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Daylight & Sunlight Assessments of a Proposed Large-Scale Residential Development at Grange Road, Baldoyle, Dublin 13.

Applicant: Rondesere Ltd.
Date: 4th December 2023

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1. Introduction

Rondesere Limited intends to apply for a Planning Permission for a Large-Scale Residential Development (LRD) on a site at Grange Road, Baldoyle, Dublin 13.

The site is bounded to the north by Myrtle Road and existing residential development, by Grange Road to the south separating the subject site with Baldoyle Industrial Estate, by Longfield Road and Beshoff Motors Car Dealers to the east and an educational facility currently under construction on lands adjoining the west of the subject site. The proposed Large-scale Residential Development consists of the following;

1. Demolition of existing, single storey, storage structures on the subject site (c. 446.5 m2 GFA).
2. The construction of a residential development (c. 15, 234.11 m2 GFA) comprising of 120 no. apartment units (15 no. studio units, 18 no. 1 bed units, 78 no. 2 bed units, 7 no. 3 bed units, 2 no. 4 bed penthouse units) within 1 no. block (ranging in height from 4 - 12 storeys over basement level).
3. The construction of a basement to be accessed off Myrtle Road with provision of c. 47 no. car parking spaces, including accessible spaces, electric vehicle charging points and residential visitor parking.
4. Addition of 2 no. crèche drop off car parking spaces at surface level.
5. Provision of 360 no. 'long stay' residential bicycle parking spaces at basement level together with additional 60 no. visitor bicycle parking spaces in secure locations at surface level.
6. All apartments are provided with private terraces / balconies.
7. Provision of c. 1877 m2 of open space to serve the development including green roof garden terraces between 5th and 10th floor level.
8. Provision of a childcare facility at ground floor level (c. 156.6 m2 GFA) with capacity in the order of 35 no. children and associated, secure, open play area (c. 117.1 m2).
9. Provision of Café unit (c. 70 m2 GFA) at ground floor level with associated outdoor seating area.
10. Provision of associated gymnasium at ground and first floor level (c. 273.12 m2).
11. Provision of Multipurpose Room (c. 48 m2 GFA) and Residents Lounge (c. 20 m2) at first floor level.
12. Total non-residential use is c. 567.72 m2 (3.73 % of overall development).
13. The development will also provide for all associated ancillary site development infrastructure including: ESB sub-station, bike stores, bin stores, plant rooms, public lighting, new watermain connection and foul and surface water drainage; internal roads & footpaths; site landscaping, including boundary treatments; associated scheme signage, and all associated site development and excavation works above and below ground necessary to facilitate the development.

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 CWPA Planning & Architecture.

1.1.1 Assessment of potential impact to daylight and sunlight availability on adjacent properties.

There will be a small reduction to the available daylight and sunlight levels to the adjacent dwellings and school building. The reduction will be minor and meets the recommendations of the BRE guidelines. There will be no reduction in sunlight to private or communal amenity spaces.

1.1.2 Assessment of the quality of the proposed development.

The apartments were designed in line with the recommendations of the BRE guidelines. Numerous rounds of design iterations were conducted to improve the daylight and sunlight within in the proposed development. The guidelines clearly state that the they are recommendations only and flexibility is required when setting and interpreting the targets.

BR209:2022 recommends assessment methods set out in BS EN 17037 for daylight provision. BS EN 17037 contains a National Annex (NA1) 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 National Annex in BS EN 17037 states that the target values set out in Table A1 may be hard to achieve in the UK and as a result 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%).

1.1.3 Assessment of daylight in accordance with BR209:2022 and BS EN 17037:2018+A1:2021.

92% of the Living, Dining, Kitchen, Bedroom and Studio spaces within the proposed development achieve the target values set out in BS EN 17037:2018+A1:2021 section NA1. This is the minimum rooms specific values to be achieved in habitable rooms. Appendix A identifies all rooms which do not achieve the minimum target illuminance levels.

1.1.4 Assessment of daylight in accordance with IS EN 17037:2018.

EN 17037:2018 sets out values for target illuminance, minimum target illuminance and fractions of reference plane to be achieved. The target and minimum target levels set out in EN17037:2018 are for any type of building and they do not take into account room use or make allowance for rooms that have a lesser requirement for daylight. The results for this assessment indicate a high level of compliance for minimum target level of 93.5% and target level of 77.7% of rooms achieving the minimum target for each metric. Appendix B identifies all rooms which do not achieve the minimum target illuminance and the target illuminance levels.

To date there is no guidance from Irish local authorities or governmental bodies on the use or interpretation of IS EN 17038:2018. The local authorities guidelines and apartment guidelines refer to BR209 Site layout planning for daylight and sunlight which in turn references BS EN 17037. BS EN17037:2018+A1:2021 is the same as IS EN 17037:2018 with the addition of a National Annex (NA1) and the annex specifically refers to and sets room specific values for dwellings in the UK and Channel Islands.

1.1.5 Sunlight within the proposed development

This scheme is well designed for sunlight, with 71.7% of units meeting the minimum recommended 1.5 direct sunlight hours.

The proposed communal amenity spaces on each level achieve sunlight levels that exceed 2 hours sunlight over 50% of the amenity space on the 21st March.

2. Methodology

2.1 Notes on the use of BRE guidance document BR209:2022 - Site Layout Planning for Daylight and Sunlight (3rd edition).

Building Research Establishment (BRE) BR209: 2022 “Site Layout Planning for Daylight and Sunlight” (Third edition) was released in June 2022 and supersedes BR209: 2011 (Second edition). It is intended to be used with the interior daylight recommendations of BS EN 17037 British Standard Daylight in Buildings. BR209: 2022 is a comprehensive revision of the 2011 edition of Site Layout Planning for Daylight and Sunlight.

BR209: 2022 sets out 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.”

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 referenced in BR209: 2022 (third edition) for internal daylight and sunlight provision are common to both the Irish Standard Version and the UK version.

The UK National Annex (NA) provides further recommendations for daylight provision in the UK and Channel Islands. NA.1 states that the UK committee supports the recommendations for daylight in buildings given in BS EN17037:2018. The annex states that the daylight target levels in Clause A.2 may be hard to achieve in buildings in the UK and in particular dwellings in urban areas with significant obstructions or tall trees outside. NA.2 sets out minimum daylight provision to be achieved in UK dwellings.

BR209: 2022 updates guidance in two areas and they are summarised below:

Impact on daylight and sunlight to adjacent buildings.

This is broadly in line with the previous version of the BRE guidelines (2011) and the assessment methods contained within BR 209:2022. The metrics are the same for assessing impact in the areas of Daylight (VSC) and Sunlight (APSH) to adjacent buildings. Sunlight to adjacent amenity space is assessed through the measurement of sunlight availability on the 21st March. Clarity has been provided in a number of areas on the appropriate use of each assessment.

Interior daylight and sunlight to proposed buildings.

The BRE guidelines (2022) recommend the use of BS EN 17037:2018 for assessing the quality of interior spaces in proposed developments, this supersedes BS 8206-2:2008. BS EN 17037 sets out assessment methods for daylight provision and access to sunlight. The use of the Average Daylight Factor (ADF) assessment is no longer recommended. BS EN 17037 is based on the European standard EN 17037 and uses assessment methodologies not directly comparable to BS 8206-2.

The UK National Annex A1 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 illiminance 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.

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

- BR209 2022: Site Layout Planning for Daylight and Sunlight (Third edition).
- BS EN 17037:2018+A1:2021 Daylight in Buildings
- IS EN 17037:2018 Daylight in Buildings

The BRE guidelines (2022) state at the outset that “It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.”

This is accordance with the most relevant S.28 Ministerial Guidelines including 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).

Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2023) states that:

> *Planning authorities should avail of appropriate expert advice where necessary and have regard 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, when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.*

That the recommendations of the BRE guidelines (2022) are not suitable for rigid application to all developments in all contexts is of particular importance in the context of national and local policies for the consolidation and densification of urban areas.

2.2 Daylight to existing dwellings

BRE guidance document (2022) "Site layout planning for daylight and sunlight" relates to daylight and sunlight to potential impact in neighbouring buildings. As set out above, this is broadly in line with the previous version of the BRE guidelines (2011). The metrics are the same for assessing impact in the areas of Daylight (VSC) and Sunlight (APSH) to adjacent buildings. Sunlight to adjacent amenity space is assessed through the measurement of sunlight availability on the 21st March. Clarity has been provided in a number of areas in BR209:2022 (third edition) on the appropriate use of each assessment.

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 their distance from the existing dwelling. To ensure a neighbouring property is not adversely affected, the Vertical Sky Component (also referred to as VSC) is calculated and assessed. VSC can be defined as the amount of skylight that falls on a vertical wall or window.

BRE guidelines (2022) recommend 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."*
The diffuse light of the existing building may be adversely affected if part of a new building measured in a vertical section perpendicular to the main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25º to the horizontal. If a window falls within a 45° angle both in plan and elevation with a new development in place then the window may be affected and should be assessed.

The guidelines sets out which rooms need to be assessed for daylight in Section 2.2:

> *"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";*

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 Vertical Sky Component 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 Vertical Sky Component 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, The Vertical Sky Component (VSC) as per the methodologies contained in the BRE guidelines BR209:2022 (third edition).

2.3 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	Jun	Jul	Aug	Sep	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 receive at least 25% of the APSH and 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.

2.4 Daylight in the Proposed Development.

BR209 (2022) Appendix C sets out interior daylight recommendations. The guideline sets out the that: “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 17037:2018+A1 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 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 ($E_{v,d,med}$) for the capital cities throughout Europe to account for external local illuminance levels.

The UK National Annex (NA) sets out additional minimum room specific Target Daylight Factor values for the UK where the target values in A2 are hard to achieve. 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 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.

BR209 (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

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. EN 17037:2018 sets out values for Minimum and Target levels to be achieved with a minimum, medium and high compliance level for each. The guideline recommends that the minimum level should be achieved but does not give guidance on the number of units or fraction within a multiple residential unit development that should achieve these values. Additionally it does not differentiate between room use and weighted targets for rooms which would have a lesser requirement. The UK National annex sets out factors for UK specific settings where it is difficult to achieve natural daylighting.

The compliance calculation is based on an annual, climate-based simulation of interior illuminance distributions, BR209 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. BR209 (2022 3rd edition) 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 UN 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%

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

2.5 Sunlight to proposed developments

The BRE guidelines (2022) recommend 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. The guideline acknowledges in large developments it may not be possible to have every living room facing within 90° of south, it recommends maximising the number of units with a southerly aspect.

The BRE guidelines (2022) states that BS EN 17037 should be used to assess for interior access to direct sunlight. BS EN 17037 sets recommendations for access to sunlight in a range achieving compliance from Minimum to 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 recommends 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.

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) 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 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) 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."*

BR209:2022 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 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, eg 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."*

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.

3. Daylight to adjacent buildings.

3.1 Site Overview

The site is bounded on three sides by Grange Road, Longfield Road and Myrtle Road. To the west a primary school is under construction. The buildings opposite the site on Grange Road and to the east of Longfield Road are in commercial use, which have no particular requirement for daylight or sunlight. There is an established residential development to the north side of Myrtle Road, which is a mix of 3 storey houses and 4-5 storey apartments.

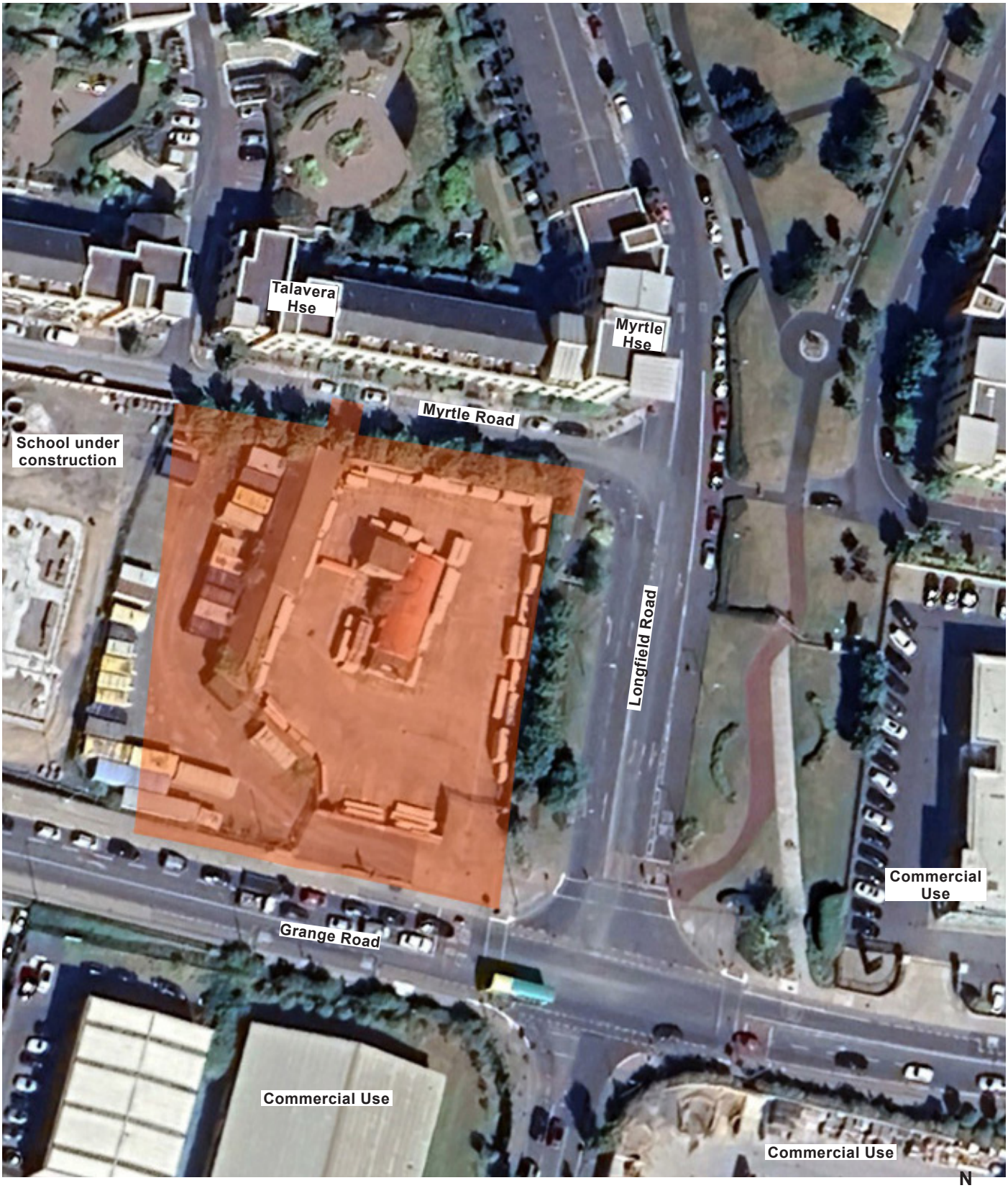


Figure 1: Aerial view of site, taken from Google Earth

3.2 Preliminary assessment of adjoining dwellings

The BRE guidelines recommend 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.

Section planes perpendicular to the window wall of the adjacent properties facing the proposed development are indicated in blue in Figure 2. The planes at locations A - C extend and if they intersect the proposed development, they are plotted in figure 3 below.

The document also states that if part of a new building measured in a vertical section perpendicular to the main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25º to the horizontal, then the diffuse light 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 then the window may be affected and should be assessed.

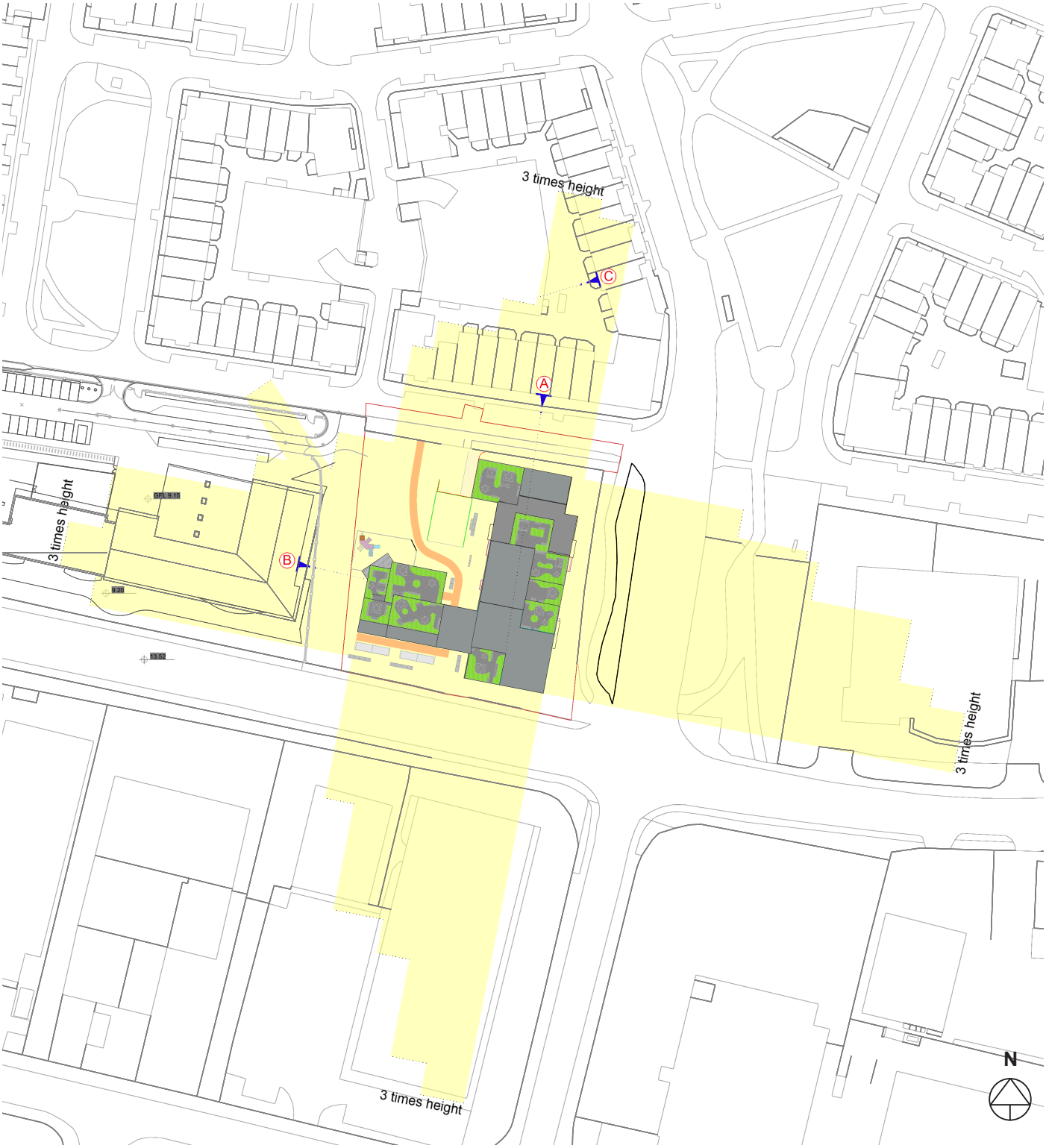


Figure 2: Proposed site plan showing the zone of influence (3 times the height of the proposed building) and direction of the window wall of adjacent residential properties.

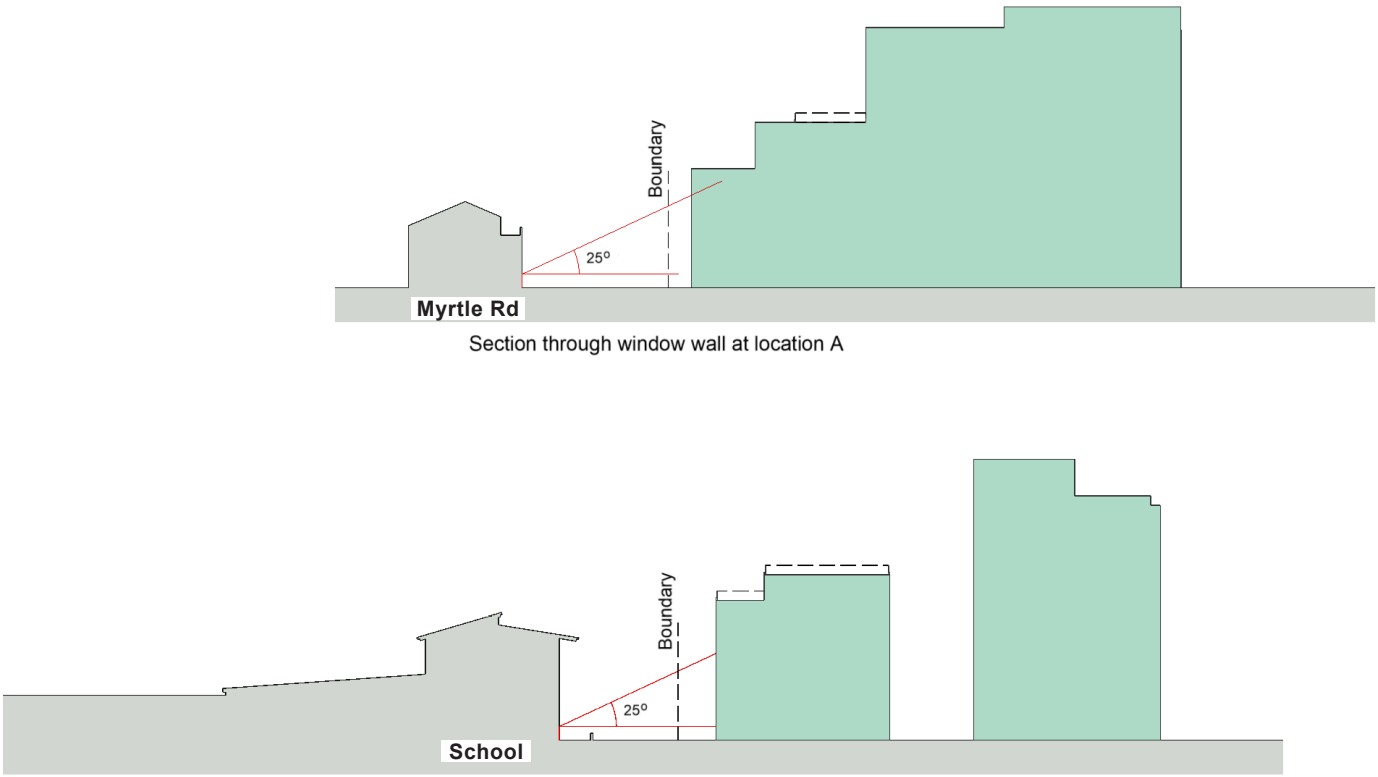


Figure 3: Section perpendicular to window walls at locations indicated in Figure 2.

