Daylight & Sunlight Assessments of a LRD of Student Accommodation at No.139 - 149 North King Street, Dublin 7.

Applicant **Ringline Investments Limited**
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Contents:

1. Introduction

The proposal at No.139 - 149 North King Street, Dublin 7, will provide a high-quality student accommodation development in a 7-storey building over a partial existing basement with a setback at 5th floor and a further significant setback at the 6th floor level. The proposal includes 362 no. student bedspaces, a ground level retail unit with frontage to both North King Street and Bow Street, communal facilities including a courtyard, external terrace at roof level on the 5th floor and internal amenity spaces.

1.1 Executive Summary

This report assesses the impact of the proposed development for Daylight and Sunlight on the neighbouring buildings and the quality of daylight and sunlight within the proposed development. This analysis is carried out based on the drawings of MOLA.

1.2 Assessment of Potential Impact on Daylight and Sunlight Availability to Adjacent Properties

There will be a perceptible level of reduction in daylight received by some windows in the adjoining properties. A development on the subject site, which would avoid having any impact outside the BRE guidance parameters to these windows would not result in an appropriate form of development of the site.

It is important to recognise that the guideline targets published by the BRE are intended to be employed with a degree of discretion and flexibility. The flexibility available in the BRE guide is outlined in the introductory section as follows:

> *"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 targets these should be interpreted flexibly because natural lighting is only one of many factors in site layout design."*

This approach is recognised within planning guidance which has been published by Government. In the Urban Design Manual 2009 the following advice is provided:

> *"Where design standards are to be used (such as the UK document Site Layout Planning for Daylight and Sunlight, published by the BRE), it should be acknowledged that for higher density proposals in urban areas it may not be possible to achieve the specified criteria, and standards may need to be adjusted locally to recognise the need for appropriate heights or street widths."*

1.3 Assessment of the Quality of Daylight and Sunlight within the Proposed Development

The residential units were designed in line with the recommendations of the BRE guidelines (2022). A number of design iterations were conducted to improve the daylight and sunlight within the proposed development. The guidelines clearly state that the targets are recommendations only and flexibility is required when setting and interpreting the targets.

The BRE guidelines (2022) recommends assessment methods set out in BS EN 17037 for daylight provision. BS EN 17037 contains a National Annex which sets out minimum daylight levels to be achieved in the UK and channel Islands. Ireland has a similar latitude and climate to the UK. The UK annex to BS EN 17037 states that the target values set out in EN 17037 Table A1 may be hard to achieve in the UK, it sets alternative minimum values for rooms to dwellings. The minimum illuminance levels set out in BS EN17037:2018+A1:2021 are: Kitchens and living spaces containing a kitchen 200lux (1.3%DF). Living rooms 150lux (1%DF) and bedrooms 100lux (DF0.7%).

The levels set out in the UK annex are used in this assessment, as the primary results to be achieved, because these are referenced in the BRE guidelines (2022), as recommended by the local authority. The BRE guidelines (2022) deals with daylight and sunlight to adjacent properties and defers to BS EN17037:2018+A1:2021 for daylight and sunlight within the proposed development and allows for a complete assessment of the proposed development and its surroundings. The BRE guidelines (2022) presents a discussion on aspects of daylight and sunlight and interpreting the results of these assessments.

IS EN17037:2018 does not set out any guidance for assessing the impact to daylight and sunlight from a proposed development on neighbouring buildings nor is there any Irish governmental guidance on interpreting results and percentages of units to achieve the target results in multi unit developments. IS EN17037:2018 does not set out room use specific targets but instead designates a Minimum and Target lux level to be achieved in all rooms regardless of use. The function of a room historically has been the key factor in informing the design of a building and the window sizes to allow adequate daylight levels for the task typical to that room to be achieved. The lack of variance in target levels for the tasks typical to a room can lead to substantially oversized windows in rooms with a lower requirement for daylight levels, for example bedrooms. The aim to achieve the minimum target lux level to all rooms in a multi unit residential building is not practical and could lead to overheating of units that have greater access to the sky and sunlight. This could also lead to higher energy usage due to oversized windows and a balance needs to be met.

There are no existing mature trees within the vicinity of any of the proposed units that would influence the daylight levels and the assessment is carried out without any trees.

1.3.1 Assessment of Daylight in Accordance with BR209:2022 and BS EN 17037:2018+A1:2021

99.8% of the LKD, studio and bedroom spaces within the proposed development achieve the target values set out in BS EN 17037:2018+A1:2021 Table NA1. These are the minimum values, per specified use, to be achieved in habitable rooms. Refer to Section 6 for detailed analysis of Daylight Provision.

1.3.2 Sunlight within the Proposed Development

This scheme is well designed for sunlight, with 72.6% of LKD/ Studio rooms meeting the minimum recommended 1.5 direct sunlight hours.

All proposed public and communal amenity spaces achieve sunlight levels that exceed 2 hours sunlight over 50% of the required amenity space on the 21st March.

2. Methodology

2.1 Standards and Guidelines

Ministerial guidance is provided in Sustainable and Compact Settlements: Guidelines for Planning Authorities (2024) Section 5.3.7(b).

> *"In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018, UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context."*

This is in accordance with Section 6.6 of the Sustainable Urban Housing: Design Standards for New Apartments (2023), and Section 3.2 of the Urban Development and Building Heights Guidelines for Planning Authorities (2018).

The Daylight and Sunlight assessments included in this report demonstrates the level of compliance with these three documents:

- BR 209:2022 Site Layout Planning for Daylight and Sunlight (third edition), also referred to as the BRE guidelines (2022).
- BS EN 17037:2018+A1:2021 Daylight in Buildings, also referred to as the UK Annex.
- IS EN 17037:2018 Daylight in Buildings.

In Appendix 16- Sunlight and Daylight, the Dublin City Development Plan 2022-28 references BR 209:2011 Site Layout Planning for Daylight and Sunlight (2nd edition). It also states that 'If, over the coming years, a revised version of BR 209 is to be issued, the guidance within this new version will take precedence." It is considered that the guidance in the Development Plan has been superseded by BR 209:2022 and therefore it is not necessary to assess the scheme against the recommendations in Appendix 16 also. All relevant assessments in this report have regard to the guidance in BR 209:2022, referred to as the BRE guidelines (2022).

2.2 BRE Guidance Document BR 209:2022 Site Layout Planning for Daylight and Sunlight (third edition)

In its opening summary, the BRE guidelines (2022) states that the report "is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location." The recommendations of the BRE guidelines (2022) are not suitable for rigid application to all developments in all contexts. This is of particular importance in the context of national and local policies for the consolidation and densification of urban areas.

The BRE guidelines (2022) sets out the assessment metrics to be applied when assessing the potential impact of a development on the daylight and sunlight of neighbouring properties. This is broadly in line with the previous version of the BRE guidelines (2011). The metrics for assessing impact to adjacent buildings for Daylight is the Vertical Sky Component (VSC) and Sunlight is the Annual Probable Sunlight Hours (APSH). Sunlight to adjacent amenity space is assessed through the measurement of sunlight availability on the 21st March and the plotting of shadow diagrams.

When assessing the quality of interior spaces in proposed developments, the BRE guidelines (2022) Appendix C states; "The guidance contained in this publication is intended to be used with BS EN 17037 and its UK National Annex." The BRE guidelines (2022) also states in Section 1.7 that "The guidance here is intended for use in the United Kingdom and in the Republic of Ireland, though recommendations in the Irish Standard IS EN 17037 may vary from those in BS EN17037."

2.3 Daylight in Buildings EN 17037:2018

EN 17037 is a unified daylighting standard published by the European Committee for Standardization (CEN) in 2018. It is applicable across all countries within the EU including Ireland, with the Irish edition IS EN17037:2018. The standard is enacted in Britain under BS EN 17037:2018+A1:2021 with a UK National Annex for regional assessments. The daylight and sunlight assessment methods for internal daylight and sunlight provision are common to both the Irish Standard version and the UK version. The EN17037:2018 Standard deals exclusively with new developments and does not give guidance or metrics on loss of light or sunlight to existing properties.

The UK National Annex (NA) provides further recommendations for daylight provision in the UK and Channel Islands. The UK annex states that the daylight target levels in BS EN 17037:2018 Clause A.2 may be hard to achieve in buildings in the UK, in particular dwellings in urban areas with significant obstructions or tall trees outside. The UK annex sets out minimum daylight provision to be achieved in UK dwellings. Table NA.1 sets out room specific minimum values to be achieved in the UK and Channel Islands. All the rooms achieve the minimum DF factor levels set out in A1 for Bedrooms (DF0.7%), Living Rooms (1%DF) and Kitchens and Living Spaces containing a Kitchen(1.3%). The Daylight Factor percentage values are derived from minimum room specific illuminance levels set out in NA+1 and the Median External Diffuse Illuminance ($E_{v,d,med}$) for Dublin from Table A.3 EN17037:2018. The illuminance levels and corresponding DF% are given in Table 5 below.

2.4 Daylight to Existing Buildings

BRE guidelines (2022) Section 2.2.2 sets out which rooms need to be assessed for daylight.

"The guidelines here are 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. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices."

A proposed development could potentially have a negative effect on the level of daylight that a neighbouring property receives, if the obstructing building is large in relation to its distance from the existing dwelling. BRE guidelines (2022) Section 2.2.4 states that "Loss of light to existing windows need not be assessed if the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing window." In this report, we refer to this as the 'zone of influence'.

BRE guidelines (2022) Section 2.2.23 states; "If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected."

If a window falls within a 45° angle both in plan and elevation with a new development in place, the window may be affected and should be assessed.

For loss of daylight the BRE guidelines (2022) recommends calculation of the Vertical Sky Component. This is the ratio of direct sky illuminance falling on the outside window, to the simultaneous horizontal illuminance under an unobstructed sky. The standard CIE Overcast Sky is used and the ratio is usually expressed as a percentage. The maximum value is just under 40% for a completely unobstructed vertical wall. The Vertical Sky Component on a window is a good measure of the amount of daylight entering it.

The BRE guidelines (2022) recommend one of two criteria is met when assessing for the Vertical Sky Component;

a) Where the VSC at the centre of the existing window exceeds 27% with the new development in place then enough sky light should still be reached by the existing window.

b) Where the VSC with the new development in place is both less than 27% and less than 0.8 times its former value, then the area lit by the window is likely to appear more gloomy, and electric light will be needed more of the time.

The BRE guidelines (2022) state that if the VSC is:

- At least 27%, then conventional window design will usually give reasonable results;
- Between 15% and 27%, then special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight;
- Between 5% and 15%, then it is very difficult to prove adequate daylight unless very large windows are used;
- Less than 5%, then it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed

This report assesses the percentage of direct sky illuminance that falls on the centre point of neighbouring windows that could be affected by the proposed development through the Vertical Sky Component as per the methodologies contained in the BRE guidelines (2022).

2.5 Sunlight to Existing Buildings

The BRE guidelines (2022) recommend assessing the main living rooms and conservatories if they have a window wall facing within 90° of due south. Kitchens and bedrooms are less important but care should be taken not to block too much sun. If the proposed development is fully north of the existing window then sunlight need not be assessed.

The Annual Probable Sunlight Hours (APSH) is used to assess the quantity of sunlight for a given location. This is the total amount of sunshine for a given location on an unobstructed horizontal surface taking cloud cover into account. Statistical data from the Irish Meteorological Service is used to assess the APSH and the Winter Probable Sunlight Hours (taken to fall between the 21st of September and the 21st of March).

Table 1 below shows the average sunlight hours for each month and the maximum possible without any cloud cover. This gives the factor of possible sunlight hours for each month.

Met Éireann Sunlight Hours Data Set 1991-2020													
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Average Sunlight Hours/ Day	1:54	2:54	3:42	5:24	6:24	6:00	5:17	5:00	4:24	3:24	2:24	1:42	
Average Sunlight Hours/ Month	58:54	81:12	114:42	162:00	198:24	180:00	163:47	155:00	132:00	105:24	72:00	52:42	1449.1
Total Available Sunlight Hours	252	265	358	412	483	485	496	451	375	320	250	236	4383
Probable Sunlight Hours Ratio	23.4%	30.6%	32.9%	39.3%	41.1%	37.1%	33.0%	34.4%	35.2%	32.9%	16.8%	22.3%	33.1%

Table 1: Average monthly sunlight hours recorded at Dublin Airport - Data set 1991-2020

The BRE guidelines (2022) recommend that the centre of a window or 1.6m above ground for a door be assessed and it should receive at least 25% of the APSH and it should receive at least 5% during the period of 21st September to 21st March. If the available APSH is less than this then it should not be reduced below 0.8 times its former value or noticeable loss of sunlight may occur.

2.6 Sunlight to Gardens and Open Spaces

For calculations of sunlight analysis it is general practice to use March 21st. The BRE guidelines (2022) Section 3.3.17 states:

> *"It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21 March."*

2.7 BRE Guidelines (2022) Appendix G: Calculations of Trees & Hedges

Trees are not usually included in the assessments of impact on neighbouring properties, unless specified otherwise. In relation to the effects of trees and hedges the BRE guidelines (2022) Section G1.2 states;

> *"It is generally more difficult to calculate the effects of trees on daylight because of their irregular shape and because some light will generally penetrate through the crown. Where the effects of a new building on existing buildings nearby is being analysed, it is usual to ignore the effects of existing trees. This is because daylight is at its scarcest and most valuable in winter when most trees will not be in leaf."*

The BRE guidelines (2022) recommends that sometimes trees should be taken into account for the proposed development where the new development is proposed near large existing trees. This needs to be done by modelling a representative of the existing trees. Reflectance and transparency should be taken into account. Table G1 in BR209:2022 gives values for transparencies of tree crowns in summer and winter for deciduous trees, dense evergreen can be assessed as opaque. Table G2 gives general reflectance values for shades of trees.

2.8 BRE Guidelines (2022) Appendix H: Environmental Impact Assessment

The BRE guidelines sets out criteria for classification for assessment of impact where a new development affects a number of existing buildings or open spaces in relation to an Environmental Impact Assessment. The guide does not give a specific range or percentages but sets out parameters as set out below.

> *"Where the loss of skylight or sunlight fully meets the guidelines in this book, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or limited area of open space lose light (within the guidelines), a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines, and a larger number of windows or open space area are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space.*
>
> *Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:*
> - *only a small number of windows or limited area of open space are affected*
> - *the loss of light is only marginally outside the guidelines*
> - *an affected room has other sources of skylight or sunlight*
> - *the affected building or open space only has a low level requirement for skylight or sunlight*
> - *there are particular reasons why an alternative, less stringent, guideline should be applied.*
>
> *Factors tending towards a major adverse impact include:*
> - *a large number of windows or large area of open space are affected*
> - *the loss of light is substantially outside the guidelines*
> - *all the windows in a particular property are affected*
> - *the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, e.g. a living room in a dwelling or a children's playground.*
>
> *Beneficial impacts occur when there is a significant increase in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space.*
>
> *Beneficial impacts should be worked out using the same principles as adverse impacts. Thus a tiny increase in light would be classified as a negligible impact, not a minor beneficial impact."*

The BRE guidelines does not set out a specific value range for the different classification of impact level of Minor, Moderate and Major to each window. For the purpose of this report one of five classification levels will be applied:

1. Imperceptible: There is no reduction in the VSC levels or where the levels are 95% of the existing value.
2. Negligible: A reduction in the VSC level but it retains a VSC >27% or <27% but >80% of the existing value.
3. Minor reduction: VSC below 27% but greater than 20%, or ratio greater than 65% of the existing value.
4. Moderate reduction: VSC below 20% but greater than 10%, or ratio greater that 50% of the existing value.
5. Major reduction: VSC below 10% or ratio less than 50% of the existing value.

A flexible approach should be taken when assessing the impact with daylight and sunlight being one of many factors that influence the environment when planning a new development. The evaluation of the impact should be considered in conjunction with other factors when determining the overall impact level to a property.

2.9 Assessment Model Parameters

The BRE guidelines (2022) recommends surface reflectances should represent real conditions and where reflectance values have not been measured or specified default values are set out in Table C4 of the guidance document. The surface reflectances have been specified and are set out in Table 2 below. This table also shows the input values for material used and additional assessment model input parameters.

Input Values for Assessment Model			
Surface Reflectance			
Element	Reflectance	Transmittance	Material Description
Internal walls	80%	0%	White Painted Walls
Internal ceiling	80%	0%	White Painted Ceiling
Floor - light wood	40%	0%	Light wood Flooring
External walls - proposed development	50%	0%	Brick
External walls - outside site	50%	0%	CIBSE
External ground	20%	0%	CIBSE
Glass		68%	Triple glazed clear glass
Maintenance Factor for Glass		Assessment Plane	
Suburban Vertical no overhang	0.96	Sensor Grid spacing	0.3m
Suburban Vertical sheltered by balcony or overhang	0.88	Sensor grid inset	0.35m
Framing Factor: Patio Doors	0.77	Minimum inset	0.3m
		Work plane offset	0.85m

Table 2: Surface reflectance parameters and input values for model calculations

2.10 Daylight in the Proposed Development.

The BRE guidelines (2022) Appendix C sets out interior daylight recommendations, it states; “BS EN 17037 supersedes BS8206 Part 2 ‘Code of practice for daylighting’ which contained a method of assessment based on Average Daylight Factor, which is now no longer recommended.”

BS EN 17037 sets out two methods for assessing daylight provision in proposed buildings. One method is called the **Illuminance method.** This is based on Target illuminances for daylight to be achieved across specified fractions of a reference plane at working plane height (0.85m) for half the daylight hours in a year. The Illuminance Method requires the use of a suitable weather file with local climate conditions and takes into account the orientation of the space.

The alternative method is called the **Daylight Factor Method.** This method is based on calculating the daylight factors achieved over specific fractions of a reference plane. The Daylight factor is the illuminance at a point on a reference plane in a space, divided by the illuminance on an unobstructed horizontal surface outdoors. This method uses an overcast sky for calculation and the assessment of the space is orientation independent. BS EN 17037 gives the Median External Diffuse Illuminance (Ev,d,med) for the capital cities throughout Europe to account for external local illuminance levels.

The UK committee formed the opinion that the Target Illuminance recommendations in Clause A.2 of BS EN 17037 may not be achievable for some buildings, particularly dwellings. The UK committee believes this could be the case for dwellings with basement rooms or those with significant external obstructions. In BS EN 17037:2018+A1:2021, the UK National Annex (NA) sets out additional minimum room specific Target Daylight Factor values for the UK. Clause NA.2 sets out illuminance values to be exceeded over at least 50% of the points on a reference plane 0.85m above the floor for at least half the daylight hours.

The compliance calculation is based on an annual, climate-based simulation of interior illuminance distributions. The BRE guidelines (2022) refers to this method as the Illuminance Method. For each hour of the year, the percentage of the floor area achieving minimum and target illuminance thresholds are measured on a room-by-room basis. Two target types are set with the following criteria:

- Target Illuminance: 300 lux over 50% of floor area for at least 50% of daylight hours.
- Minimum Illuminance: 100 lux over 95% of floor area for at least 50% of daylight hours.

BS EN 17037 gives three levels of recommendation for daylight provision in an interior space: Minimum, Medium and High. The BRE guidelines (2022) Section C3 recommends for compliance with the standard, a space should achieve the Minimum level.

Daylight hours are defined as the 4380 hours with the most diffuse horizontal illuminance in the weather file. In addition to this baseline (Minimum) requirement, rooms can achieve Medium and High levels of compliance by meeting higher illuminance thresholds, as outlined in the table below:

Target Illuminance from Daylight over at least half the daylight hours		
Level of recommendation	Target illuminance E_T(lx) for half of the assessment grid	Minimum illuminance E_{TM}(lx) for 95% of the assessment grid
Minimum	300 lux	100 lux
Medium	500 lux	300 lux
High	750 lux	500 lux

Table 3: IS / BS EN 17037:2018 Target Illuminance from Daylight over at least half the daylight hours.

Target Daylight Factor (D) for Dublin*		
Level of recommendation	Target daylight factor D for half of the assessment grid	Minimum daylight factor D for 95% of the assessment grid
Minimum	2%	0.7%
Medium	3.5%	2%
High	5%	3.5%

Table 4: IS / BS EN 17037:2018 Target Daylight Factor (D) for Dublin.

Target Minimum Daylight Factor (D) for Dublin* based on UK National Annex		
Room Type	Target illuminance E_T(lx) for half of the assessment grid	Target daylight factor D from Table A.3 EN17037 $E_{v,d,med}$ for Dublin -14,900
Bedroom	100 lux	0.7%
Living Room	150 lux	1%
Kitchen	200 lux	1.3%

* EN17037 uses the latitude of the capital city of each European country to set individual values for daylight and sunlight metrics for use in setting the target levels to be achieved in a particular country.

Table 5: BS EN 17037:2018+A1:2021 Target Illuminance levels and Daylight Factor (D) for Dublin.

2.11 Sunlight within Proposed Developments

The BRE guidelines (2022) Section 3.1.7 states “that for large residential developments the overall sunlight potential can be initially assessed by counting the number of windows facing south, east and west and the aim should be to minimise the number of living rooms facing solely north, north-east or north-west unless there is some compensating factor such as an appealing view to the north.” In Section 3.1.8 the guideline acknowledges that it may not be possible to have every living room facing within 90° of south in large developments, however, it recommends maximising the number of units with a southerly aspect.

The BRE guidelines (2022) Section 3.1.10 recommends that BS EN 17037 should be used to assess for interior access to direct sunlight. BS EN 17037 Table A.6 sets recommendations for access to sunlight and notes three levels of achievement; Minimum, Medium and High. In dwellings at least one habitable room, preferably a living room, should achieve the Minimum of 1.5 direct hours on a specified date between 1st February and 21st March, with a cloudless sky. This assessment uses the 21st March. The guidelines recommend a time step of 5 minutes or less for the assessment interval. The Minimum level to achieve is 1.5, the Medium level is 3 hours and the High level is 4 hours direct sunlight.

3. Daylight in Neighbouring Buildings

3.1 Site Overview

The site is bounded by King Street North, Bow Street and Brown Street North. It is an inner city location, the surrounding properties are a mix of residential, commercial and community uses. There are 2 - 3 storey houses in Friary Grove, St. Francis Terrace, Bow Street and Nicholas Avenue. There are apartments and commercial units in developments opposite in Kings Court and Smithfield Lofts.

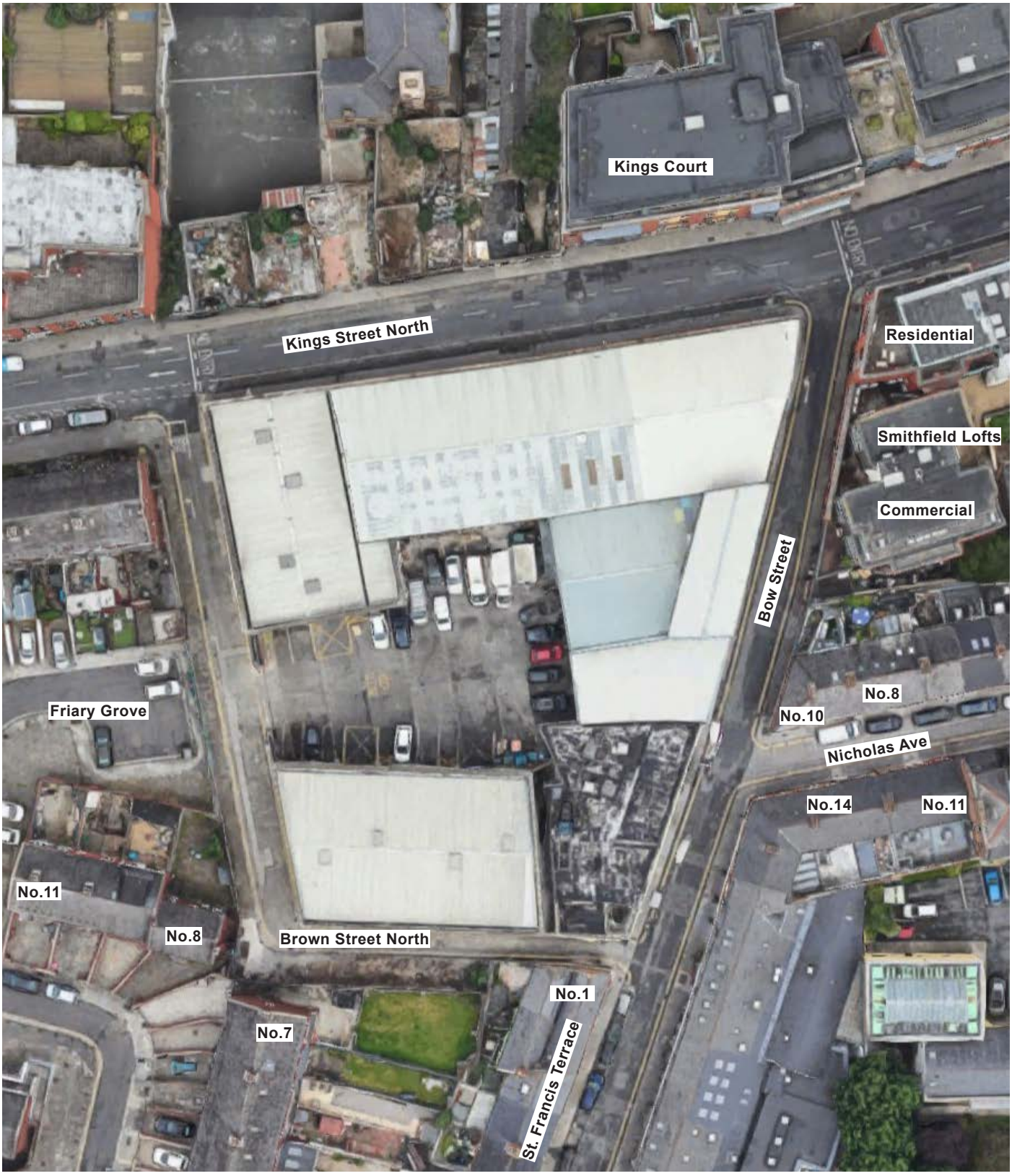


Figure 1: Indicative view of the site, taken from Google Maps.
Please refer to architectural drawings for statutory boundaries.

3.2 Detailed Assessment of VSC Levels to Adjoining Dwellings

In this dense urban environment, all windows considered to have the potential to be effected by the proposed development have been subject to detailed assessment. Windows to dwellings are studied in Sections 3.2 - 3.9. Windows serving commercial/ community use are studied in Section 3.10 & 11.

The BRE guidelines BR209:2022 (third edition) recommend assessing the Vertical Sky Component (VSC) to adjacent properties, where the layouts are not known. Annual Probable Sunlight Hours (APSH) will also be assessed, where that is relevant. If a window retains a VSC in excess of 27% with the proposed development in place then it will still receive enough daylight. If the existing VSC is below 27% or is reduced below 27% and below 0.8 times its former value then the diffuse light maybe adversely affected.

Test points representing windows in the adjacent dwellings are indicated in Figures 2 - 7 and 9 - 10. Daylight assessment is only required for habitable rooms, windows serving sanitary or circulation areas have been omitted. The results are shown in Table 6 - 13 below.

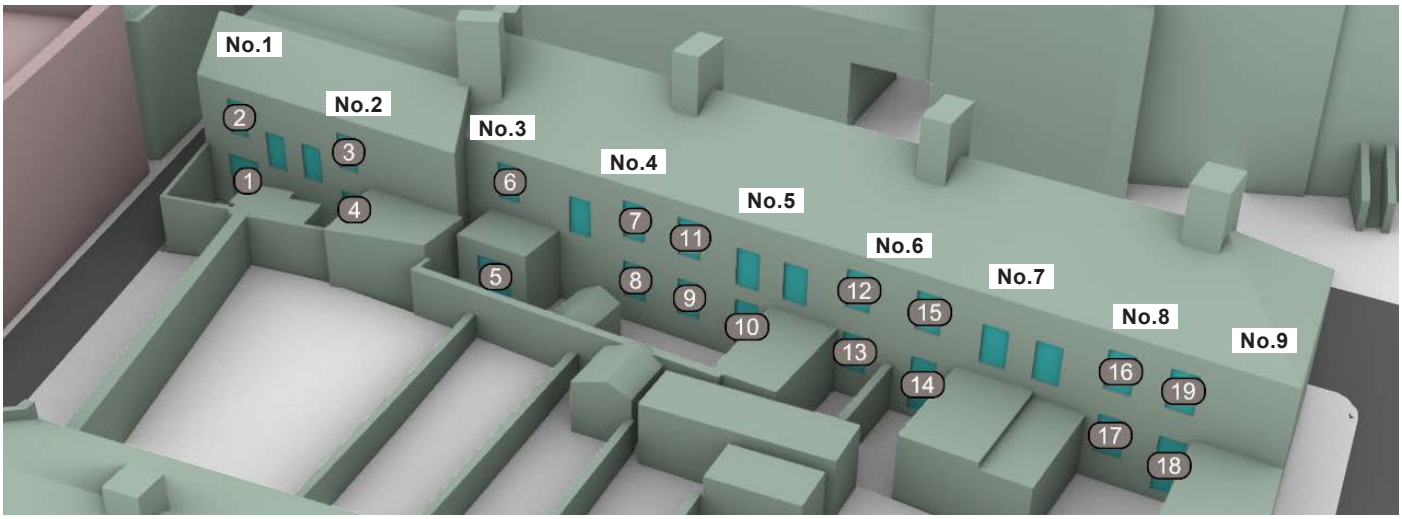


Figure 2: No.1 - 9 St. Francis Terrace, Bow Street - View of model locating VSC test points

Vertical Sky Component					
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or <27% but >80% Existing Value	Comment
	Existing %	Proposed %			
1	19.7	15.8	80.4%	Y	Negligible
2	27.3	20.2	74.0%	N	Minor Reduction
3	31.8	25.0	78.8%	N	Minor Reduction
4	20.3	15.8	77.7%	N	Minor Reduction
5	24.8	22.5	91.0%	Y	Negligible
6	30.5	28.4	93.2%	Y	Negligible
7	33.3	30.5	91.6%	Y	Negligible
8	29.6	27.2	91.7%	Y	Negligible
9	29.8	27.6	92.6%	Y	Negligible
10	24.0	22.1	92.0%	Y	Negligible
11	33.4	31.0	92.9%	Y	Negligible
12	33.6	32.1	95.6%	Y	Negligible
13	24.4	24.4	100.0%	Y	Imperceptible
14	23.6	23.3	98.6%	Y	Negligible
15	33.8	32.6	96.5%	Y	Negligible
16	34.7	33.9	97.8%	Y	Negligible
17	29.0	29.0	100.0%	Y	Imperceptible
18	21.6	21.3	98.8%	Y	Negligible
19	34.9	34.2	98.0%	Y	Negligible

Table 6: Vertical Sky Component

3.3 Comment of Potential Impact to Existing Windows in No.1- 9 St. Francis Terrace

There is a reduction in the ratio marginally below 80% to some of the windows in St. Francis Terrace. These windows retain high VSC values and any loss of daylight will be minor to negligible.

