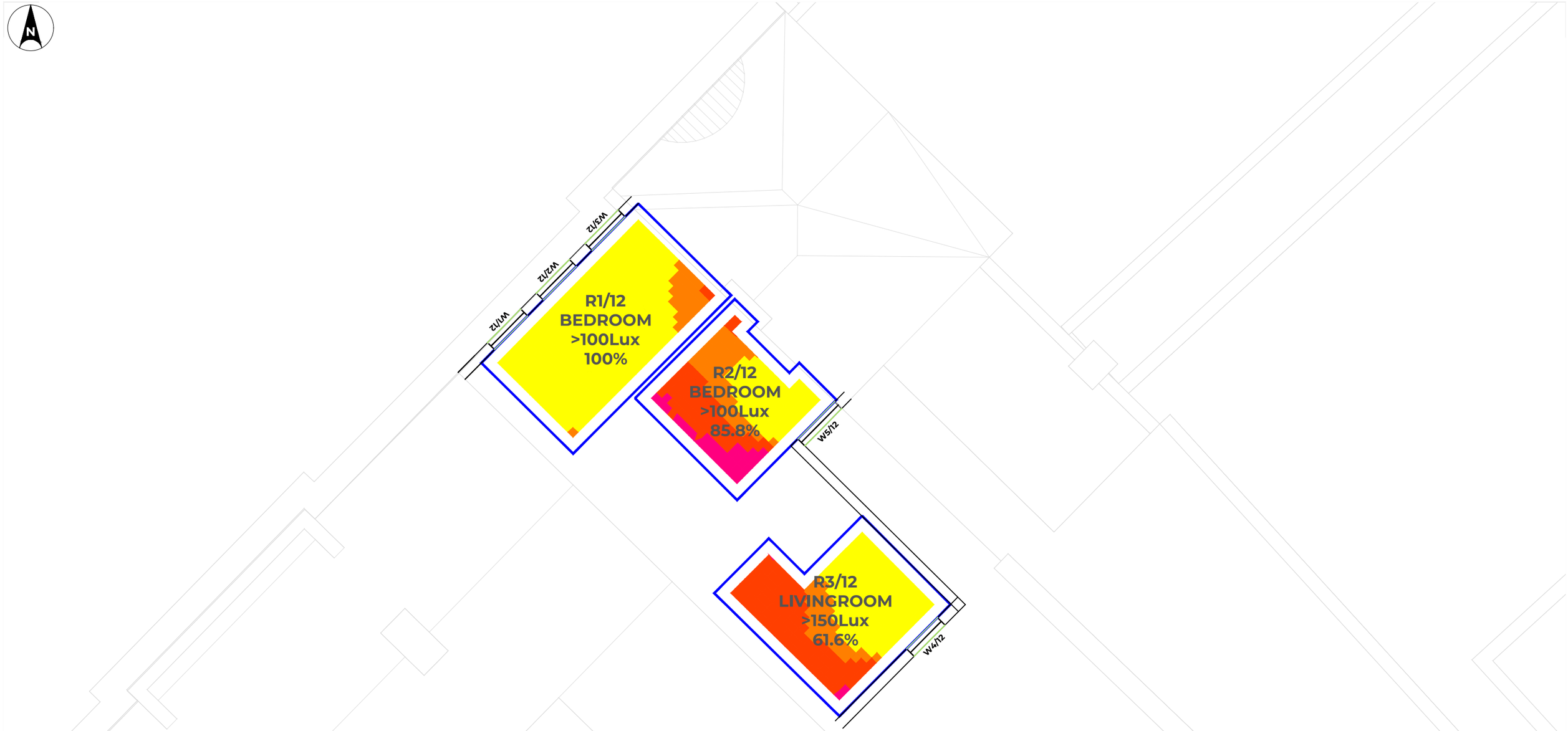

2nd floor

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Daylight Illuminance falsecolour Lux

0-5 lux
5-10 lux
10-25 lux
25-50 lux
50-100 lux
100-150 lux
150-200 lux
>200 lux

project	**title**	**surrounding**	**existing**
5a King Street, Twickenham	**Internal CBDM results for 5a King Street, Twickenham**	Accucities photogrametry model received 30 October 2024	Accucities photogrametry model received 30 October 2024
date 07 Nov 2024			
scale **1:150**	**no** KI01_01 05		

proposed	**consent**
Proposed drawings received 06 November 2024, 14070-ALN-KS-01-D-A-100 Proposed Plans BOUND.DWG, 14070-ALN-KS-01-D-A-100 Proposed Elevations BOUND.DWG	n/a