3.3 Comment on preliminary assessment

Location A, through No.56 Myrtle Road: The 25º line would be subtended by the proposed development. For completeness the windows which face towards the proposed development, from Talavera House to Longfield Road are selected for further assessment.

Location B, through the side elevation of the school: The 25º line would be subtended by the proposed development, the windows which face towards the proposed development in the school are selected for assessment.

Location C, through the rear elevations on Longfield Road: The windows do not face towards the proposed development indicating any reduction in available daylight is negligible and no further assessment required.

3.4 Detailed assessment to adjoining buildings

The BRE guide recommends assessing the Vertical Sky Component (VSC) to adjacent properties. The Annual Probable Sunlight Hours will also be assessed, where that is relevant.

The BRE guideline recommends that 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 at locations identified in the preliminary analysis are indicated in Figures 4 & 5. The results are shown in Table 6 below.

Figure 4: Myrtle Road - View of model locating VSC & APSH test points.

Vertical Sky Component					
Location	Vertical Sky Component Recommended Value > 27%		Ratio: Proposal to Existing Recommended > 80%		Meets criteria if >27% VSC or <27% but >80% Existing Value
	Existing %	Proposed %		Average Ratio	
1	22.1	16.2	73.0%	* 84.3%	* Y
2	26.2	20.9	79.7%		
3	22.9	17.8	77.7%	* 86.8%	* Y
4	27.7	22.9	82.7%		
5	37.2	32.8	88.2%	* 92.0%	Y
6	33.0	28.9	87.7%		Y
7	35.2	27.7	78.7%		Y
8	35.0	28.6	81.7%		Y
9	36.4	29.7	81.7%		Y
10	35.9	30.7	85.3%		Y
11	36.8	31.3	85.0%		Y
12	36.7	28.4	77.3%		Y
13	36.9	29.8	80.8%		Y
14	37.4	30.1	80.5%		Y
15	26.4	20.9	79.1%	* 82.3%	Y
16	33.3	28.5	85.4%		Y
17	36.9	28.2	76.4%		Y
18	37.5	29.9	79.6%		Y
19	37.2	29.4	79.0%		Y
20	35.0	29.1	83.1%	* 84.8%	Y
21	29.2	25.3	86.5%		Y
22	37.2	27.6	74.2%		Y
23	37.3	29.4	78.8%		Y
24	37.7	29.6	78.6%		Y
25	34.8	28.9	83.2%	* 81.7%	Y
26	29.7	23.9	80.3%		Y
27	37.3	27.5	73.8%		Y
28	37.8	29.7	78.4%		Y
29	37.5	29.5	78.6%		Y
30	35.2	29.1	82.8%	* 82.8%	Y
31	29.8	24.7	82.8%		Y
32	37.4	28.1	75.0%		Y
33	38.0	30.1	79.4%		Y
34	37.6	29.6	78.8%		Y
35	35.2	29.4	83.5%	* 83.0%	Y
36	30.2	25.0	82.6%		Y
37	37.6	28.6	76.1%		Y
38	38.1	30.5	80.1%		Y
39	37.8	30.6	80.9%		Y
40	35.0	29.5	84.4%	* 83.5%	Y
41	30.7	25.3	82.6%		Y
42	37.7	30.0	79.7%		Y
43	38.2	31.7	83.0%		Y
44	37.9	31.0	81.9%		Y
45	29.1	24.3	83.3%	* 84.9%	Y
46	28.8	24.9	86.6%		Y
47	37.3	30.3	81.2%		Y
48	37.6	31.0	82.6%		Y
49	38.0	31.9	83.8%		Y
50	38.0	32.4	85.2%		Y
51	38.2	33.3	87.0%		Y

Vertical Sky Component					
Location	Vertical Sky Component Recommended Value > 27%		Ratio: Proposal to Existing Recommended > 80%		Meets criteria if >27% VSC or <27% but >80% Existing Value
	Existing %	Proposed %		Average Ratio	
52	38.3	33.7	87.9%		Y
53	38.4	34.3	89.5%		Y
54	38.4	34.6	90.1%		Y
55	37.5	31.4	83.9%		Y
56	37.1	31.4	84.5%		Y
57	28.4	23.1	81.5%	** 90.8%	Y
58	37.9	32.6	86.1%		Y
59	37.6	32.6	86.5%		Y
60	28.9	24.3	84.2%	** 92.1%	Y
61	38.1	33.7	88.4%		Y
62	37.7	33.5	88.7%		Y
63	29.2	25.3	86.5%	**93.3%	Y
64	38.1	34.5	90.6%		Y
65	37.3	33.8	90.8%		Y
66	29.2	26.0	89.0%	**94.5%	Y
67	38.2	35.5	92.8%		Y
68	35.9	33.1	92.4%		Y
69	24.0	21.4	89.3%	**94.7%	Y

Table 6: Vertical sky component for windows in Myrtle Road

* The BRE guidelines recommend where there are more than one window to a room the cumulative average can be used.
** In many of these apartments the second window is on the side elevation, facing away from the proposed development and will have a VSC ratio of 100% for existing to proposed.

3.5 Conclusion of potential impact to existing dwellings.

The majority the windows retain a VSC in excess of 27% or are not reduced below 80% of the existing VSC values. Many of the residential units have a wiindow facing away from the proposed development. When averaged all VSC values are in excess of 27% or are not reduced below 80% of the existing VSC value. Any reduction in available daylight from the proposed development will be negligible and meets the recommendations of the BRE guidelines BR209:2022.

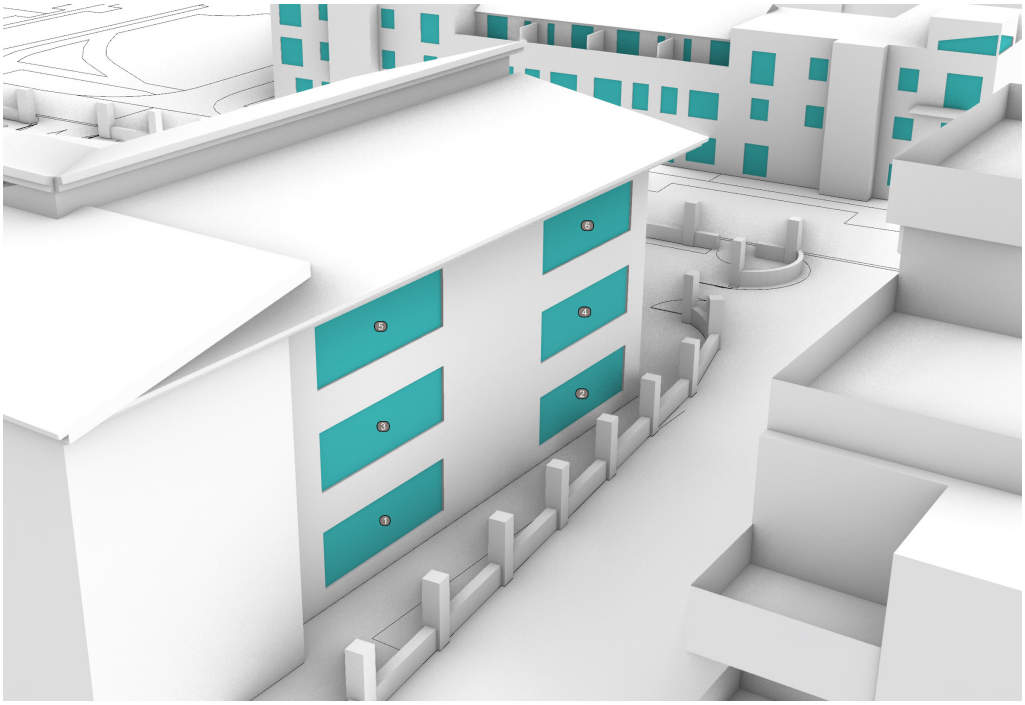


Figure 5: School: View of model locating VSC test points.

Vertical Sky Component				
Location	Vertical Sky Component Recommended Value > 27%		Ratio: Proposal to Existing Recommended > 80%	Meets criteria if >27% VSC or <27% but >80% Existing Value
	Existing %	Proposed %		
1	35.3	24.9	70.5%	N
2	35.2	25.6	72.7%	N
3	34.7	25.9	74.7%	N
4	35.0	26.9	76.7%	N
5	25.1	18.5	73.7%	N
6	25.4	19.0	74.9%	N

Table 7: Vertical sky component for windows in adjacent school

3.6 Comment on detailed assessment of the windows in the school

This school is under construction. The rooms have very large windows, with a high VSC as they faced a currently vacant site. There is a slight impact to the windows on the side elevation. The reduced ratio is the order of 70.5 - 76.7%.

4. Sunlight in Adjoining Residential Living Areas

4.1 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 livingrooms, 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.

All relevant windows in Myrtle Road and in the school, faced within 90º of due south. All windows were assessed for APSH regardless of room use. Their locations are indicated in Figures 4 & 5; the results are set out in Tables 8 & 9.

Annual Probable Sunlight Hours

	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% WPSH Or <25% or <5% WPSH 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%	APSH	WPSH
1	47.8%	35.2%	73.5%	25.6%	15.1%	58.9%	Y	Y
2	46.4%	36.1%	77.9%	21.5%	12.9%	60.3%	Y	Y
3	50.5%	39.8%	78.8%	27.3%	18.4%	67.5%	Y	Y
4	47.9%	39.9%	83.2%	22.6%	16.0%	70.5%	Y	Y
5	75.7%	66.5%	87.8%	28.7%	21.0%	73.3%	Y	Y
6	60.9%	54.5%	89.5%	23.9%	18.6%	77.8%	Y	Y
7	69.5%	55.3%	79.6%	26.9%	15.1%	56.1%	Y	Y
8	69.3%	57.1%	82.3%	28.3%	18.1%	64.0%	Y	Y
9	73.7%	61.4%	83.3%	28.9%	18.7%	64.6%	Y	Y
10	72.2%	61.9%	85.7%	30.0%	21.5%	71.5%	Y	Y
11	77.0%	66.8%	86.8%	30.4%	22.0%	72.2%	Y	Y
12	76.1%	60.4%	79.3%	28.3%	15.3%	53.9%	Y	Y
13	76.4%	63.0%	82.5%	29.2%	18.1%	61.9%	Y	Y
14	77.4%	63.9%	82.6%	29.4%	18.2%	61.9%	Y	Y
15	51.1%	42.0%	82.1%	21.2%	13.6%	64.1%	Y	Y
16	57.8%	50.5%	87.4%	20.5%	14.4%	70.5%	Y	Y
17	76.8%	62.1%	80.8%	28.6%	16.3%	57.1%	Y	Y
18	78.4%	65.8%	83.9%	29.9%	19.4%	64.9%	Y	Y
19	78.8%	66.1%	84.0%	29.9%	19.4%	64.9%	Y	Y
20	67.0%	57.6%	86.0%	23.9%	16.1%	67.3%	Y	Y
21	53.6%	47.6%	88.7%	17.0%	12.0%	70.5%	Y	Y
22	77.6%	62.2%	80.2%	28.7%	15.9%	55.5%	Y	Y
23	79.1%	66.3%	83.8%	29.9%	19.3%	64.4%	Y	Y
24	79.6%	66.6%	83.6%	30.0%	19.1%	63.8%	Y	Y
25	64.6%	55.7%	86.4%	20.7%	13.4%	64.6%	Y	Y
26	56.5%	47.2%	83.5%	21.2%	13.5%	63.6%	Y	Y
27	77.7%	62.5%	80.5%	28.5%	15.9%	55.9%	Y	Y
28	79.8%	67.1%	84.0%	30.0%	19.4%	64.7%	Y	Y
29	79.7%	66.7%	83.7%	30.0%	19.2%	64.0%	Y	Y
30	67.1%	57.5%	85.7%	24.0%	16.0%	66.7%	Y	Y
31	55.2%	46.7%	84.5%	17.3%	10.2%	58.8%	Y	Y
32	78.2%	64.5%	82.4%	28.9%	17.5%	60.4%	Y	Y
33	80.6%	69.0%	85.6%	30.7%	21.0%	68.5%	Y	Y
34	80.3%	68.0%	84.7%	30.4%	20.2%	66.5%	Y	Y
35	65.7%	56.5%	86.0%	21.3%	13.6%	64.1%	Y	Y
36	56.3%	49.3%	87.5%	21.4%	15.5%	72.7%	Y	Y

Annual Probable Sunlight Hours								
	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% WPSH Or <25% or <5% WPSH 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%	APSH	WPSH
37	78.3%	64.0%	81.7%	28.9%	17.0%	58.9%	Y	Y
38	80.1%	67.7%	84.5%	30.5%	20.2%	66.2%	Y	Y
39	80.2%	67.8%	84.5%	30.6%	20.3%	66.2%	Y	Y
40	64.8%	55.8%	86.0%	24.0%	16.5%	68.7%	Y	Y
41	56.7%	47.9%	84.5%	18.2%	10.9%	59.9%	Y	Y
42	78.3%	65.1%	83.0%	28.9%	17.9%	61.8%	Y	Y
43	80.6%	68.4%	84.9%	30.8%	20.7%	67.2%	Y	Y
44	80.7%	69.2%	85.7%	30.7%	21.1%	68.9%	Y	Y
45	51.2%	41.8%	81.6%	19.8%	12.0%	60.6%	Y	Y
46	47.2%	41.5%	88.0%	19.8%	15.1%	76.1%	Y	Y
47	78.8%	66.3%	84.1%	29.2%	18.8%	64.4%	Y	Y
48	78.5%	66.7%	85.0%	29.3%	19.5%	66.6%	Y	Y
49	80.9%	69.2%	85.5%	30.8%	21.1%	68.4%	Y	Y
50	80.5%	69.9%	86.9%	31.0%	22.2%	71.6%	Y	Y
51	82.2%	72.0%	87.6%	32.0%	23.6%	73.6%	Y	Y
52	80.5%	71.4%	88.7%	32.1%	24.5%	76.5%	Y	Y
53	82.5%	74.3%	90.0%	32.3%	25.5%	78.9%	Y	Y
54	81.9%	74.1%	90.6%	32.5%	26.0%	80.2%	Y	Y
55	77.5%	66.8%	86.1%	29.3%	20.4%	69.5%	Y	Y
56	75.3%	64.0%	85.0%	29.3%	19.9%	68.1%	Y	Y
57	64.2%	52.7%	82.2%	29.4%	19.9%	67.7%	Y	Y
58	79.5%	69.2%	87.1%	30.9%	22.4%	72.4%	Y	Y
59	77.1%	66.7%	86.6%	30.8%	22.2%	72.1%	Y	Y
60	65.9%	55.6%	84.3%	30.9%	22.3%	72.1%	Y	Y
61	80.7%	71.5%	88.6%	32.0%	24.4%	76.2%	Y	Y
62	78.6%	69.5%	88.5%	32.0%	24.5%	76.6%	Y	Y
63	67.4%	58.0%	86.1%	32.1%	24.3%	75.7%	Y	Y
64	79.7%	72.1%	90.4%	32.3%	26.0%	80.4%	Y	Y
65	78.1%	70.4%	90.2%	32.3%	26.0%	80.4%	Y	Y
66	67.8%	59.9%	88.4%	32.4%	25.8%	79.8%	Y	Y
67	82.5%	76.2%	92.4%	32.3%	27.1%	83.9%	Y	Y
68	72.4%	65.6%	90.7%	32.4%	26.8%	82.8%	Y	Y
69	54.6%	48.2%	88.1%	32.7%	27.3%	83.5%	Y	Y

Table 8: Annual Probable Sunlight hours Myrtle Road

Annual Probable Sunlight Hours								
	APSH >25% Target			Sept 21 - Mar 21 WPSH >5% Target			Meets criteria of >25% APSH and >5% WPSH Or <25% or <5% WPSH 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%	APSH	WPSH
1	46.4%	30.0%	64.6%	15.3%	10.5%	68.4%	Y	Y
2	47.6%	30.7%	64.3%	16.3%	7.5%	45.7%	Y	Y
3	47.5%	30.8%	64.8%	16.8%	10.9%	65.0%	Y	Y
4	48.0%	32.7%	68.2%	17.4%	7.6%	44.0%	Y	Y
5	39.6%	26.7%	67.4%	15.1%	9.5%	63.1%	Y	Y
6	39.3%	26.8%	68.2%	15.1%	6.5%	43.0%	Y	Y

Table 9: Annual Probable Sunlight hours in school (under construction)

4.2 Comment on assessment of APSH and WPSH

All the windows assessed to main living spaces have an APSH percentage greater than the recommended 25% (414 hours) and 5% (75 hours) from 21 September to 21 March. All windows assessed exceed the target values set out for sunlight. The proposed development meets the recommendations of the BRE guidelines (2022).

4.3 Sunlight to adjoining amenity spaces

The shadow diagrams in Section 7 of this report indicate that the shadows from the proposed development do not extend to any private garden on the 21st march. The shadow from the proposed development will not reach the linear park on Longfield Road until approximately 16.00pm on the 21st March. The sun on the ground will not be reduced below 2 hours over 50% of the area, no detailed assessment is required.

There will be no reduction in sunlight to any of the neighbouring amenity spaces with a requirement for sunlight and the proposed development meets the requirements of the BRE guidelines (2022).

5. Daylight to proposed units.

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 6 below and a complete set of room results are shown in Appendix A.

Compliance is also demonstrated with a calculation of Daylight Provision with the illuminance method under IS /BS EN 17037:2018. A summary of the results are presented in Table 7 below and a complete set of room results are shown in Appendix B.

5.1 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
Apartments	LKD	106	200	86	81.1%
	Studio	15	200	9	60.0%
	Bedrooms	202	100	202	100.0%
Total		323		297	92.0%

Table 10: Summary of room for Target Illuminance compliance with BS EN 17037:2018+A1:2021. Individual room results can be viewed in Appendix A.

5.2 Conclusion

BR209:2022 recommends assessment methods set out in BS EN 17037 for daylight provision. 92% of the Living, Dining, Kitchen and Bedroom spaces achieve the target values set out in BS EN 17037:2018+A1:2021 section NA1. The is the minimum rooms specific values to be achieved in habitable rooms.

5.3 Assessment for Daylight Provision IS / BS EN 17037:2018

A summary of Minimum and Target Illuminance level compliance under IS EN 17037:2018 Annex A Table A1 are set out in the table below.

Daylight provision Illuminance Method IS EN 17037:2018						
		Below Target	Minimum	Medium	High	Percentage of rooms achieving Target
Overall total	Target Illuminance	22.3%	10.8%	26.0%	40.9%	77.7%
	Minimum Illuminance	6.5%	26.9%	27.9%	38.7%	93.5%

Table 11: Summary of room for Target Illuminance compliance with IS/BS EN 17037:2018. Percentage of rooms at each compliance level. Individual room results can be viewed in Appendix B.

The results indicate a high level of compliance for Minimum level with 93.5% and Target level with 77.7% of the spaces achieving the minimum target for each metric.

The recommendations for Daylight provision in Table A1 are not specific for dwellings and do not make allowance for room use. BS EN 17037:2018+A1:2021 address this with the National Annex NA.1 which sets out room specific targets for dwellings and compliance for this is presented in Section 5.1.

6. Sunlight hours in habitable rooms.

6.1 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.

Appendix C details the results per habitable room, indicating if this room has a relevant South facing window. A summary of these results are displayed in the table below.

Sunlight Hours Summary Table									
	Total Units	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						
Overall Total	120	79	65.8%	34	55	3	28	86	71.7%

Table 12: Summary of results of assessment of Sunlight Hours

6.2 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 all of the units were assessed, 79 no. (65.8%) have window to a Living room or Kitchen/ Dining room which face 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 this development of 120 units 71.7% (86 no.) of units have a living spaces achieve the minimum recommended 1.5 direct sunlight hours.

6.3 Conclusion

This scheme is well designed for sunlight, with 71.7% of units meeting the minimum recommended 1.5 direct sunlight hours. This meets the recommendations of the BRE guidelines (2022).

7. Sunlight to gardens and open spaces

The BRE document 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.

7.1 Sunlight to amenity 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 6 and the results are set out in Table 13 below.

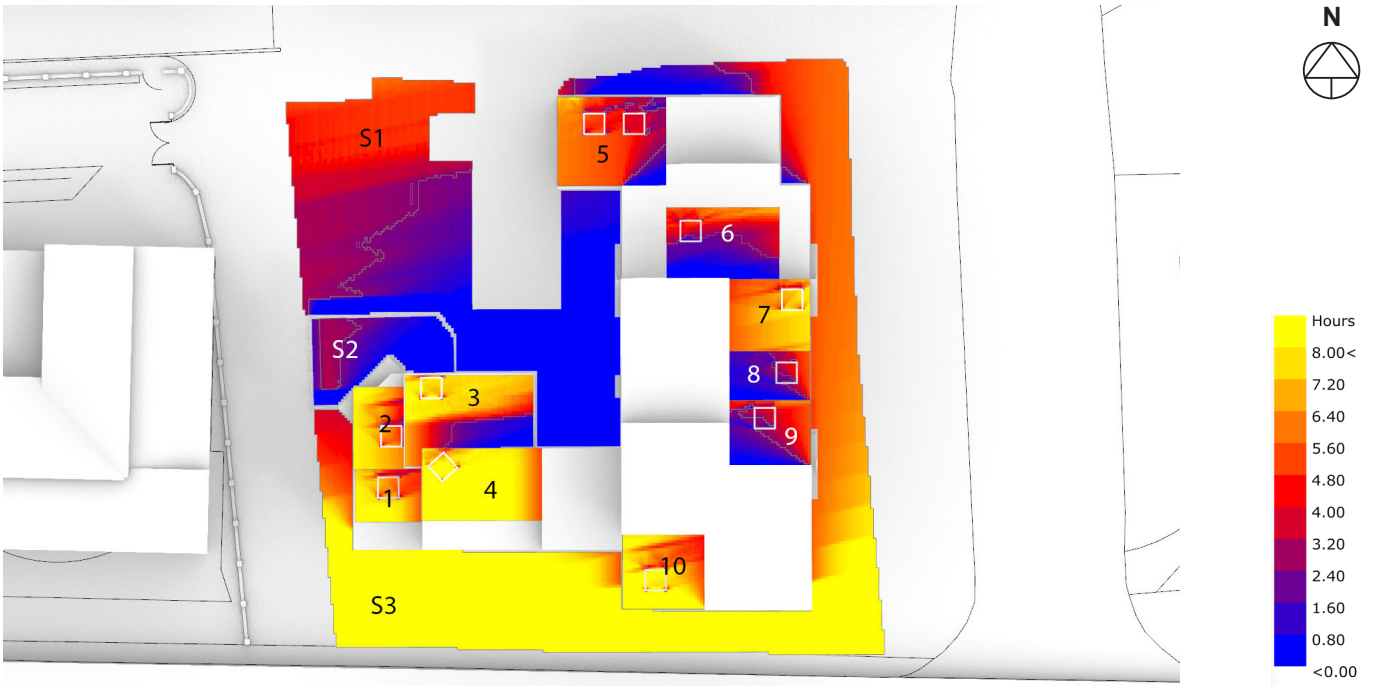


Figure 6: Radiation map of amenity within the Proposed Development, showing available sunlight on 21st March. The scale represents the percentage of daylight received from 0 - 8 hrs.