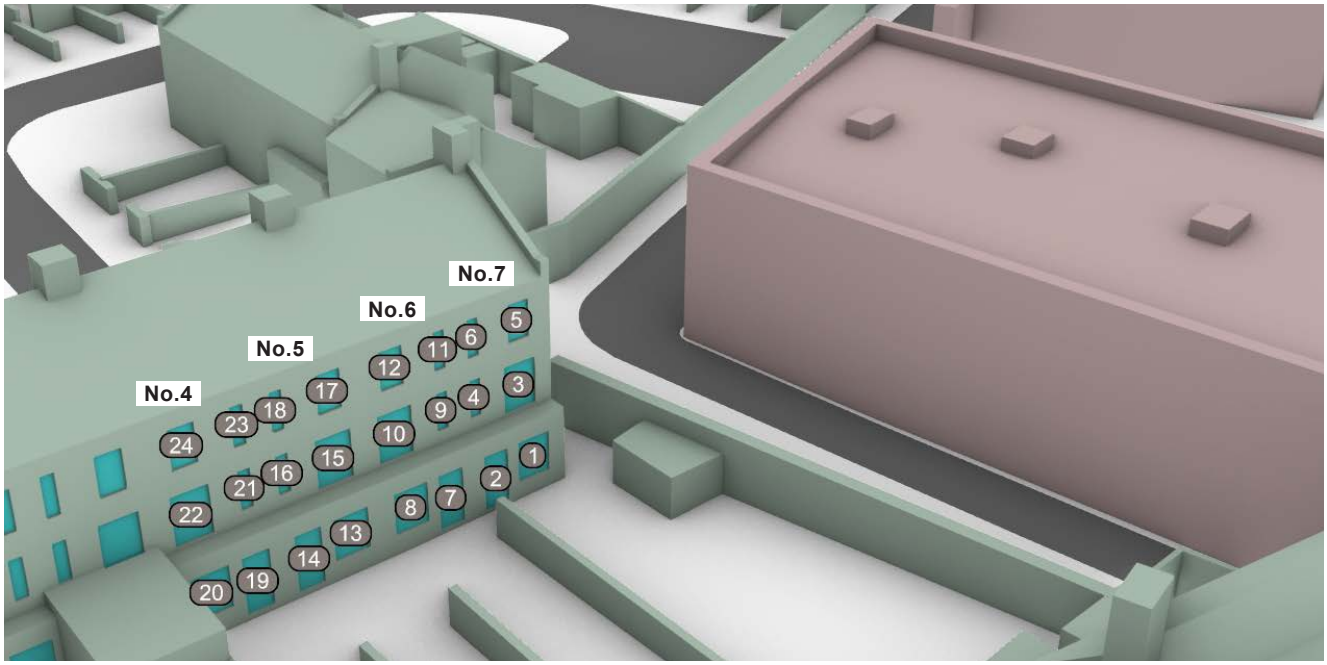


Figure 3: No.4 - 7 Friary Grove - View of model locating VSC test points

Vertical Sky Component					
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or <27% but >80% Existing Value	Comment
	Existing %	Proposed %			
1	32.5	30.4	93.6%	Y	Negligible
2	32.3	30.5	94.3%	Y	Negligible
3	35.8	33.1	92.6%	Y	Negligible
4	33.7	32.1	95.2%	Y	Negligible
5	37.3	34.4	92.3%	Y	Negligible
6	35.2	33.5	95.2%	Y	Negligible
7	32.6	31.0	95.3%	Y	Negligible
8	33.3	31.8	95.6%	Y	Negligible
9	33.8	32.5	95.9%	Y	Negligible
10	36.4	34.7	95.3%	Y	Negligible
11	35.2	33.8	96.1%	Y	Negligible
12	37.5	35.9	95.7%	Y	Negligible
13	33.3	32.0	96.2%	Y	Negligible
14	32.3	31.3	96.9%	Y	Negligible
15	36.6	35.2	96.3%	Y	Negligible
16	34.2	33.5	98.0%	Y	Negligible
17	37.5	36.3	96.9%	Y	Negligible
18	35.3	34.8	98.4%	Y	Negligible
19	30.7	29.8	97.0%	Y	Negligible
20	26.7	25.9	96.8%	Y	Negligible
21	34.2	33.7	98.5%	Y	Negligible
22	36.9	35.9	97.5%	Y	Negligible
23	35.3	34.9	98.6%	Y	Negligible
24	37.6	36.9	98.2%	Y	Negligible

Table 7: Vertical Sky Component

3.4 Comment of Potential Impact to Existing Windows in No.4 - 7 Friary Grove

All windows retain a VSC in excess of 27% or are not reduced below 80% of the existing VSC value and any potential loss of daylight light will be negligible.

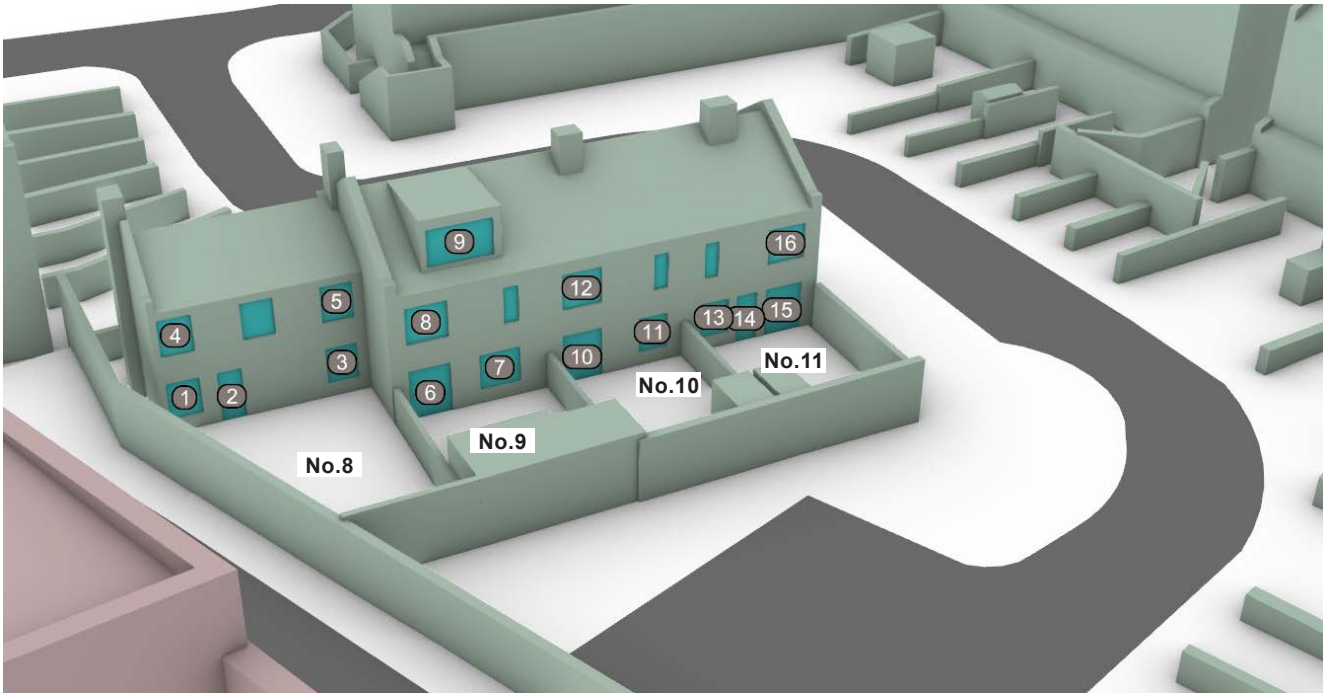


Figure 4: No.8 - 11 Friary Grove - View of model locating VSC test points.

Vertical Sky Component						
Location	Vertical Sky Component		Ratio: Proposed to Existing		Meets criteria if >27% VSC or <27% but >80% Existing Value	Comment
	Existing %	Proposed %				
1	26.6	19.0	71.4%	* Avg 81.0%	Y	Negligible
2	26.8	19.1	71.5%			
3	20.2	12.4	61.5%	* Avg 80.8%	Y	Negligible
4	31.4	21.1	67.4%		N	Minor
5	24.0	15.6	65.0%		N	Minor
6	29.2	22.4	76.6%		N	Minor
7	30.8	24.1	78.3%		N	Minor
8	33.8	25.4	75.2%		N	Minor
9	35.8	28.3	78.9%		Y	Negligible
10	30.2	25.2	83.6%		Y	Negligible
11	31.6	26.1	82.5%		Y	Negligible
12	34.0	27.6	81.1%		Y	Negligible
13	31.5	26.6	84.4%		Y	Negligible
14	30.6	26.2	85.7%		Y	Negligible
15	28.0	23.7	84.4%		Y	Negligible
16	33.7	29.3	87.1%		Y	Negligible

* The BRE guidelines recommend where there are more than one window to a room the cumulative average can be used. The ground floor rooms of No. 8 Friary Grove are dual aspect. The window on the front elevation faces away from the proposed development and will have a VSC ratio of 100% of proposed to existing.

Table 8: Vertical Sky Component

3.5 Comment of Potential Impact to Existing Windows in No.8 - 11 Friary Grove

There is a reduction in the ratio marginally below 80% to a small number of the windows in No.s 8 - 11 Friary Grove. These windows retain high VSC values and any loss of daylight will be minor to negligible.

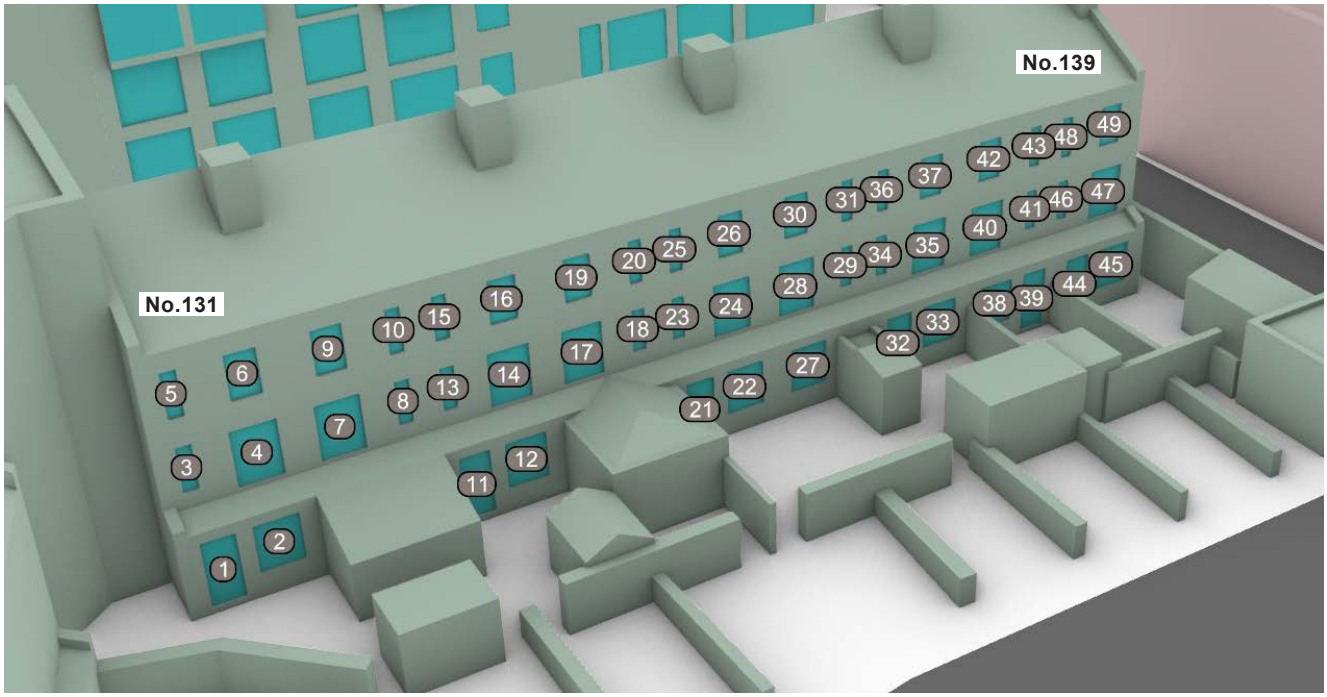


Figure 5: No.131 - 139 Friary Grove - View of model locating VSC & APSH test points

Vertical Sky Component					
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or <27% but >80% Existing Value	Comment
	Existing %	Proposed %			
1	28.9	28.6	98.9%	Y	Negligible
2	27.9	27.9	100.0%	Y	Negligible
3	31.4	30.6	97.5%	Y	Negligible
4	34.2	33.0	96.5%	Y	Negligible
5	33.7	33.0	97.9%	Y	Negligible
6	35.9	34.9	97.2%	Y	Negligible
7	35.1	33.8	96.4%	Y	Negligible
8	33.6	32.5	96.8%	Y	Negligible
9	36.4	35.3	96.9%	Y	Negligible
10	34.8	33.9	97.2%	Y	Negligible
11	26.2	26.0	99.2%	Y	Negligible
12	28.9	28.9	100.0%	Y	Negligible
13	33.7	32.5	96.5%	Y	Negligible
14	35.9	34.2	95.5%	Y	Negligible
15	35.0	33.9	96.8%	Y	Negligible
16	37.0	35.4	95.7%	Y	Negligible
17	36.1	34.2	94.8%	Y	Negligible
18	34.1	32.4	95.1%	Y	Negligible
19	37.1	35.4	95.4%	Y	Negligible
20	35.2	33.6	95.5%	Y	Negligible
21	26.3	24.1	91.9%	Y	Negligible
22	33.6	31.3	93.1%	Y	Negligible
23	34.1	32.3	94.6%	Y	Negligible
24	36.3	33.8	93.2%	Y	Negligible
25	35.3	33.5	95.1%	Y	Negligible
26	37.2	34.9	93.7%	Y	Negligible
27	30.4	30.4	99.9%	Y	Negligible
28	36.2	33.5	92.4%	Y	Negligible
29	34.2	31.5	92.2%	Y	Negligible
30	37.2	34.6	93.0%	Y	Negligible
31	35.3	32.8	92.8%	Y	Negligible

Vertical Sky Component					
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or <27% but >80% Existing Value	Comment
	Existing %	Proposed %			
32	25.3	22.4	88.6%	Y	Negligible
33	31.9	28.2	88.6%	Y	Negligible
34	34.1	31.3	91.6%	Y	Negligible
35	36.2	32.4	89.5%	Y	Negligible
36	35.4	32.6	92.1%	Y	Negligible
37	37.3	33.6	90.2%	Y	Negligible
38	32.4	28.5	87.9%	Y	Negligible
39	31.4	27.4	87.1%	Y	Negligible
40	35.9	31.7	88.2%	Y	Negligible
41	33.7	29.6	87.7%	Y	Negligible
42	37.2	33.0	88.6%	Y	Negligible
43	35.2	31.1	88.1%	Y	Negligible
44	31.1	27.0	86.9%	Y	Negligible
45	31.1	26.9	86.5%	Y	Negligible
46	33.5	29.1	86.9%	Y	Negligible
47	34.9	29.6	84.7%	Y	Negligible
48	35.2	30.5	86.8%	Y	Negligible
49	36.9	31.1	84.1%	Y	Negligible

Table 9: Vertical Sky Component

3.6 Comment of Potential Impact to Existing Windows in No.131 - 139 Friary Grove

All windows retain a VSC in excess of 27% or are not reduced below 80% of the existing VSC value and any potential loss of daylight light will be negligible.

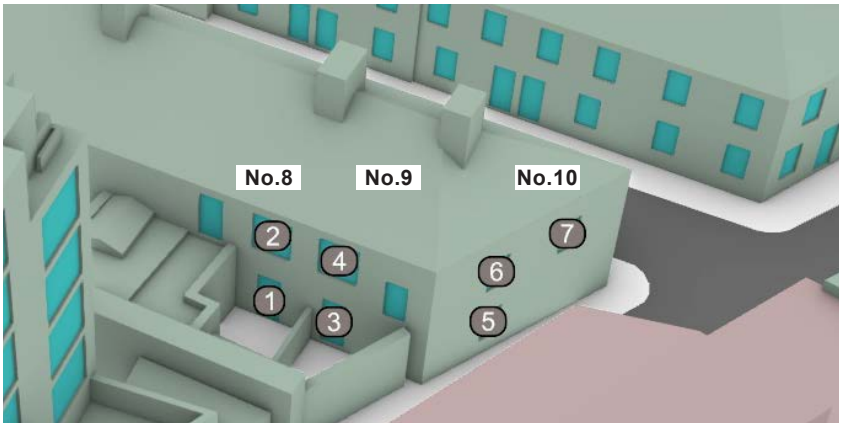


Figure 6: No.8 - 10 Nicholas Avenue - View of model locating VSC test points.

Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or <27% but >80% Existing Value	Comment
	Existing %	Proposed %			
1	13.2	8.1	61.4%	N	Moderate
2	21.1	13.6	64.3%	N	Moderate
3	14.6	9.5	65.1%	N	Moderate
4	21.5	13.6	63.3%	N	Moderate
5	18.2	9.4	51.9%	N	Moderate
6	25.3	10.7	42.5%	N	Major
7	27.5	13.8	50.0%	N	Moderate

Table 10: Vertical Sky Component

3.7 Conclusion of Potential Impact to Existing Windows in No.s 8 - 10 Nicholas Avenue

There is a moderate to major reduction in the VSC to the windows in No.s 8 - 10 Nicholas Avenue.

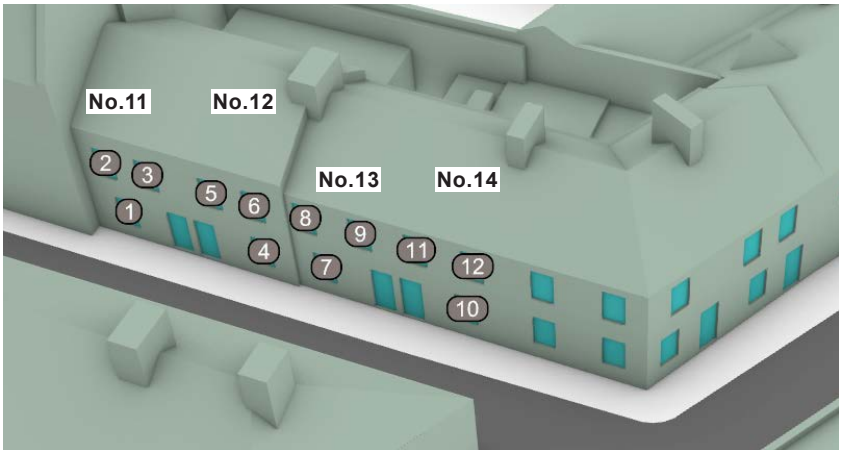


Figure 7: No.11 - 14 Nicholas Avenue - View of model locating VSC test points.

Vertical Sky Component					
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or <27% but >80% Existing Value	Comment
	Existing %	Proposed %			
1	22.8	20.5	90.0%	Y	Negligible
2	29.3	25.0	85.4%	Y	Negligible
3	29.3	24.6	83.9%	Y	Negligible
4	22.5	19.2	85.4%	Y	Negligible
5	29.4	23.9	81.4%	Y	Negligible
6	29.3	23.5	80.0%	Y	Negligible
7	22.7	18.9	83.1%	Y	Negligible
8	29.1	22.6	77.6%	N	Minor
9	29.5	22.4	75.9%	N	Minor
10	23.2	17.6	76.0%	N	Minor
11	29.6	21.8	73.8%	N	Minor
12	29.6	21.2	71.7%	N	Minor

Table 11: Vertical Sky Component

3.8 Comment of Potential Impact to Existing Windows in No.11 - 14 Nicholas Avenue

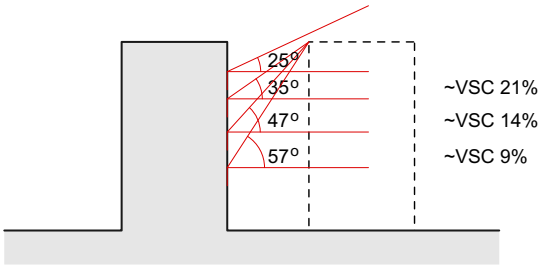
There is a reduction in the ratio marginally below 80% to some of the windows in No.s 13 & 14 Nicholas Avenue. These windows retain high VSC values and any loss of daylight will be minor to negligible.

3.9 BRE Guidelines on Establishing Alternative VSC Target for an Inner City Location

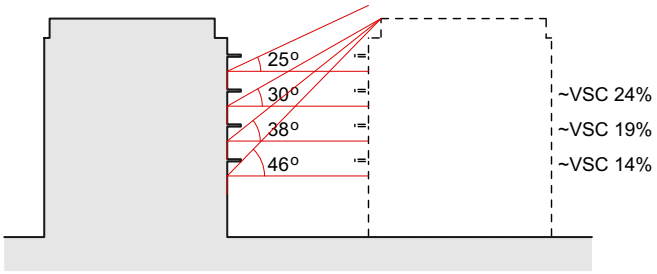
The BRE guidelines BR209:2022 (third edition) sets out an advisory target VSC of 27% when assessing windows to adjacent dwellings. It states that *"These targets are purely advisory and different targets may be used based on the special requirements of the proposed development or its location."* The site is located in the city centre and where there are buildings built directly on the boundary in a continuous form. The guidelines set out methods for establishing alternative values. One occasion is in cases where an existing building has windows that are unusually close to the boundary.

> *"To ensure that a new development matches the heights and proportions of an existing building, the VSC, daylight distribution and APSH targets for these windows could be set to those for a 'mirror-image building of the same height and size, an equal distance away from the other side of the boundary."*

Table F1, in the BRE guidelines, gives alternative VSC values based on the established obstructing angle of the buildings in the area. It also recommends where there is a tall building on or close to the boundary that a hypothetical mirror image building should be used to establish the obstructing angle and VSC. This is the case in Kings Court and Smithfield Lofts, Figure 8 below indicates the relevant obstructing angles per floor and their associated alternative VSC.



Virtual section through Smithfield Lofts



Virtual section through Kings Court

Figure 8: Section indicating existing and hypothetical obstructing angles and alternative VSC

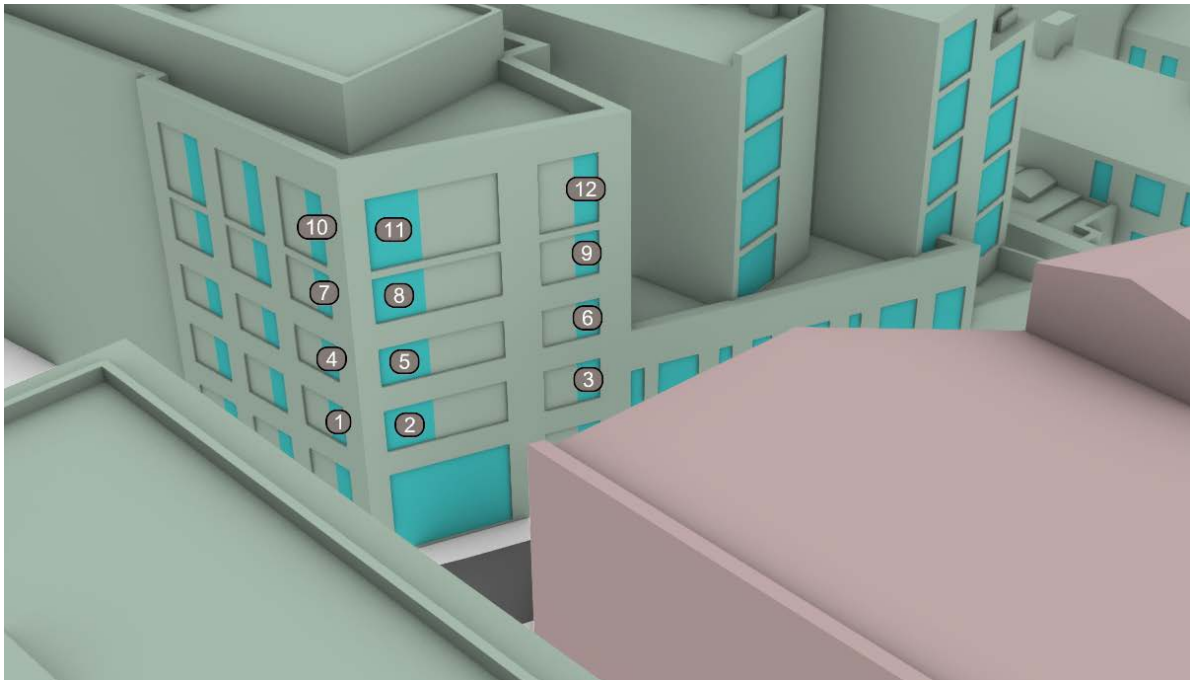


Figure 9: Smithfield Lofts, Bow Street - View of model locating VSC test points to residential units

Vertical Sky Component								
Location	Vertical Sky Component		Ratio: Proposed to Existing		Meets criteria if >27% VSC or >80% Existing Value	Meets criteria of alternative VSC per floor level		Comment
	Existing %	Proposed %				Alternative VSC		
1	21.3	21.3	100.0%	*Avg 90.2%	Y			Negligible
2	25.4	20.5	80.4%					
3	22.7	14.1	62.3%			9%	Y	
4	26.6	26.6	100.0%	*Avg 88.8%	Y			Negligible
5	31.3	24.3	77.5%					
6	31.0	17.8	57.4%			14%	Y	
7	31.8	31.8	100.0%	*Avg 90.7%	Y			Negligible
8	34.8	28.3	81.4%					
9	35.8	21.3	59.5%			21%	Y	
10	35.5	35.5	100.0%	*Avg 93.1%	Y			Negligible
11	37.0	31.9	86.2%					
12	37.3	25.2	67.5%		N			Minor Reduction

* The BRE guidelines recommend where there are more than one window to a room the cumulative average can be used. In the corner LKD there is an equal window is on the North King Street elevation. This faces away from the proposed development and will have a VSC ratio of 100% for existing to proposed.

Table 12: Vertical Sky Component

3.10 Comment of Potential Impact to Existing Windows in Smithfield Lofts

There is a reduction in the ratio marginally below 80% to some of the windows in Smithfield Lofts. These windows retain high VSC values and any loss of daylight will be minor to negligible.

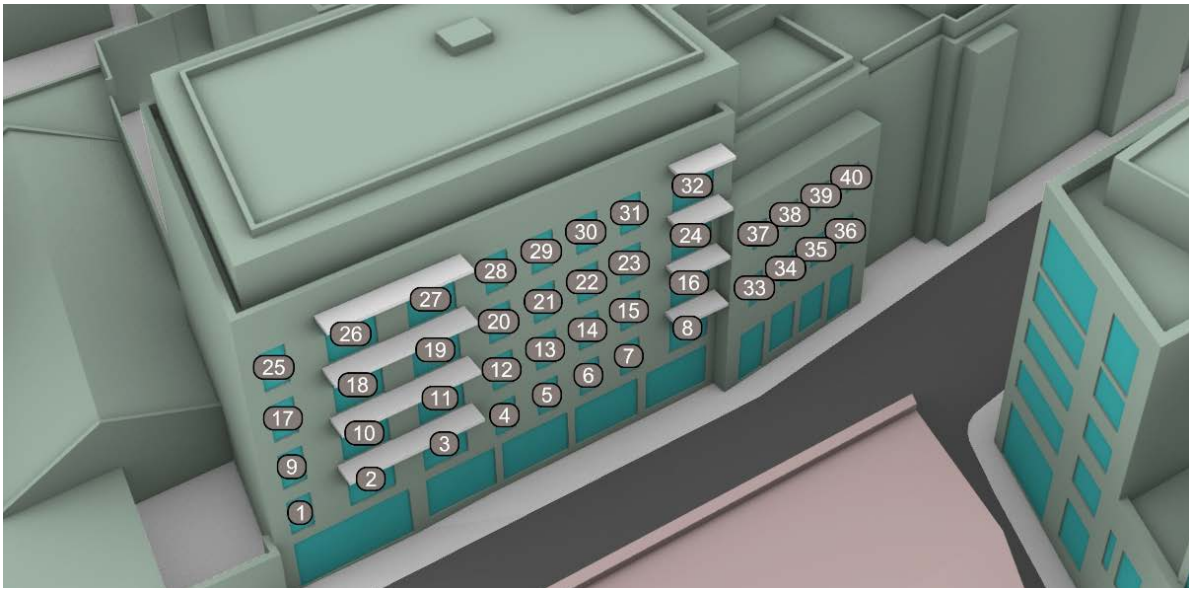


Figure 10: Kings Court, North King Street - View of model locating VSC & APSH test points.