5A King Street, Twickeham
07/11/2024
KI01

UKNA Daylight Illuminance results
Proposed 200 lux LKD
Job 01

URBAN LIGHT SURVEYORS

Address	Flat No.	Level	Room Label	Room Use	Room Area sq m	Percentage of Daylight	Median Illuminance	Ref Plane	Room Use Target	Fraction of Working Plane % Area	above/below
5a King Street		1st	R1/11	BEDROOM	13.35	50	516.2	50	100	100	above
5a King Street		1st	R2/11	BEDROOM	9.07	50	115.3	50	100	52.2	above
5a King Street		1st	R3/11	KITCHEN	7.93	50	268.2	50	200	98.7	above
5a King Street		2nd	R1/12	BEDROOM	14.68	50	286.7	50	100	100	above
5a King Street		2nd	R2/12	BEDROOM	8.97	50	165.8	50	100	85.8	above
5a King Street		2nd	R3/12	LIVINGROOM	11.32	50	192.9	50	150	61.6	above

OVERALL				
Room Use	Target Value	No. Rooms	No. meeting Target	% meeting Target
BEDROOM	>100 Lux for 50% of the area for 50% of the time	4	4	100.00%
DINING	>150 Lux for 50% of the area for 50% of the time	0	0	0.00%
KITCHEN	>200 Lux for 50% of the area for 50% of the time	1	1	100.00%
LD	>150 Lux for 50% of the area for 50% of the time	0	0	0.00%
KD	>200 Lux for 50% of the area for 50% of the time	0	0	0.00%
STUDY	>150 Lux for 50% of the area for 50% of the time	0	0	0.00%
STUDIO	>200 Lux for 50% of the area for 50% of the time	0	0	0.00%
LKD	>200 Lux for 50% of the area for 50% of the time	0	0	0.00%
Livingroom	>150 Lux for 50% of the area for 50% of the time	1	1	100.00%
TOTALS		6	6	100.00%

Name	Reflectance/Transmittance	How Defined	Details
revealsout	R:0.2	mat.rad	(0.2 0.2 0.2)
reveals	R:0.8	mat.rad	(0.8 0.8 0.8)
ceiling	R:0.8	mat.rad	(0.8 0.8 0.8)
floor	R:0.4	mat.rad	(0.4 0.4 0.4)
partition	R:0.8	mat.rad	(0.8 0.8 0.8)
pr	R:0.2	mat.rad	(0.2 0.2 0.2)
wall	R:0.2	mat.rad	(0.2 0.2 0.2)
window_surrounds	R:0.2	mat.rad	(0.2 0.2 0.2)
surr	R:0.2	mat.rad	(0.2 0.2 0.2)
man_made_surface_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
green_space_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
terrain_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
water_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
road_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
foot_bridge_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
wall_bridge_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
building_features_0.2	R:0.2	Auto	(0.2 0.2 0.2 0 0)
g_0.487	T:0.406	Auto	Tg:0.68 Mf:8 Tb:0.65 (0.487 0.487 0.487) - ADFP
g_0.402	T:0.335	Auto	Tg:0.68 Mf:24 Tb:0.65 (0.402 0.402 0.402) - ADFP

5a King Street, Twickenham

Sunlight Exposure Analysis results for March 21 Job 02 7 November 2024

URBAN LIGHT SURVEYORS

Room	Mar-21	Above/Below	Room use	Flat number	Proposed daynumber
5a King Street					
1st floor					
R1/11	120	Above	BEDROOM		80
R2/11	110	Above	BEDROOM		80
R3/11	280	Above	KITCHEN		80
R1/12	105	Above	BEDROOM		80
R2/12	175	Above	BEDROOM		80
R3/12	455	Above	LIVINGROOM		80
	Total above	6			
	Total below	0			
	Percentage below rate	0.00%			
	Percentage above rate	100.00%			
	Total rooms	6			
LKD above	0	0%			
BEDROOM above	4	100%			
BED/STUDY above	0	-			
STUDIO above	0	0%			
KITCHEN above	1	100%			
LIVINGROOM	1	100%			
Total LKD	0				
Total BEDROOM	4				
Total BED/STUDY	0				
Total STUDIO	0				
Total KITCHEN	1				
Total LIVINGROOM	1				
Total	6				

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URBAN LIGHT SURVEYORS