Sunlight on the ground - within development					
ID	Location	Area m2	Area receiving 2 hours sunlight on 21st March		Meets criteria if >50% area receiving 2 hours sunlight on 21st March
			%	Area weighted average	
S3	Communal open space	1,061.5	93.8%		
S1	Communal open space	798.6	39.6%		
	Total	1,860.1		70.5%	Meets criteria
S2	Creche	115.5	21.3%		N
5	Terrace 4th floor	120.4	85.8%		Meets criteria
1	Terrace 5th floor	58.8	99.5%		Meets criteria
2	Terrace 6th floor	52.1	98.3%		Meets criteria
3	Terrace 7th floor	147.2	70.1%		
6	Terrace 7th floor	101.8	47.4%		
	Total	249.0		60.8%	Meets criteria
4	Terrace 8th floor	108.8	99.8%		
8	Terrace 8th floor	50.5	30.0%		
	Total	159.3		77.7%	Meets criteria
7	Terrace 9th floor	73.7	100.0%		
10	Terrace 9th floor	94.5	99.0%		
	Total	168.2		99.4%	Meets criteria

Table 13: Calculation of Sun on the Ground to amenity areas within the proposed development.

7.2 Comment on calculation of sun on the ground.

There are a variety of amenity spaces within this development. In some cases there are two spaces per level. Each level meets the BRE criteria of more than 2 hours of sunlight, over 50% of the amenity space, on 21st March, when taken as area weighted average. The creche amenity has lower than recommended sun on the ground, however in a area where young children are playing, some area of shade is preferable.

8. Shadow Diagrams

8.1 BRE Guidance on Shadow Studies

Shadow diagrams are a visual aid to understand where possible shading may occur. 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."*

The shadows cast on the September equinox are the same as the March Equinox. They are included here with the Daylight Saving Time (UTC+1) applied, as with the Summer Solstice diagrams.

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. 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

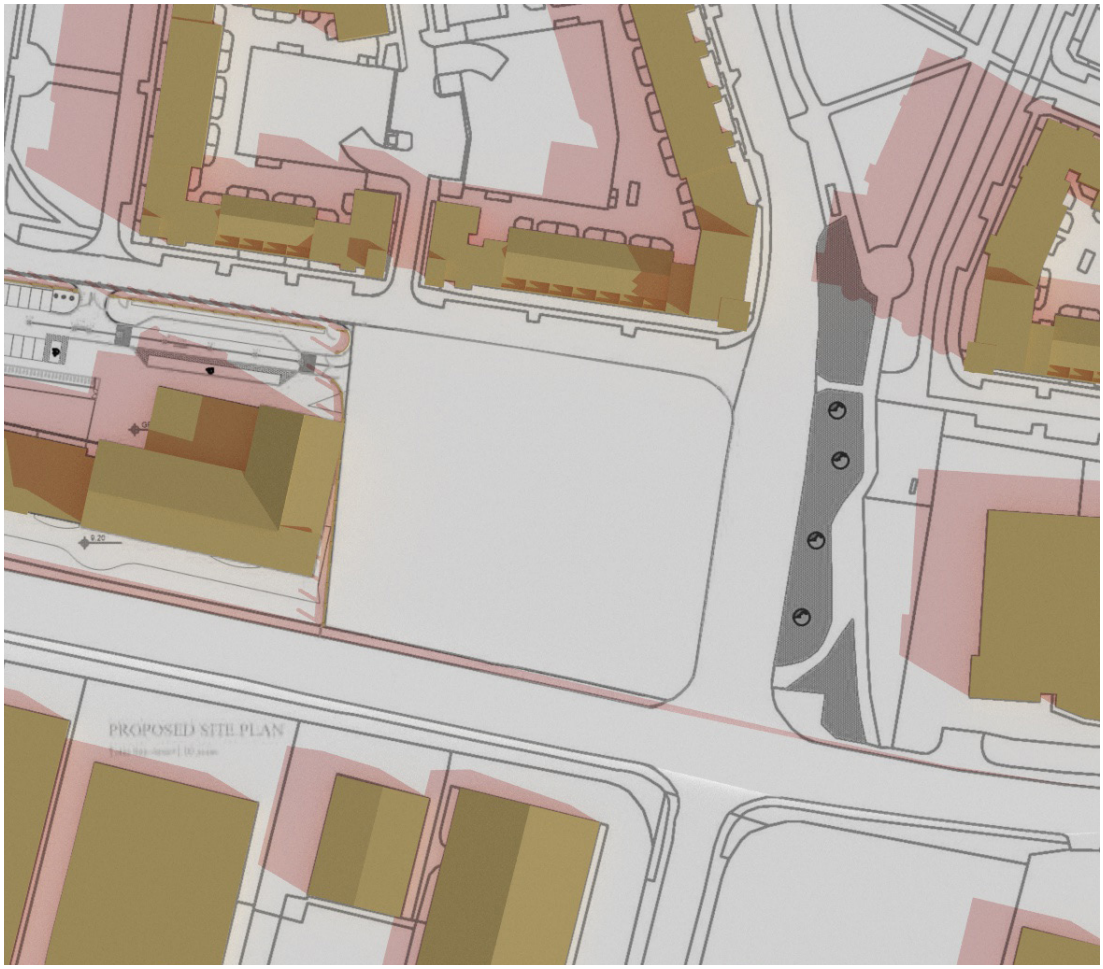
Section 8.2 shows the existing and proposed shadow diagrams for the Equinox on the 21st March at 2 hourly intervals during the day between 09:00 and 17:00.
Section 8.3 shows the existing and proposed shadow diagrams for the Summer Solstice on the 21st June at 2 hourly intervals during the day between 09:00 and 19:00.
Section 8.4 shows the existing and proposed shadow diagrams for the Equinox on the 21st September at 2 hourly intervals during the day between 09:00 and 17:00.
Section 8.5 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.

Much of the site is vacant, casting minimal shadows at present. 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.

8.2 Shadow Casting diagrams March Equinox

N

Existing



Proposed

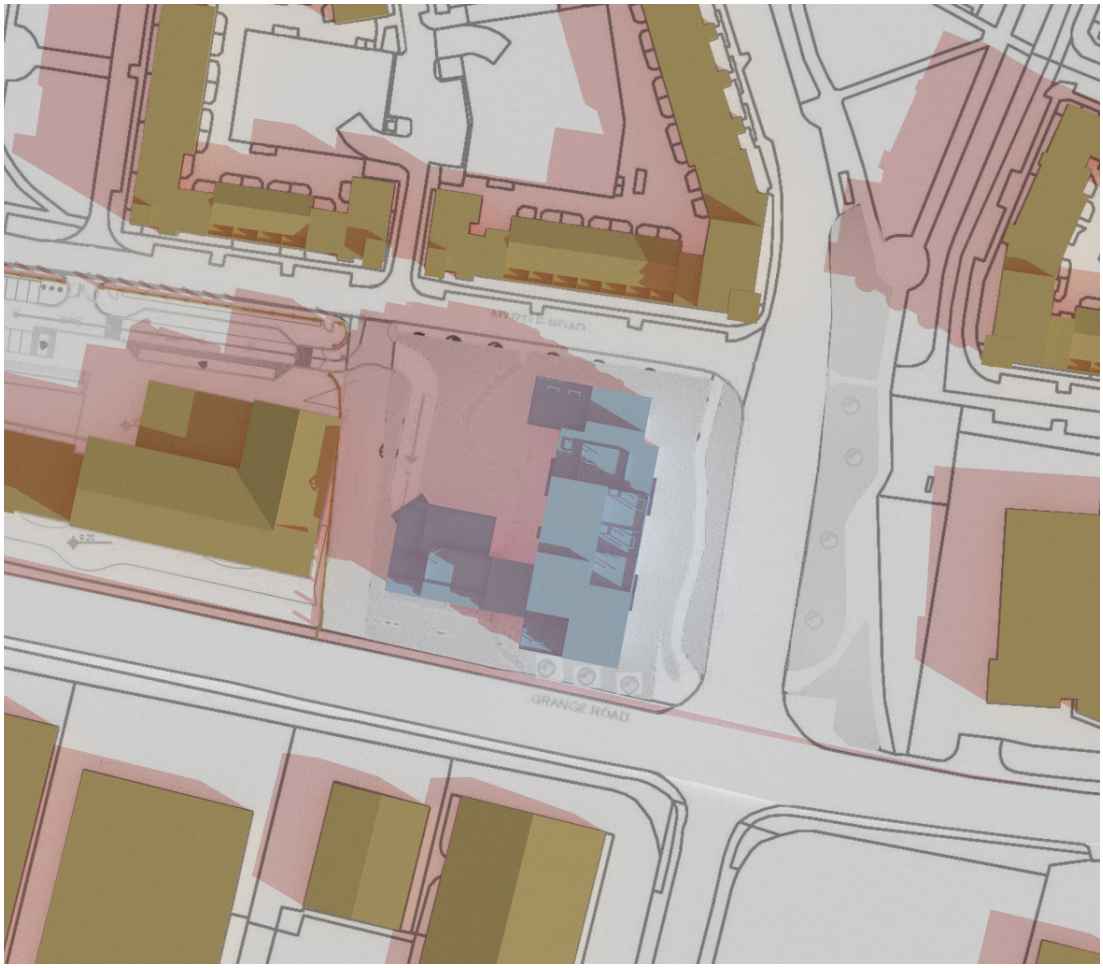
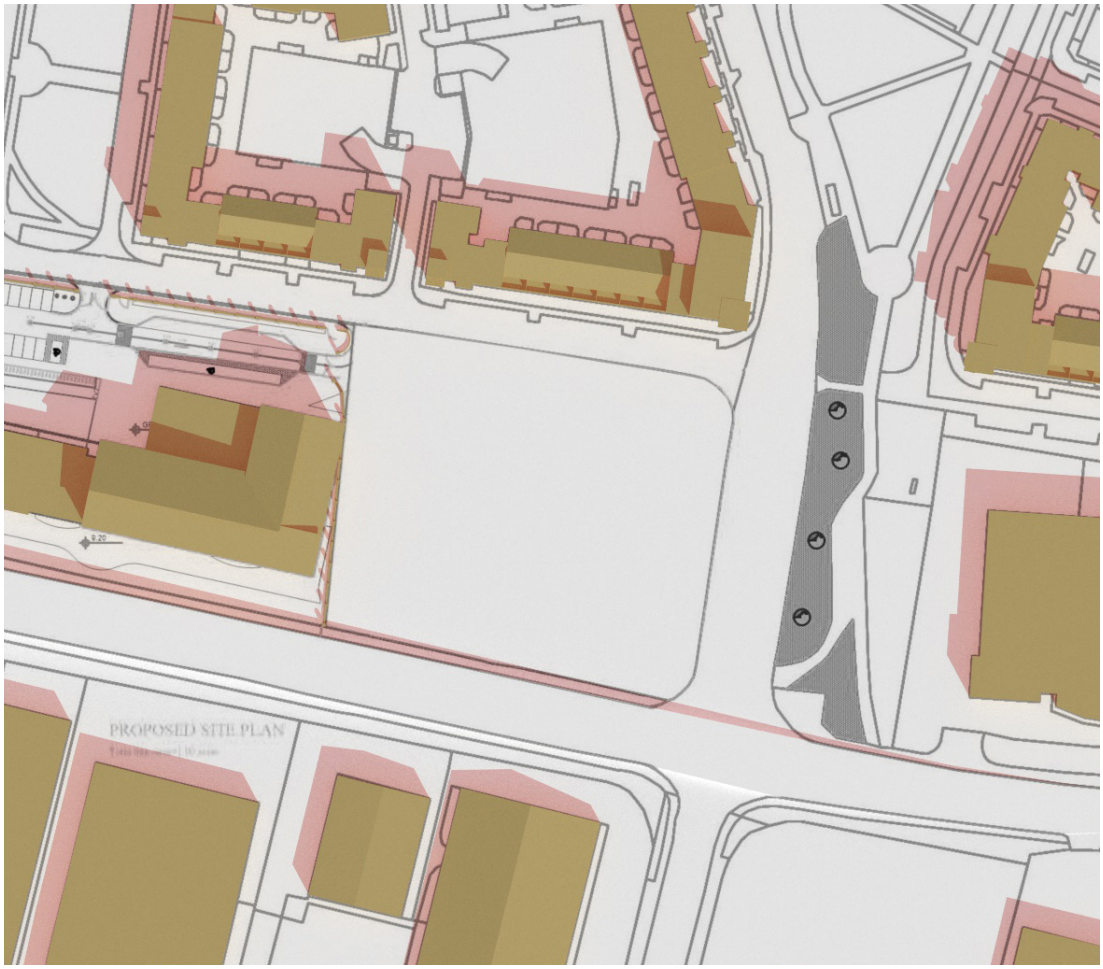
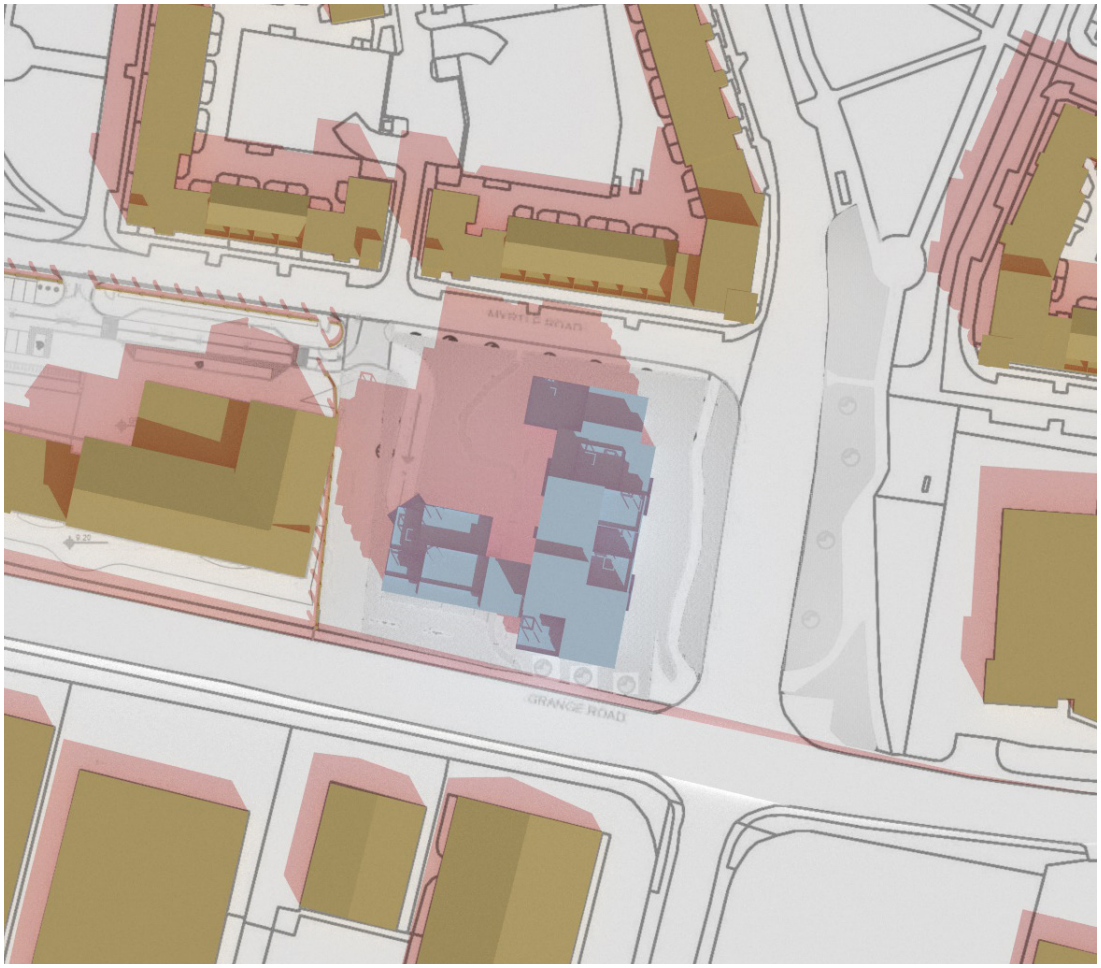