3.11 BRE Guidelines on Balcony and Overhead Obstructions

Balconies and overhangs cut light from the top part of the sky and even a modest obstruction opposite may result in a large relative impact on the VSC. The guidelines recommend carrying out additional calculations of the VSC with and without the balcony in place for the existing and proposed conditions to show if the balcony rather than the obstruction are the main factor in the relative loss of light.

Vertical Sky Component

Test No.	Vertical Sky Component				Ratio: Proposed to Existing		Meets criteria if > alternative VSC or >80% Existing Value		Comment
	Existing	Existing with no balcony	Proposed	Proposed with no balcony	Prop : Exist	Prop : Exist no balcony	Proposed	Proposed with no balcony	
First Floor							Alternative VSC >14%		
1	28.9		13.3		46.0%		N		Moderate
2	20.7	30.0	5.5	14.7	26.4%	49.2%	N	** Y	Moderate/Minor
3	20.3	29.5	5.8	15.1	28.6%	51.0%	N	** Y	Moderate/Minor
4	27.5		13.9		50.7%		N		Moderate
5	28.1		15.5		55.0%		Y		Moderate
6	27.8		16.1		58.0%		Y		Moderate
7	26.4		15.9		60.4%		Y		Moderate
8	18.4	25.1	10.0	16.7	54.2%	66.6%	N	** Y	Moderate/Minor
33	25.6		19.6		76.8%		Y		Minor
34	24.9		20.1		80.6%		Y		Negligible
35	24.0		20.1		83.6%		Y		Negligible
36	23.1		19.6		84.8%		Y		Negligible
Second Floor							Alternative VSC >19%		
9	33.4		16.7		50.1%		N		Moderate
10	25.2	34.5	9.0	18.3	35.5%	53.0%	N	N	Moderate
11	24.8	34.1	9.3	18.6	37.5%	54.4%	N	N	Moderate
12	32.0		17.5		54.6%		N		Moderate
13	32.8		19.1		58.4%		Y		Moderate/Minor
14	32.3		19.8		61.2%		Y		Moderate/Minor
15	31.0		19.7		63.7%		Y		Moderate/Minor
16	23.1	29.7	14.3	20.8	61.7%	70.2%	N	**Y	Moderate/Minor
37	30.8		25.1		81.6%		Y		Negligible
38	30.0		25.5		85.0%		Y		Negligible
39	29.1		25.3		87.2%		Y		Negligible
40	28.2		25.0		88.7%		Y		Negligible

Vertical Sky Component									
Test No.	Vertical Sky Component				Ratio: Proposed to Existing		Meets criteria if > alternative VSC or >80% Existing Value		Comment
	Existing	Existing with no balcony	Proposed	Proposed with no balcony	Prop : Exist	Prop : Exist no balcony	Proposed	Proposed with no balcony	
Third Floor							Alternative VSC >24%		
17	36.4		21.1		58.1%		N		Moderate
18	28.2	37.4	13.3	22.6	47.2%	60.4%	N	N	Moderate
19	27.9	37.1	13.7	23.0	49.2%	61.8%	N	N	Moderate
20	35.3		22.0		62.3%		N		Moderate
21	36.1		23.6		65.3%		N		Minor
22	35.8		24.3		68.0%		Y		Minor
23	34.6		24.3		70.2%		Y		Minor
24	26.9	34.1	18.8	26.0	69.9%	76.2%	N	**Y	Minor
Fourth Floor							VSC >27%		
25	37.4		26.3		70.5%		N		Minor
26	29.0	38.3	18.3	27.6	63.0%	72.1%	N	**Y	Moderate/Minor
27	28.9	38.2	18.7	27.9	64.7%	73.2%	N	**Y	Moderate/Minor
28	36.7		27.2		73.9%		Y		Negligible
29	37.5		28.6		76.2%		Y		Negligible
30	37.4		29.2		78.3%		Y		Negligible
31	36.6		29.4		80.3%		Y		Negligible
32	29.2	37.2	23.4	31.5	80.3%	84.6%	Y	**Y	Negligible

** Assessment without balcony overhead.

Table 13: Vertical sky component.

3.12 Comment of Potential Impact to Windows Serving Residential Rooms in Kings Court

There is a reduction in the ratio below 80% to some of the windows in Kings Court, where the loss of daylight will be moderate to negligible. These windows currently have no obstruction opposite them. However the access to sky of a number of windows is obstructed by balconies above.

3.13 Detailed Assessment of VSC Levels to Non-Domestic Properties

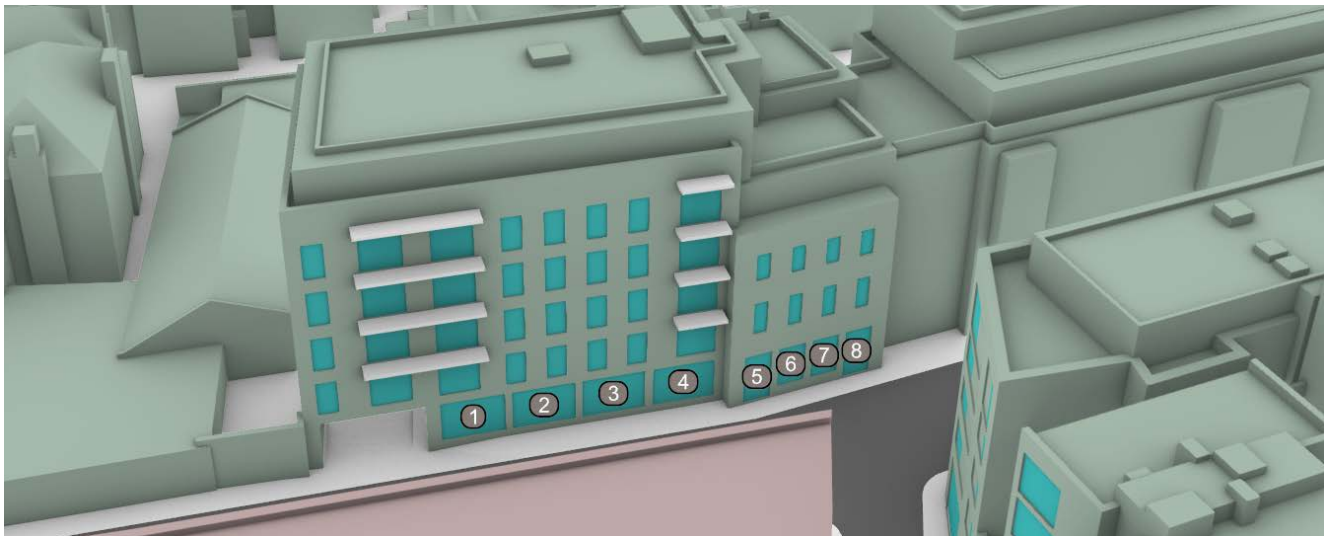


Figure 11: Kings Court, North King Street - View of model locating VSC test points.

Vertical Sky Component						
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or >80% Existing Value		Comment
	Existing %	Proposed %				
1	23.3	12.4	53.2%	*Avg 55.0%	N	Commercial
2	22.8	13.0	56.8%			
3	22.0	13.6	61.8%		N	Commercial
4	20.3	13.6	67.0%		N	Commercial
5	18.5	14.3	77.1%	*Avg 81.40%	Y	Commercial
6	19.1	15.5	81.0%			
7	19.0	15.7	82.7%			
8	17.9	15.2	84.8%			

* The BRE guidelines recommend where there are more than one window to a room the cumulative average can be used.

Table 14: Vertical sky component to commercial units.

3.14 Comment of Potential Impact to Windows Serving Commercial Use in Kings Court

These windows have no particular target values set out the BRE guidelines. Any loss of daylight will be minor to negligible.

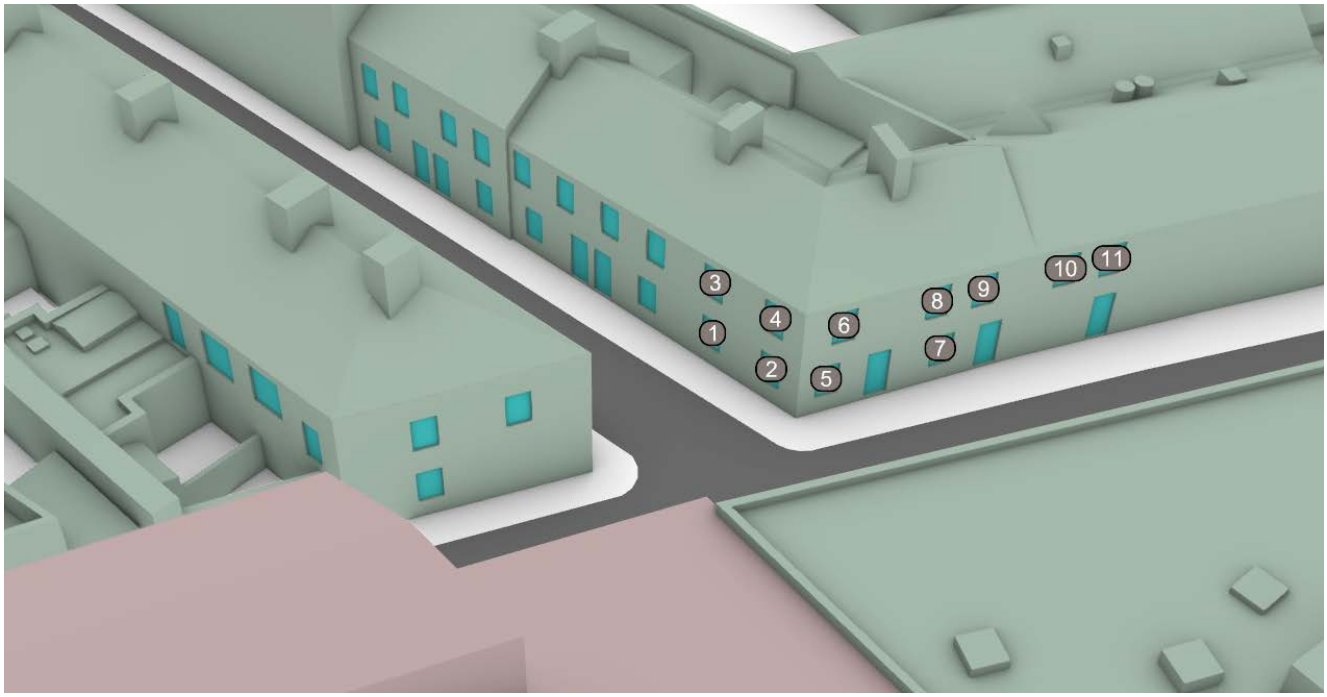


Figure 12: Capuchin Day Centre, Bow Street - View of model locating VSC test points.

Vertical Sky Component					
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or >80% Existing Value	Comment
	Existing %	Proposed %			
1	23.3	16.9	72.5%	N	Ancillary use to day centre
2	23.9	16.8	70.0%	N	Ancillary use to day centre
3	29.5	20.4	69.1%	N	Ancillary use to day centre
4	29.5	19.9	67.5%	N	Ancillary use to day centre
5	22.9	17.4	76.1%	N	Ancillary use to day centre
6	30.9	21.4	69.2%	N	Ancillary use to day centre
7	23.7	19.0	80.3%	Y	Ancillary use to day centre
8	31.4	22.9	72.8%	N	Ancillary use to day centre
9	31.6	23.6	74.5%	N	Ancillary use to day centre
10	31.9	24.3	76.4%	N	Ancillary use to day centre
11	32.1	25.0	77.8%	N	Ancillary use to day centre

Table 15: Vertical sky component.

3.15 Comment of Potential Impact to Windows Serving Community Use in Bow Street

These windows have no particular target values set out the BRE guidelines. Any loss of daylight will be minor to negligible.

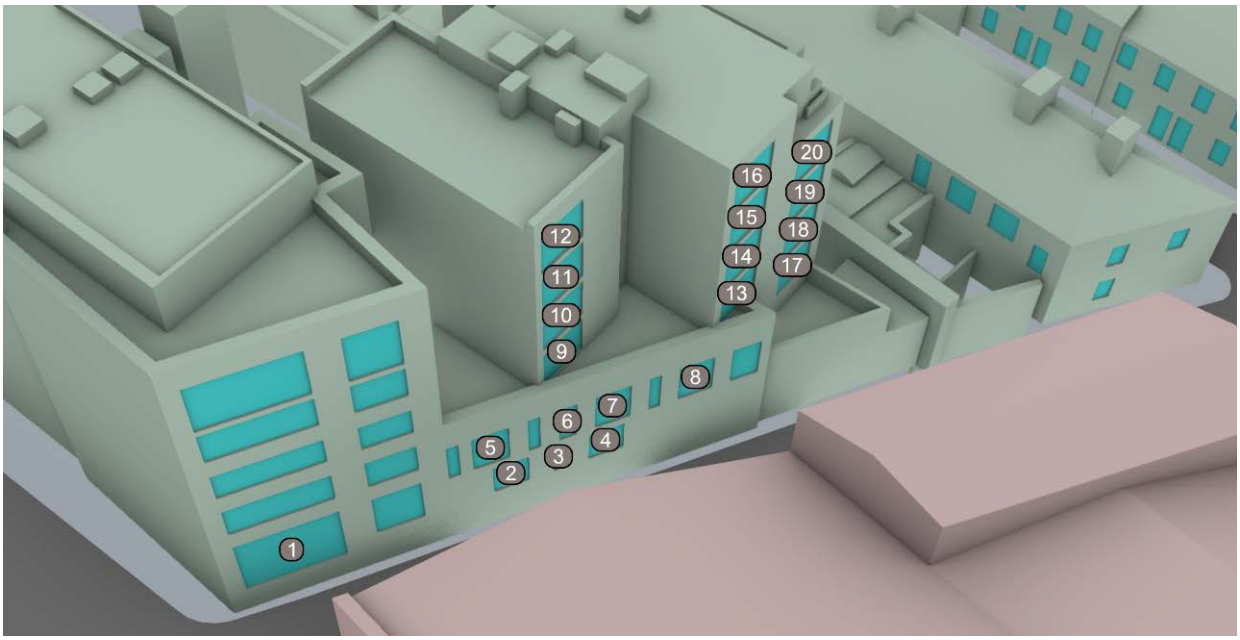


Figure 13: Smithfield Lofts Commercial Use - View of model locating VSC test points.

Vertical Sky Component					
Location	Vertical Sky Component		Ratio: Proposed to Existing	Meets criteria if >27% VSC or >80% Existing Value	Comment
	Existing %	Proposed %			
1	16.9	14.3	84.6%	Y	Commercial
2	13.0	7.3	56.5%	N	Commercial
3	11.9	5.5	46.5%	N	Commercial
4	13.2	6.2	46.6%	N	Commercial
5	18.9	10.2	53.7%	N	Commercial
6	18.6	7.9	42.2%	N	Commercial
7	19.5	7.6	39.2%	N	Commercial
8	19.6	6.8	34.8%	N	Commercial
9	29.9	10.6	35.6%	N	Commercial
10	34.3	13.2	38.3%	N	Commercial
11	36.2	16.9	46.7%	N	Commercial
12	37.7	22.1	58.8%	N	Commercial
13	32.3	13.6	42.0%	N	Commercial
14	36.8	15.4	41.8%	N	Commercial
15	38.5	18.0	46.6%	N	Commercial
16	38.8	21.4	55.2%	N	Commercial
17	29.2	15.7	53.5%	N	Commercial
18	33.9	17.2	50.7%	N	Commercial
19	37.2	19.2	51.5%	N	Commercial
20	38.6	21.7	56.2%	N	Commercial

Table 16: Vertical Sky Component To Commercial Units

3.16 Comment of Potential Impact to Windows Serving Commercial Use in Smithfield Lofts

These windows have no particular target values set out the BRE guidelines. Any loss of daylight will be minor to negligible.

3.17 Conclusion to Assessment of Daylight in Adjacent Residential and Non Residential Buildings

There will be a perceived reduction to the available daylight levels to some of the neighbouring residential and commercial developments. The majority of the window with a perceived impact are within the recommended reduction levels or alternative target levels. There are a small number of window that are reduced below the target VSC or alternative target VSC level established for the location and are reduced below 80% of the existing value. Most of these windows have overhead balconies which are the main cause of lack of available daylight. The rear of the houses in Nicholas Avenue have a reduction in the VSC levels below recommended target levels. The propose development does not lie in a plane perpendicular to the window wall of these houses. There is a 5-6 storey commercial building, Smithfield Lofts, directly behind the houses at Nicholas Avenue in a plane perpendicular to the window wall which is a considerable influence in the low existing VSC levels and any additional development within the vicinity of these windows will have a considerable impact no matter how moderate.

The reduction in VSC levels to the neighbouring windows is in line with recent developments in inner city areas.

4. Sunlight in Neighbouring Buildings

4.1 Sunlight the neighbouring dwellings (Annual Probable Sunlight Hours)

The BRE guidelines recommends assessing window walls for the APSH that face within 90º of due south. The guidelines state that *" In housing the main requirement for sunlight is 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."*

For a proposed development to have a noticeable impact on the annual Probable Sunlight Hours the value need to be reduced below the recommended 25% annual or 5% in the winter period from September to March. If the value is either below this to begin with or is reduced below this then it should not be reduced below 0.8 times its former value.

The windows identified in the preliminary assessment are Kings Court and No.131 - 139 Friary Grove, indicated in Figures 14 & 15 that face within 90° of due south are assessed regardless of use. The results are set out in the tables below.

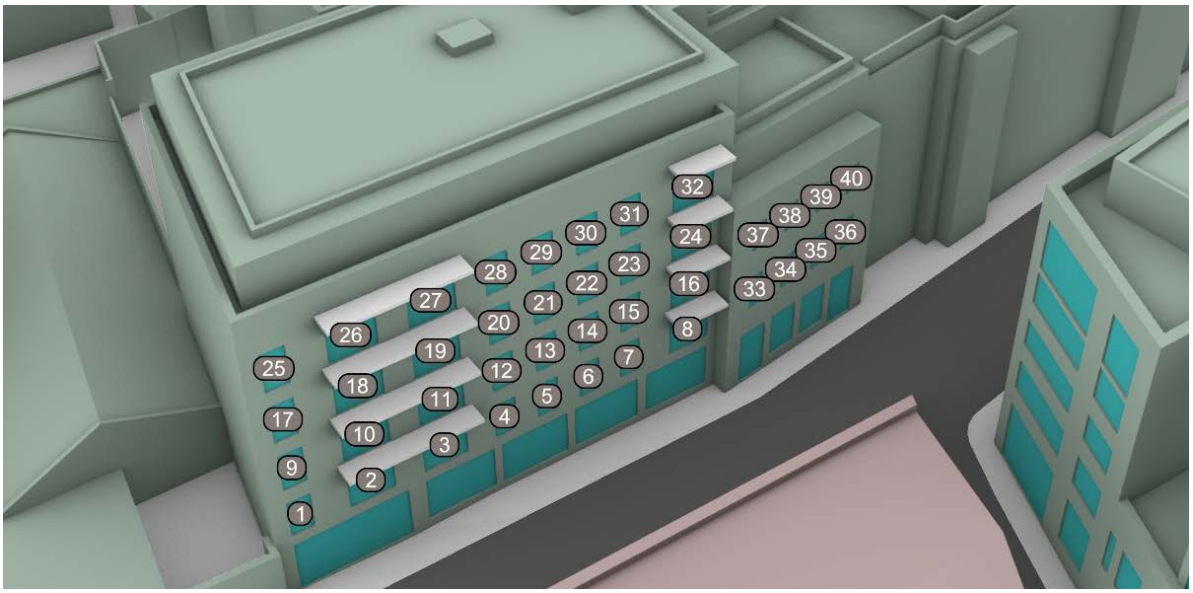


Figure 14: Kings Court, North King Street - View of model locating APSH test points

Annual Probable Sunlight Hours

	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% PSH Or <25% or <5% PSH but >80% Existing Value	
Location ID	Existing	Proposed	Ratio	Existing	Proposed	Ratio		
	% of APSH	% of APSH	If less than 25% APSH Target >80%	% WPSH	% WPSH	If less than 5% WPSH Target >80%		
1	61.0%	36.8%	60.4%	15.1%	1.3%	8.8%	Y	N
2	60.3%	37.6%	62.3%	14.9%	1.3%	8.9%	Y	N
3	58.7%	36.2%	61.7%	14.6%	1.4%	9.4%	Y	N
4	57.3%	37.3%	65.1%	14.0%	1.5%	10.8%	Y	N
5	56.5%	37.2%	65.8%	14.0%	1.9%	13.3%	Y	N
6	55.0%	36.4%	66.2%	13.5%	1.6%	11.9%	Y	N
7	53.5%	36.7%	68.7%	13.2%	2.2%	16.9%	Y	N
8	48.6%	34.7%	71.5%	12.4%	3.1%	25.4%	Y	N
9	74.8%	42.8%	57.2%	25.8%	2.2%	8.4%	Y	N
10	74.3%	43.5%	58.5%	25.5%	2.2%	8.6%	Y	N
11	72.7%	43.6%	59.9%	24.5%	2.5%	10.4%	Y	N
12	71.8%	44.3%	61.7%	24.1%	2.8%	11.7%	Y	N
13	69.7%	43.8%	62.8%	23.1%	3.0%	13.0%	Y	N
14	68.4%	43.2%	63.1%	22.9%	3.2%	14.0%	Y	N
15	66.2%	43.4%	65.6%	21.9%	3.8%	17.5%	Y	N
16	59.7%	40.7%	68.2%	20.2%	4.9%	24.2%	Y	N
17	78.6%	50.1%	63.8%	28.4%	5.1%	17.9%	Y	Y
18	78.2%	50.1%	64.0%	28.2%	5.0%	17.7%	Y	N
19	77.6%	50.8%	65.4%	27.8%	5.5%	19.9%	Y	Y

Annual Probable Sunlight Hours								
	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% PSH Or <25% or <5% PSH but >80% Existing Value	
Location ID	Existing	Proposed	Ratio	Existing	Proposed	Ratio		
	% of APSH	% of APSH	If less than 25% APSH Target >80%	% WPSH	% WPSH	If less than 5% WPSH Target >80%		
20	76.3%	51.3%	67.2%	26.8%	6.0%	22.4%	Y	Y
21	75.3%	52.1%	69.1%	26.0%	6.7%	25.8%	Y	Y
22	75.1%	52.6%	70.1%	25.9%	7.2%	27.8%	Y	Y
23	74.4%	53.7%	72.3%	25.3%	8.1%	32.2%	Y	Y
24	66.1%	48.9%	74.0%	24.3%	10.0%	41.2%	Y	Y
25	81.5%	58.5%	71.8%	30.2%	11.1%	36.8%	Y	Y
26	81.1%	58.9%	72.6%	29.9%	11.4%	38.3%	Y	Y
27	81.0%	59.6%	73.5%	29.8%	12.0%	40.3%	Y	Y
28	80.7%	60.5%	74.9%	29.6%	12.8%	43.3%	Y	Y
29	80.7%	61.3%	76.0%	29.6%	13.5%	45.7%	Y	Y
30	80.5%	63.4%	78.8%	29.4%	15.2%	51.8%	Y	Y
31	80.2%	64.3%	80.3%	29.1%	16.0%	54.9%	Y	Y
32	79.5%	65.9%	82.9%	28.6%	17.3%	60.6%	Y	Y
33	58.2%	43.1%	74.2%	16.1%	5.0%	31.2%	Y	Y
34	56.5%	44.1%	78.0%	14.8%	5.4%	36.4%	Y	Y
35	54.2%	43.3%	79.9%	13.5%	5.0%	36.6%	Y	Y
36	53.6%	43.6%	81.4%	12.8%	5.0%	38.6%	Y	Y
37	66.8%	51.4%	77.0%	20.1%	7.3%	36.4%	Y	Y
38	65.9%	53.0%	80.3%	19.3%	8.5%	44.2%	Y	Y
39	64.1%	52.6%	82.1%	17.8%	8.3%	46.5%	Y	Y
40	62.8%	52.2%	83.2%	16.6%	7.9%	47.3%	Y	Y

Table 17: Annual Probable Sunlight hours to Kings Court, King Street North

4.2 Comment on sunlight to Kings Court, North King Street

There will be a reduction in sunlight, in winter in particular to the lower floors.

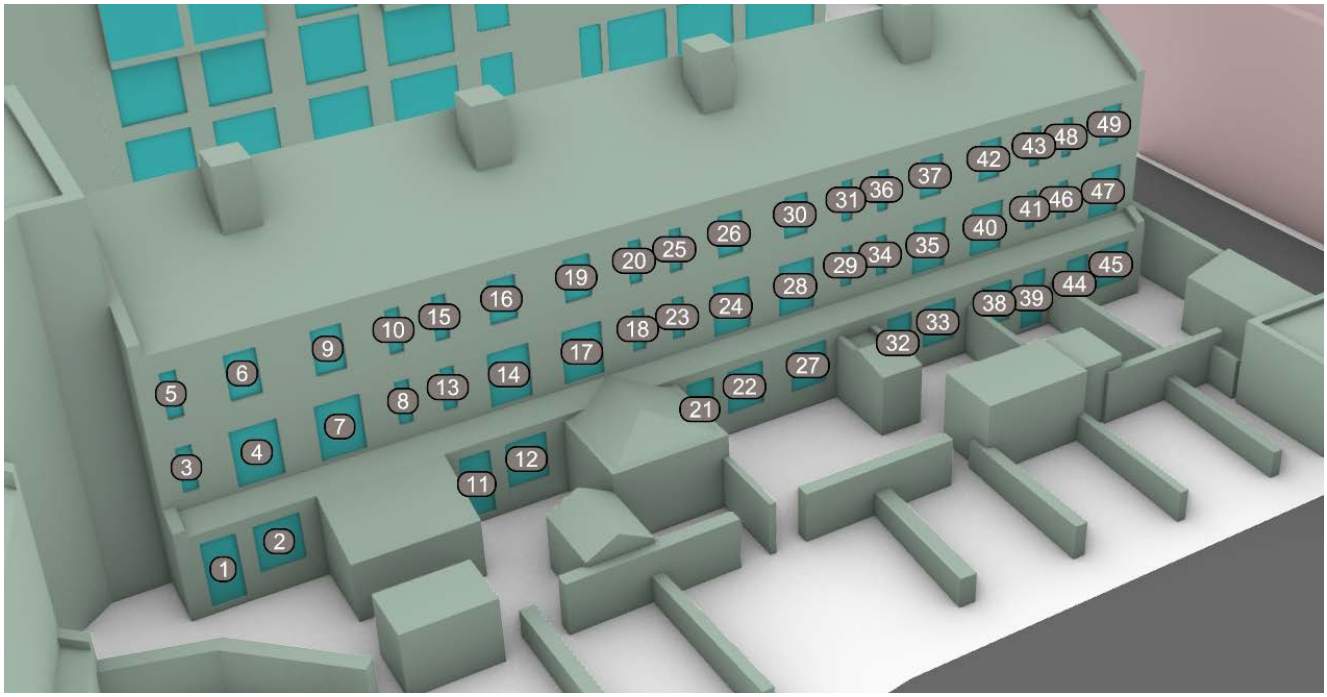


Figure 15: No.s 131 - 139 Friary Grove - View of model locating APSH test points

Annual Probable Sunlight Hours

	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% PSH Or <25% or <5% PSH but >80% Existing Value	
Location ID	Existing	Proposed	Ratio	Existing	Proposed	Ratio		
	% of APSH	% of APSH	If less than 25% APSH Target >80%	% WPSH	% WPSH	If less than 5% WPSH Target >80%		
1	49.0%	48.4%	98.9%	16.0%	16.0%	100.0%	Y	Y
2	45.7%	45.7%	100.0%	15.1%	15.1%	100.0%	Y	Y
3	60.6%	55.6%	91.6%	20.8%	18.9%	90.5%	Y	Y
4	65.8%	60.3%	91.7%	22.5%	20.5%	91.3%	Y	Y
5	68.5%	63.8%	93.1%	24.9%	22.4%	90.2%	Y	Y
6	71.2%	66.3%	93.1%	25.8%	23.4%	90.8%	Y	Y
7	68.8%	62.3%	90.6%	24.5%	22.2%	90.6%	Y	Y
8	72.8%	65.7%	90.3%	25.1%	22.7%	90.3%	Y	Y
9	75.4%	70.0%	92.8%	26.9%	24.3%	90.5%	Y	Y
10	75.9%	69.7%	91.9%	27.2%	24.3%	89.3%	Y	Y
11	43.2%	42.6%	98.6%	12.4%	12.2%	98.9%	Y	Y
12	51.6%	51.6%	100.0%	15.8%	15.8%	100.0%	Y	Y
13	73.0%	65.1%	89.2%	24.9%	22.5%	90.5%	Y	Y
14	73.0%	65.2%	89.3%	25.0%	22.9%	91.5%	Y	Y
15	76.2%	69.6%	91.2%	27.5%	24.4%	88.8%	Y	Y
16	77.2%	69.8%	90.4%	28.1%	24.9%	88.4%	Y	Y
17	72.9%	65.1%	89.3%	25.0%	23.0%	92.3%	Y	Y
18	73.1%	64.3%	88.0%	25.1%	22.5%	89.7%	Y	Y
19	78.3%	69.8%	89.1%	28.6%	25.1%	87.6%	Y	Y
20	79.3%	69.4%	87.5%	29.1%	25.3%	86.9%	Y	Y
21	47.8%	39.0%	81.7%	13.7%	11.6%	84.8%	Y	Y
22	67.0%	57.4%	85.7%	21.1%	18.8%	88.9%	Y	Y
23	73.4%	64.0%	87.1%	25.3%	22.3%	87.9%	Y	Y
24	73.8%	63.3%	85.7%	25.5%	21.8%	85.6%	Y	Y
25	79.6%	68.9%	86.5%	29.2%	24.8%	85.0%	Y	Y
26	79.7%	67.9%	85.1%	29.2%	24.1%	82.5%	Y	Y
27	56.0%	56.0%	100.0%	18.9%	18.9%	100.0%	Y	Y
28	74.4%	63.3%	85.1%	25.8%	22.1%	85.8%	Y	Y
29	75.0%	62.9%	83.8%	26.1%	22.2%	85.2%	Y	Y

Annual Probable Sunlight Hours								
	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% PSH Or <25% or <5% PSH but >80% Existing Value	
Location ID	Existing	Proposed	Ratio	Existing	Proposed	Ratio		
	% of APSH	% of APSH	If less than 25% APSH Target >80%	% WPSH	% WPSH	If less than 5% WPSH Target >80%		
30	80.1%	67.6%	84.5%	29.4%	24.2%	82.1%	Y	Y
31	80.0%	67.1%	83.8%	29.4%	24.1%	81.9%	Y	Y
32	43.8%	34.2%	78.0%	9.6%	7.5%	78.2%	Y	Y
33	61.4%	50.9%	82.9%	17.8%	14.9%	83.9%	Y	Y
34	75.1%	61.8%	82.2%	26.2%	22.1%	84.3%	Y	Y
35	74.6%	61.0%	81.8%	26.1%	21.9%	84.0%	Y	Y
36	80.2%	66.3%	82.7%	29.5%	23.8%	80.6%	Y	Y
37	79.9%	64.8%	81.0%	29.4%	23.3%	79.4%	Y	Y
38	63.2%	53.3%	84.4%	20.3%	17.5%	86.2%	Y	Y
39	59.9%	49.3%	82.3%	18.1%	14.9%	82.1%	Y	Y
40	74.3%	60.3%	81.2%	26.0%	21.8%	83.8%	Y	Y
41	73.8%	58.0%	78.6%	25.9%	20.6%	79.5%	Y	Y
42	80.0%	62.9%	78.6%	29.5%	23.0%	78.2%	Y	Y
43	79.6%	61.3%	77.0%	29.2%	22.3%	76.3%	Y	Y
44	58.5%	49.8%	85.0%	18.1%	15.5%	85.8%	Y	Y
45	58.9%	51.6%	87.6%	19.7%	17.7%	89.8%	Y	Y
46	73.0%	56.1%	76.9%	25.8%	20.3%	78.7%	Y	Y
47	69.6%	55.8%	80.2%	25.2%	20.3%	80.4%	Y	Y
48	79.4%	60.1%	75.7%	29.1%	21.7%	74.7%	Y	Y
49	78.6%	58.4%	74.3%	28.6%	21.4%	74.7%	Y	Y

Table 18: Annual Probable Sunlight hours to No.s 131 - 139 Friary Grove

4.3 Comment on sunlight to Friary Court

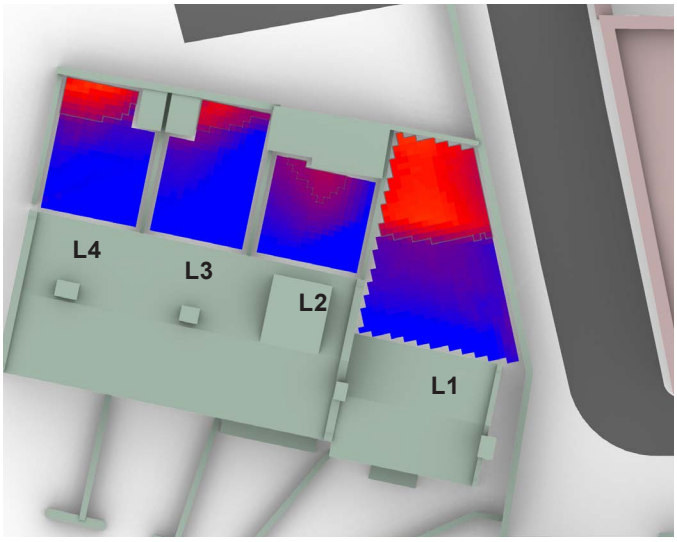
All windows assessed exceed the target values set out for annual and winter probable sunlight hours. The proposed development meets the recommendations of the BRE guidelines and any potential loss of sunlight will be negligible.

5. Sunlight to Amenity Spaces in Neighbouring Properties

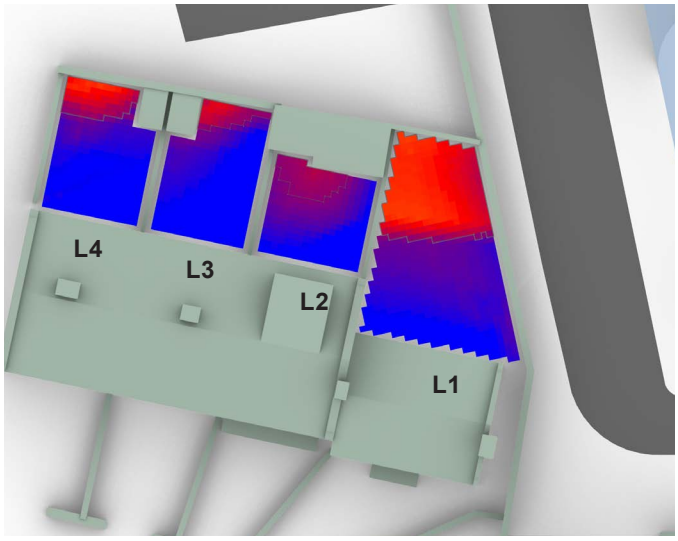
The BRE guidelines BR209:2022 (third edition) indicates that for an amenity area to have good quality sunlight throughout the year, 50% should receive in excess of 2 hours sunlight on the 21st March. It also states that front gardens need not be assessed for sunlight. Amenity spaces which are entirely south of the proposed development would not perceive an impact from it.

5.1 Amenity Space to Neighbouring Properties

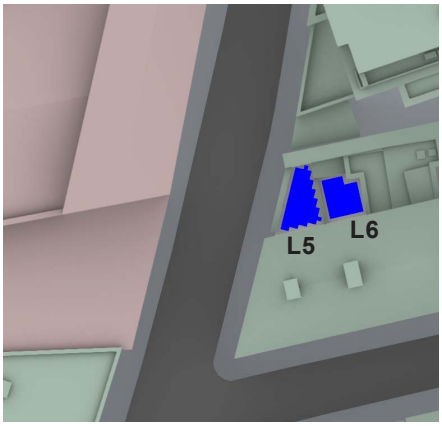
The gardens and amenity spaces to the neighbouring properties have been assessed for a potential impact on their sunlight of the ground. The existing and proposed generated analysis are shown in Figure 16, the results are shown in Table 19 below.



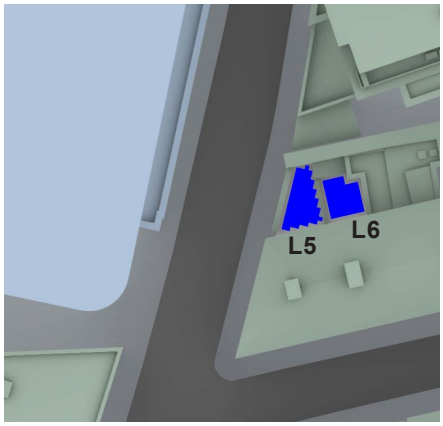
Existing No.8 - 11 Friary Grove



Proposed No.8 - 11 Friary Grove



Existing No.8 - 9 Nicholas Avenue



Proposed No.8 - 9 Nicholas Avenue

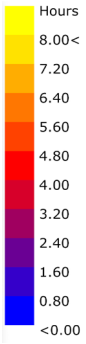


Figure 16: Existing & Proposed Radiation map of amenity areas, showing available sunlight on 21st March. The scale represents the sunlight received from 0 - 8 hours.

Sunlight on the ground - Adjacent properties					
No.	Location	% Area receiving 2 hours sunlight on 21st March		Ratio	Meets criteria of >50% area Or if <50% then target >80% Existing Value
		Existing	Proposed	Proposed: Existing	
L1	8 Friary Grove	37.8%	38.1%	101%	Y
L2	9 Friary Grove	11.1%	19.6%	177%	Y
L3	10 Friary Grove	10.4%	10.4%	100%	Y
L4	11 Friary Grove	19.2%	19.2%	100%	Y
L6	9 Nicholas Avenue	0.0%	0.0%	100%	Y
L5	8 Nicholas Avenue	0.0%	0.0%	100%	Y

Table 19: Calculation of Sun on the Ground to adjacent amenity areas

5.2 Conclusion

All the private amenity space to the surrounding properties were assessed for sunlight in accordance with the recommendations set out in BR209:2022. On the 21st March, all the amenity spaces will retain 2 hours sunlight over 50% of the area or will not be reduced below 80% of the existing levels. The proposed development meets the recommendations of the BRE guidelines.

6. Daylight within the Proposed Development

All habitable rooms within the units were assessed for daylight provision by illuminance method. The Illuminance method assesses the daylight levels over at least 50% daylight hours in the year and uses a weather file data set. These methods take into account the orientation of the space. They provide an accurate representation of the daylight provision to a specific room in the context of the proposed environment.

Compliance is demonstrated by a calculation of Daylight Provision with the illuminance method under BS EN 17037:2018+A1:2021. A summary of the results are presented in Table 20 below and a complete set of room results are shown in Appendix A.

6.1 Assessment for Daylight Provision BS EN 17037:2018+A1:2021

The UK National Annex (A1) contains minimum room specific target values for dwellings in the UK. The UK committee fully supports the recommendations of EN17037:2018 but considers the target daylight levels may be hard to achieve in UK dwellings, in particular in urban areas and areas with mature trees. The Target and Minimum levels set out in IS / BS EN17037:2018 does not take into account room use or make allowance for room that have a lesser requirement for daylight. The UK National Annex A1 in BS EN17037:2018+A1:2021 sets out room specific minimum values to be achieved in the UK and Channel Islands. These target values are set to achieve similar minimum daylight levels as the superseded Average Daylight Factor method (ADF) in BS8206-2 2008.

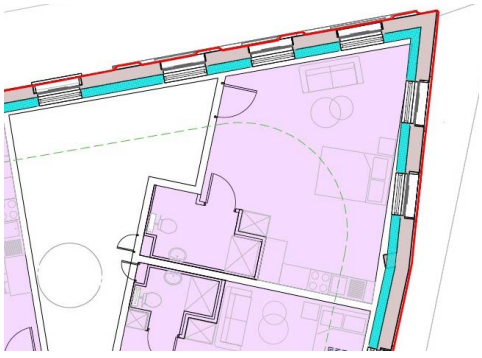
Minimum daylight provision UK NA.1 - BS EN 17037:2018+A1:2021					
	Room Use	Number of rooms	Target illuminance E_T(lx) for half of the assessment grid	Number of rooms to achieve target Lux over 50% of the assessment grid	Percentage of rooms achieving Target
Habitable Accommodation	LK	51	200	51	100.0%
	Studio	62	200	61	98.4%
	Bedrooms	299	100	299	100.0%
Total		412		411	99.8%

Table 20: Summary of room for Target Illuminance compliance with BS EN 17037:2018+A1:2021. Individual room results can be viewed in Appendix A.

6.2 Comment on Daylight Provision

BR209:2022 recommends assessment methods set out in BS EN 17037 for daylight provision. 99.8% of the LKD, studio and bedroom spaces achieve the target values set out in BS EN 17037:2018+A1:2021 section NA1. These are the minimum values, per specified use, to be achieved in habitable rooms.

A single studio space is below the target value over 50% of the assessment grid. This room ID 485, is in a desirable location, on the corner in the protected structure. It has 4 windows and a large floor area of 28m2. The retention of the smaller panes windows in the protected structure combined with the secondary glazing has the effect of reducing the penetration of daylight deep into the plan, however the layout of this room is such that the living area has good quality daylight.



Proposed Room Layout

Plan Indicating Daylight Provision to BS EN17037:2021+A1 Table NA.1

Figure 17: Study of room ID 485

7. Sunlight within the Proposed Development

7.1 Sunlight Hours

BR209:2022 (third edition) and BS EN 17037 set out recommendations for sunlight hours to be achieved preferably in a main living space. The guidelines recommends the sunlight hours should be assessed preferably on the 21st March over the course of the day. The guidelines sets three levels of achievement. Minimum 1.5h, Medium 3h and High 4h. The guideline does not set the percentage of units that need the achieve the recommendations but does give an example of a well designed floor layout in figure below where 4 out of 5 units in an apartment building would achieve the target sunlight.

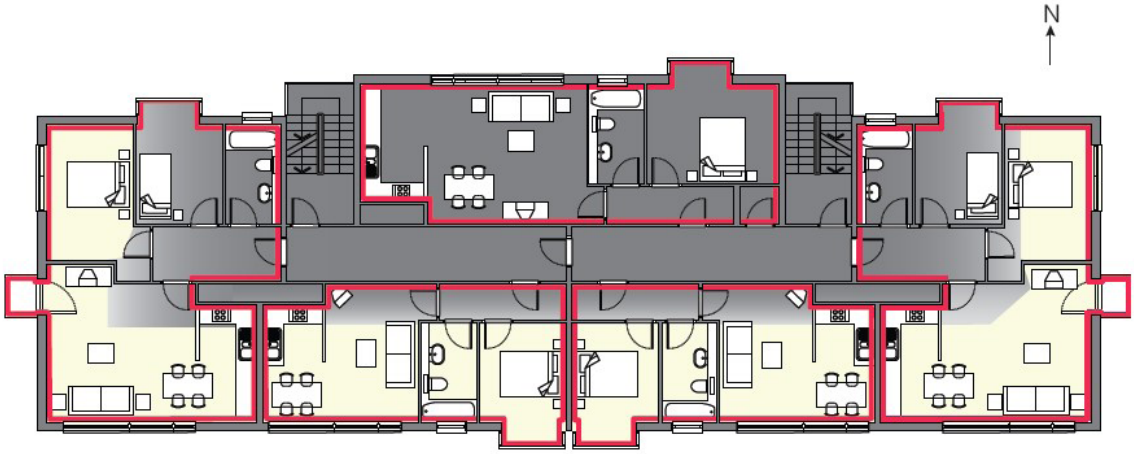


Figure 26: Careful layout design means that four out of the five flats shown have a south-facing living room

Figure 18: Extract from BR209:2022 Section 3 Sun-lighting: Diagram indicating sample floor plan to maximise units with a main living space facing south.

Appendix C details the results in the LKD and studio rooms, indicating if these rooms have a south facing window. A summary of these results are displayed in the table below.

Sunlight Hours Summary Table									
	Total Rooms	Rooms with a window within 90° south		Below recommendation <1.5 hours	Minimum >1.5 hours	Medium >3 Hours	High >4 Hours	Number meets criteria	Ratio meets criteria
		No.	Ratio						
LKD & Studio	113	85	75.2%	31	10	22	50	82	72.6%

Table 21: Summary of results of assessment of Sunlight Hours

7.2 Comment on EN 17037 Sunlight Hours

The BRE Guidelines recommend maximising the amount of units that have a window within 90° due south but does not have set targets. The guidelines acknowledges that for large developments with site constraints its not possible to achieve south facing windows to all main living spaces. In this development there are 51no. LKD rooms and 62no. Studios, of these 113 rooms, 75.2% (85 no.) have window that faces within 90° south.

Often windows with an aspect of greater than 90° due south, to the north west or north east, will still receive sunlight, but it is likely to be lesser amounts especially in the winter period. In these 113no. LKD/ Studio rooms 72.6% (82 no.) have a living spaces achieve the minimum recommended 1.5 direct sunlight hours.

7.3 Conclusion

This scheme is well designed for sunlight, with 72.6% of LKD/ Studio rooms meeting the minimum recommended 1.5 direct sunlight hours.

8. Sunlight to Amenity Spaces Within the Proposed Development

The BRE guidelines BR209:2022 (third edition) indicates that for an amenity area to have good quality sunlight throughout the year, 50% should receive in excess of 2 hours sunlight on the 21st March.

8.1 Sunlight to Amenity Spaces Within the Proposed Development

The amenity area within this proposal have been assessed with a calculation of Sun on the Ground on the 21st March. Generated analysis is shown in Figure 19 and the results are set out in Table 22 below.

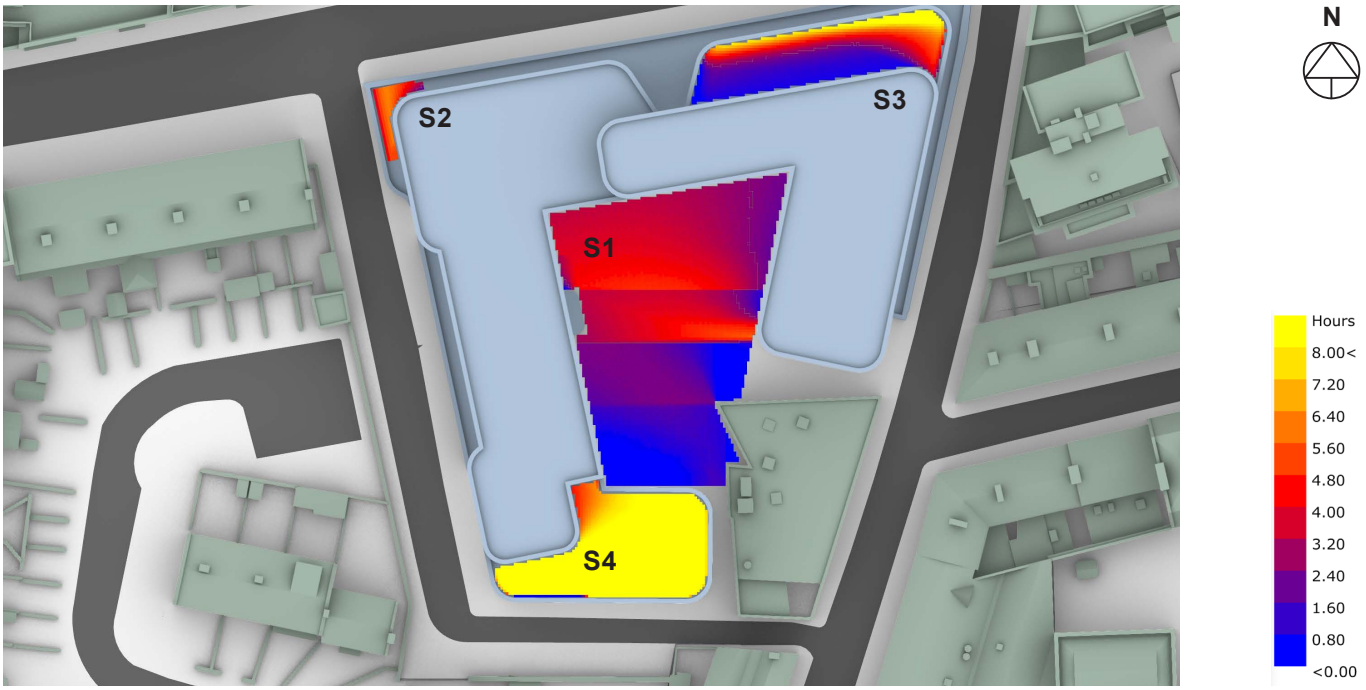


Figure 19: Radiation map of amenity within the proposed development, showing available sunlight on 21st March. The scale represents the sunlight received from 0 - 8 hours.

Sunlight on the ground - within development			
No.	Use	Proposed	Meets criteria of >50% area
S1	Courtyard	53.1%	Y
S2	Terrace 2nd Floor	97.8%	Y
S3	Terrace 5 Flr N	50.0%	Y
S4	Terrace 5 Flr S	98.8%	Y

Table 22: Calculation of Sun on the Ground to amenity area within the proposed development.

8.2 Conclusion

The communal amenity space is well oriented for sunlight and will all achieve 2 hours sunlight on the 21st March over in excess of 50% of the area. The proposed development meets the recommendations of the BRE guidelines (2022) for gardens and open spaces.

9. Shadow Study

9.1 BRE Guidance on Shadow Studies

The BRE guidelines recommend using the March Equinox due the equal length of the day and night time. It states:

> *"If a space is used all year round, the equinox (21 March) is the best date for which to prepare shadow plots as it gives an average level of shadowing. Lengths of shadows at the autumn equinox (21 September) will be the same as those for 21 March, so a separate set of plots for September is not required."*

June 21st and December 21st are provided below for information but it should be noted that the summer solstice is the best case scenario with shadows at their shortest. The summer solstice diagrams are included here with the Daylight Saving Time (UTC+1) applied. In Winter even low buildings will cast long shadows and it is common for large areas of the ground to be in shadow throughout the day especially in a built up area and sun barely rises above an altitude of 10° during the course of the day. The guidelines recommends that Sunlight at an altitude of 10° or less does not count. Below are the times for the Equinox and Solstice that the sun is above 10° altitude rounded to the nearest half hour.

Equinox: between 8:30 and 17:30
Summer Solstice: Between 6:30 and 20:00
Winter Solstice: Between 10:30 and 14:00

Section 9.2 shows the existing and proposed shadow diagrams for the Equinox on the 21st March at 2 hourly intervals during the day between 09:00 and 17:00.
Section 9.3 shows the existing and proposed shadow diagrams for the Summer Solstice on the 21st June at 2 hourly intervals during the day between 09:00 and 19:00.
Section 9.4 shows the existing and proposed shadow diagrams for the Winter Solstice on the 21st December at 2 hourly intervals during the day between 09:00 and 15:00.

Shadow diagrams are a visual aid to understand where possible shading may occur. The use of shadow diagrams as an assessment method should be taken over the course of the day and not a specific time due to the transient nature of the sun and the shade caused by obstructions.

9.2 Shadow Casting diagrams March Equinox

Existing

N

Proposed

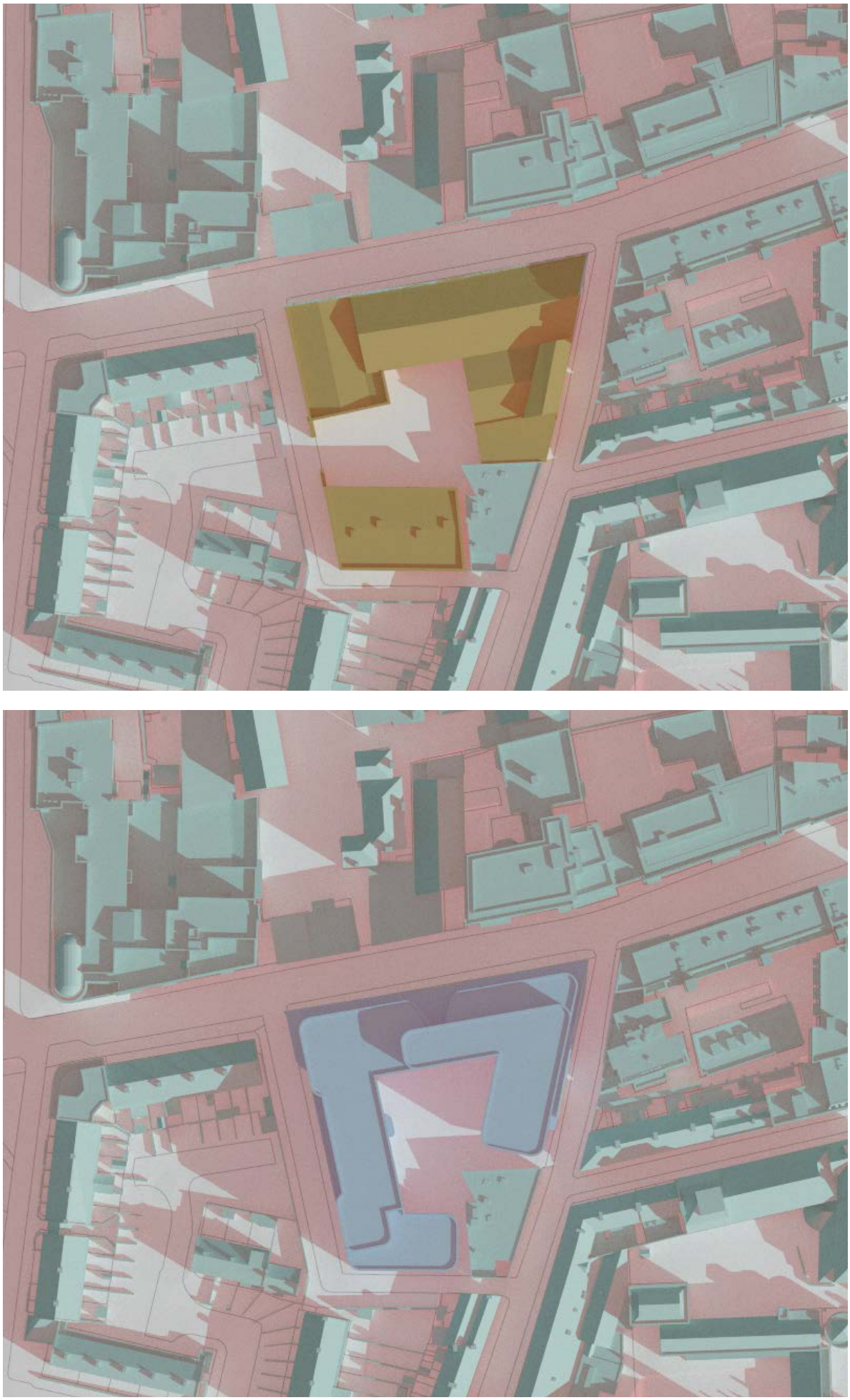
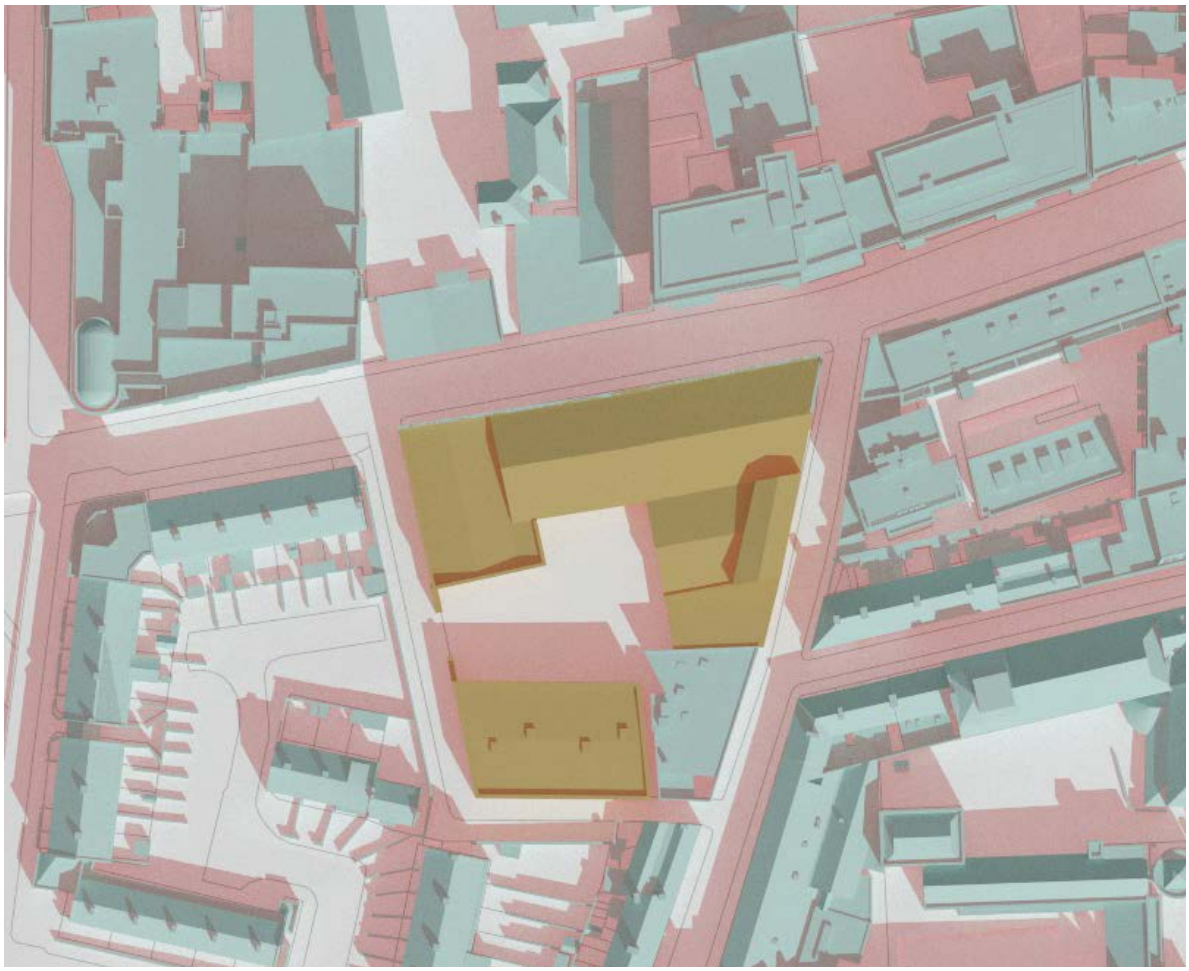