Figure 7: Shadow diagrams 21 March 09:00 UTC

N



Existing



Proposed

Figure 8: Shadow diagrams 21 March 11:00 UTC

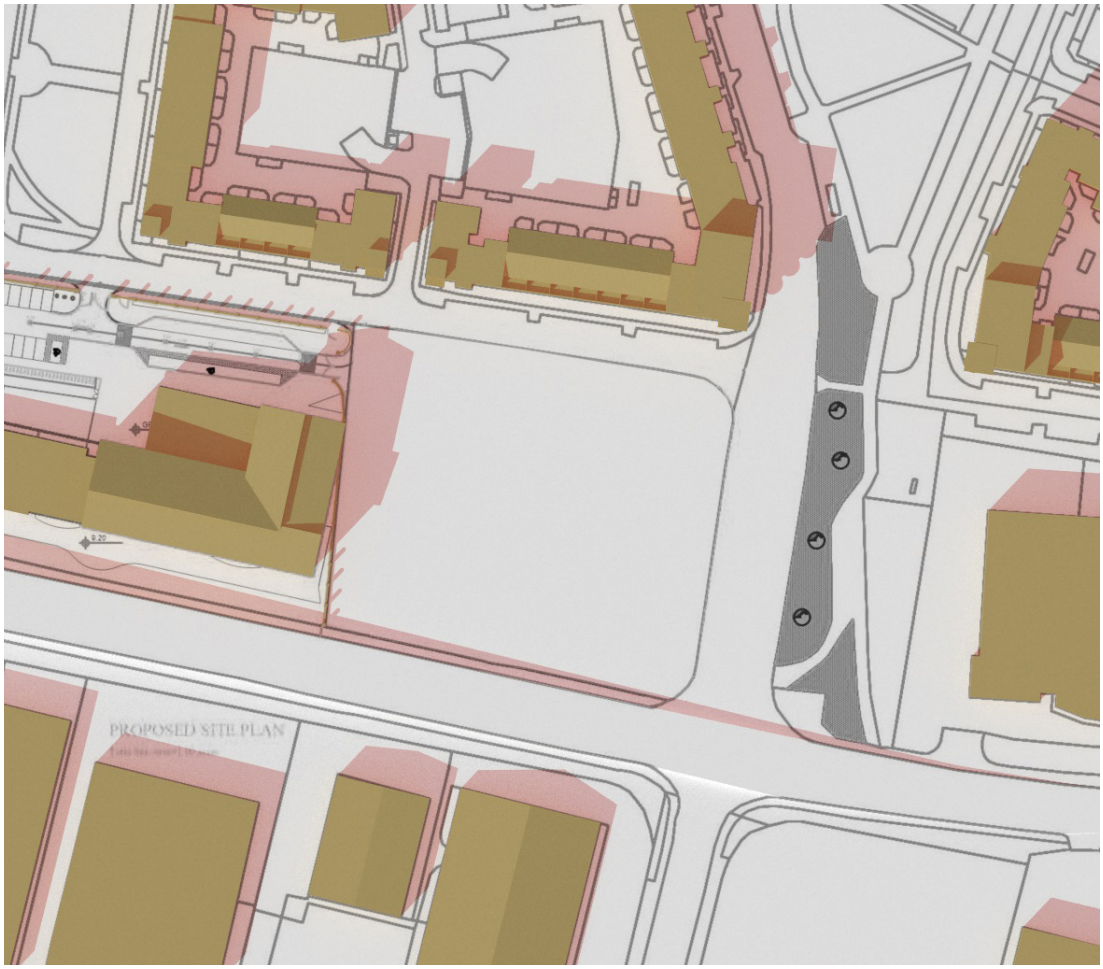
N

Existing

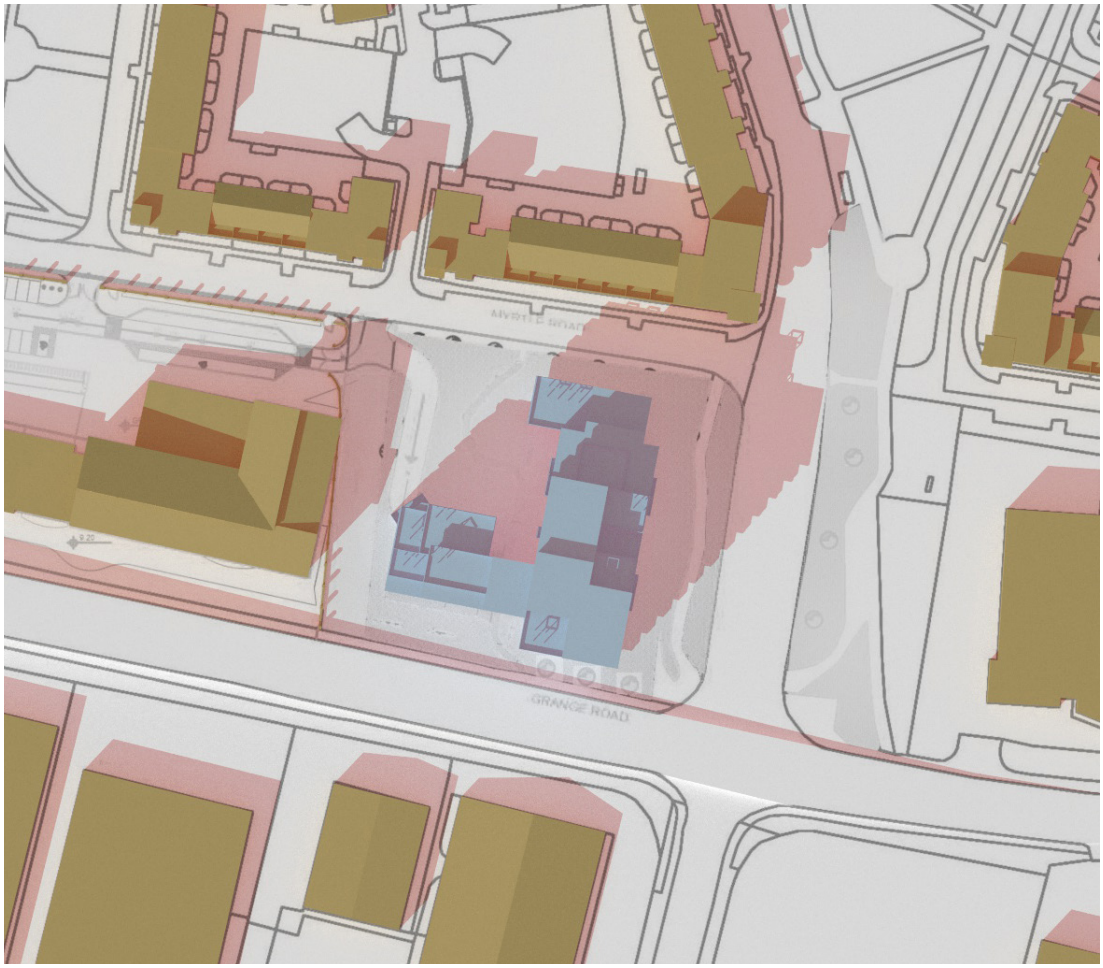
Proposed

Figure 9: Shadow diagrams 21 March 13:00 UTC

N



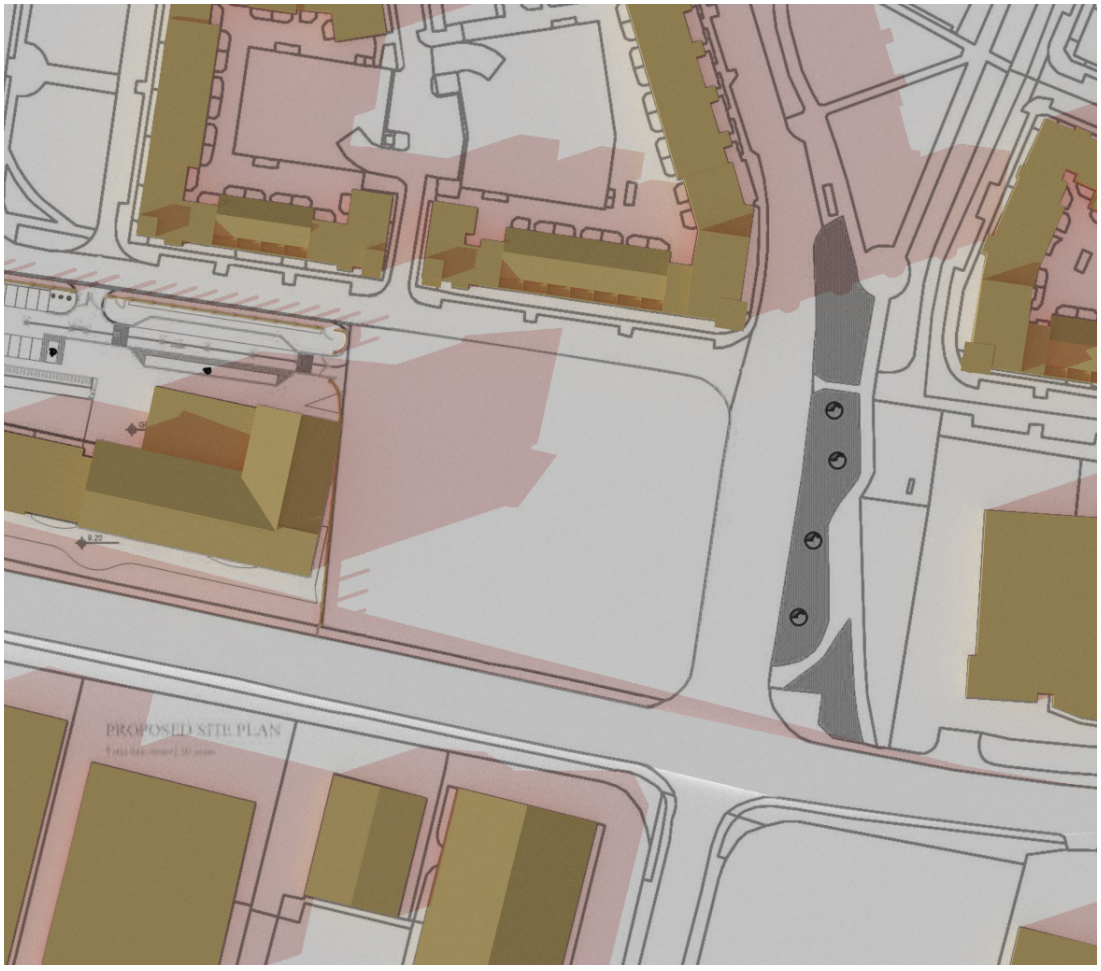
Existing



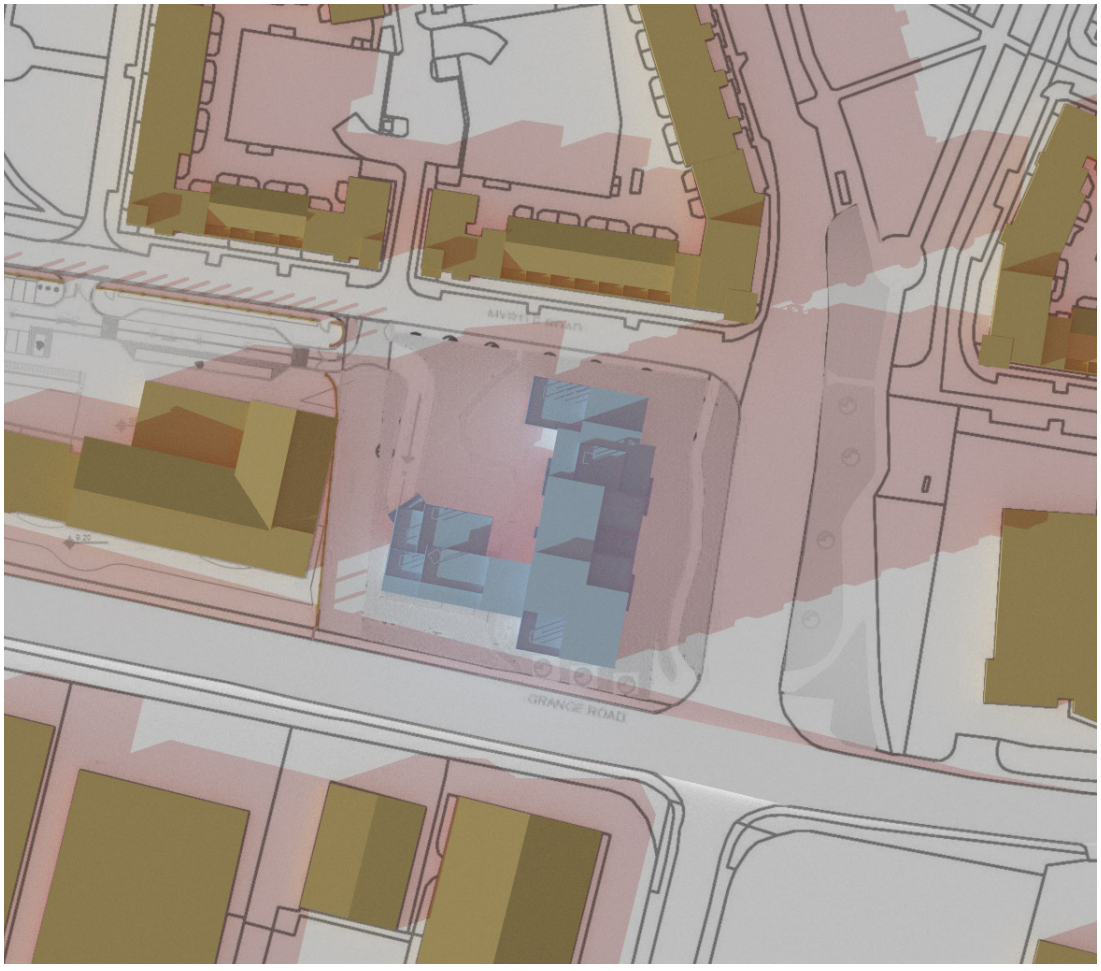
Proposed

Figure 10: Shadow diagrams 21 March 15:00 UTC

N



Existing



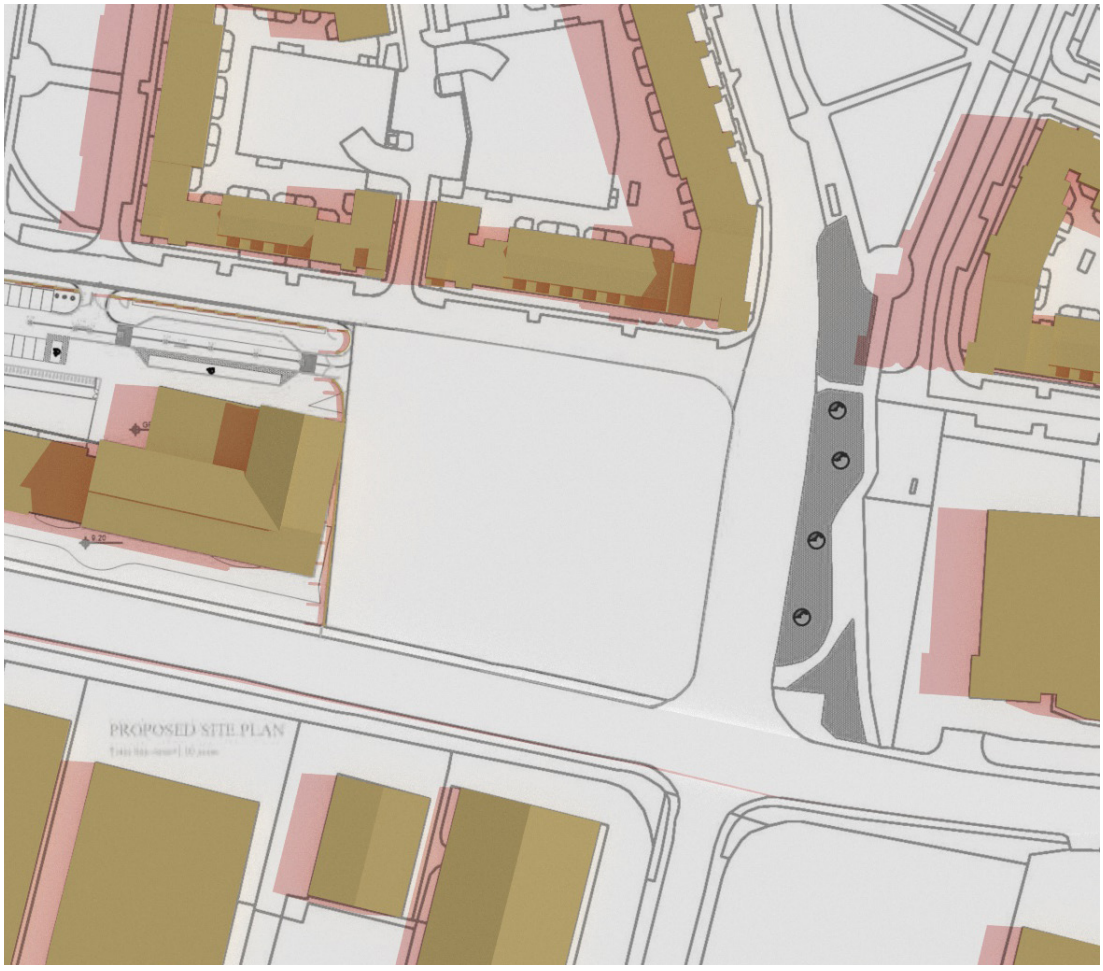
Proposed

Figure 11: Shadow diagrams 21 March 17:00 UTC

8.3 Shadow Casting diagrams June Solstice

N

Existing



Proposed

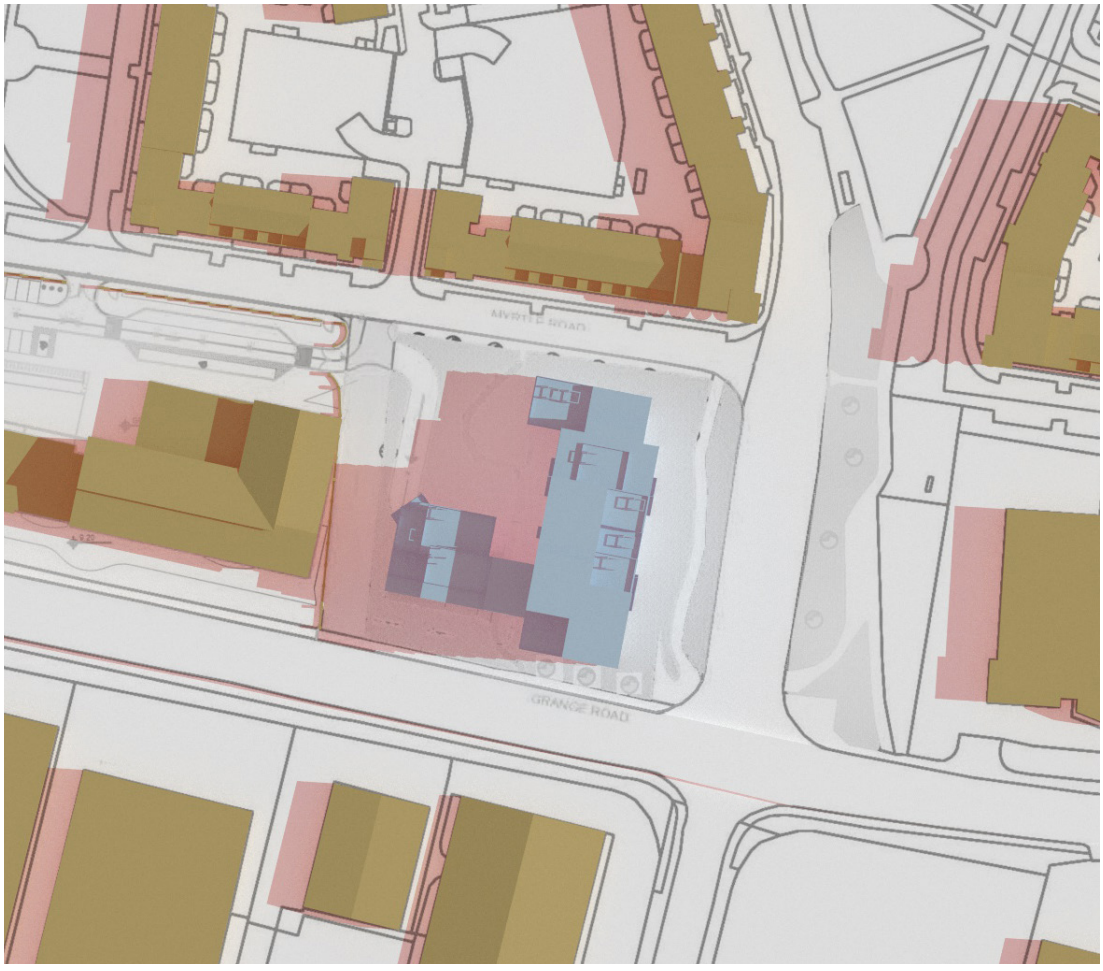
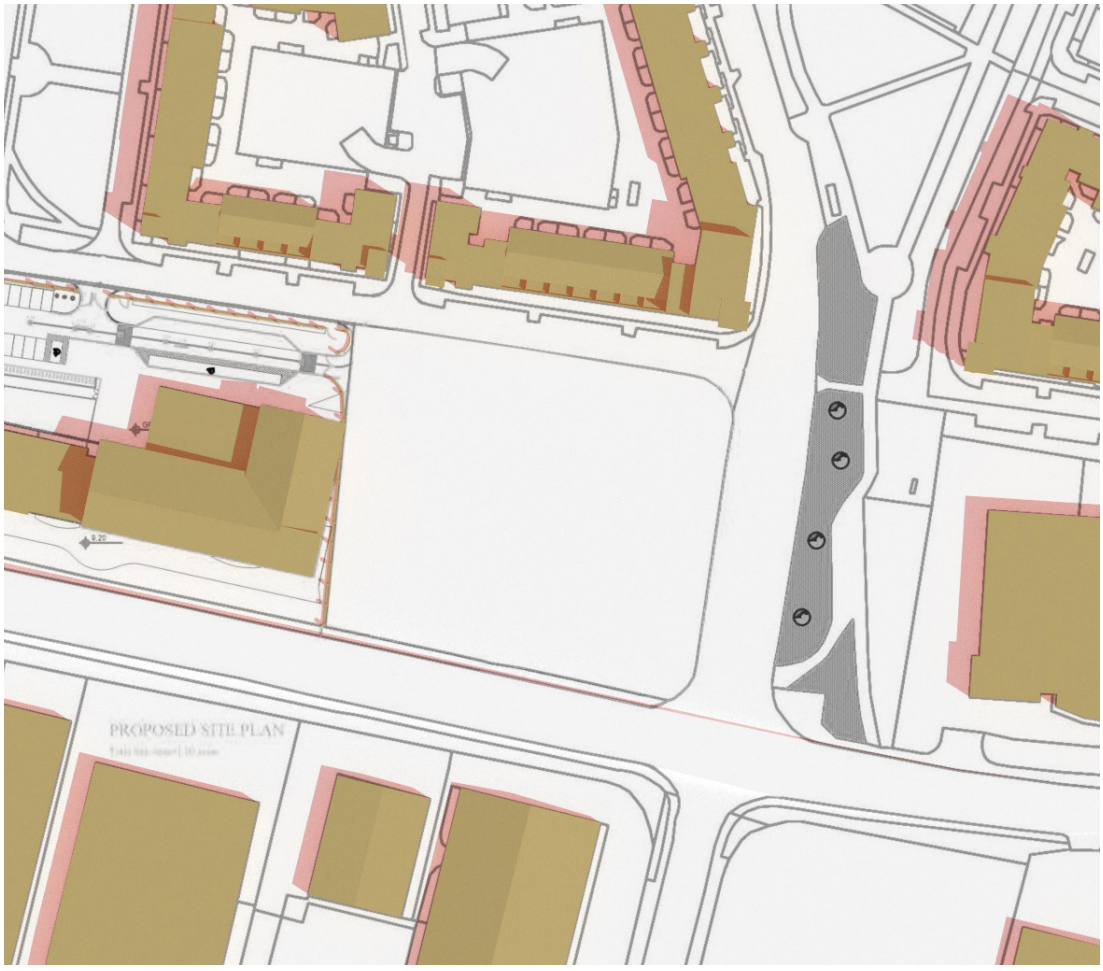
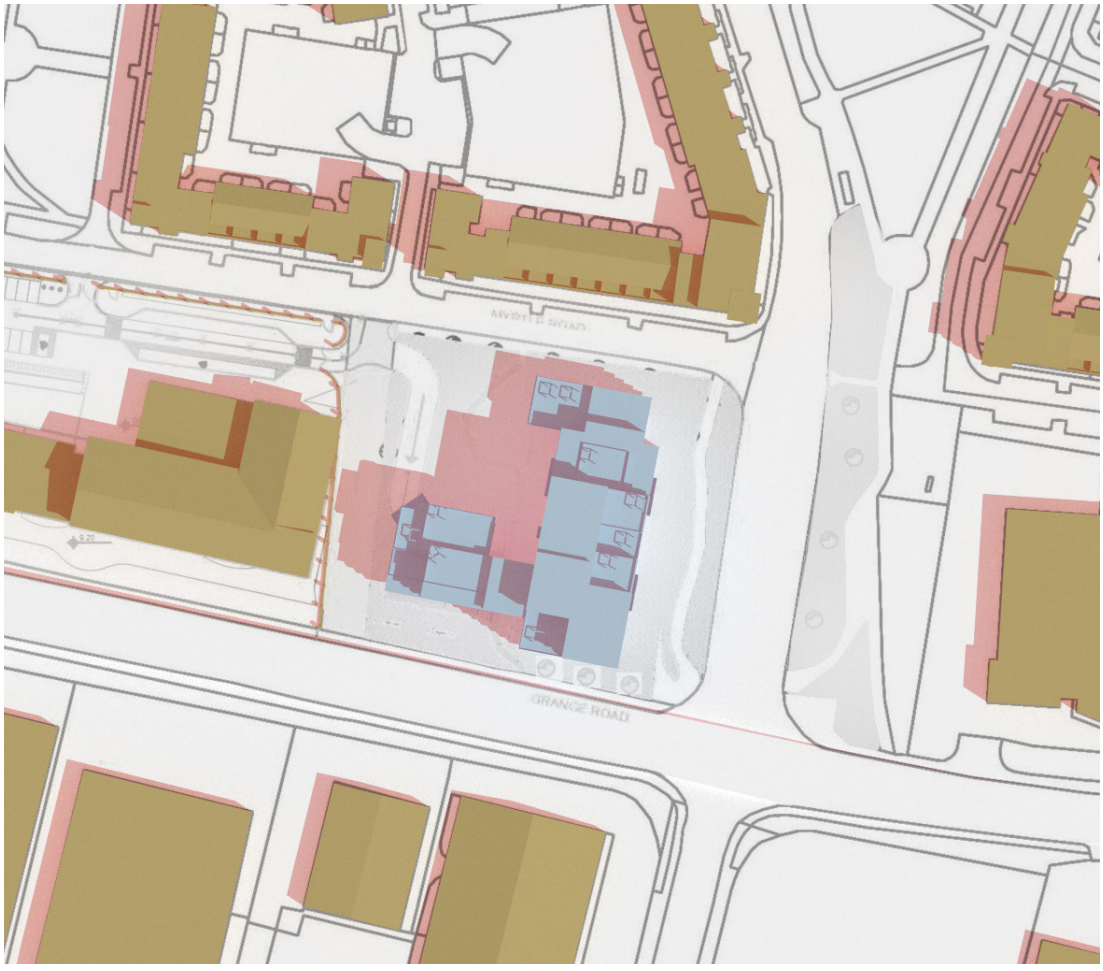