Figure 20: Shadow diagrams 21 March 09:00 UTC

Existing



N

Proposed

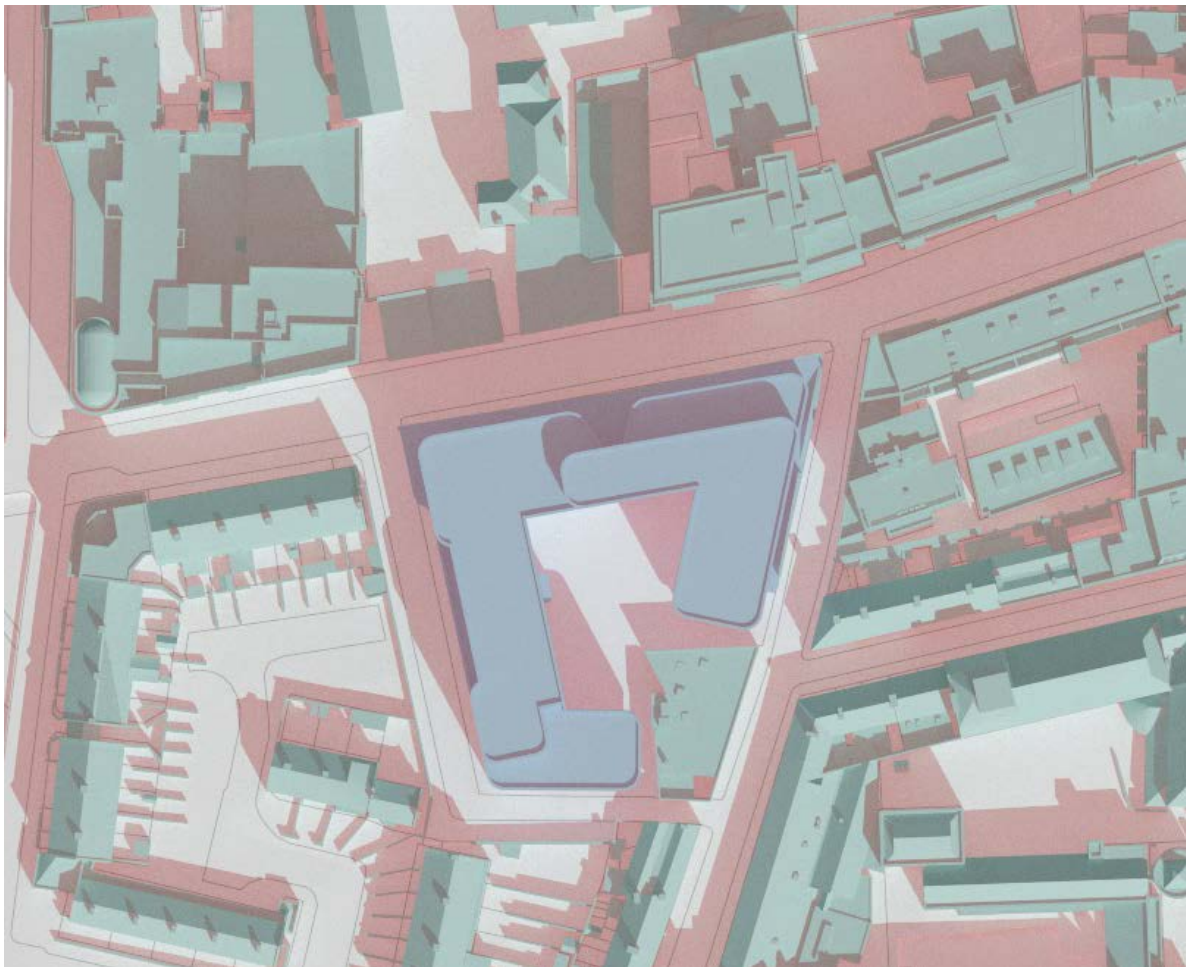


Figure 21: Shadow diagrams 21 March 11:00 UTC

Existing

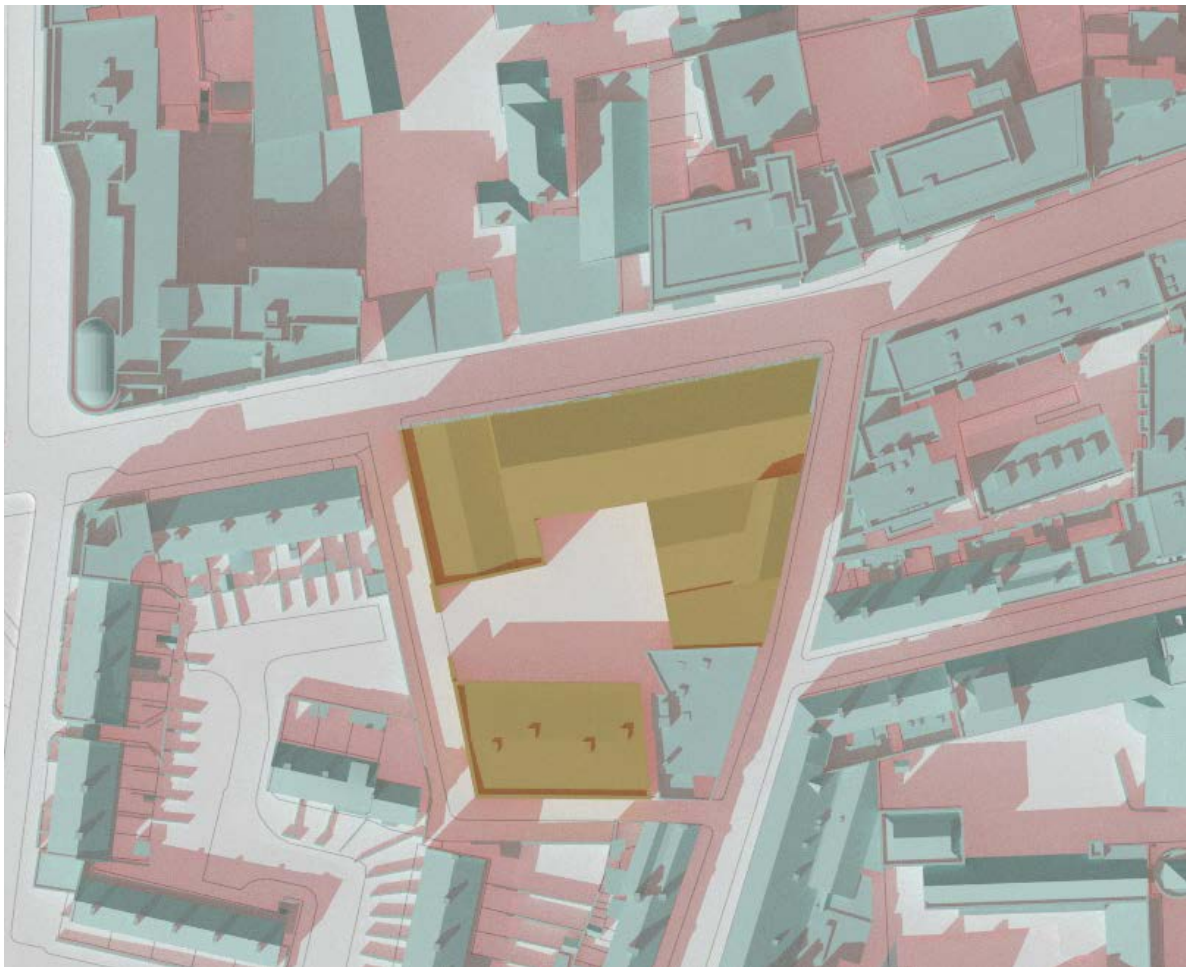
N

Proposed

Figure 22: Shadow diagrams 21 March 13:00 UTC

Existing

N



Proposed

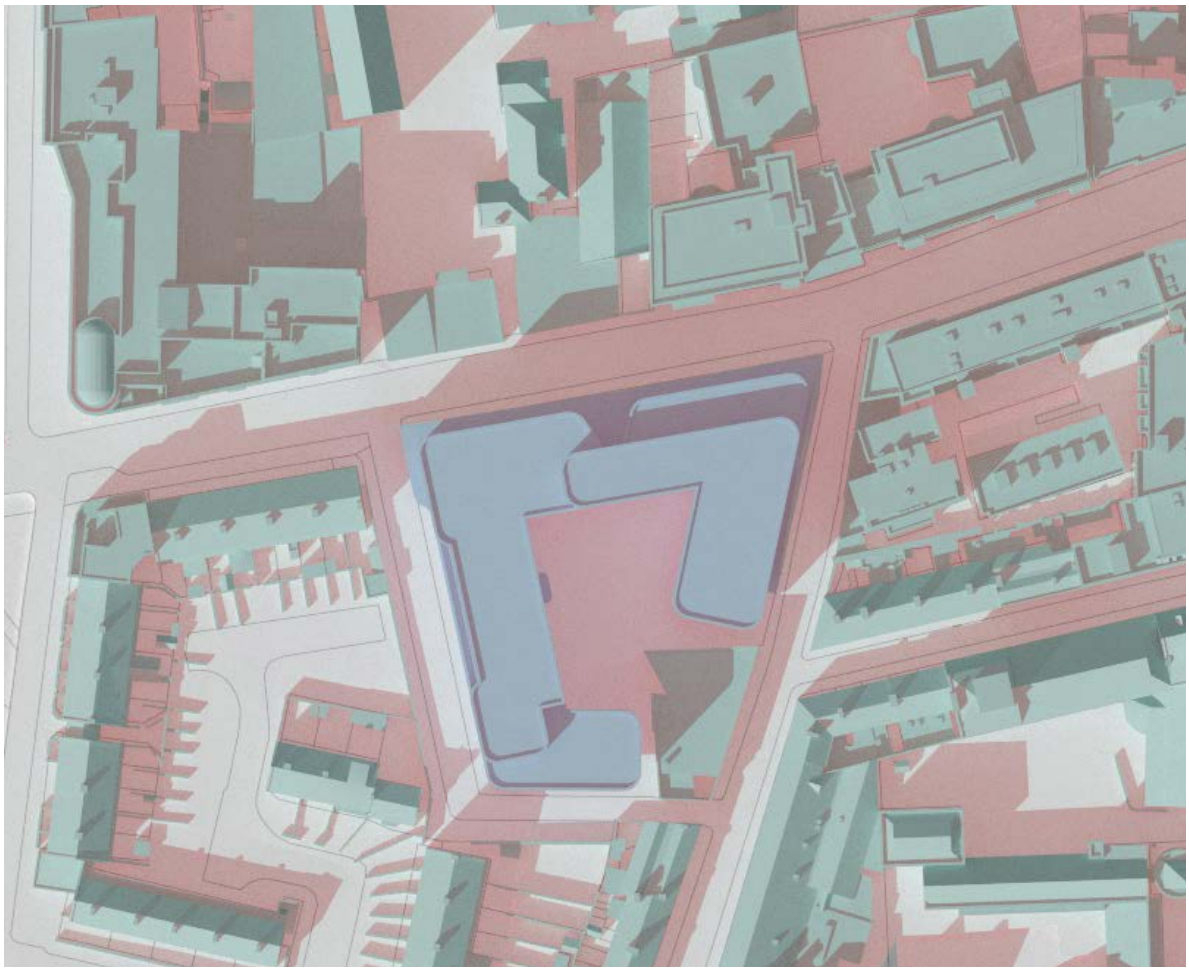
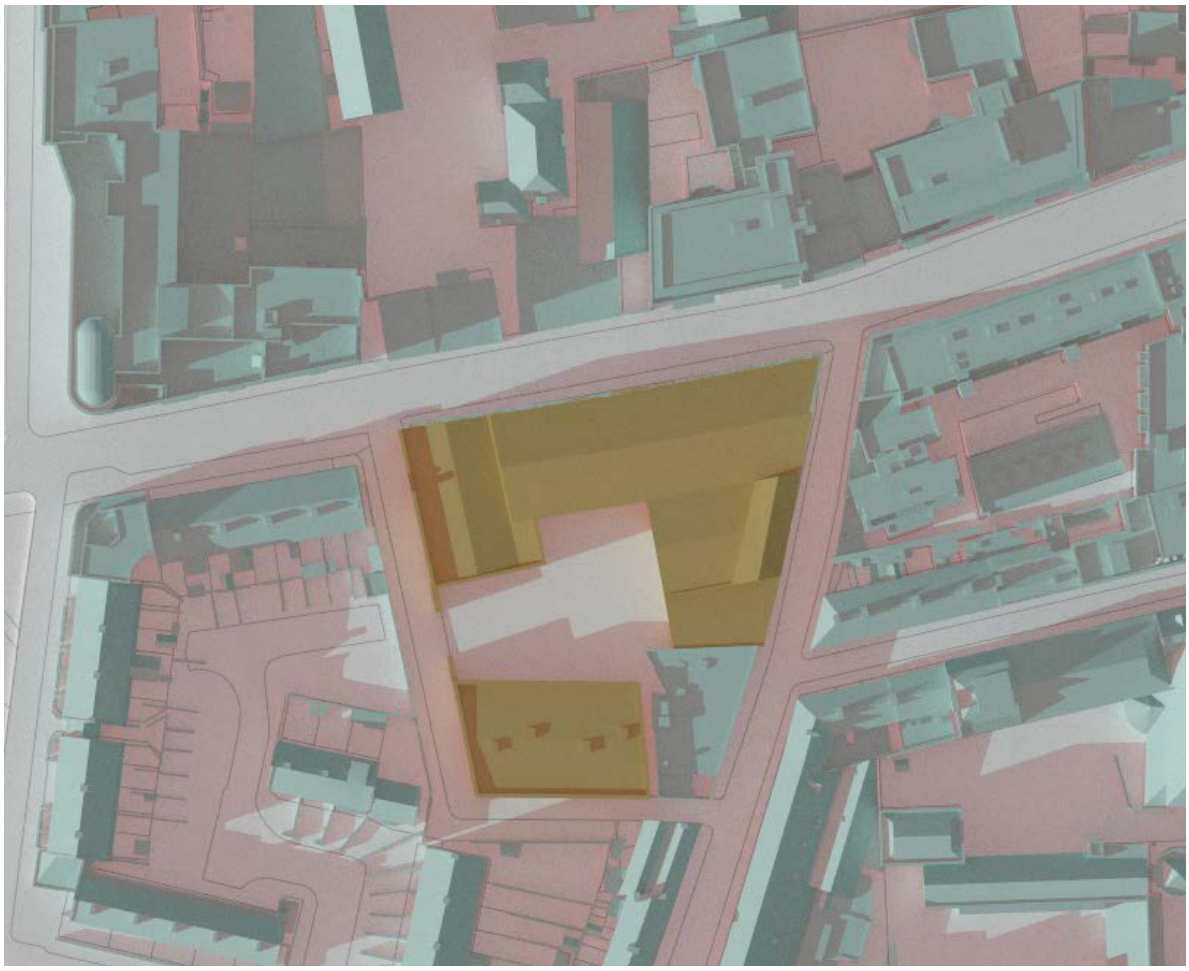


Figure 23: Shadow diagrams 21 March 15:00 UTC

Existing

N



Proposed

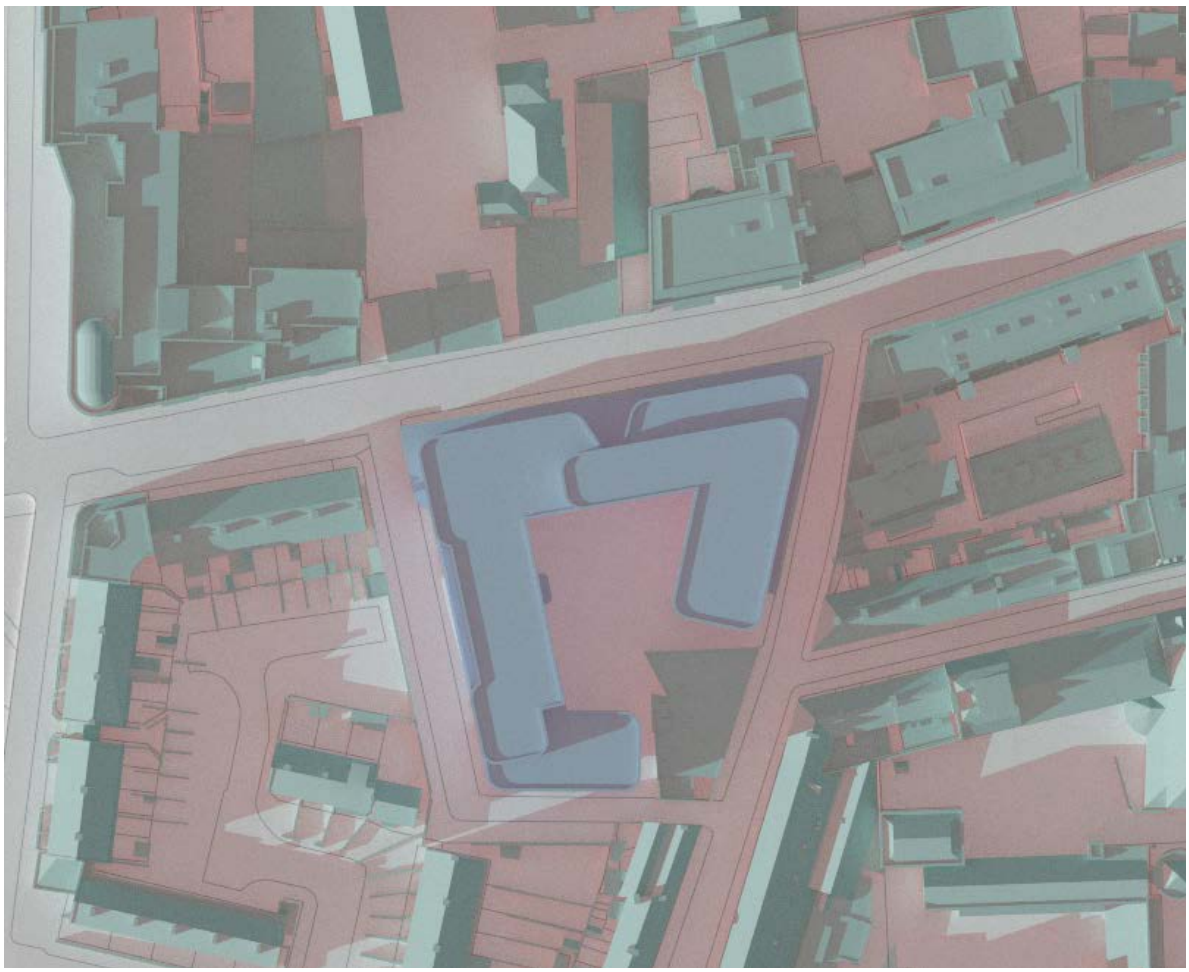


Figure 24: Shadow diagrams 21 March 17:00 UTC

9.3 Shadow Casting diagrams June Solstice

Existing

N

Proposed

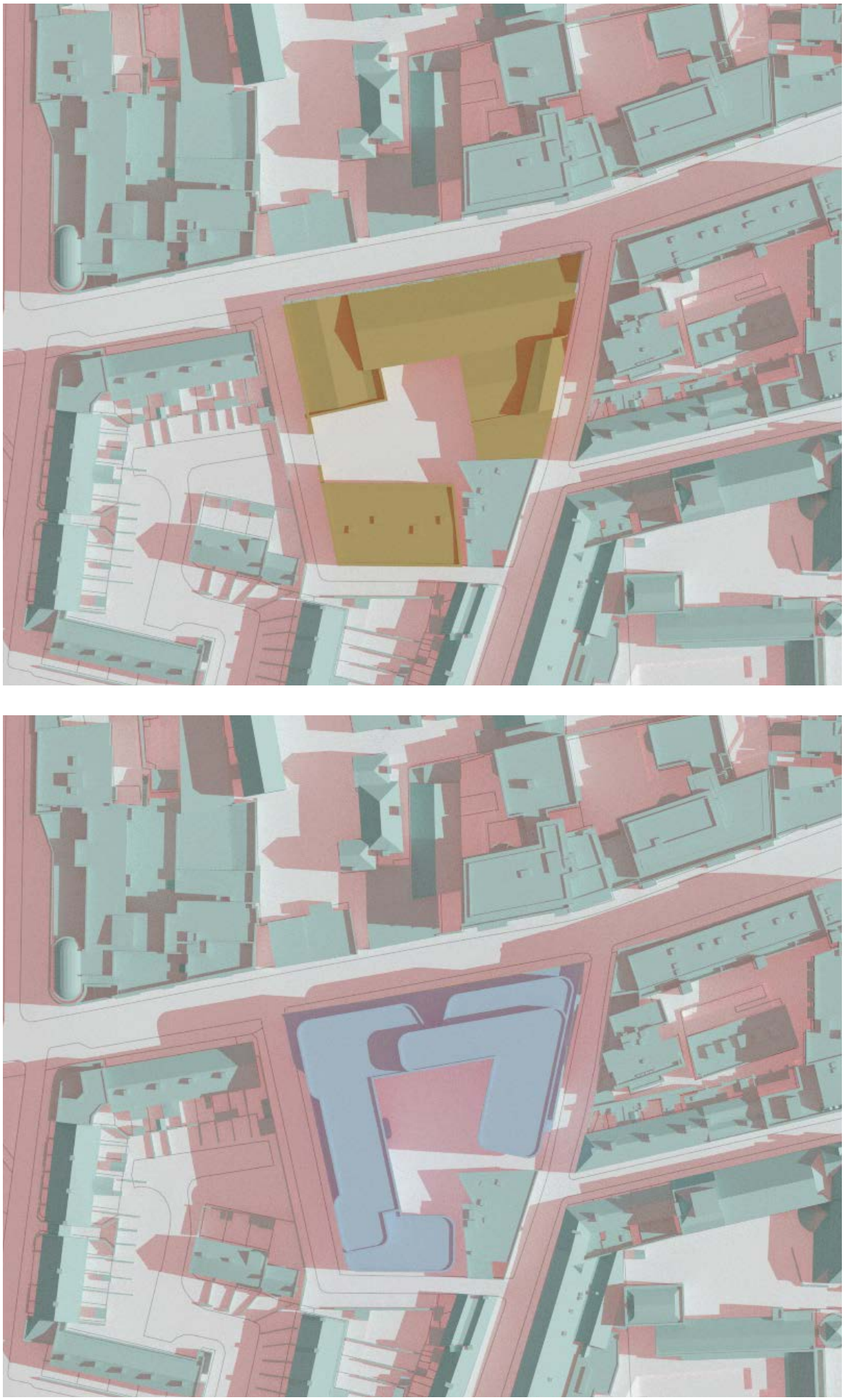
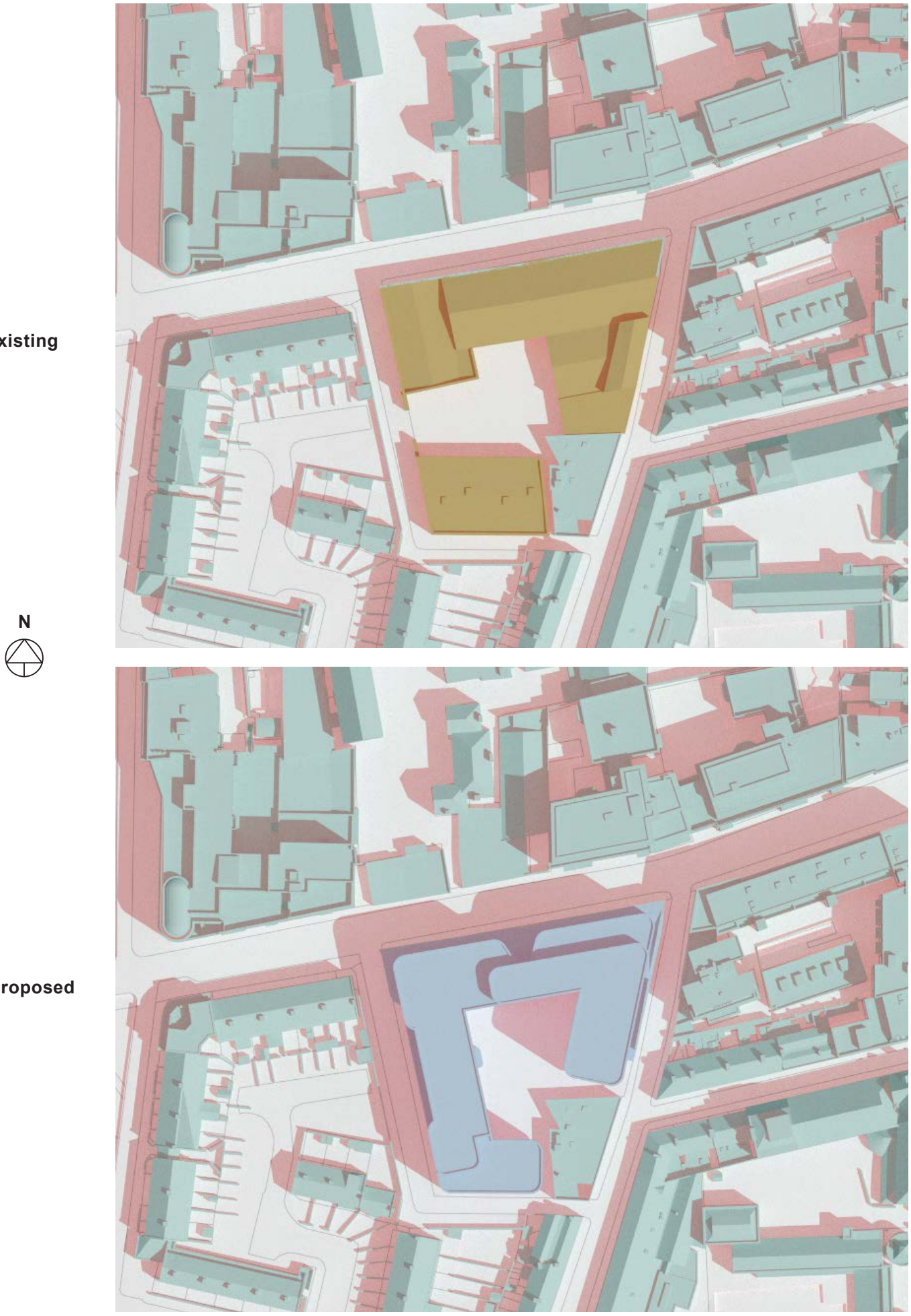


Figure 25: Shadow diagrams 21 June 09.00 UTC +1

Existing

N

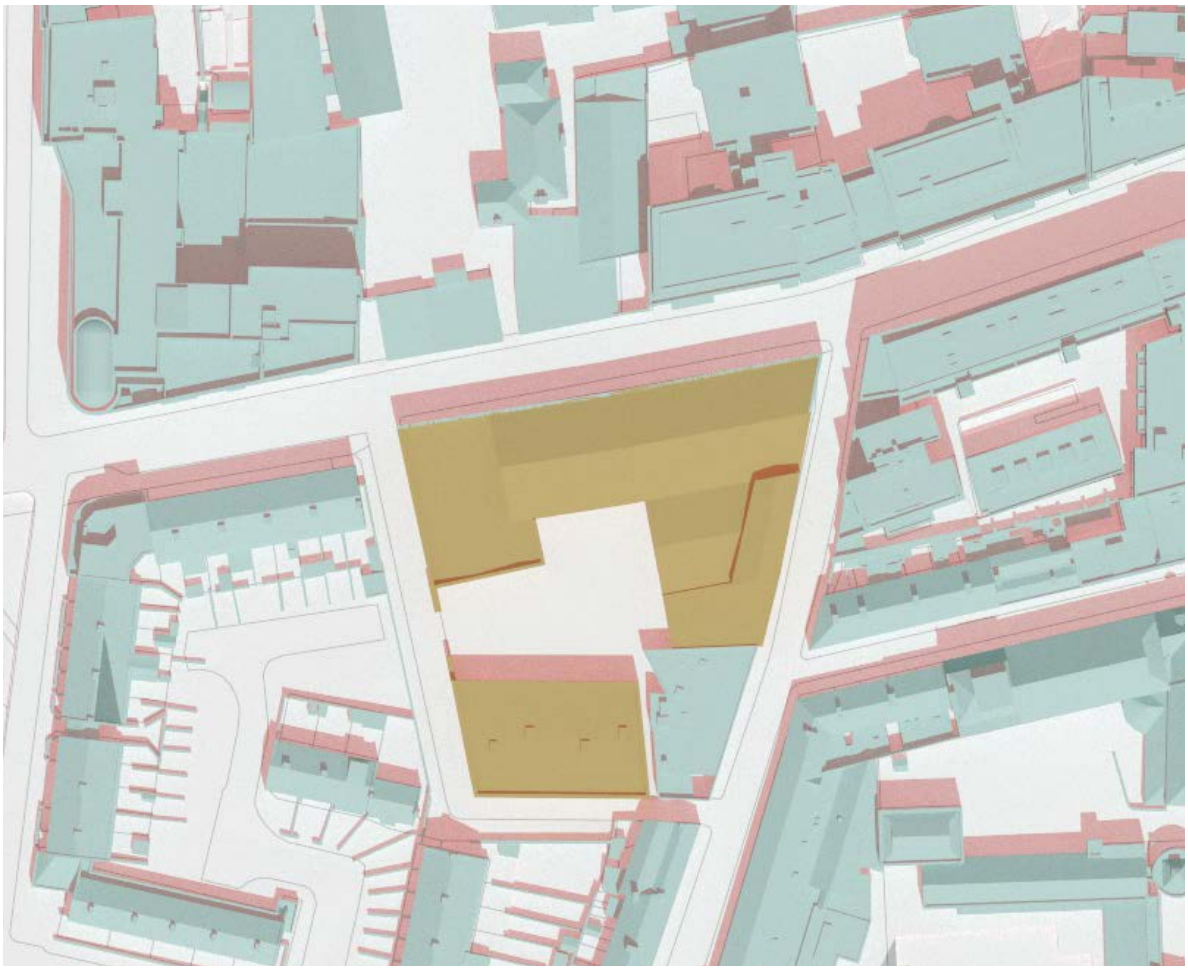


Proposed

Figure 26: Shadow diagrams 21 June 11:00 UTC +1

Existing

N



Proposed

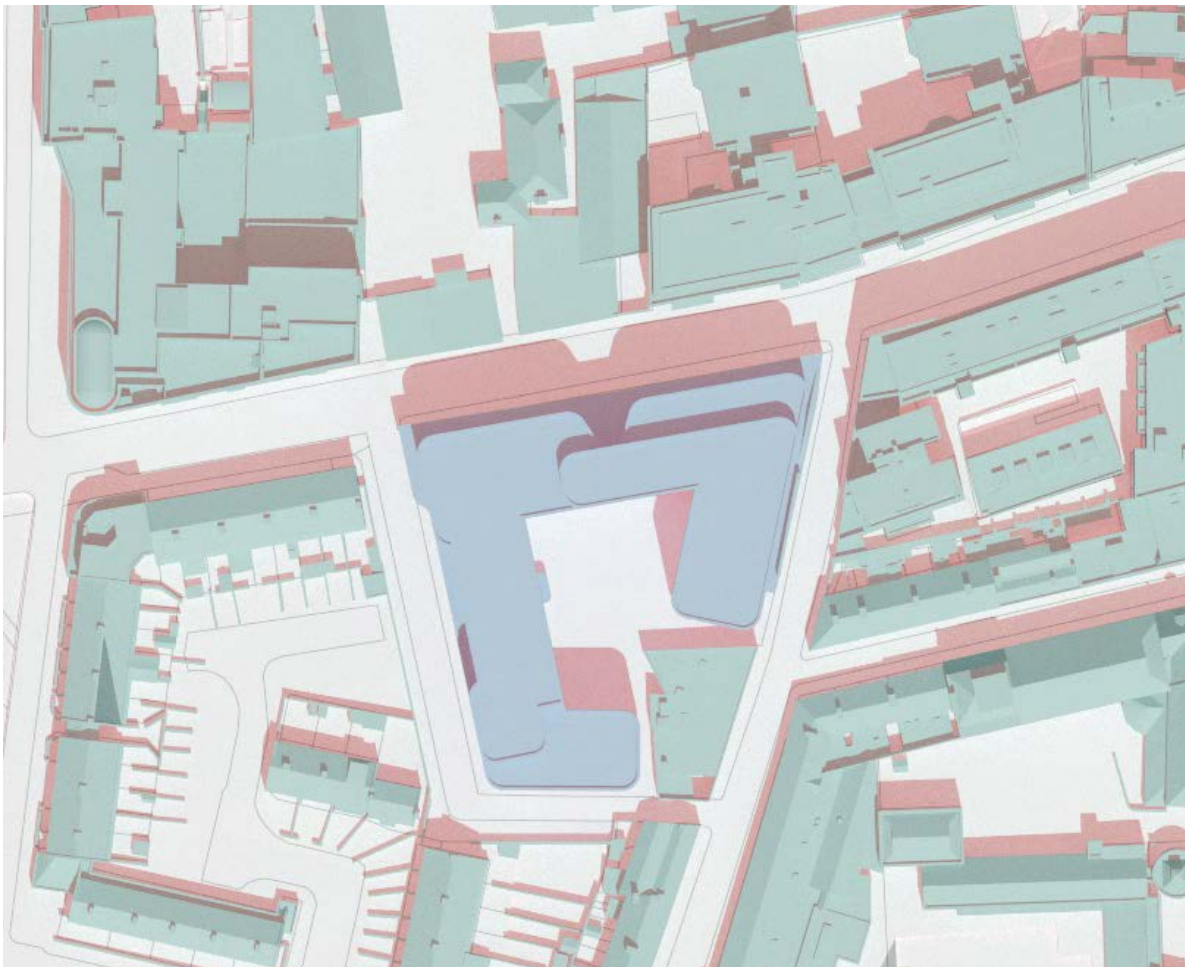


Figure 27: Shadow diagrams 21 June 13:00 UTC +1

Existing

N

Proposed

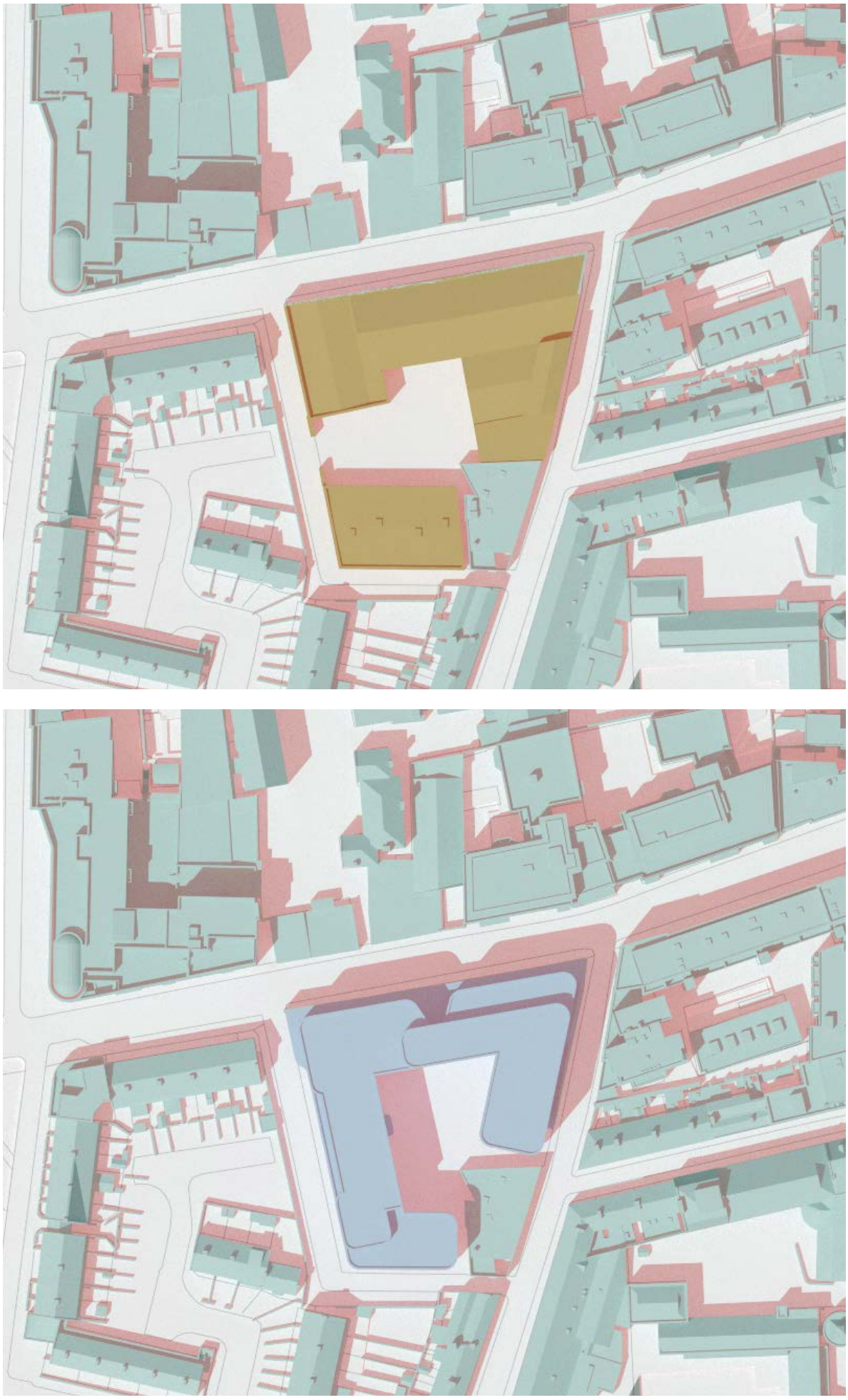
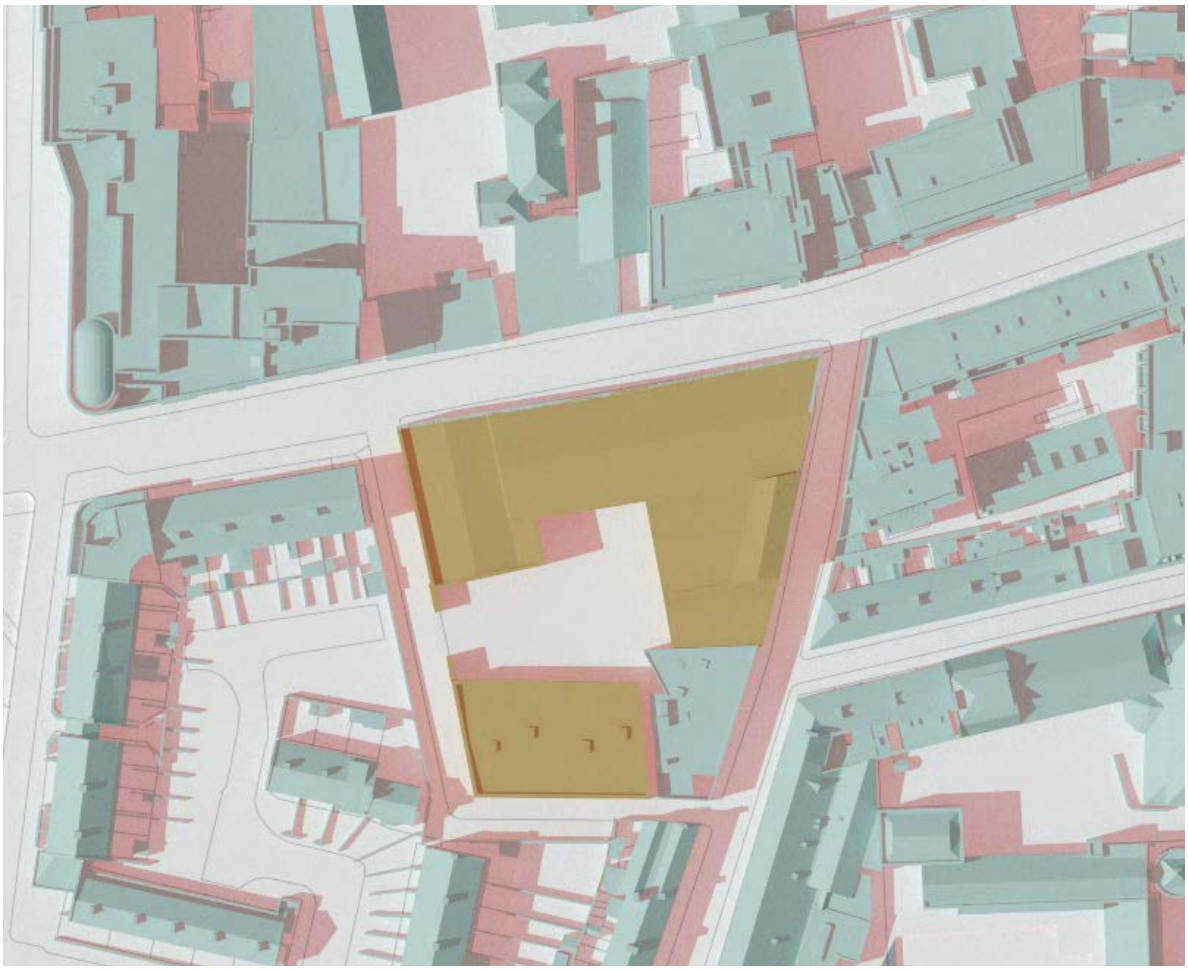


Figure 28: Shadow diagrams 21 June 15:00 UTC +1

Existing

N



Proposed

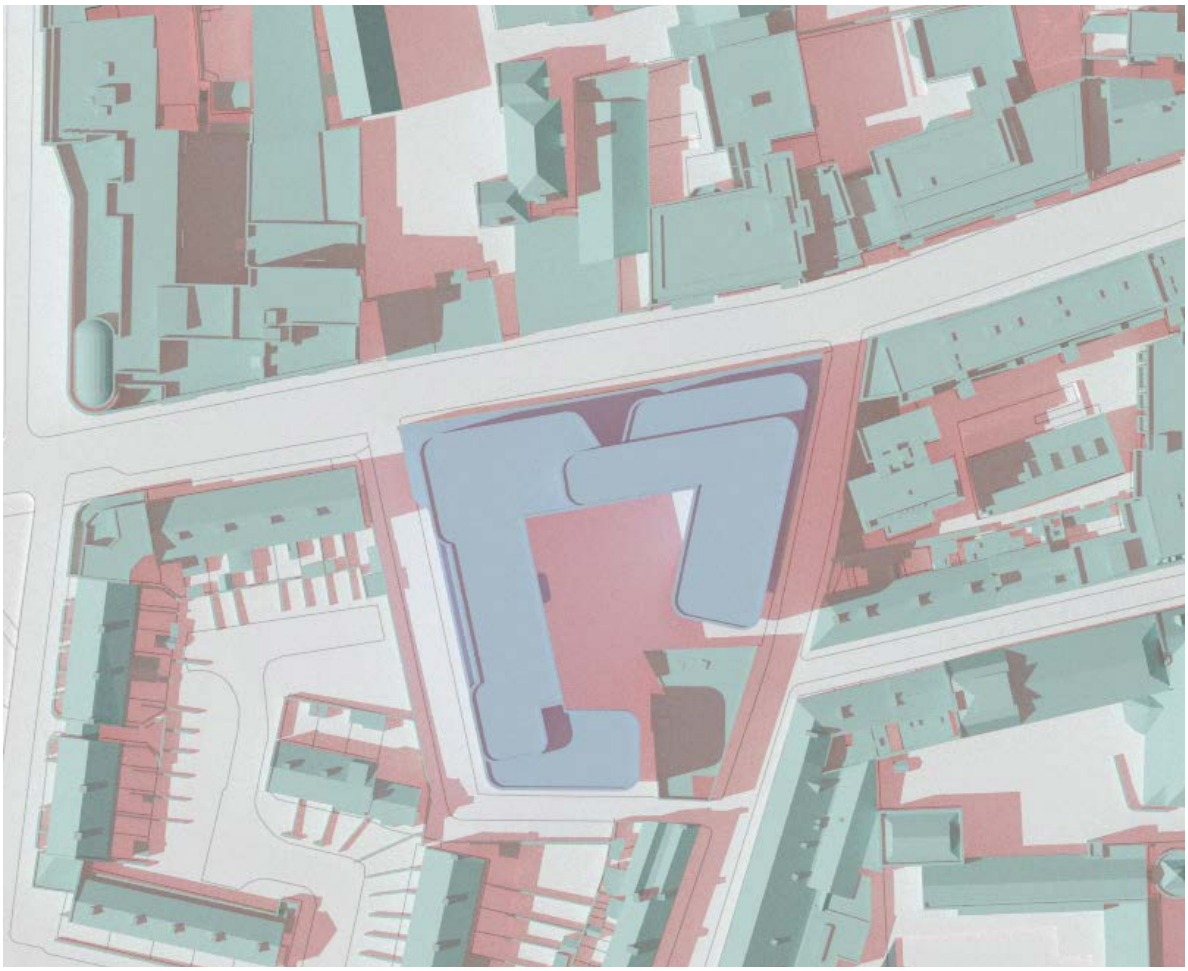
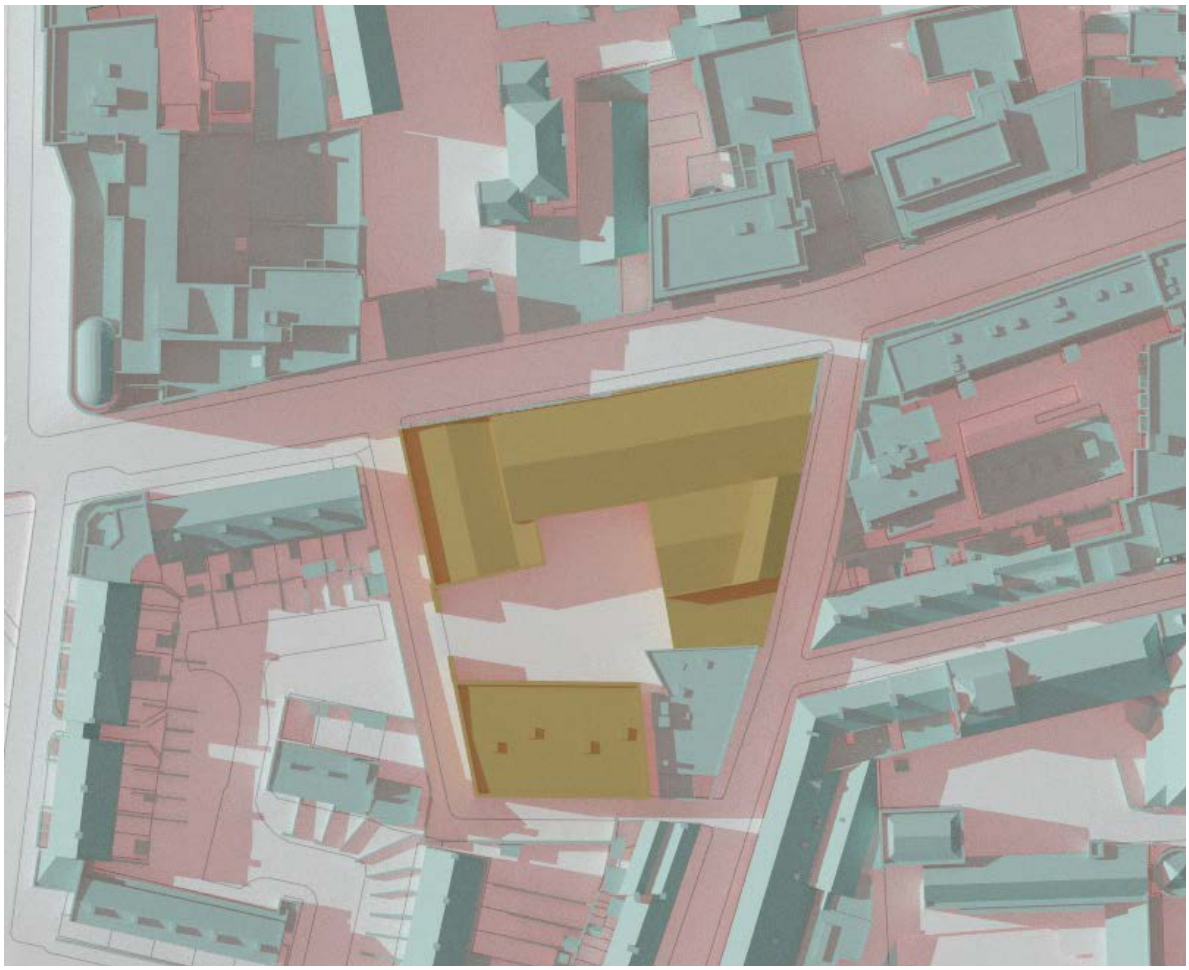


Figure 29: Shadow diagrams 21 June 17:00 UTC +1

Existing

N



Proposed

Figure 30: Shadow diagrams 21 June 19:00 UTC +1

9.4 Shadow Casting diagrams December Solstice

Existing

N

Proposed

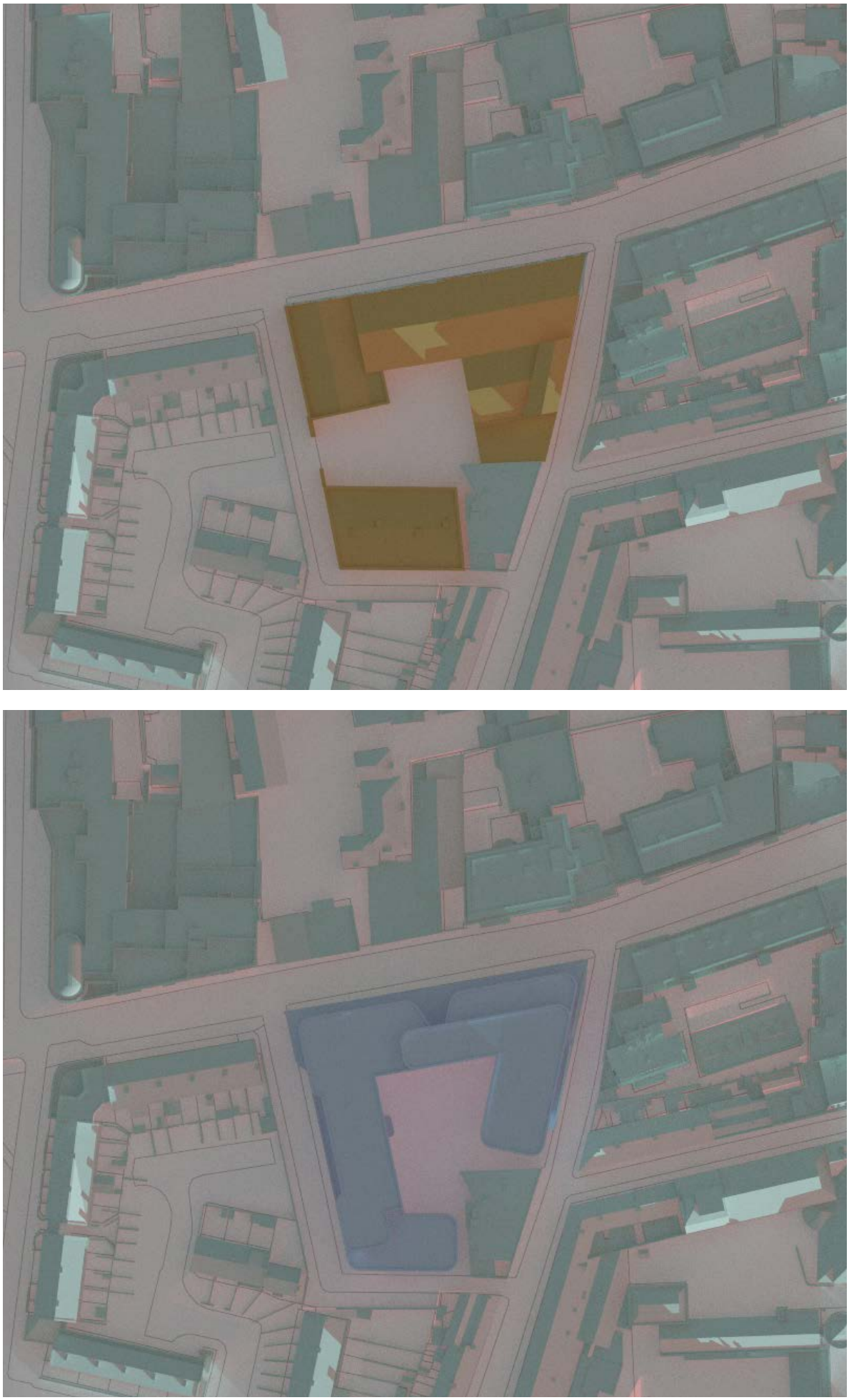
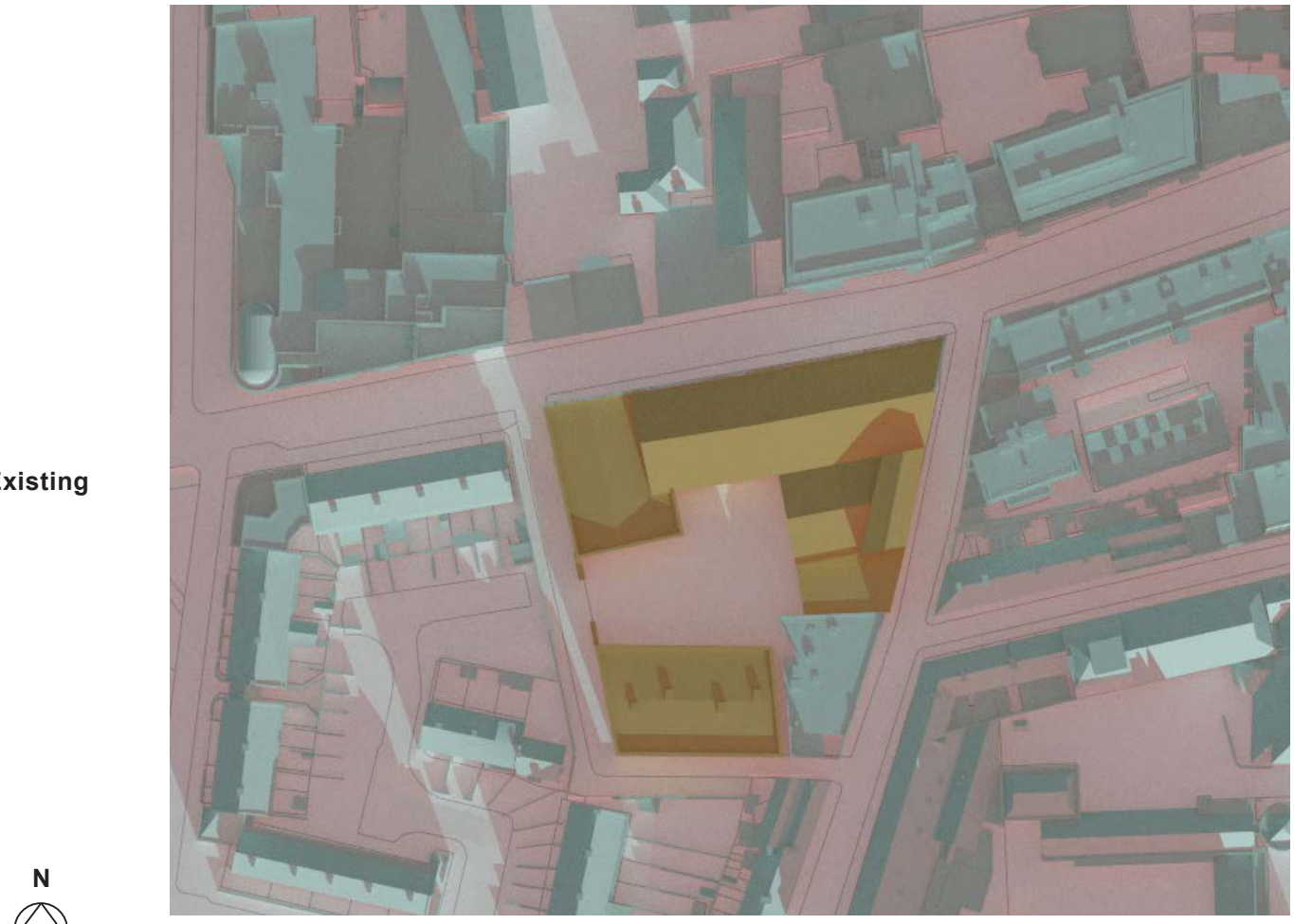