Figure 12: Shadow diagrams 21 June 09:00 UTC+1

N



Existing



Proposed

Figure 13: Shadow diagrams 21 June 11:00 UTC+1

N

Existing

Proposed

Figure 14: Shadow diagrams 21 June 13:00 UTC+1

N

Existing

Proposed

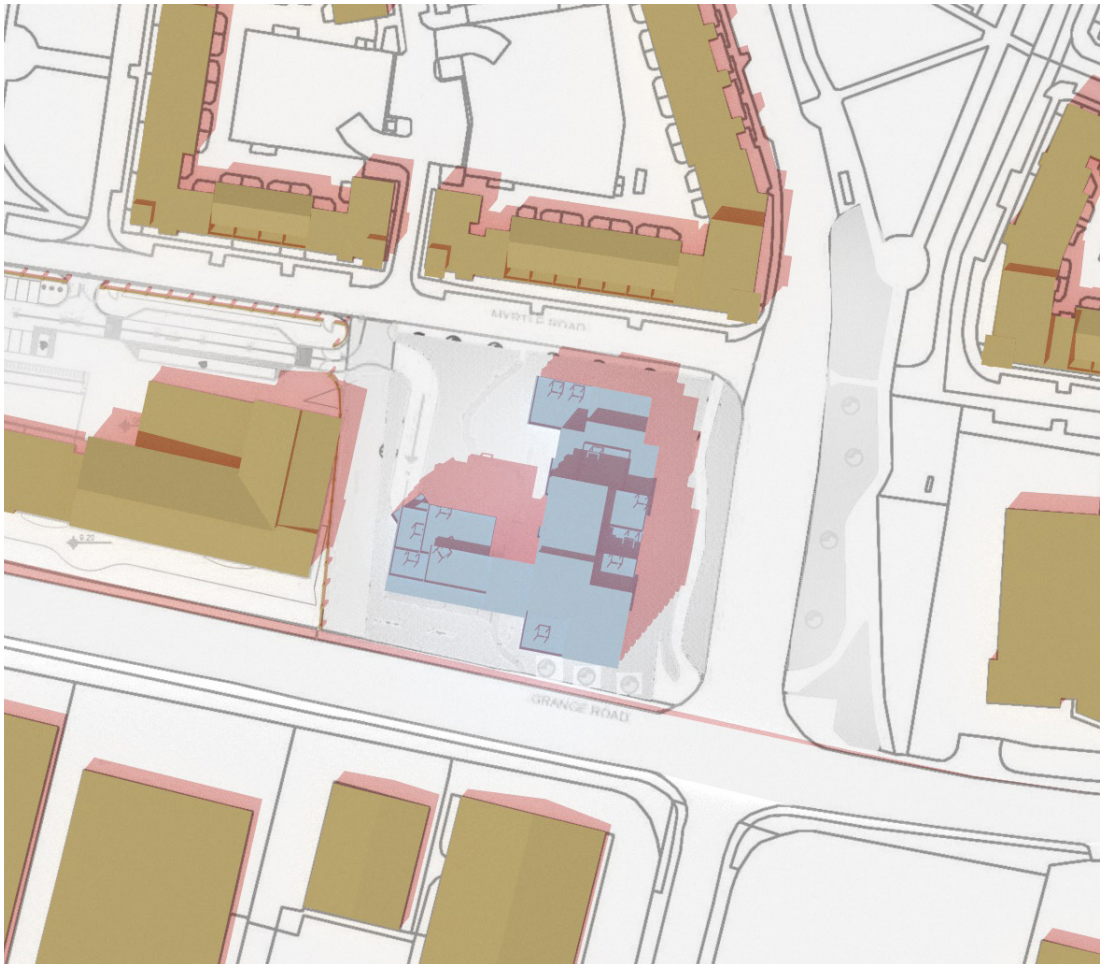
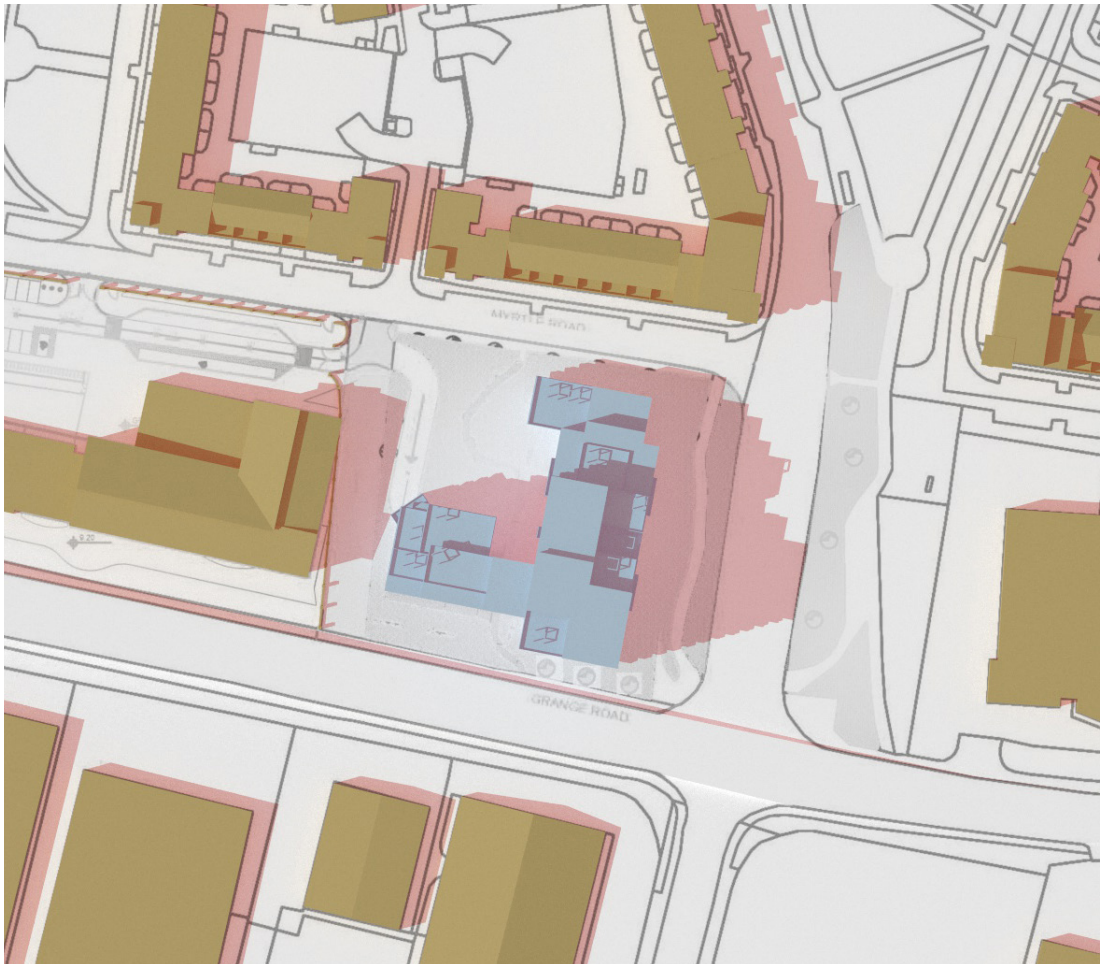


Figure 15: Shadow diagrams 21 June 15:00 UTC+1

N

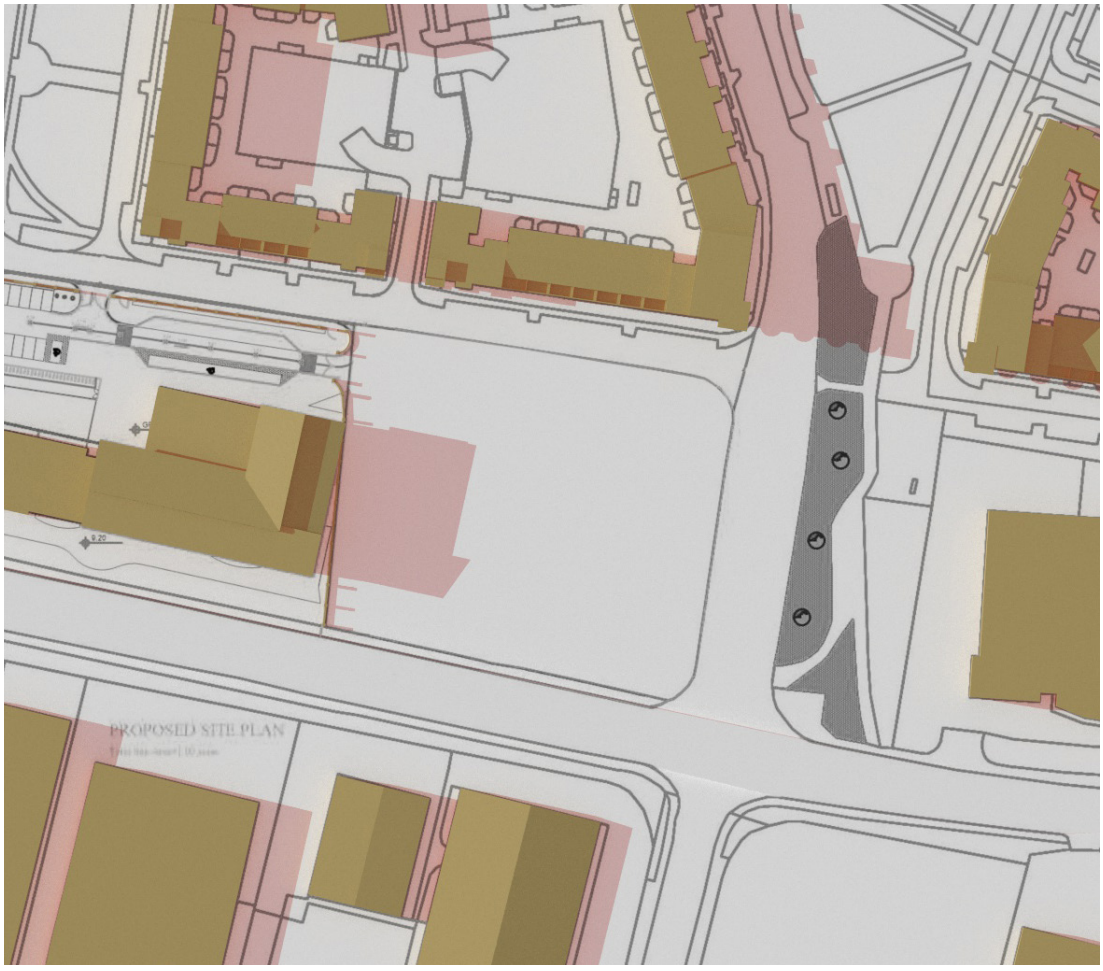
Existing



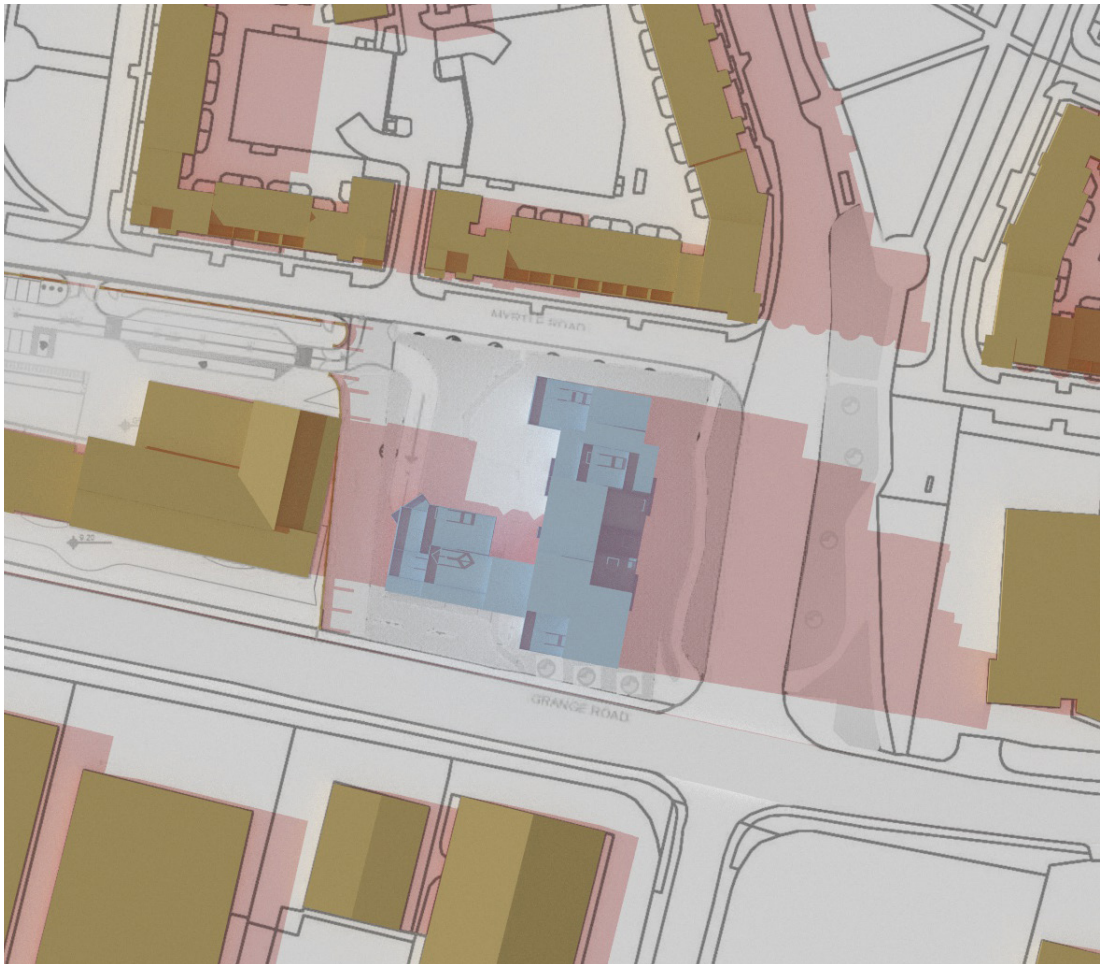
Proposed

Figure 16: Shadow diagrams 21 June 17:00 UTC+1

N



Existing



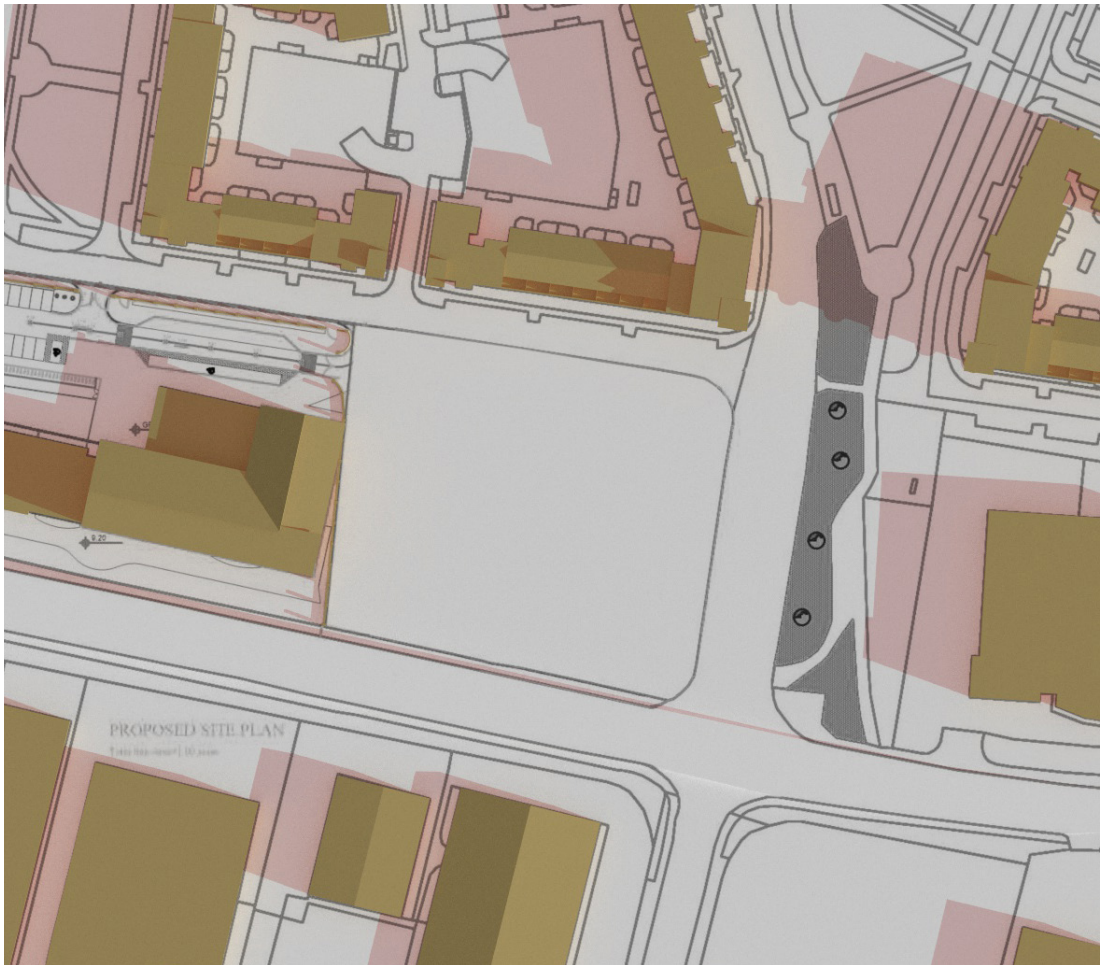
Proposed

Figure 17: Shadow diagrams 21 June 19:00 UTC+1

8.4 Shadow Casting diagrams September Equinox

N

Existing



Proposed

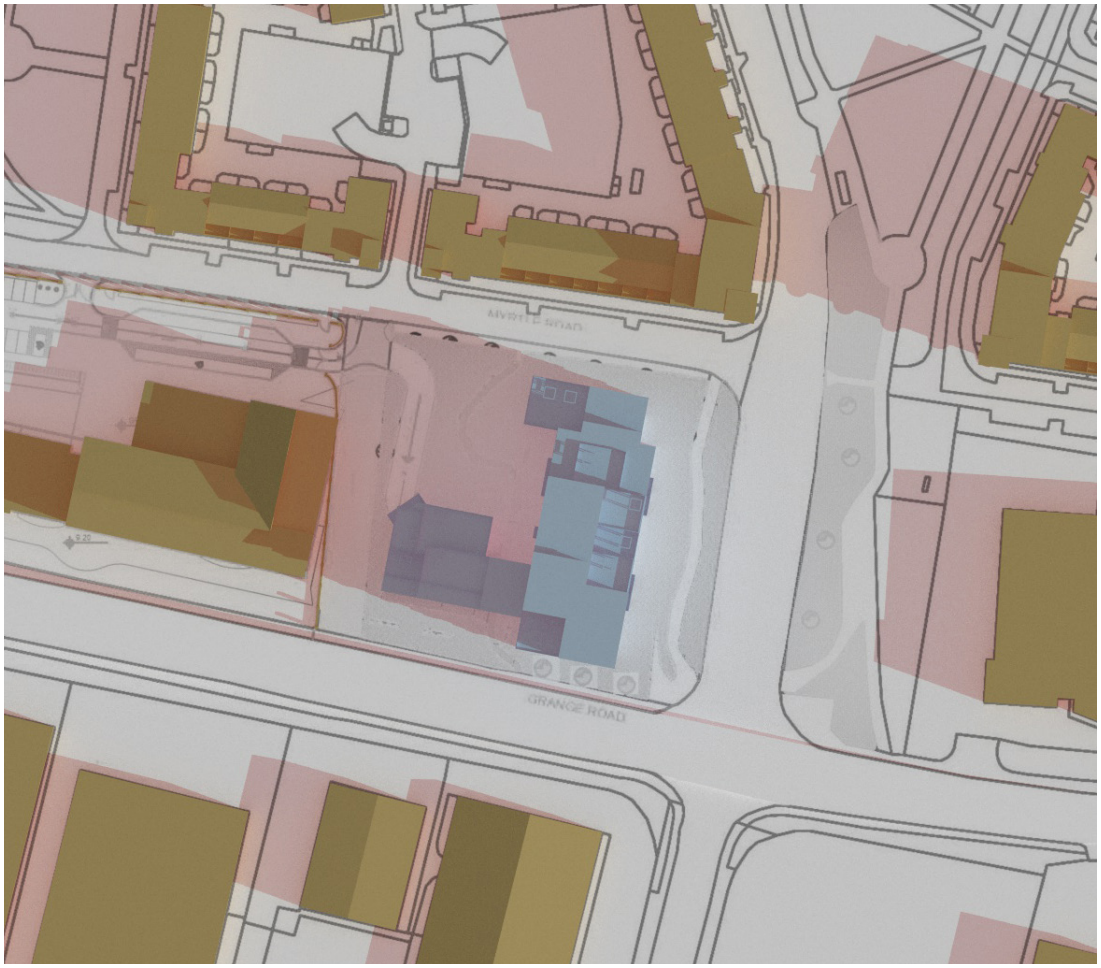
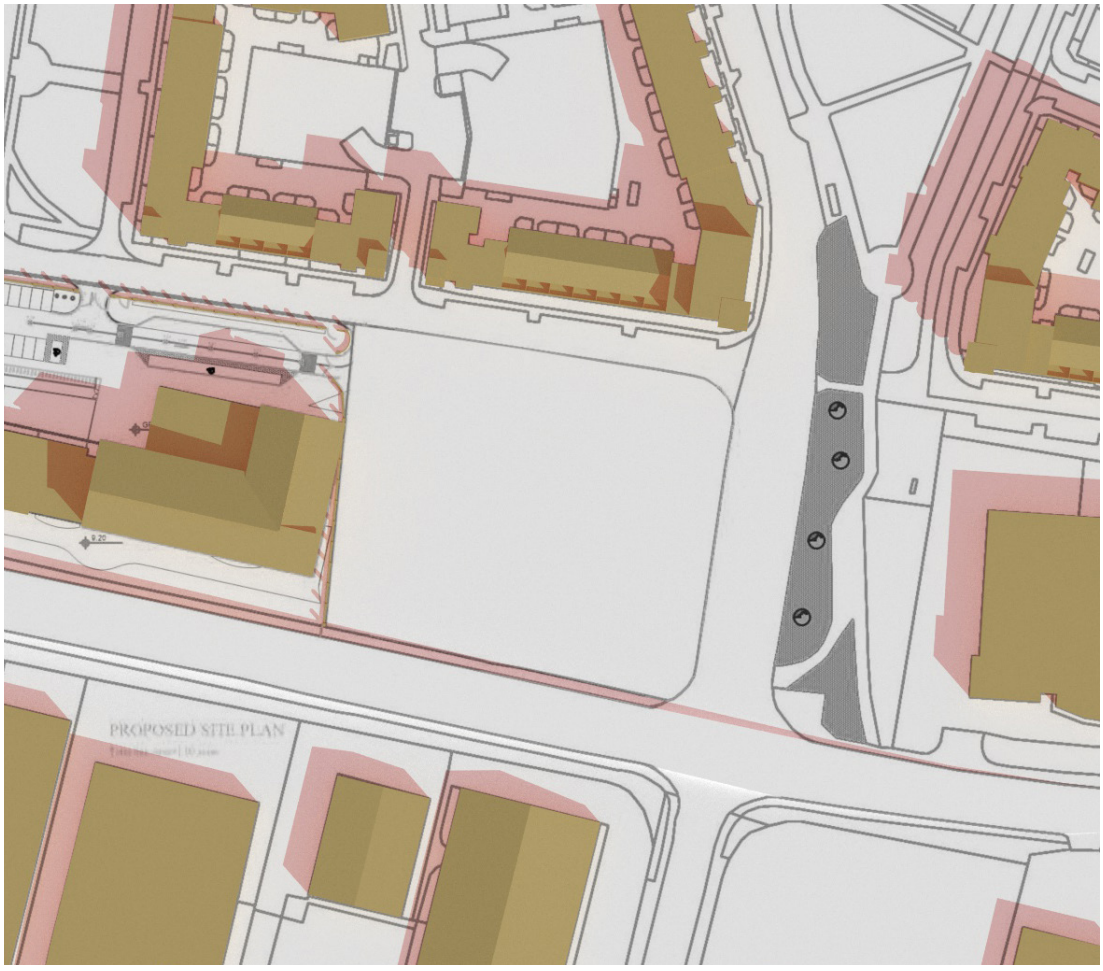


Figure 18: Shadow diagrams 21 September 09:00 UTC+1

N

Existing



Proposed

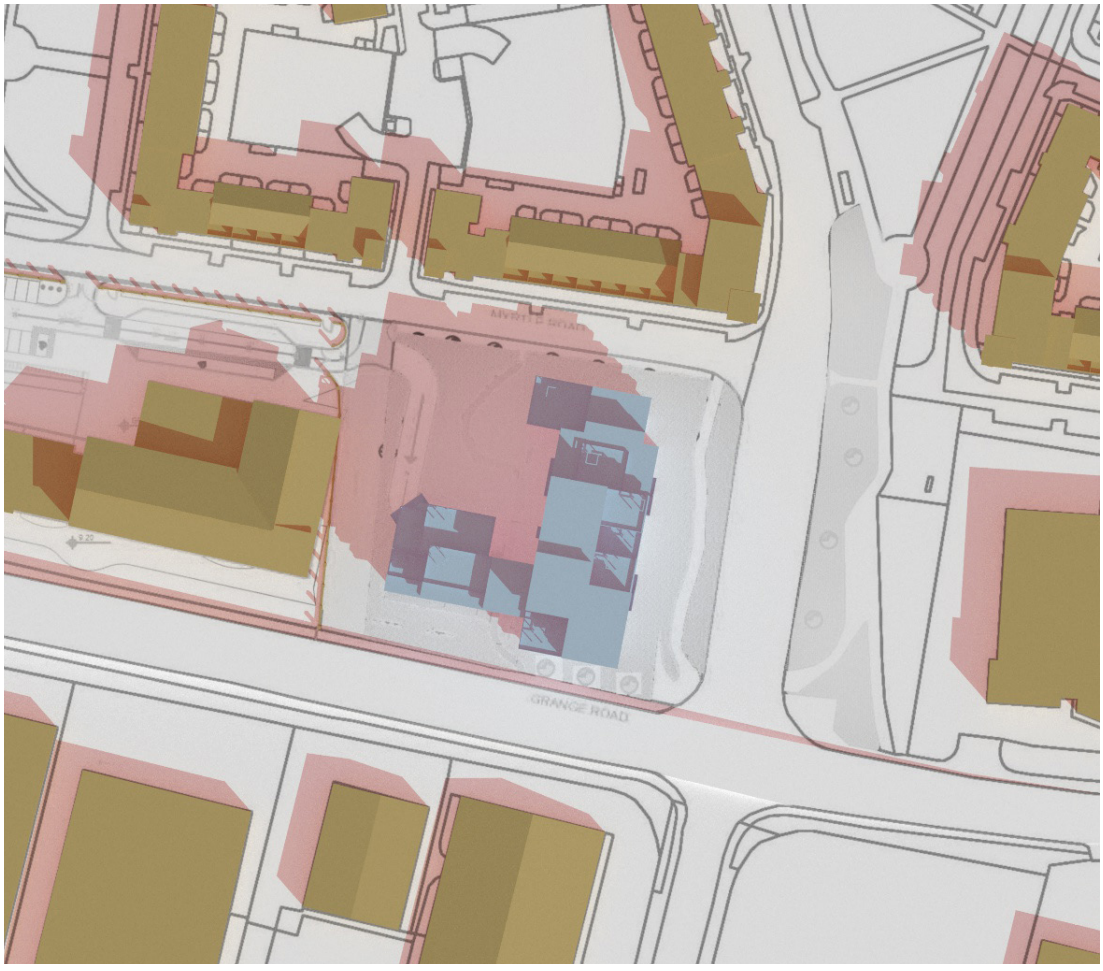


Figure 19: Shadow diagrams 21 September 11:00 UTC+1

N

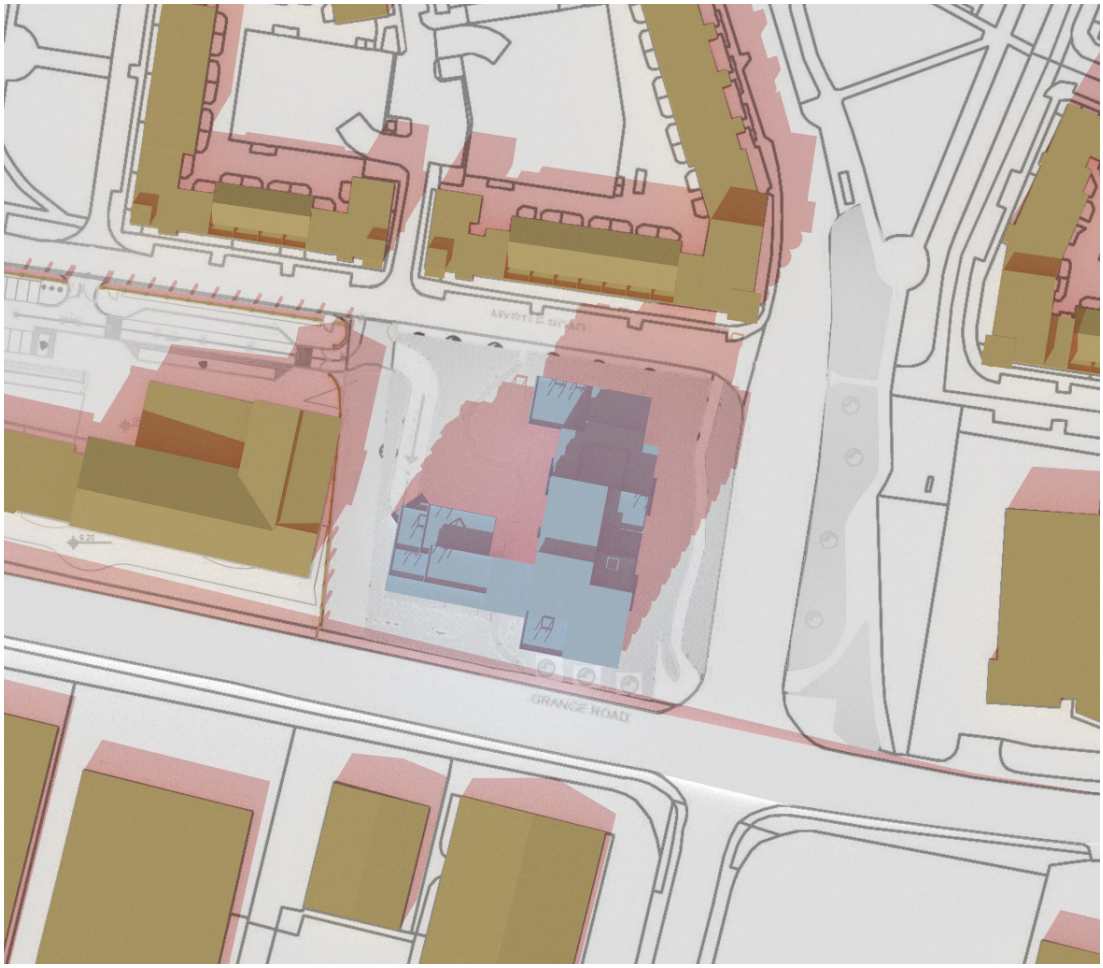
Existing

Proposed

Figure 20: Shadow diagrams 21 September 13:00 UTC+1

N

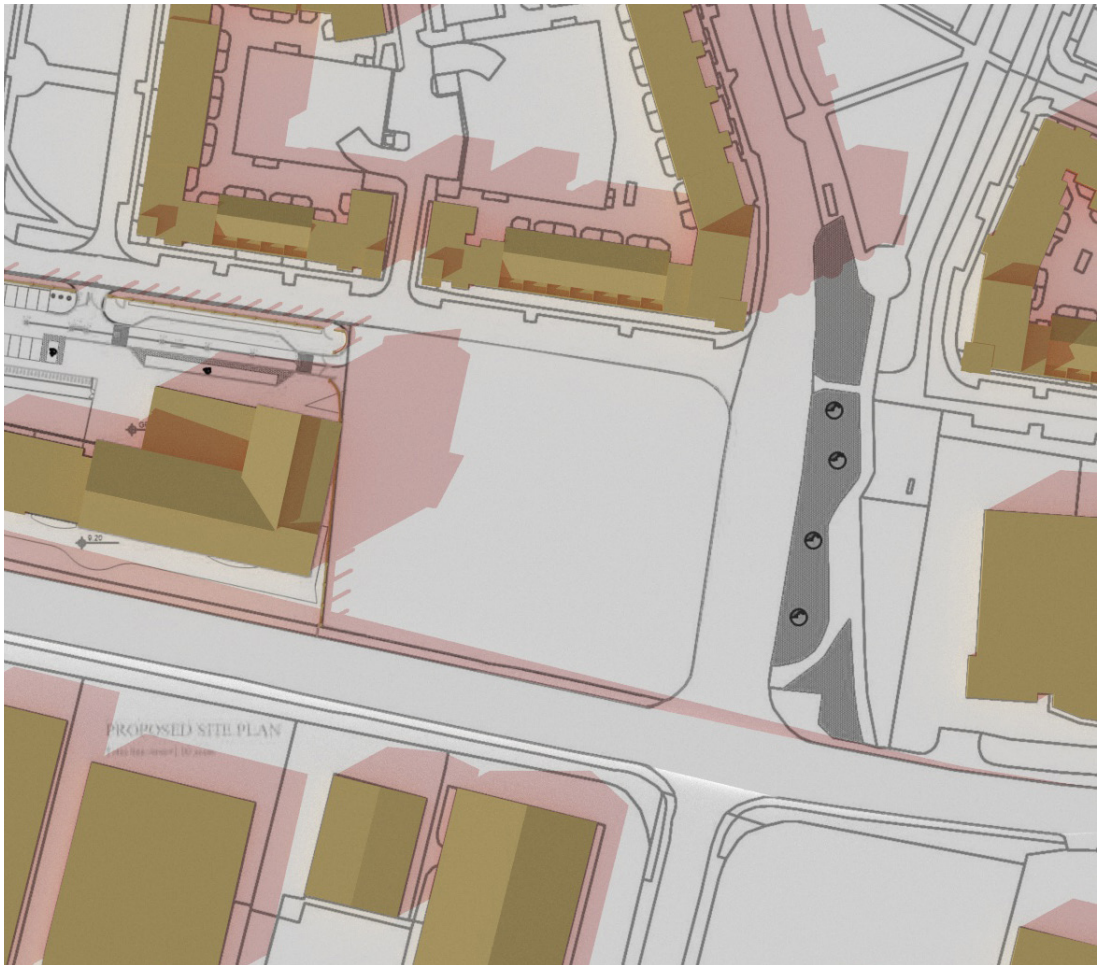
Existing



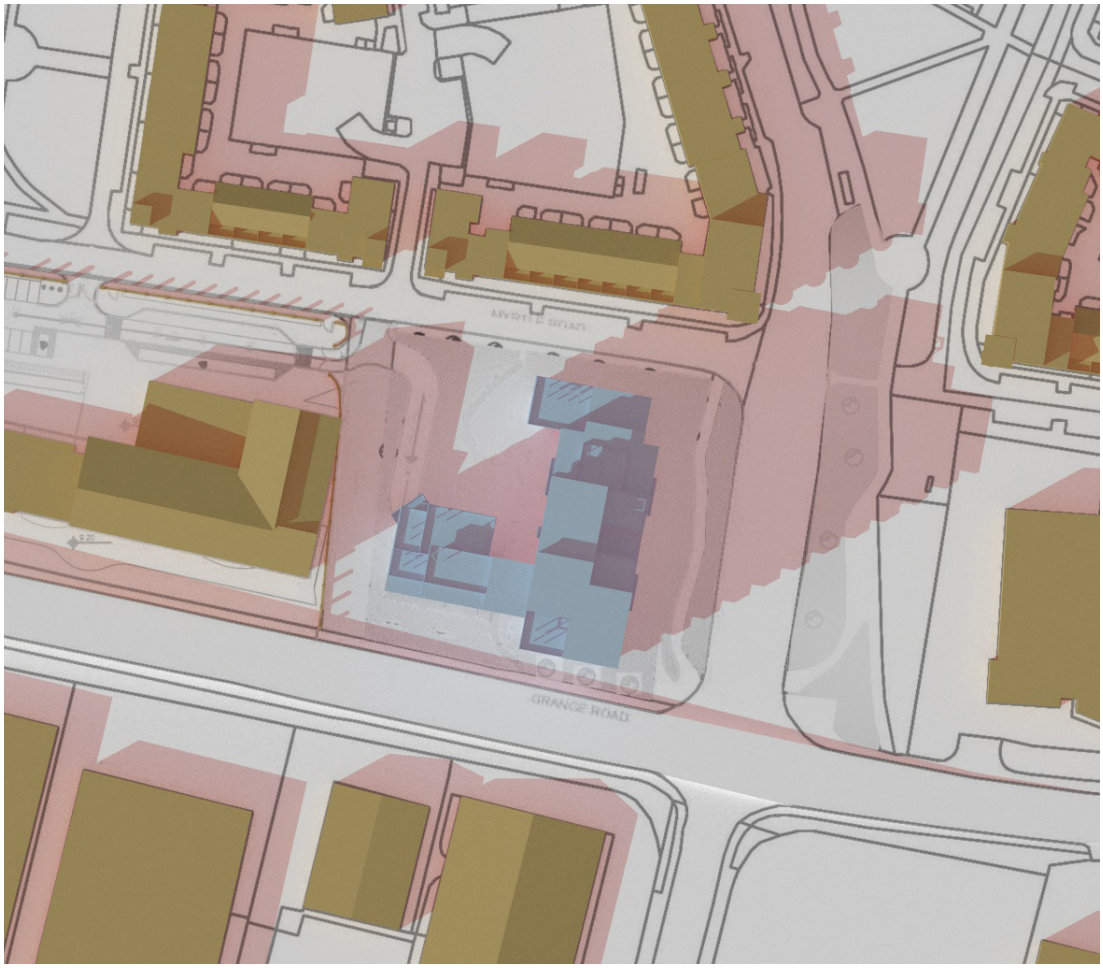
Proposed

Figure 21: Shadow diagrams 21 September 15:00 UTC+1

N



Existing



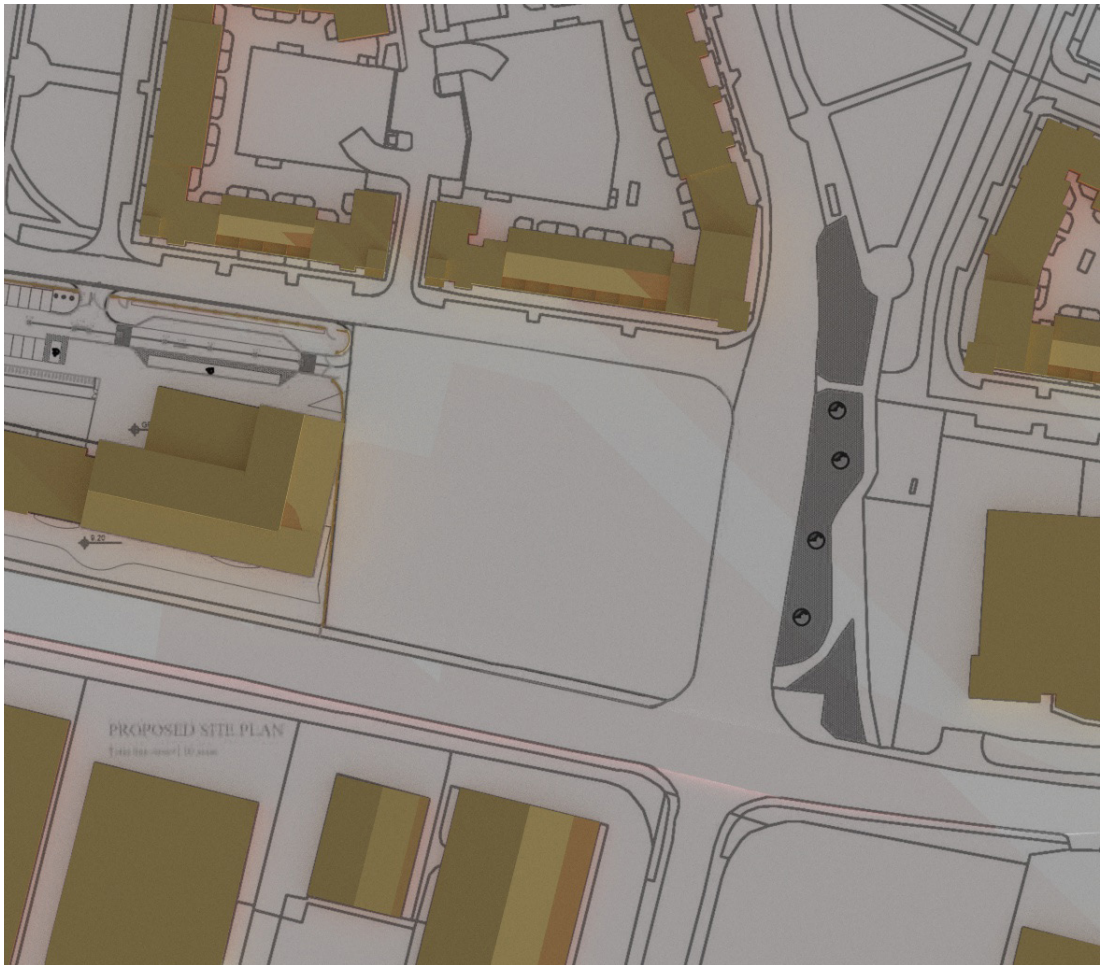
Proposed

Figure 22: Shadow diagrams 21 September 17:00 UTC+1

8.5 Shadow Casting diagrams December Solstice