Figure 31: Shadow diagrams 21 December 09:00 UTC

Existing

N



Proposed

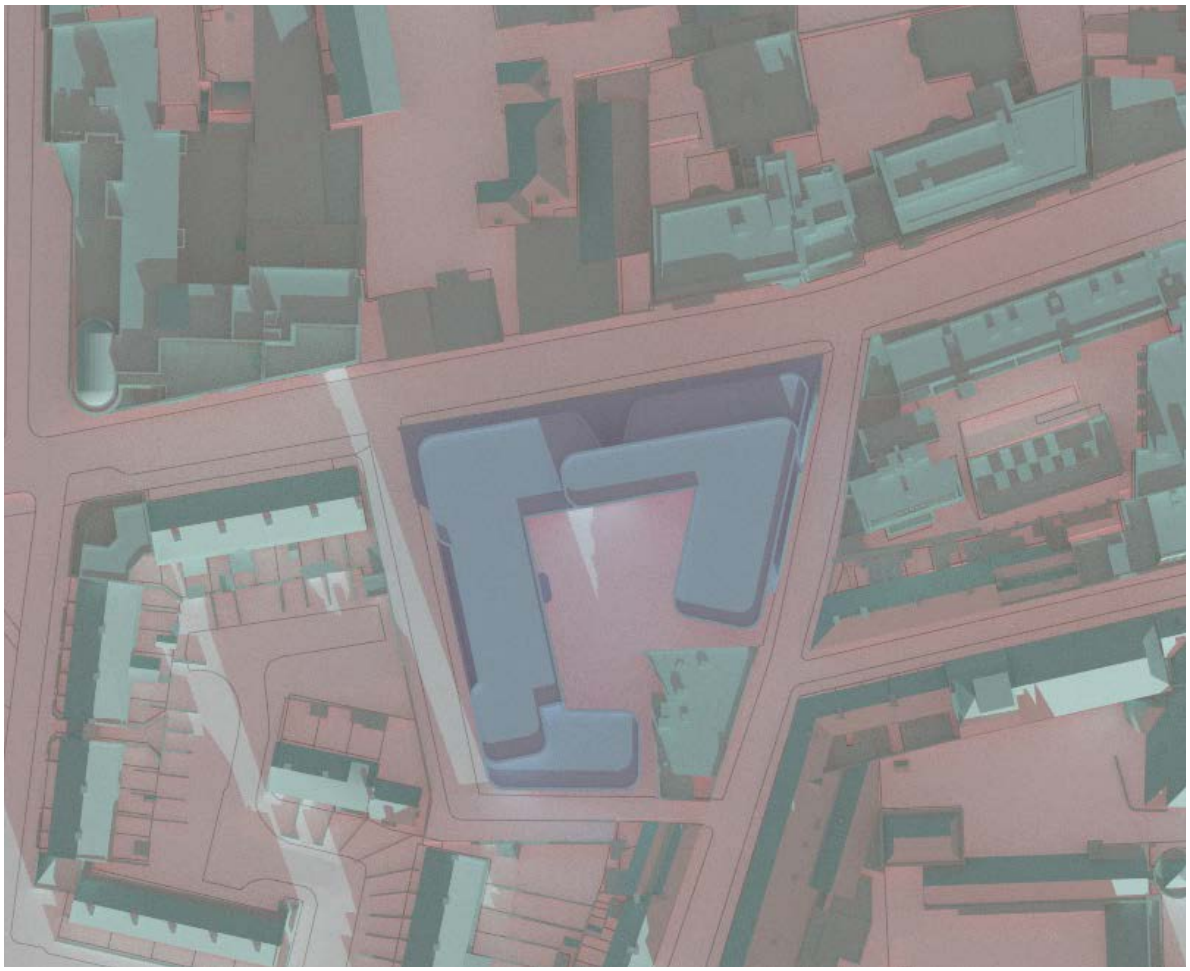
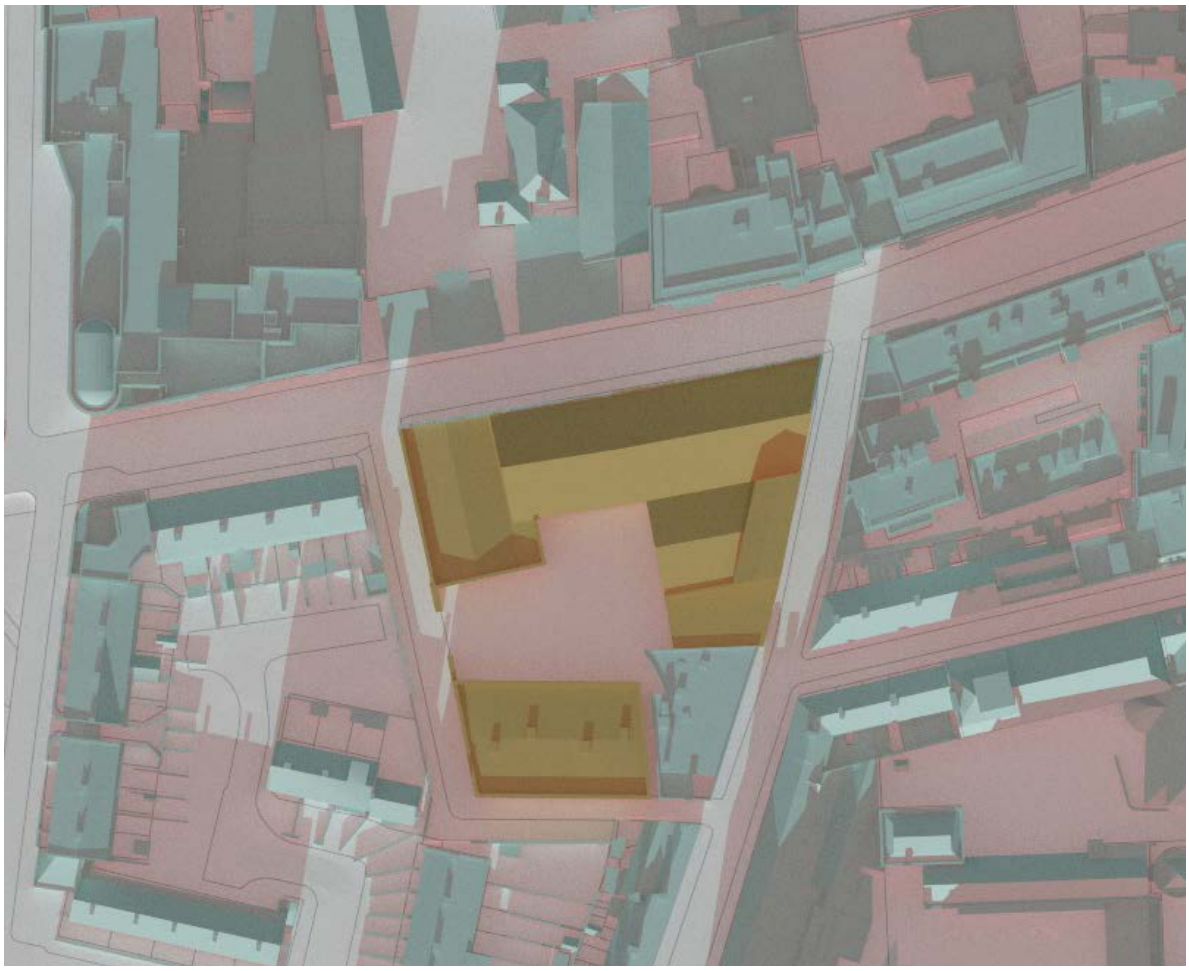


Figure 32: Shadow diagrams 21 December 11:00 UTC

Existing

N



Proposed

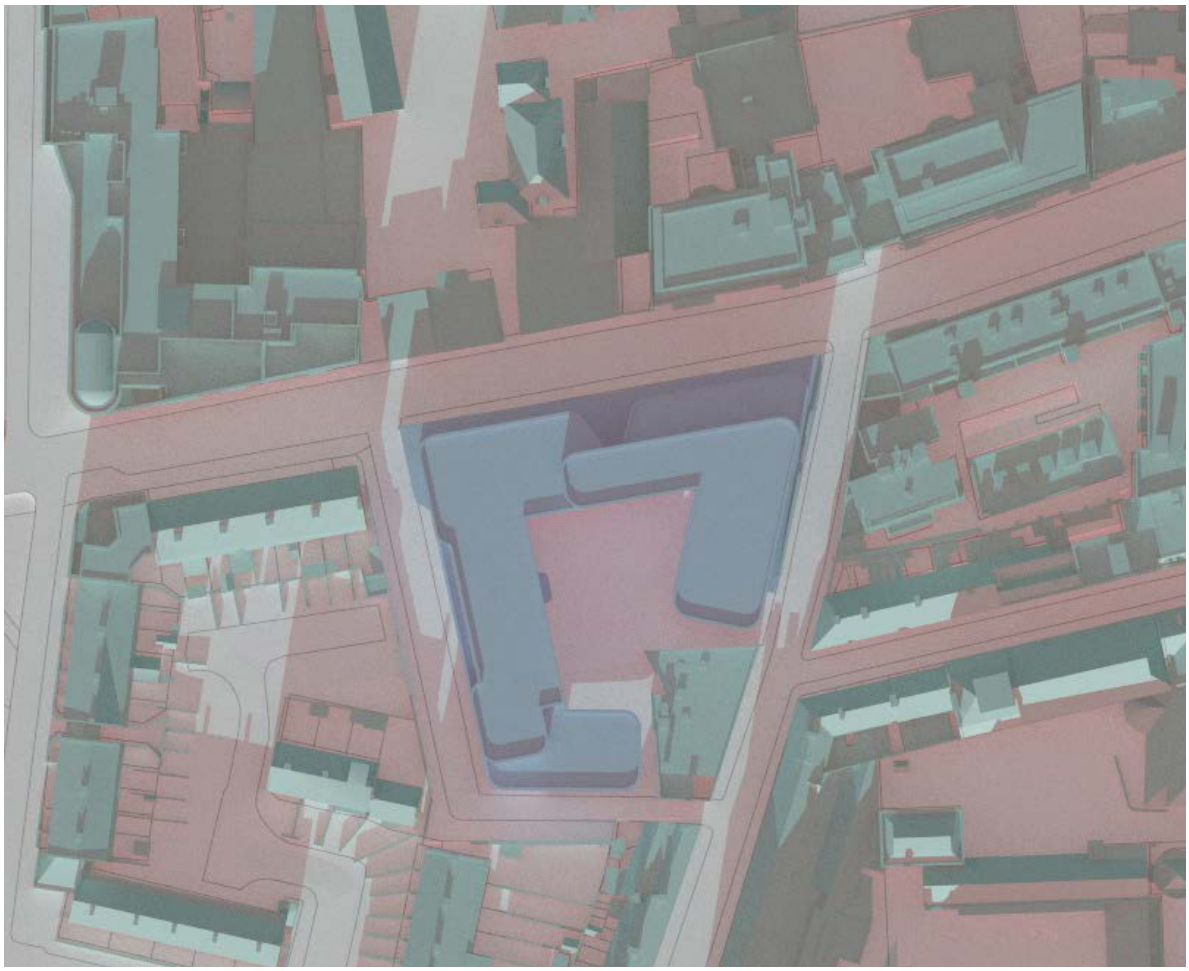
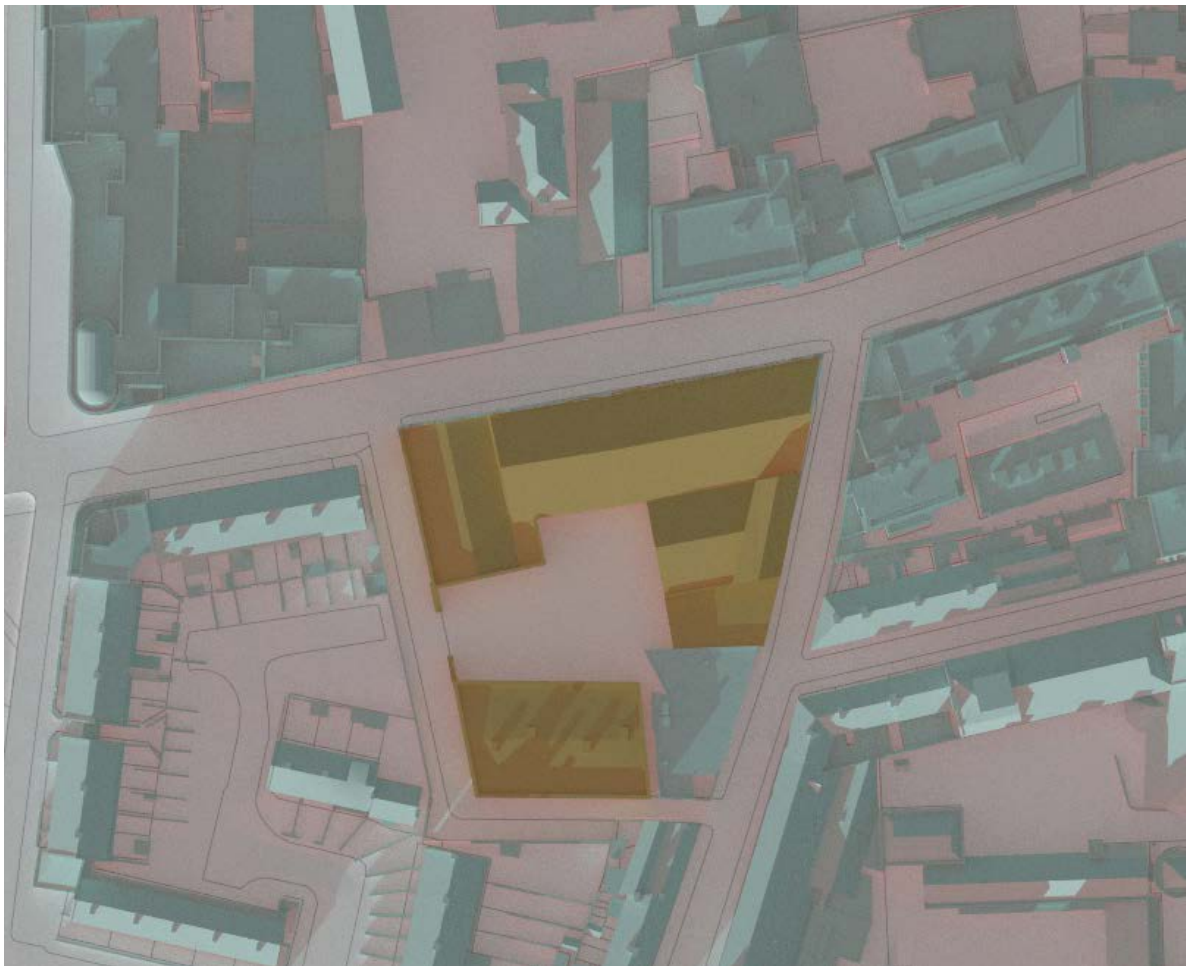


Figure 33: Shadow diagrams 21 December 13:00 UTC

Existing



N

Proposed

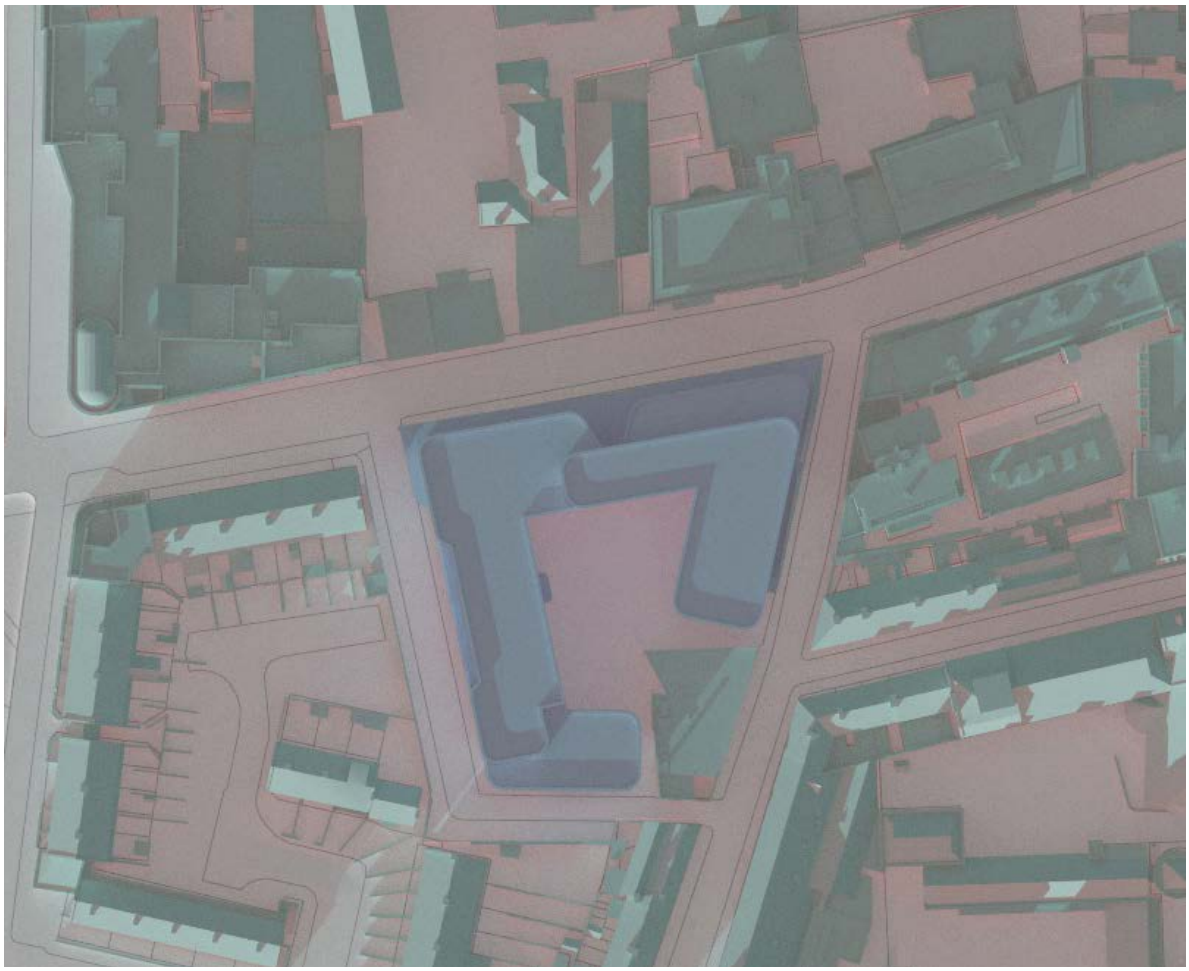


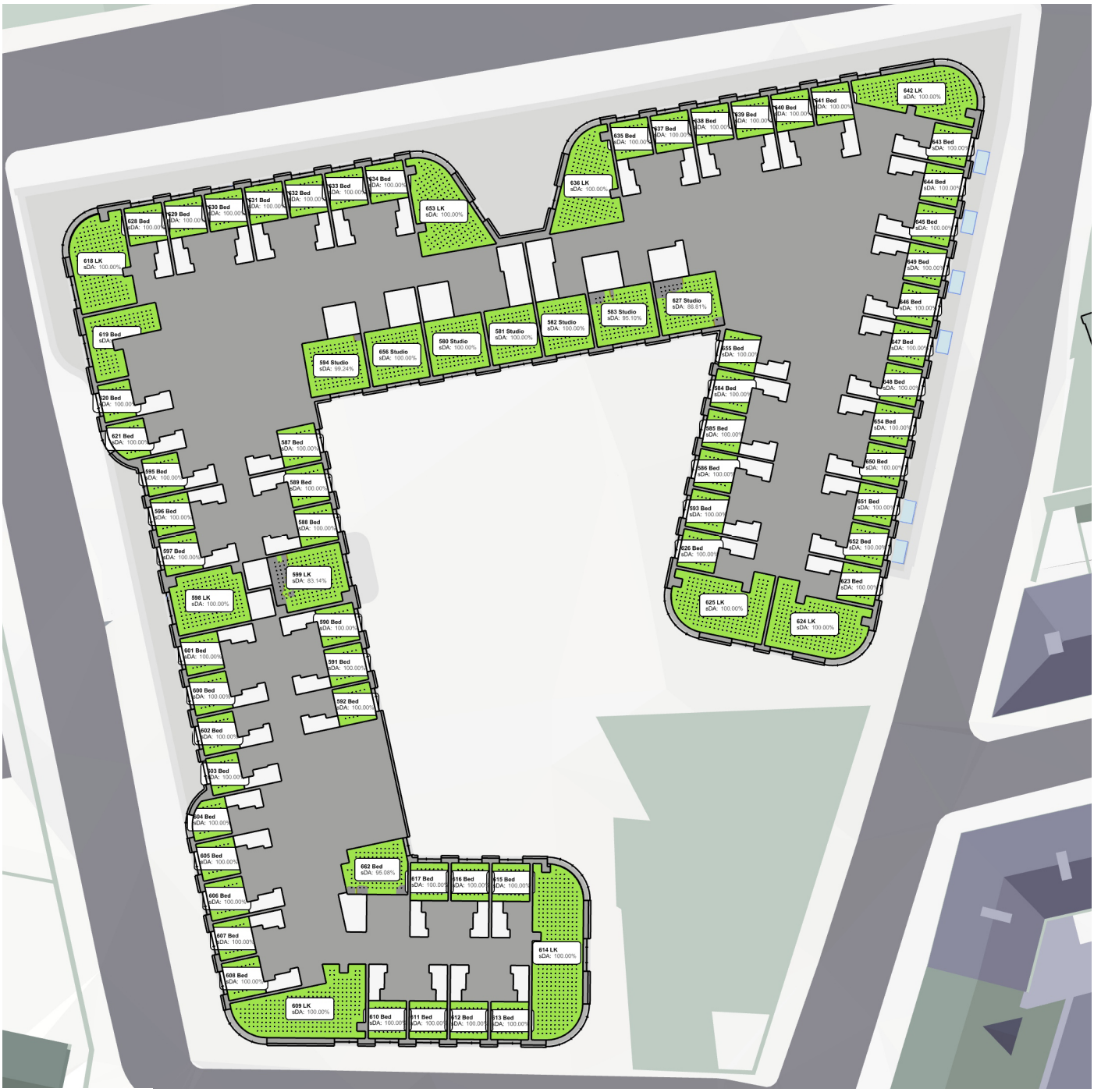
Figure 34: Shadow diagrams 21 December 15:00 UTC

Appendix A -BS EN17037:2021+A1 Minimum room specific Daylight Provision in accordance with UK National Annex Table NA.1.

Figure 35: Floor plans indicating Daylight Provision to BS EN17037:2021+A1 Table NA.1

Second Floor

Figure 36: Floor plans indicating Daylight Provision to BS EN17037:2021+A1 Table NA.1

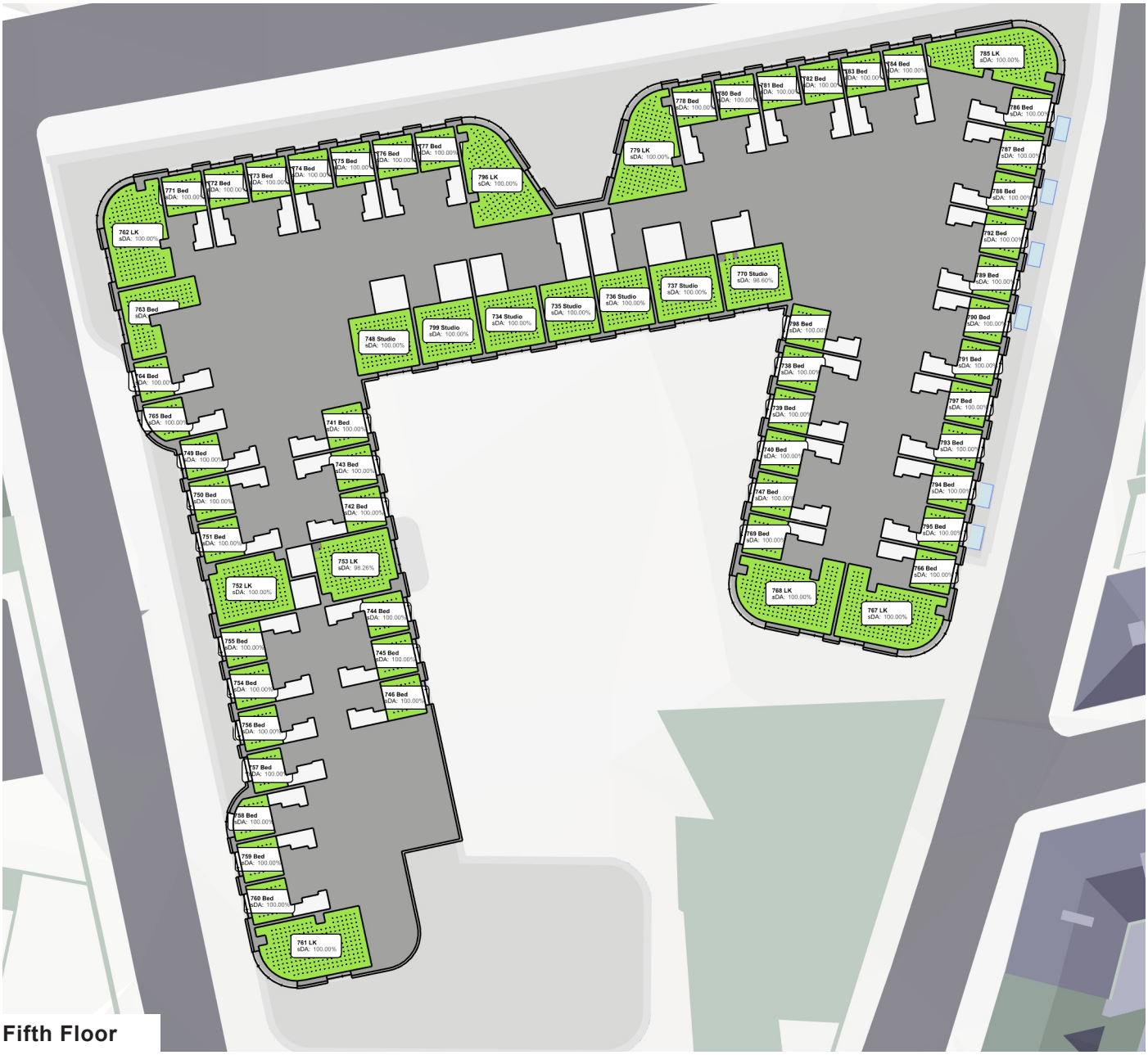


Third Floor

Figure 37: Floor plans indicating Daylight Provision to BS EN17037:2021+A1 Table NA.1

Fourth Floor

Figure 38: Floor plans indicating Daylight Provision to BS EN17037:2021+A1 Table NA.1



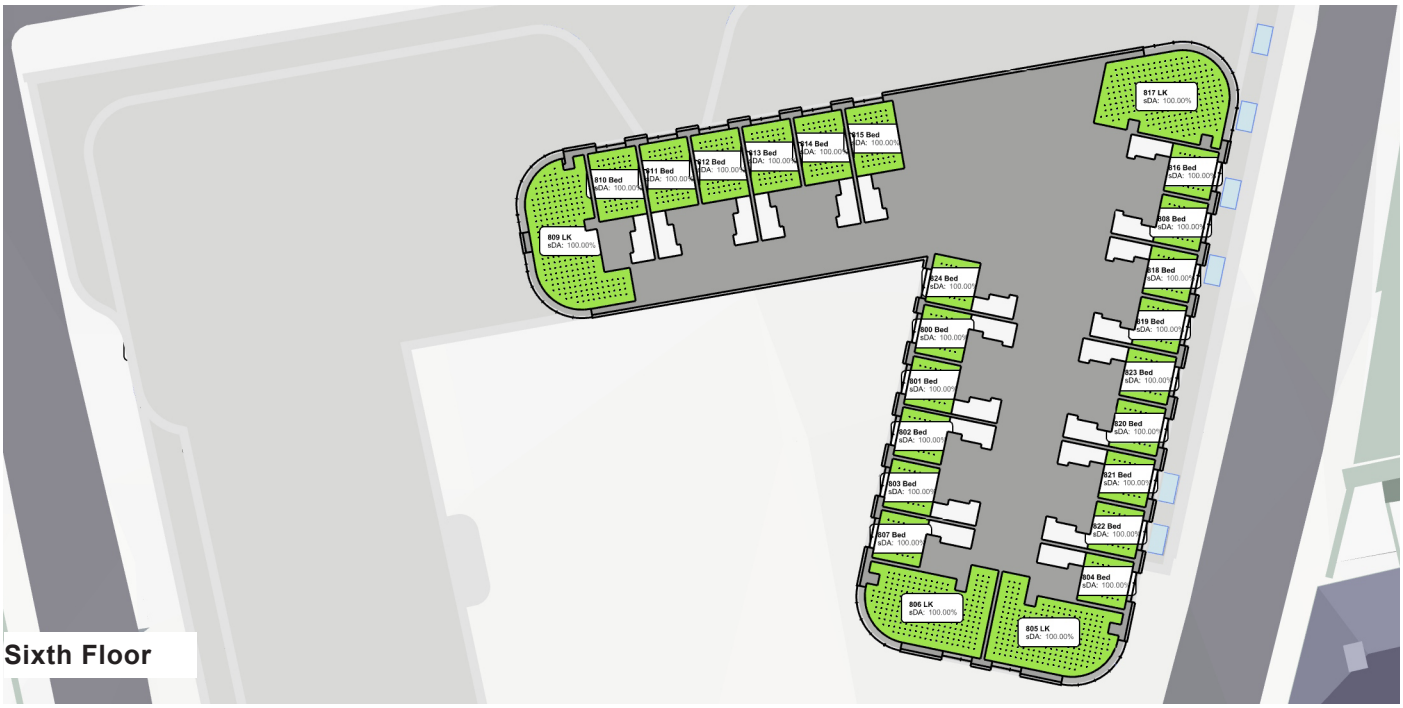


Figure 39: Floor plans indicating Daylight Provision to BS EN17037:2021+A1 Table NA.1