N

Existing



Proposed

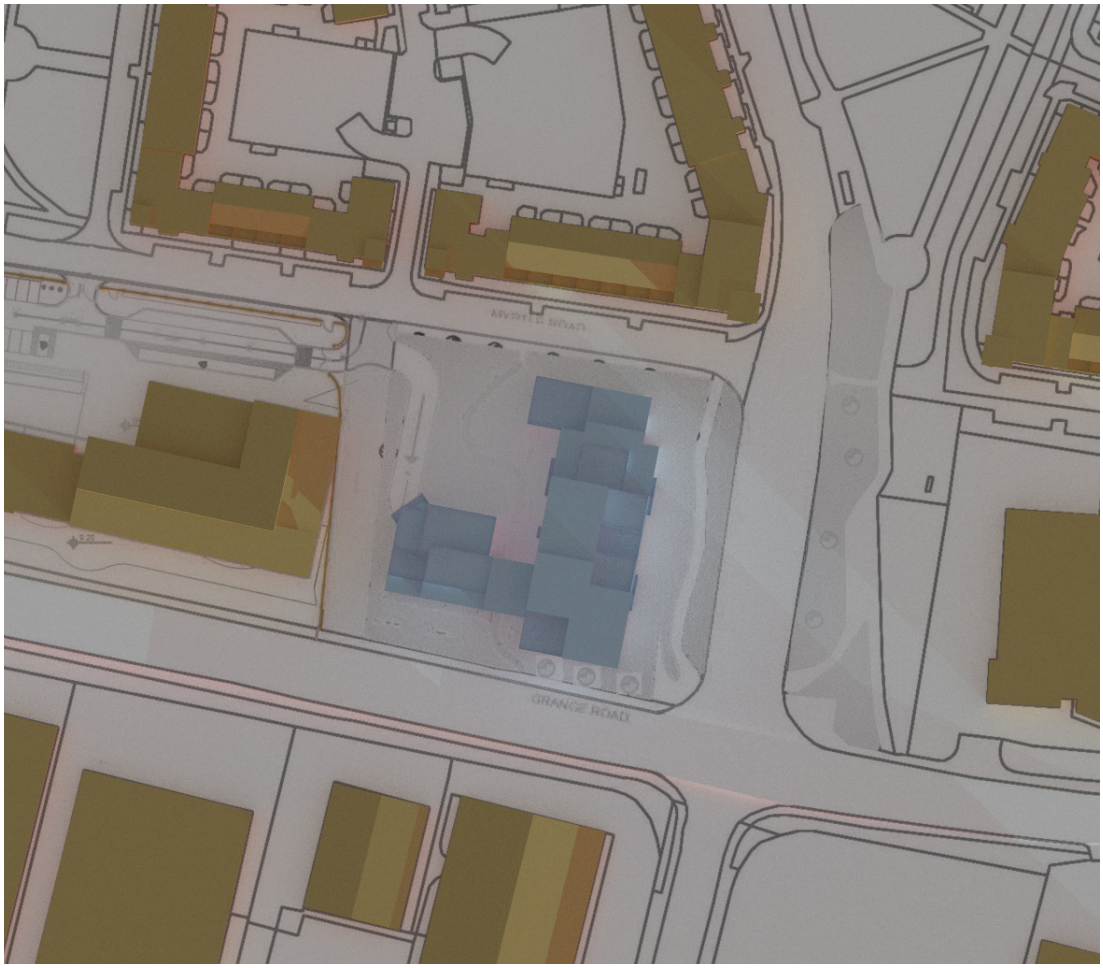
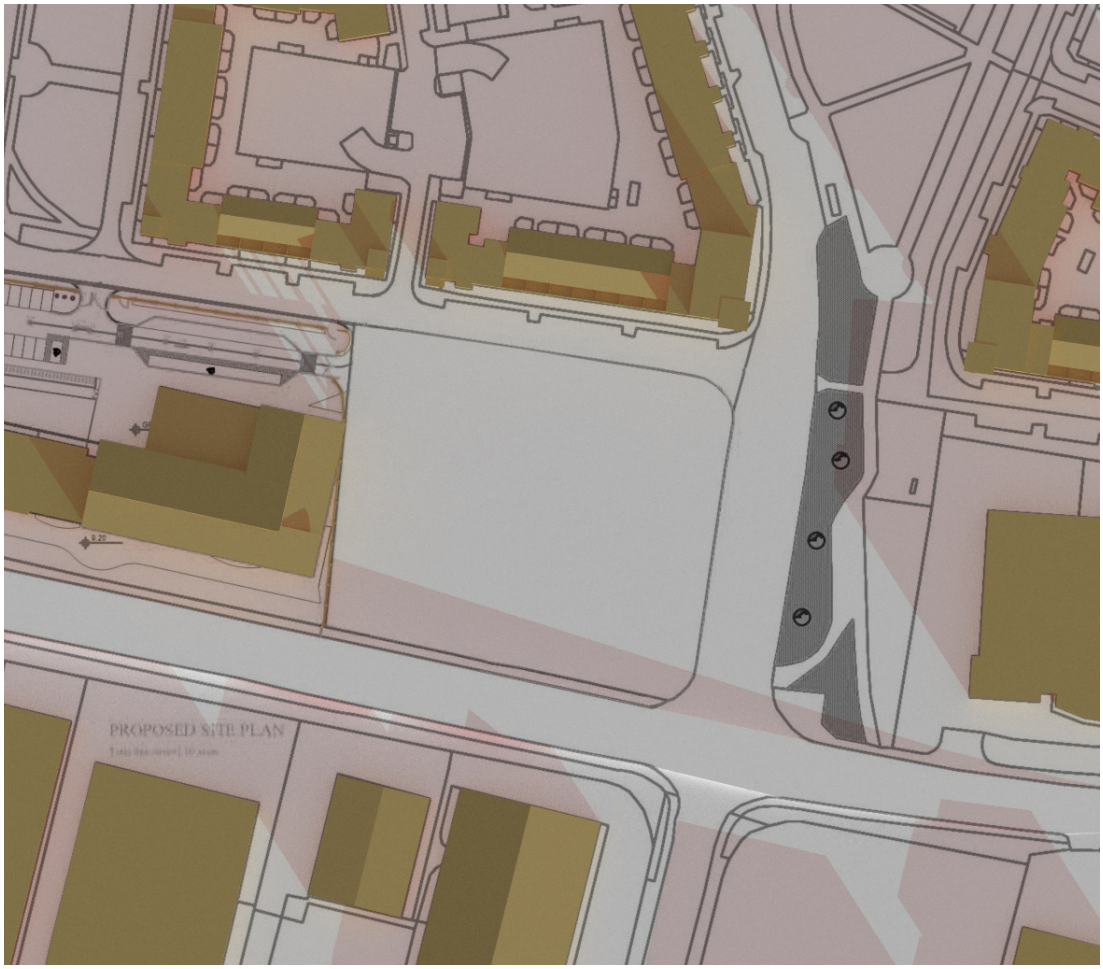
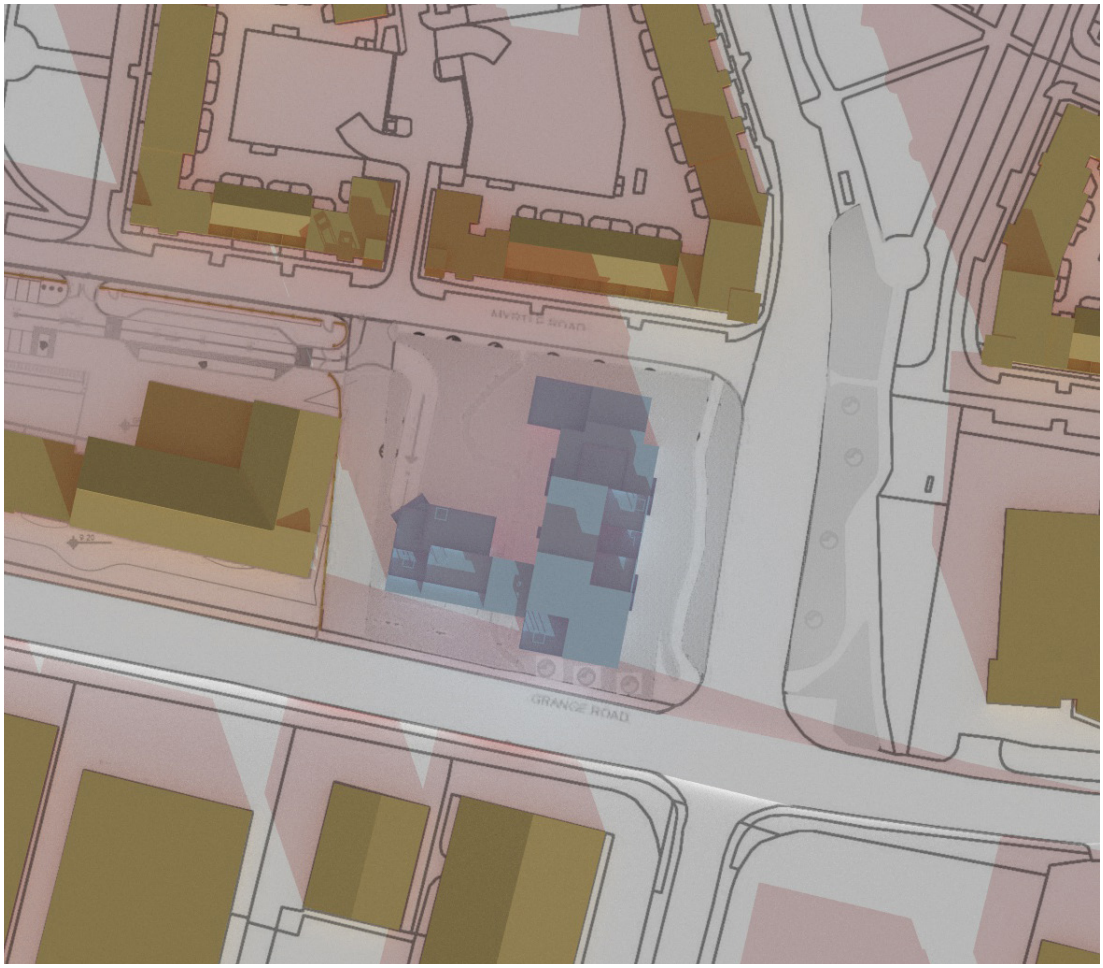


Figure 23: Shadow diagrams 21 December 09:00 UTC

N



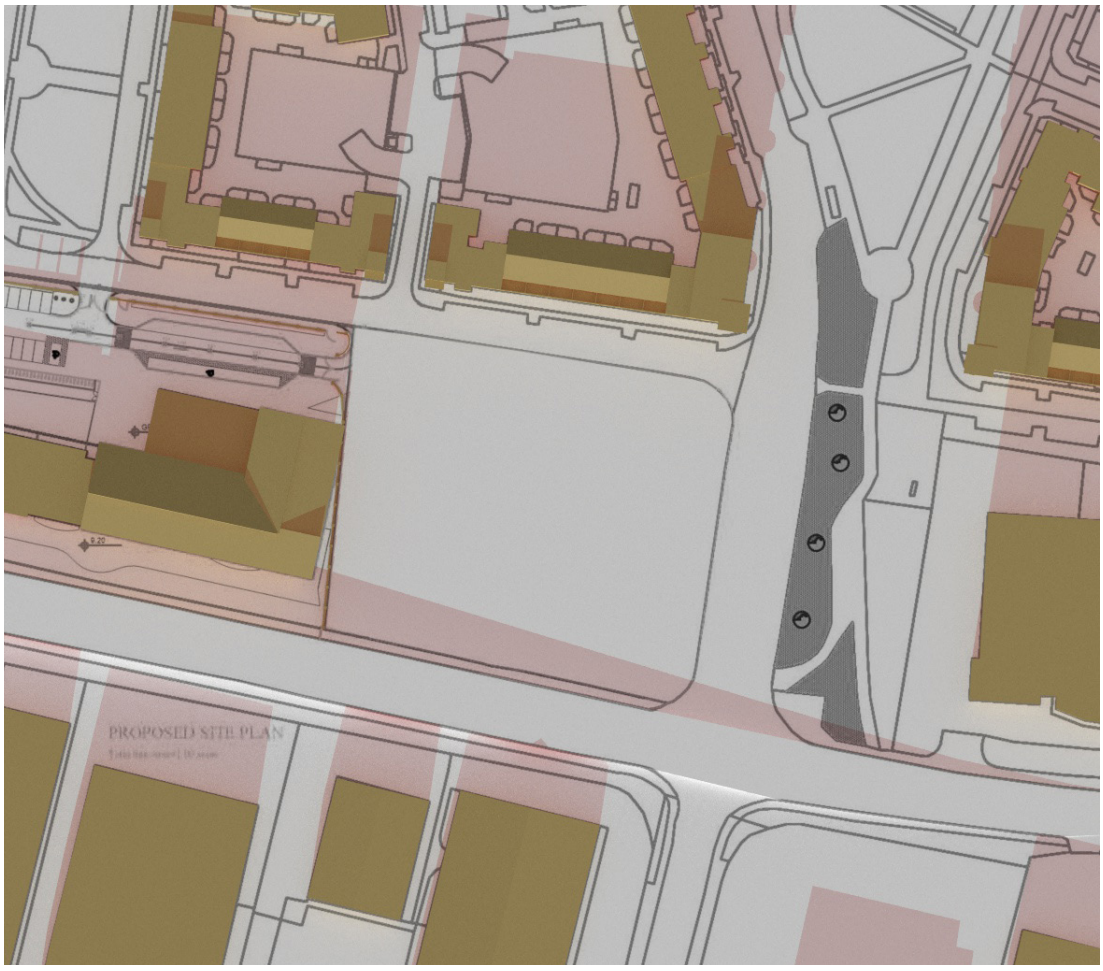
Existing



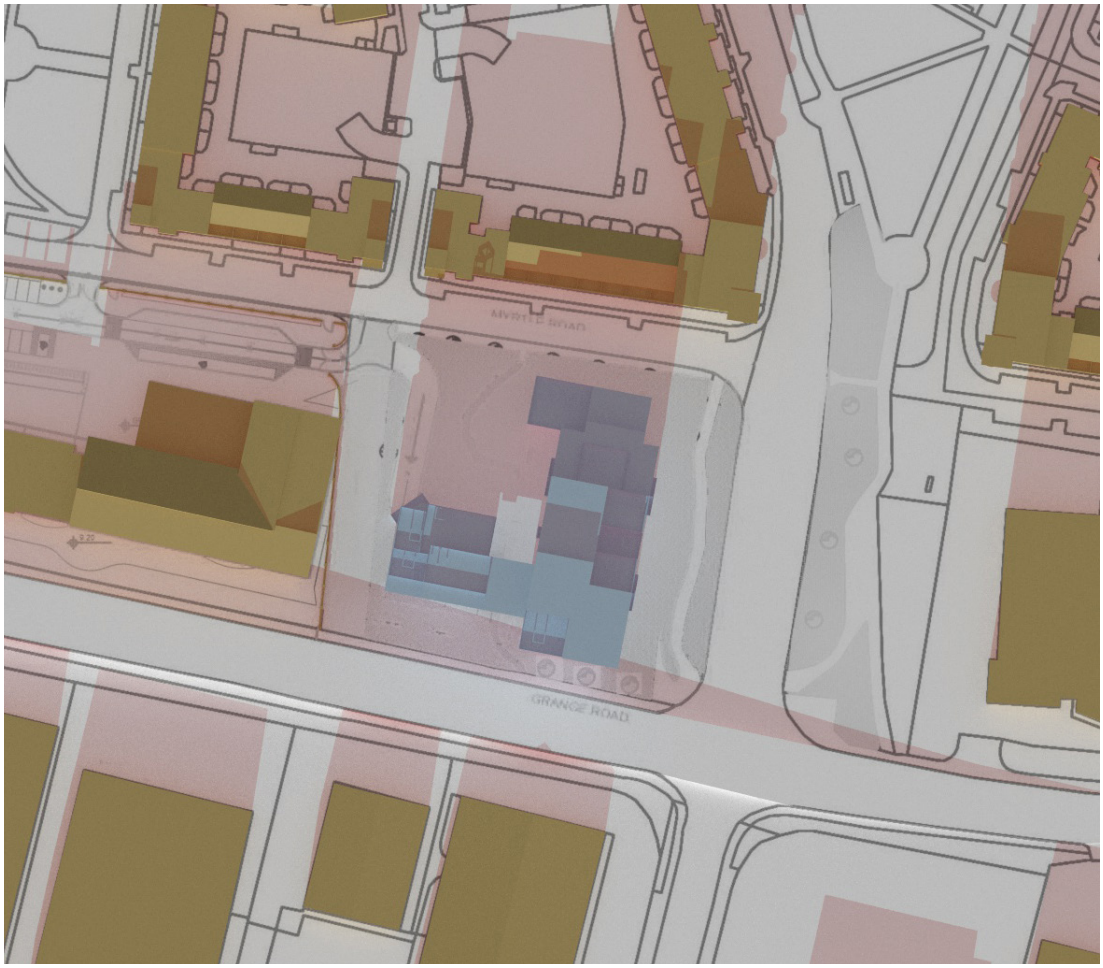
Proposed

Figure 24: Shadow diagrams 21 December 11:00 UTC

N



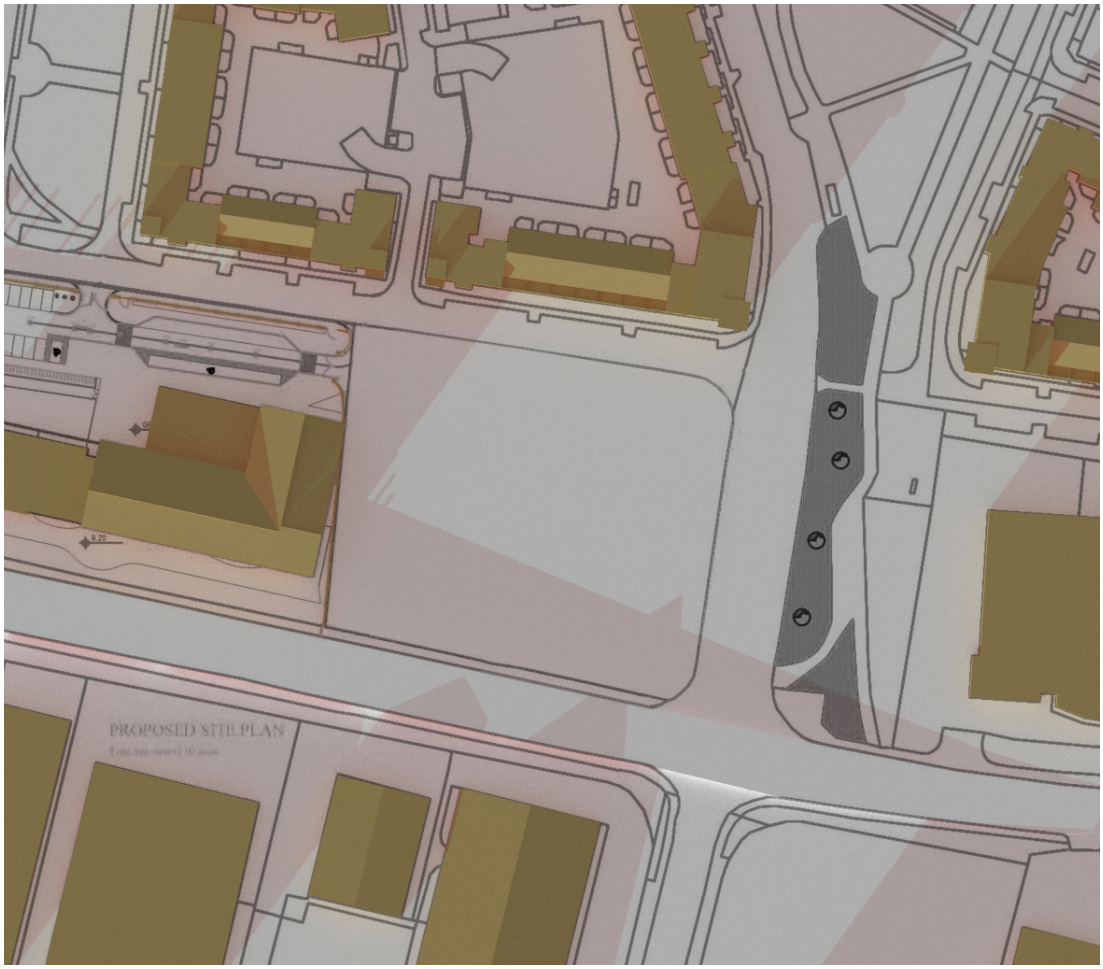
Existing



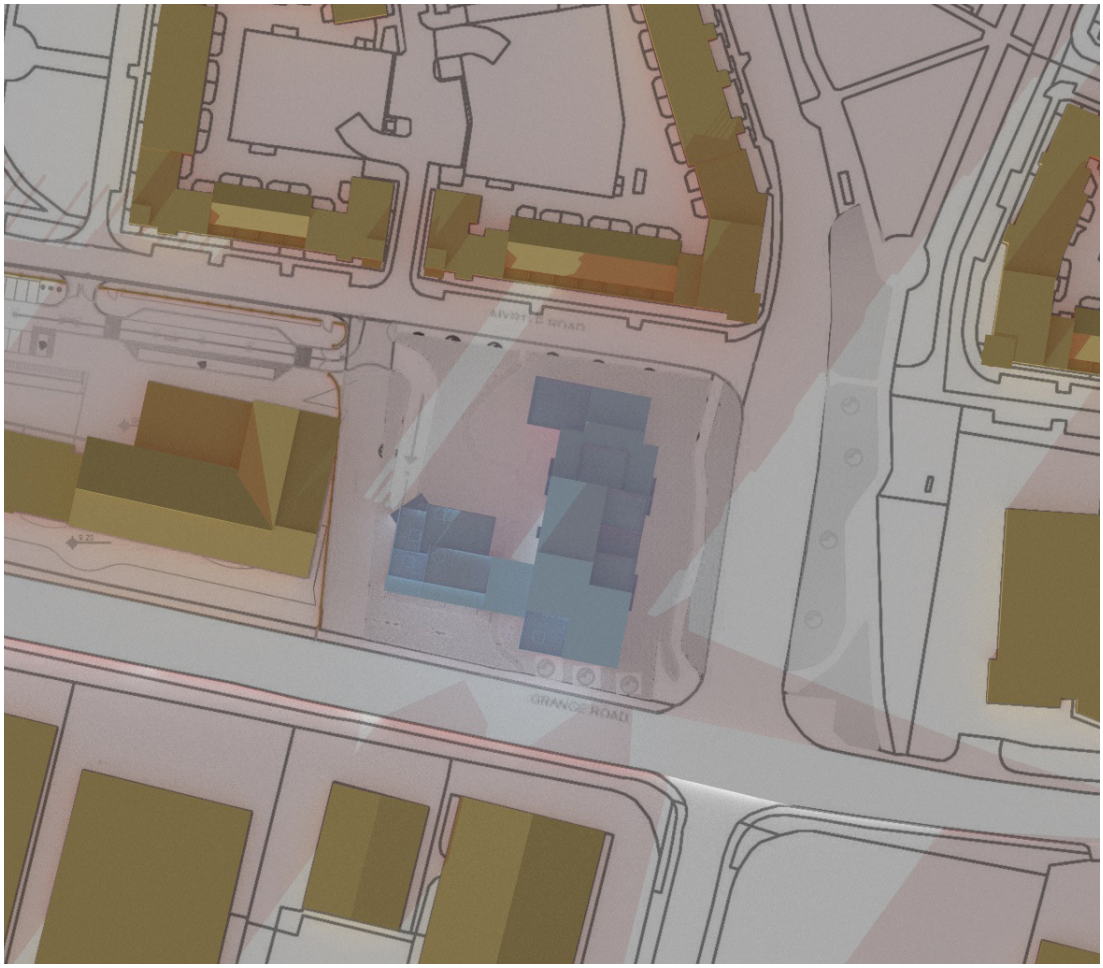
Proposed

Figure 25: Shadow diagrams 21 December 13:00 UTC

N



Existing



Proposed

Figure 26: 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.