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
413	LK	26.1	240	200	495	62.1%	Y
414	LK	23.8	210	200	479	64.8%	Y
415	Bed	6.5	49	100	611	100.0%	Y
416	Bed	6.8	49	100	582	100.0%	Y
417	Bed	6.8	49	100	560	100.0%	Y
418	Bed	6.8	49	100	509	100.0%	Y
419	Studio	16.3	143	200	783	93.0%	Y
420	Studio	16.3	143	200	995	97.2%	Y
421	Studio	12.9	110	200	1474	100.0%	Y
422	Studio	12.9	110	200	1604	100.0%	Y
423	Studio	14.9	132	200	1455	100.0%	Y
424	Studio	14.9	132	200	1374	100.0%	Y
425	Bed	6.8	49	100	584	100.0%	Y
426	Bed	6.8	49	100	613	100.0%	Y
427	Bed	6.8	49	100	479	100.0%	Y
428	Bed	6.8	49	100	764	100.0%	Y
429	Bed	6.8	49	100	823	100.0%	Y
430	Bed	6.8	49	100	857	100.0%	Y
431	Studio	15.0	132	200	773	94.7%	Y
432	Studio	12.9	110	200	883	99.1%	Y
433	Studio	12.9	110	200	818	93.6%	Y
434	Bed	6.8	49	100	602	100.0%	Y
435	Bed	6.8	49	100	649	100.0%	Y
436	Bed	6.8	49	100	678	100.0%	Y
437	Bed	6.8	49	100	639	100.0%	Y
438	Bed	6.8	49	100	727	100.0%	Y
439	Bed	6.8	49	100	678	100.0%	Y
440	Bed	6.8	49	100	851	100.0%	Y
441	Bed	6.8	49	100	916	100.0%	Y
442	Bed	6.8	49	100	955	100.0%	Y
443	Bed	6.8	49	100	679	100.0%	Y
444	Studio	15.4	132	200	625	77.3%	Y
445	Bed	6.5	49	100	1626	100.0%	Y
446	Bed	6.8	49	100	1460	100.0%	Y
447	Bed	6.8	49	100	1465	100.0%	Y
448	LK	19.7	172	200	696	97.7%	Y
449	LK	19.7	172	200	390	55.2%	Y
450	Bed	6.8	49	100	1477	100.0%	Y
451	Bed	6.8	49	100	1455	100.0%	Y
452	Bed	5.7	42	100	1607	100.0%	Y
453	Bed	5.7	42	100	1384	100.0%	Y
454	Bed	6.2	45	100	1494	100.0%	Y
455	Bed	6.8	49	100	1409	100.0%	Y
456	Bed	6.8	49	100	1417	100.0%	Y
457	Bed	6.5	49	100	1432	100.0%	Y
458	Bed	6.8	49	100	1411	100.0%	Y
459	LK	32.0	271	200	1765	100.0%	Y
460	Bed	6.8	49	100	1989	100.0%	Y
461	Bed	6.8	49	100	2014	100.0%	Y
462	Bed	6.8	49	100	2010	100.0%	Y
463	Bed	6.8	49	100	2040	100.0%	Y

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
464	LK	38.9	350	200	2140	100.0%	Y
465	Bed	6.8	49	100	553	100.0%	Y
466	Bed	6.8	49	100	536	100.0%	Y
467	Bed	6.8	49	100	513	100.0%	Y
468	Bed	14.7	122	100	196	63.1%	Y
469	Studio	20.5	184	200	359	97.8%	Y
470	Studio	16.5	140	200	584	74.3%	Y
471	Studio	18.5	168	200	545	65.5%	Y
472	Studio	32.0	286	200	853	99.7%	Y
473	Studio	16.1	137	200	484	94.2%	Y
474	Studio	18.9	162	200	541	99.4%	Y
475	Studio	18.2	148	200	583	100.0%	Y
476	Studio	16.9	146	200	477	95.9%	Y
477	Studio	14.6	117	200	654	100.0%	Y
478	Studio	20.2	180	200	440	66.7%	Y
479	Studio	20.8	182	200	512	79.1%	Y
480	Studio	19.5	166	200	404	59.6%	Y
481	Studio	18.3	161	200	544	96.9%	Y
482	Studio	16.8	146	200	430	76.0%	Y
483	Studio	17.5	156	200	362	70.5%	Y
484	Studio	17.6	156	200	459	81.4%	Y
485	Studio	28.9	267	200	218	31.5%	N
486	Studio	16.8	144	200	443	70.1%	Y
487	Studio	16.8	144	200	472	70.8%	Y
488	Studio	16.8	144	200	498	76.4%	Y
489	Studio	16.3	144	200	583	86.8%	Y
490	Bed	10.4	84	100	721	100.0%	Y
491	Bed	10.2	77	100	765	100.0%	Y
492	Bed	11.1	87	100	712	100.0%	Y
493	Bed	10.6	84	100	835	100.0%	Y
494	Bed	10.5	84	100	829	100.0%	Y
495	Bed	6.7	49	100	1445	100.0%	Y
496	LK	23.7	218	200	2598	100.0%	Y
497	LK	23.7	218	200	1559	100.0%	Y
498	Bed	6.7	49	100	663	100.0%	Y
499	Studio	16.3	143	200	413	53.9%	Y
500	Studio	16.3	143	200	533	66.4%	Y
501	Bed	6.5	49	100	638	100.0%	Y
502	Studio	15.0	132	200	729	84.1%	Y
503	Studio	15.0	132	200	950	100.0%	Y
504	Studio	12.9	110	200	1085	100.0%	Y
505	Studio	12.9	110	200	993	100.0%	Y
506	Studio	16.4	143	200	676	88.8%	Y
507	Bed	6.8	49	100	810	100.0%	Y
508	Bed	6.8	49	100	869	100.0%	Y
509	Bed	6.8	49	100	908	100.0%	Y
510	Bed	6.8	49	100	870	100.0%	Y
511	Bed	6.8	49	100	935	100.0%	Y
512	Bed	6.8	49	100	909	100.0%	Y
513	Bed	6.8	49	100	989	100.0%	Y
514	Bed	6.8	49	100	1072	100.0%	Y

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
515	Bed	6.8	49	100	1122	100.0%	Y
516	Bed	6.8	49	100	899	100.0%	Y
517	Studio	15.4	132	200	765	93.9%	Y
518	Bed	6.5	49	100	1790	100.0%	Y
519	Bed	6.8	49	100	1606	100.0%	Y
520	Bed	6.8	49	100	1625	100.0%	Y
521	LK	19.7	172	200	761	100.0%	Y
522	LK	19.7	172	200	467	70.9%	Y
523	Bed	6.8	49	100	1610	100.0%	Y
524	Bed	6.8	49	100	1593	100.0%	Y
525	Bed	6.5	49	100	1654	100.0%	Y
526	Bed	5.7	42	100	1538	100.0%	Y
527	Bed	6.2	45	100	1679	100.0%	Y
528	Bed	6.8	49	100	1589	100.0%	Y
529	Bed	6.8	49	100	1616	100.0%	Y
530	Bed	6.5	49	100	1616	100.0%	Y
531	Bed	6.8	49	100	1628	100.0%	Y
532	LK	32.0	271	200	2059	100.0%	Y
533	Bed	6.8	49	100	2233	100.0%	Y
534	Bed	6.8	49	100	2260	100.0%	Y
535	Bed	6.8	49	100	2236	100.0%	Y
536	Bed	6.8	49	100	2265	100.0%	Y
537	LK	38.9	350	200	2712	100.0%	Y
538	Bed	6.8	49	100	699	100.0%	Y
539	Bed	6.8	49	100	665	100.0%	Y
540	Bed	6.8	49	100	632	100.0%	Y
541	LK	24.1	203	200	1864	100.0%	Y
542	Bed	15.2	112	100	923	100.0%	Y
543	Bed	5.7	42	100	1804	100.0%	Y
544	Bed	6.2	45	100	1982	100.0%	Y
545	Bed	14.7	122	100	236	86.1%	Y
546	Bed	6.7	49	100	1667	100.0%	Y
547	LK	25.9	233	200	3017	100.0%	Y
548	LK	25.9	233	200	2028	100.0%	Y
549	Bed	6.8	49	100	899	100.0%	Y
550	Studio	16.3	143	200	523	81.8%	Y
551	Bed	6.7	49	100	835	100.0%	Y
552	Bed	6.7	49	100	821	100.0%	Y
553	Bed	6.7	49	100	823	100.0%	Y
554	Bed	6.7	49	100	818	100.0%	Y
555	Bed	6.7	49	100	821	100.0%	Y
556	Bed	6.7	49	100	826	100.0%	Y
557	Bed	6.7	49	100	812	100.0%	Y
558	Bed	6.7	49	100	771	100.0%	Y
559	LK	23.8	197	200	834	100.0%	Y
560	Bed	6.7	49	100	717	100.0%	Y
561	Bed	6.5	49	100	732	100.0%	Y
562	Bed	6.7	49	100	690	100.0%	Y
563	Bed	6.7	49	100	687	100.0%	Y
564	Bed	6.7	49	100	679	100.0%	Y
565	LK	23.8	199	200	1376	100.0%	Y
566	Bed	6.8	49	100	978	100.0%	Y

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
567	Bed	6.8	49	100	957	100.0%	Y
568	Bed	6.8	49	100	992	100.0%	Y
569	Bed	6.5	49	100	1209	100.0%	Y
570	Bed	6.5	49	100	1379	100.0%	Y
571	Bed	6.5	49	100	1541	100.0%	Y
572	Bed	6.8	49	100	1075	100.0%	Y
573	Bed	6.8	49	100	1648	100.0%	Y
574	Bed	6.8	49	100	1651	100.0%	Y
575	Bed	6.8	49	100	1657	100.0%	Y
576	LK	23.8	194	200	849	100.0%	Y
577	Bed	6.8	49	100	1614	100.0%	Y
578	Bed	6.5	49	100	838	100.0%	Y
579	Studio	15.0	132	200	904	98.5%	Y
580	Studio	15.0	132	200	1070	100.0%	Y
581	Studio	12.9	110	200	1218	100.0%	Y
582	Studio	12.9	110	200	1085	100.0%	Y
583	Studio	16.4	143	200	746	95.1%	Y
584	Bed	6.8	49	100	912	100.0%	Y
585	Bed	6.8	49	100	974	100.0%	Y
586	Bed	6.8	49	100	1026	100.0%	Y
587	Bed	6.8	49	100	1027	100.0%	Y
588	Bed	6.8	49	100	1051	100.0%	Y
589	Bed	6.8	49	100	1046	100.0%	Y
590	Bed	6.8	49	100	1076	100.0%	Y
591	Bed	6.8	49	100	1166	100.0%	Y
592	Bed	6.8	49	100	1195	100.0%	Y
593	Bed	6.8	49	100	1007	100.0%	Y
594	Studio	15.4	132	200	852	99.2%	Y
595	Bed	6.5	49	100	1794	100.0%	Y
596	Bed	6.8	49	100	1608	100.0%	Y
597	Bed	6.8	49	100	1637	100.0%	Y
598	LK	19.7	172	200	775	100.0%	Y
599	LK	19.7	172	200	503	83.1%	Y
600	Bed	6.8	49	100	1644	100.0%	Y
601	Bed	6.8	49	100	1614	100.0%	Y
602	Bed	6.5	49	100	1674	100.0%	Y
603	Bed	5.7	42	100	1566	100.0%	Y
604	Bed	6.2	45	100	1715	100.0%	Y
605	Bed	6.8	49	100	1588	100.0%	Y
606	Bed	6.8	49	100	1617	100.0%	Y
607	Bed	6.5	49	100	1629	100.0%	Y
608	Bed	6.8	49	100	1641	100.0%	Y
609	LK	32.0	271	200	2087	100.0%	Y
610	Bed	6.8	49	100	2263	100.0%	Y
611	Bed	6.8	49	100	2297	100.0%	Y
612	Bed	6.8	49	100	2275	100.0%	Y
613	Bed	6.8	49	100	2321	100.0%	Y
614	LK	38.9	350	200	2781	100.0%	Y
615	Bed	6.8	49	100	758	100.0%	Y
616	Bed	6.8	49	100	725	100.0%	Y
617	Bed	6.8	49	100	684	100.0%	Y
618	LK	24.1	203	200	1833	100.0%	Y

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
619	Bed	15.2	112	100	918	100.0%	Y
620	Bed	5.7	42	100	1865	100.0%	Y
621	Bed	6.2	45	100	2027	100.0%	Y
623	Bed	6.7	49	100	1700	100.0%	Y
624	LK	25.9	233	200	3098	100.0%	Y
625	LK	25.9	233	200	2294	100.0%	Y
626	Bed	6.8	49	100	1007	100.0%	Y
627	Studio	16.3	143	200	584	88.8%	Y
628	Bed	6.7	49	100	858	100.0%	Y
629	Bed	6.7	49	100	862	100.0%	Y
630	Bed	6.7	49	100	858	100.0%	Y
631	Bed	6.7	49	100	857	100.0%	Y
632	Bed	6.7	49	100	849	100.0%	Y
633	Bed	6.7	49	100	856	100.0%	Y
634	Bed	6.7	49	100	840	100.0%	Y
635	Bed	6.7	49	100	807	100.0%	Y
636	LK	23.8	197	200	877	100.0%	Y
637	Bed	6.7	49	100	764	100.0%	Y
638	Bed	6.5	49	100	790	100.0%	Y
639	Bed	6.7	49	100	754	100.0%	Y
640	Bed	6.7	49	100	751	100.0%	Y
641	Bed	6.7	49	100	736	100.0%	Y
642	LK	23.8	199	200	1506	100.0%	Y
643	Bed	6.8	49	100	1264	100.0%	Y
644	Bed	6.8	49	100	1274	100.0%	Y
645	Bed	6.8	49	100	1299	100.0%	Y
646	Bed	6.5	49	100	1457	100.0%	Y
647	Bed	6.5	49	100	1539	100.0%	Y
648	Bed	6.5	49	100	1635	100.0%	Y
649	Bed	6.8	49	100	1323	100.0%	Y
650	Bed	6.8	49	100	1654	100.0%	Y
651	Bed	6.8	49	100	1674	100.0%	Y
652	Bed	6.8	49	100	1690	100.0%	Y
653	LK	23.8	194	200	895	100.0%	Y
654	Bed	6.8	49	100	1619	100.0%	Y
655	Bed	6.5	49	100	926	100.0%	Y
656	Studio	15.0	132	200	1017	100.0%	Y
657	Studio	15.0	132	200	1179	100.0%	Y
658	Studio	12.9	110	200	1332	100.0%	Y
659	Studio	12.9	110	200	1218	100.0%	Y
660	Studio	16.4	143	200	835	99.3%	Y
661	Bed	6.8	49	100	1016	100.0%	Y
662	Bed	14.7	122	100	253	95.1%	Y
662	Bed	6.8	49	100	1097	100.0%	Y
663	Bed	6.8	49	100	1129	100.0%	Y
664	Bed	6.8	49	100	1149	100.0%	Y
665	Bed	6.8	49	100	1178	100.0%	Y
666	Bed	6.8	49	100	1169	100.0%	Y
667	Bed	6.8	49	100	1193	100.0%	Y
668	Bed	6.8	49	100	1236	100.0%	Y
669	Bed	6.8	49	100	1259	100.0%	Y
670	Bed	6.8	49	100	1119	100.0%	Y

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
671	Studio	15.4	132	200	951	100.0%	Y
672	Bed	6.5	49	100	1808	100.0%	Y
673	Bed	6.8	49	100	1627	100.0%	Y
674	Bed	6.8	49	100	1670	100.0%	Y
675	LK	19.7	172	200	778	100.0%	Y
676	LK	19.7	172	200	566	94.2%	Y
677	Bed	6.8	49	100	1645	100.0%	Y
678	Bed	6.8	49	100	1622	100.0%	Y
679	Bed	6.5	49	100	1668	100.0%	Y
680	Bed	5.7	42	100	1573	100.0%	Y
681	Bed	6.2	45	100	1714	100.0%	Y
682	Bed	6.8	49	100	1611	100.0%	Y
683	Bed	6.8	49	100	1628	100.0%	Y
684	Bed	6.5	49	100	1648	100.0%	Y
685	Bed	6.8	49	100	1652	100.0%	Y
686	LK	32.0	271	200	2109	100.0%	Y
687	Bed	6.8	49	100	2279	100.0%	Y
688	Bed	6.8	49	100	2267	100.0%	Y
689	Bed	6.8	49	100	2266	100.0%	Y
690	Bed	6.8	49	100	2317	100.0%	Y
691	LK	38.9	350	200	2800	100.0%	Y
692	Bed	6.8	49	100	798	100.0%	Y
693	Bed	6.8	49	100	779	100.0%	Y
694	Bed	6.8	49	100	747	100.0%	Y
695	LK	24.1	203	200	1865	100.0%	Y
696	Bed	15.2	112	100	932	100.0%	Y
697	Bed	5.7	42	100	1876	100.0%	Y
698	Bed	6.2	45	100	2028	100.0%	Y
699	Bed	14.7	122	100	283	99.2%	Y
700	Bed	6.7	49	100	1735	100.0%	Y
701	LK	25.9	233	200	3159	100.0%	Y
702	LK	25.9	233	200	2519	100.0%	Y
703	Bed	6.8	49	100	1119	100.0%	Y
704	Studio	16.3	143	200	651	95.8%	Y
705	Bed	6.7	49	100	875	100.0%	Y
706	Bed	6.7	49	100	896	100.0%	Y
707	Bed	6.7	49	100	881	100.0%	Y
708	Bed	6.7	49	100	885	100.0%	Y
709	Bed	6.7	49	100	875	100.0%	Y
710	Bed	6.7	49	100	882	100.0%	Y
711	Bed	6.7	49	100	866	100.0%	Y
712	Bed	6.7	49	100	857	100.0%	Y
713	LK	23.8	197	200	939	100.0%	Y
714	Bed	6.7	49	100	833	100.0%	Y
715	Bed	6.5	49	100	861	100.0%	Y
716	Bed	6.7	49	100	820	100.0%	Y
717	Bed	6.7	49	100	816	100.0%	Y
718	Bed	6.7	49	100	808	100.0%	Y
719	LK	23.8	199	200	1698	100.0%	Y
720	Bed	6.8	49	100	1533	100.0%	Y
721	Bed	6.8	49	100	1546	100.0%	Y
722	Bed	6.8	49	100	1563	100.0%	Y

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
723	Bed	6.5	49	100	1674	100.0%	Y
724	Bed	6.5	49	100	1700	100.0%	Y
725	Bed	6.5	49	100	1729	100.0%	Y
726	Bed	6.8	49	100	1569	100.0%	Y
727	Bed	6.8	49	100	1702	100.0%	Y
728	Bed	6.8	49	100	1709	100.0%	Y
729	Bed	6.8	49	100	1706	100.0%	Y
730	LK	23.8	194	200	952	100.0%	Y
731	Bed	6.8	49	100	1695	100.0%	Y
732	Bed	6.5	49	100	996	100.0%	Y
733	Studio	15.0	132	200	1165	100.0%	Y
734	Studio	15.0	132	200	1298	100.0%	Y
735	Studio	12.9	110	200	1439	100.0%	Y
736	Studio	12.9	110	200	1370	100.0%	Y
737	Studio	16.4	143	200	982	100.0%	Y
738	Bed	6.8	49	100	1124	100.0%	Y
739	Bed	6.8	49	100	1213	100.0%	Y
740	Bed	6.8	49	100	1206	100.0%	Y
741	Bed	6.8	49	100	1256	100.0%	Y
742	Bed	6.8	49	100	1256	100.0%	Y
743	Bed	6.8	49	100	1267	100.0%	Y
744	Bed	6.8	49	100	1266	100.0%	Y
745	Bed	6.8	49	100	1300	100.0%	Y
746	Bed	6.8	49	100	1299	100.0%	Y
747	Bed	6.8	49	100	1211	100.0%	Y
748	Studio	15.4	132	200	1156	100.0%	Y
749	Bed	6.5	49	100	1830	100.0%	Y
750	Bed	6.8	49	100	1634	100.0%	Y
751	Bed	6.8	49	100	1657	100.0%	Y
752	LK	19.7	172	200	780	100.0%	Y
753	LK	19.7	172	200	608	98.3%	Y
754	Bed	6.8	49	100	1653	100.0%	Y
755	Bed	6.8	49	100	1639	100.0%	Y
756	Bed	6.5	49	100	1694	100.0%	Y
757	Bed	5.7	42	100	1574	100.0%	Y
758	Bed	6.2	45	100	1717	100.0%	Y
759	Bed	6.8	49	100	1618	100.0%	Y
760	Bed	6.8	49	100	1633	100.0%	Y
761	LK	26.0	236	200	2957	100.0%	Y
762	LK	24.1	203	200	1897	100.0%	Y
763	Bed	15.2	112	100	933	100.0%	Y
764	Bed	5.7	42	100	1899	100.0%	Y
765	Bed	6.2	45	100	2042	100.0%	Y
766	Bed	6.7	49	100	1758	100.0%	Y
767	LK	25.9	233	200	3180	100.0%	Y
768	LK	25.9	233	200	2670	100.0%	Y
769	Bed	6.8	49	100	1205	100.0%	Y
770	Studio	16.3	143	200	719	98.6%	Y
771	Bed	6.7	49	100	904	100.0%	Y
772	Bed	6.7	49	100	908	100.0%	Y
773	Bed	6.7	49	100	894	100.0%	Y

Minimum illuminance levels from BS EN17037:2018+A1:2021 - Table NA.1							
Space ID	Use	Area m2	Sensor Count	Target Lux	Mean Lux	% of grid target exceeded - Minimum 50% of Grid	Meets Criteria
774	Bed	6.7	49	100	899	100.0%	Y
775	Bed	6.7	49	100	886	100.0%	Y
776	Bed	6.7	49	100	911	100.0%	Y
777	Bed	6.7	49	100	888	100.0%	Y
778	Bed	6.7	49	100	886	100.0%	Y
779	LK	23.8	197	200	1066	100.0%	Y
780	Bed	6.7	49	100	865	100.0%	Y
781	Bed	6.5	49	100	906	100.0%	Y
782	Bed	6.7	49	100	878	100.0%	Y
783	Bed	6.7	49	100	874	100.0%	Y
784	Bed	6.7	49	100	867	100.0%	Y
785	LK	23.8	199	200	1835	100.0%	Y
786	Bed	6.8	49	100	1669	100.0%	Y
787	Bed	6.8	49	100	1675	100.0%	Y
788	Bed	6.8	49	100	1682	100.0%	Y
789	Bed	6.5	49	100	1754	100.0%	Y
790	Bed	6.5	49	100	1759	100.0%	Y
791	Bed	6.5	49	100	1771	100.0%	Y
792	Bed	6.8	49	100	1676	100.0%	Y
793	Bed	6.8	49	100	1717	100.0%	Y
794	Bed	6.8	49	100	1732	100.0%	Y
795	Bed	6.8	49	100	1730	100.0%	Y
796	LK	23.8	194	200	1061	100.0%	Y
797	Bed	6.8	49	100	1720	100.0%	Y
798	Bed	6.5	49	100	1091	100.0%	Y
799	Studio	15.0	132	200	1292	100.0%	Y
800	Bed	6.8	49	100	1154	100.0%	Y
801	Bed	6.8	49	100	1170	100.0%	Y
802	Bed	6.8	49	100	1166	100.0%	Y
803	Bed	6.8	49	100	1143	100.0%	Y
804	Bed	6.7	49	100	1624	100.0%	Y
805	LK	25.9	233	200	3002	100.0%	Y
806	LK	25.9	233	200	2559	100.0%	Y
807	Bed	6.8	49	100	1149	100.0%	Y
808	Bed	6.5	49	100	1675	100.0%	Y
809	LK	28.5	240	200	4384	100.0%	Y
810	Bed	9.6	77	100	668	100.0%	Y
811	Bed	9.6	77	100	630	100.0%	Y
812	Bed	9.6	77	100	630	100.0%	Y
813	Bed	9.6	77	100	657	100.0%	Y
814	Bed	9.6	77	100	665	100.0%	Y
815	Bed	9.6	77	100	672	100.0%	Y
816	Bed	6.5	49	100	1668	100.0%	Y
817	LK	28.3	247	200	2616	100.0%	Y
818	Bed	6.5	49	100	1667	100.0%	Y
819	Bed	6.5	49	100	1655	100.0%	Y
820	Bed	6.8	49	100	1621	100.0%	Y
821	Bed	6.8	49	100	1625	100.0%	Y
822	Bed	6.8	49	100	1619	100.0%	Y
823	Bed	6.8	49	100	1630	100.0%	Y
824	Bed	6.5	49	100	1163	100.0%	Y

Table 23: Minimum Daylight Provision Compliance for Habitable Rooms to BS EN17037:2018+A1:2021

Appendix B - Sunlight Hours to Living Spaces within the Proposed Development

Sunlight Hours			
Unit ID	LKD window within 90° south	No. sunlight hrs on 21st March	BRE Recommendation
LK 414	No	0.6	Below criteria
Studio 419	Yes	2.1	Minimum
Studio 420	Yes	2.4	Minimum
Studio 421	Yes	2.8	Minimum
Studio 422	Yes	2.8	Minimum
Studio 423	Yes	2.9	Minimum
Studio 424	Yes	2.9	Minimum
LK 413	No	3.0	Medium
Studio 485	Yes	0.0	Below criteria
Studio 486	Yes	0.0	Below criteria
Studio 487	Yes	0.0	Below criteria
Studio 488	Yes	0.9	Below criteria
Studio 489	Yes	1.3	Below criteria
LK 496	Yes	5.3	High
LK 497	Yes	4.9	High
Studio 499	Yes	2.5	Minimum
Studio 500	Yes	2.8	Minimum
Studio 433	Yes	3.1	Medium
Studio 432	Yes	3.2	Medium
Studio 431	Yes	3.3	Medium
Studio 502	Yes	3.1	Medium
Studio 444	Yes	2.9	Minimum
LK 449	No	3.3	Medium
LK 464	Yes	7.9	High
LK 459	Yes	7.5	High
LK 448	Yes	5.1	High
Studio 472	Yes	4.4	High
Studio 471	Yes	3.2	Medium
Studio 470	Yes	2.5	Minimum
Studio 469	No	0.0	Below criteria
Studio 473	No	0.0	Below criteria
Studio 474	No	0.0	Below criteria
Studio 475	No	0.0	Below criteria
Studio 476	No	0.0	Below criteria
Studio 477	No	0.0	Below criteria
Studio 478	No	0.0	Below criteria
Studio 479	No	0.0	Below criteria
Studio 480	No	0.0	Below criteria
Studio 481	No	0.0	Below criteria
Studio 482	No	0.0	Below criteria
Studio 483	No	0.0	Below criteria
Studio 484	No	0.0	Below criteria
LK 565	Yes	0.0	Below criteria
LK 547	Yes	6.8	High
LK 548	Yes	6.5	High
Studio 550	Yes	3.2	Medium
Studio 506	Yes	3.5	Medium
Studio 505	Yes	3.8	Medium
Studio 504	Yes	3.8	Medium
Studio 503	Yes	3.8	Medium
Studio 579	Yes	3.4	Medium

Sunlight Hours			
Unit ID	LKD window within 90° south	No. sunlight hrs on 21st March	BRE Recommendation
Studio 517	Yes	3.0	Medium
LK 522	No	3.3	Medium
LK 537	Yes	8.2	High
LK 532	Yes	7.5	High
LK 521	Yes	5.5	High
LK 541	Yes	5.6	High
LK 576	No	0.0	Below criteria
LK 559	No	0.0	Below criteria
LK 642	Yes	0.0	Below criteria
LK 624	Yes	7.2	High
LK 625	Yes	7.0	High
Studio 627	Yes	3.6	Medium
Studio 583	Yes	4.3	High
Studio 582	Yes	4.5	High
Studio 581	Yes	4.7	High
Studio 580	Yes	4.4	High
Studio 656	Yes	3.9	Medium
Studio 594	Yes	3.2	Medium
LK 599	No	3.3	Medium
LK 614	Yes	8.2	High
LK 609	Yes	7.5	High
LK 598	Yes	5.6	High
LK 618	Yes	5.6	High
LK 653	No	0.0	Below criteria
LK 636	No	0.0	Below criteria
LK 719	Yes	0.0	Below criteria
LK 701	Yes	7.8	High
LK 702	Yes	7.8	High
Studio 704	Yes	3.7	Medium
Studio 660	Yes	4.7	High
Studio 659	Yes	5.5	High
Studio 658	Yes	6.2	High
Studio 657	Yes	6.1	High
Studio 733	Yes	5.4	High
Studio 671	Yes	4.1	High
LK 676	No	3.3	Medium
LK 691	Yes	8.2	High
LK 686	Yes	7.5	High
LK 675	Yes	5.6	High
LK 695	Yes	5.6	High
LK 730	No	0.0	Below criteria
LK 713	No	0.0	Below criteria
LK 785	Yes	0.0	Below criteria
LK 767	Yes	7.9	High
LK 768	Yes	8.1	High
Studio 770	Yes	4.0	High
Studio 737	Yes	5.3	High
Studio 736	Yes	6.4	High
Studio 735	Yes	7.1	High
Studio 734	Yes	7.6	High
Studio 799	Yes	8.0	High

Sunlight Hours			
Unit ID	LKD window within 90° south	No. sunlight hrs on 21st March	BRE Recommendation
Studio 748	Yes	6.2	High
LK 753	No	3.3	Medium
LK 761	Yes	7.9	High
LK 752	Yes	5.6	High
LK 762	Yes	5.6	High
LK 796	No	0.0	Below criteria
LK 779	No	0.0	Below criteria
LK 817	Yes	5.3	High
LK 805	Yes	7.8	High
LK 806	Yes	7.8	High
LK 809	Yes	8.8	High

Table 24: Sunlight hours to living spaces