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
A0-01.1	LKD	35.1	341	200	615	100.0%	Y
A0-01.2	Bed	10.7	80	100	1433	100.0%	Y
A0-01.3	Bed	9.3	76	100	1132	100.0%	Y
A0-01.4	Bed	11.0	92	100	558	100.0%	Y
A0-02.1	LKD	35.6	339	200	970	100.0%	Y
A0-02.2	Bed	8.1	66	100	669	100.0%	Y
A0-02.3	Bed	11.1	89	100	554	100.0%	Y
A0-03.1	LKD	32.3	288	200	160	19.8%	N
A0-03.2	Bed	11.0	88	100	899	100.0%	Y
A0-03.3	Bed	12.1	96	100	652	100.0%	Y
A0-04.1	LKD	32.3	288	200	342	52.4%	Y
A0-04.2	Bed	11.0	88	100	1701	100.0%	Y
A0-04.3	Bed	12.0	96	100	1615	100.0%	Y
A0-05.1	LKD	32.3	288	200	145	15.6%	N
A0-05.2	Bed	11.1	90	100	456	100.0%	Y
A0-05.3	Bed	12.1	96	100	350	100.0%	Y
A0-06.1	LKD	32.3	288	200	344	51.0%	Y
A0-06.2	Bed	11.1	89	100	2397	100.0%	Y
A0-06.3	Bed	11.9	90	100	1824	100.0%	Y
A0-07.1	Studio	34.0	324	200	128	12.7%	N
A0-08.1	LKD	32.3	288	200	378	56.9%	Y
A0-08.2	Bed	11.1	90	100	1120	100.0%	Y
A0-08.3	Bed	11.9	90	100	2083	100.0%	Y
A0-09.1	LKD	29.9	264	200	340	49.6%	N
A0-09.2	Bed	10.1	81	100	2177	100.0%	Y
A0-10.1	LKD	31.3	275	200	2013	100.0%	Y
A0-10.2	Bed	8.2	66	100	1587	100.0%	Y
A0-10.3	Bed	12.7	101	100	1210	100.0%	Y
A0-11.1	LKD	30.1	273	200	770	100.0%	Y
A0-11.2	Bed	8.3	64	100	2679	100.0%	Y
A0-11.3	Bed	13.0	102	100	1987	100.0%	Y
A1-01.1	LKD	35.1	341	200	759	100.0%	Y
A1-01.2	Bed	10.6	80	100	1616	100.0%	Y
A1-01.3	Bed	9.2	76	100	1301	100.0%	Y
A1-01.4	Bed	11.0	92	100	681	100.0%	Y
A1-02.1	LKD	35.6	339	200	1108	100.0%	Y
A1-02.2	Bed	8.1	66	100	815	100.0%	Y
A1-02.3	Bed	11.1	88	100	671	100.0%	Y
A1-03.1	LKD	32.3	288	200	188	25.7%	N
A1-03.2	Bed	10.9	88	100	1054	100.0%	Y
A1-03.3	Bed	12.1	96	100	767	100.0%	Y
A1-04.1	LKD	32.3	288	200	360	56.6%	Y
A1-04.2	Bed	10.9	88	100	1830	100.0%	Y
A1-04.3	Bed	12.1	96	100	1828	100.0%	Y
A1-05.1	LKD	32.3	288	200	169	22.2%	N
A1-05.2	Bed	11.0	88	100	532	100.0%	Y
A1-05.3	Bed	12.1	96	100	408	100.0%	Y
A1-06.1	LKD	32.3	288	200	360	56.6%	Y
A1-06.2	Bed	11.0	88	100	2228	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
A1-06.3	Bed	11.7	96	100	1674	100.0%	Y
A1-07.1	Studio	34.0	324	200	151	17.0%	N
A1-08.1	LKD	32.3	288	200	393	63.9%	Y
A1-08.2	Bed	11.0	88	100	1208	100.0%	Y
A1-08.3	Bed	11.7	96	100	1908	100.0%	Y
A1-09.1	LKD	29.9	264	200	353	55.7%	Y
A1-09.2	Bed	10.1	81	100	2347	100.0%	Y
A1-10.1	LKD	31.3	275	200	1833	100.0%	Y
A1-10.2	Bed	8.2	66	100	1706	100.0%	Y
A1-10.3	Bed	12.7	101	100	1312	100.0%	Y
A1-11.1	LKD	30.1	273	200	749	100.0%	Y
A1-11.2	Bed	8.2	64	100	3107	100.0%	Y
A1-11.3	Bed	12.9	100	100	2314	100.0%	Y
A2-01.1	LKD	35.1	341	200	832	100.0%	Y
A2-01.2	Bed	10.6	80	100	1689	100.0%	Y
A2-01.3	Bed	9.2	76	100	1278	100.0%	Y
A2-01.4	Bed	11.0	92	100	743	100.0%	Y
A2-02.1	LKD	35.6	339	200	1171	100.0%	Y
A2-02.2	Bed	8.1	66	100	889	100.0%	Y
A2-02.3	Bed	11.1	88	100	729	100.0%	Y
A2-03.1	LKD	32.3	288	200	207	28.8%	N
A2-03.2	Bed	10.9	88	100	1145	100.0%	Y
A2-03.3	Bed	12.1	96	100	830	100.0%	Y
A2-04.1	LKD	32.3	288	200	369	60.8%	Y
A2-04.2	Bed	10.9	88	100	1865	100.0%	Y
A2-04.3	Bed	12.1	96	100	1889	100.0%	Y
A2-05.1	LKD	32.3	288	200	191	29.9%	N
A2-05.2	Bed	11.0	88	100	593	100.0%	Y
A2-05.3	Bed	12.1	96	100	451	100.0%	Y
A2-06.1	LKD	32.3	288	200	371	59.4%	Y
A2-06.2	Bed	11.0	88	100	2236	100.0%	Y
A2-06.3	Bed	11.7	96	100	1675	100.0%	Y
A2-07.1	Studio	34.0	324	200	169	20.7%	N
A2-08.1	LKD	32.3	288	200	402	66.3%	Y
A2-08.2	Bed	11.0	88	100	1256	100.0%	Y
A2-08.3	Bed	11.7	96	100	1931	100.0%	Y
A2-09.1	LKD	29.9	264	200	364	58.7%	Y
A2-09.2	Bed	10.1	81	100	2395	100.0%	Y
A2-10.1	LKD	31.4	275	200	2319	100.0%	Y
A2-10.2	Bed	8.2	66	100	1717	100.0%	Y
A2-10.3	Bed	12.7	101	100	1335	100.0%	Y
A2-11.1	LKD	30.1	273	200	622	90.8%	Y
A2-11.2	Bed	8.3	64	100	3186	100.0%	Y
A2-11.3	Bed	12.9	101	100	2366	100.0%	Y
A2-12.1	LKD	31.4	293	200	270	27.3%	N
A2-12.2	Bed	7.7	53	100	2438	100.0%	Y
A2-12.3	Bed	12.0	97	100	1487	100.0%	Y
A2-13.1	LKD	35.3	321	200	1314	100.0%	Y
A2-13.2	Bed	12.0	98	100	1879	100.0%	Y
A2-13.3	Bed	15.2	126	100	1540	100.0%	Y
A2-14.1	LKD	36.7	327	200	1035	78.3%	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
A2-14.2	Bed	12.3	103	100	924	100.0%	Y
A2-14.3	Bed	8.9	69	100	1151	100.0%	Y
A2-15.1	LKD	27.5	242	200	704	100.0%	Y
A2-15.2	Bed	12.9	100	100	890	100.0%	Y
A2-16.1	Studio	28.6	255	200	401	100.0%	Y
A3-01.1	LKD	35.1	341	200	923	100.0%	Y
A3-01.2	Bed	10.6	80	100	1755	100.0%	Y
A3-01.3	Bed	9.2	76	100	1385	100.0%	Y
A3-01.4	Bed	11.0	92	100	798	100.0%	Y
A3-02.1	LKD	35.6	339	200	1217	100.0%	Y
A3-02.2	Bed	8.1	66	100	953	100.0%	Y
A3-02.3	Bed	11.1	88	100	786	100.0%	Y
A3-03.1	LKD	32.3	288	200	231	37.5%	N
A3-03.2	Bed	10.9	88	100	1254	100.0%	Y
A3-03.3	Bed	12.1	96	100	923	100.0%	Y
A3-04.1	LKD	32.3	288	200	375	61.8%	Y
A3-04.2	Bed	10.9	88	100	1892	100.0%	Y
A3-04.3	Bed	12.1	96	100	1934	100.0%	Y
A3-05.1	LKD	32.3	288	200	213	35.1%	N
A3-05.2	Bed	11.0	88	100	708	100.0%	Y
A3-05.3	Bed	12.1	96	100	532	100.0%	Y
A3-06.1	LKD	32.3	288	200	375	60.8%	Y
A3-06.2	Bed	11.0	88	100	2245	100.0%	Y
A3-06.3	Bed	11.7	96	100	1684	100.0%	Y
A3-07.1	Studio	34.0	324	200	195	28.7%	N
A3-08.1	LKD	32.3	288	200	406	69.1%	Y
A3-08.2	Bed	11.0	88	100	1274	100.0%	Y
A3-08.3	Bed	11.7	96	100	1942	100.0%	Y
A3-09.1	LKD	29.9	264	200	367	59.1%	Y
A3-09.2	Bed	10.1	81	100	2404	100.0%	Y
A3-10.1	LKD	31.4	275	200	1893	100.0%	Y
A3-10.2	Bed	8.2	66	100	1735	100.0%	Y
A3-10.3	Bed	12.7	101	100	1340	100.0%	Y
A3-11.1	LKD	30.1	273	200	644	98.2%	Y
A3-11.2	Bed	8.3	64	100	3226	100.0%	Y
A3-11.3	Bed	12.9	101	100	2410	100.0%	Y
A3-12.1	LKD	31.4	293	200	279	30.4%	N
A3-12.2	Bed	7.7	53	100	2460	100.0%	Y
A3-12.3	Bed	12.0	97	100	1509	100.0%	Y
A3-13.1	LKD	35.3	321	200	1318	100.0%	Y
A3-13.2	Bed	12.0	98	100	1881	100.0%	Y
A3-13.3	Bed	15.2	126	100	1553	100.0%	Y
A3-14.1	LKD	36.7	327	200	1045	85.0%	Y
A3-14.2	Bed	12.3	103	100	989	100.0%	Y
A3-14.3	Bed	8.9	69	100	1250	100.0%	Y
A3-15.1	LKD	27.5	242	200	814	100.0%	Y
A3-15.2	Bed	12.9	100	100	973	100.0%	Y
A3-16.1	Studio	28.6	255	200	327	99.2%	Y
A4-01.1	LKD	35.6	339	200	1314	100.0%	Y
A4-01.2	Bed	8.1	66	100	992	100.0%	Y
A4-01.3	Bed	11.1	88	100	820	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
A4-02.1	LKD	32.3	288	200	252	42.4%	N
A4-02.2	Bed	10.9	88	100	1349	100.0%	Y
A4-02.3	Bed	12.1	96	100	1059	100.0%	Y
A4-03.1	LKD	32.3	288	200	380	64.6%	Y
A4-03.2	Bed	10.9	88	100	1895	100.0%	Y
A4-03.3	Bed	12.1	96	100	1979	100.0%	Y
A4-04.1	LKD	32.3	288	200	238	40.6%	N
A4-04.2	Bed	11.0	88	100	835	100.0%	Y
A4-04.3	Bed	12.1	96	100	666	100.0%	Y
A4-05.1	LKD	32.3	288	200	380	63.2%	Y
A4-05.2	Bed	11.0	88	100	2272	100.0%	Y
A4-05.3	Bed	11.7	96	100	1690	100.0%	Y
A4-06.1	Studio	34.0	324	200	234	36.1%	N
A4-07.1	LKD	32.3	288	200	412	69.1%	Y
A4-07.2	Bed	11.0	88	100	1280	100.0%	Y
A4-07.3	Bed	11.7	96	100	1941	100.0%	Y
A4-08.1	LKD	29.9	264	200	371	60.2%	Y
A4-09.2	Bed	8.2	66	11	1745	100.0%	Y
A4-08.2	Bed	10.1	81	100	2420	100.0%	Y
A4-09.3	Bed	12.7	101	100	1349	100.0%	Y
A4-09.1	LKD	31.4	275	200	2369	100.0%	Y
A4-10.1	LKD	30.1	273	200	658	98.5%	Y
A4-10.2	Bed	8.3	64	100	3273	100.0%	Y
A4-10.3	Bed	12.9	101	100	2437	100.0%	Y
A4-11.1	LKD	31.4	293	200	281	31.1%	N
A4-11.2	Bed	7.7	53	100	2477	100.0%	Y
A4-11.3	Bed	12.0	97	100	1521	100.0%	Y
A4-12.1	LKD	35.3	321	200	1334	100.0%	Y
A4-12.2	Bed	12.0	98	100	1897	100.0%	Y
A4-12.3	Bed	15.2	126	100	1558	100.0%	Y
A4-13.1	LKD	36.7	327	200	1091	86.5%	Y
A4-13.2	Bed	12.3	103	100	1055	100.0%	Y
A4-13.3	Bed	8.9	69	100	1323	100.0%	Y
A4-14.1	LKD	27.5	242	200	870	100.0%	Y
A4-14.2	Bed	12.9	100	100	1040	100.0%	Y
A4-15.1	Studio	28.6	255	200	341	100.0%	Y
A5-01.1	LKD	32.3	288	200	275	47.6%	N
A5-01.2	Bed	10.9	88	100	1426	100.0%	Y
A5-01.3	Bed	12.1	96	100	2232	100.0%	Y
A5-02.1	LKD	32.3	288	200	383	64.9%	Y
A5-02.2	Bed	10.9	88	100	1908	100.0%	Y
A5-02.3	Bed	12.1	96	100	2036	100.0%	Y
A5-03.1	LKD	32.3	288	200	263	45.8%	N
A5-03.2	Bed	11.0	88	100	977	100.0%	Y
A5-03.3	Bed	12.1	96	100	804	100.0%	Y
A5-04.1	LKD	32.3	288	200	385	63.9%	Y
A5-04.2	Bed	11.0	88	100	2282	100.0%	Y
A5-04.3	Bed	11.7	96	100	1705	100.0%	Y
A5-05.1	Studio	34.0	324	200	297	46.6%	N
A5-06.1	LKD	32.3	288	200	413	72.9%	Y
A5-06.2	Bed	11.0	88	100	1275	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
A5-06.3	Bed	11.7	96	100	1964	100.0%	Y
A5-07.1	LKD	29.9	264	200	375	63.6%	Y
A5-07.2	Bed	10.1	81	100	2426	100.0%	Y
A5-08.1	LKD	31.4	275	200	1927	100.0%	Y
A5-08.2	Bed	8.2	66	100	1741	100.0%	Y
A5-08.3	Bed	12.7	101	100	1347	100.0%	Y
A5-09.1	LKD	30.1	273	200	667	98.9%	Y
A5-09.2	Bed	8.3	64	100	3293	100.0%	Y
A5-09.3	Bed	12.9	101	100	2462	100.0%	Y
A5-10.1	LKD	31.4	293	200	287	31.7%	N
A5-10.2	Bed	7.7	53	100	2508	100.0%	Y
A5-10.3	Bed	12.0	97	100	1534	100.0%	Y
A5-11.1	LKD	34.1	320	200	307	42.5%	N
A5-11.2	Bed	14.7	126	100	2753	100.0%	Y
A5-11.3	Bed	8.2	63	100	2665	100.0%	Y
A5-11.4	Bed	15.2	126	100	1578	100.0%	Y
A5-12.1	LKD	27.5	242	200	1034	100.0%	Y
A5-12.2	Bed	12.9	100	100	1031	100.0%	Y
A5-13.1	Studio	28.6	255	200	352	100.0%	Y
A6-01.1	LKD	32.3	288	200	422	68.1%	Y
A6-01.2	Bed	10.9	88	200	1487	100.0%	Y
A6-01.3	Bed	12.1	96	100	2263	100.0%	Y
A6-02.1	LKD	32.3	288	200	574	91.3%	Y
A6-02.2	Bed	10.9	88	100	1957	100.0%	Y
A6-02.3	Bed	12.1	96	100	2067	100.0%	Y
A6-03.1	LKD	32.3	288	200	293	51.0%	Y
A6-03.1	LKD	12.1	96	200	916	100.0%	Y
A6-03.2	Bed	11.0	88	100	1070	100.0%	Y
A6-04.1	LKD	32.3	288	200	391	65.6%	Y
A6-04.2	Bed	11.0	88	100	2292	100.0%	Y
A6-04.3	Bed	11.7	96	100	1708	100.0%	Y
A6-05.1	Studio	34.0	324	200	384	68.8%	Y
A6-06.1	LKD	32.3	288	200	415	72.9%	Y
A6-06.2	Bed	11.0	88	100	1277	100.0%	Y
A6-06.3	Bed	11.7	96	100	1962	100.0%	Y
A6-07.1	LKD	29.9	264	200	375	61.0%	Y
A6-07.2	Bed	10.1	81	100	2430	100.0%	Y
A6-08.1	LKD	31.4	275	200	2403	100.0%	Y
A6-08.2	Bed	8.2	66	100	1749	100.0%	Y
A6-08.3	Bed	12.7	101	100	1352	100.0%	Y
A6-09.1	LKD	30.1	273	200	677	98.9%	Y
A6-09.2	Bed	8.3	64	100	3316	100.0%	Y
A6-09.3	Bed	12.9	101	100	2468	100.0%	Y
A6-10.1	LKD	31.4	293	200	289	33.4%	N
A6-10.2	Bed	7.7	53	100	2535	100.0%	Y
A6-10.3	Bed	12.0	97	100	1566	100.0%	Y
A6-11.1	LKD	34.1	320	200	1066	100.0%	Y
A6-11.2	Bed	14.1	118	100	2741	100.0%	Y
A6-11.3	Bed	7.6	55	100	2570	100.0%	Y
A6-11.4	Bed	15.2	126	100	1595	100.0%	Y
A6-12.1	LKD	27.3	252	200	441	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
A6-12.2	Bed	10.9	89	100	534	100.0%	Y
A7-01.1	LKD	32.3	288	200	325	57.3%	Y
A7-01.2	Bed	11.0	88	100	1138	100.0%	Y
A7-01.3	Bed	12.1	96	100	1004	100.0%	Y
A7-02.1	LKD	32.3	288	200	404	68.8%	Y
A7-02.2	Bed	11.0	88	100	2292	100.0%	Y
A7-02.3	Bed	11.7	96	100	1513	100.0%	Y
A7-03.1	Studio	34.0	324	200	483	95.7%	Y
A7-04.1	LKD	32.3	288	200	430	76.7%	Y
A7-04.2	Bed	11.0	88	100	1298	100.0%	Y
A7-04.3	Bed	11.7	96	100	1712	100.0%	Y
A7-05.1	LKD	29.9	264	200	378	61.7%	Y
A7-05.2	Bed	10.1	81	100	2448	100.0%	Y
A7-06.1	LKD	31.4	275	200	1937	100.0%	Y
A7-06.2	Bed	8.2	66	100	1766	100.0%	Y
A7-06.3	Bed	12.7	101	100	1360	100.0%	Y
A7-07.1	LKD	30.1	273	200	693	98.9%	Y
A7-07.2	Bed	8.3	64	100	3327	100.0%	Y
A7-07.3	Bed	12.9	101	100	2490	100.0%	Y
A7-08.1	LKD	31.4	293	200	295	37.2%	N
A7-08.2	Bed	7.7	53	100	2604	100.0%	Y
A7-08.3	Bed	12.0	97	100	1597	100.0%	Y
A7-09.1	LKD	34.1	320	200	898	100.0%	Y
A7-09.2	Bed	14.7	126	100	2792	100.0%	Y
A7-09.3	Bed	8.2	63	100	2703	100.0%	Y
A7-09.4	Bed	15.2	126	100	1556	100.0%	Y
A8-01.1	LKD	31.2	288	200	779	100.0%	Y
A8-01.2	Bed	11.1	90	100	1178	100.0%	Y
A8-01.3	Bed	11.7	96	100	1099	100.0%	Y
A8-02.1	LKD	29.1	264	200	913	100.0%	Y
A8-02.2	Bed	12.7	109	100	1336	100.0%	Y
A8-03.1	Studio	34.0	324	200	592	99.7%	Y
A8-04.1	LKD	27.6	240	200	439	72.1%	Y
A8-04.2	Bed	11.7	98	100	1265	100.0%	Y
A8-05.1	LKD	29.9	264	200	378	64.0%	Y
A8-05.2	Bed	10.1	81	100	2463	100.0%	Y
A8-06.1	LKD	31.4	275	200	2424	100.0%	Y
A8-06.2	Bed	8.2	66	100	1758	100.0%	Y
A8-06.3	Bed	12.7	101	100	1360	100.0%	Y
A8-07.1	LKD	30.1	273	200	721	100.0%	Y
A8-07.2	Bed	8.3	64	100	3326	100.0%	Y
A8-07.3	Bed	12.9	101	100	2473	100.0%	Y
A8-08.1	LKD	31.4	293	200	384	57.0%	Y
A8-08.2	Bed	7.7	53	100	2703	100.0%	Y
A8-08.3	Bed	12.0	97	100	1751	100.0%	Y
A9-01.1	LKD	31.2	288	200	787	100.0%	Y
A9-01.2	Bed	11.1	90	100	1212	100.0%	Y
A9-01.3	Bed	11.7	96	100	1147	100.0%	Y
A9-02.1	Studio	34.0	324	200	659	100.0%	Y
A9-03.1	LKD	27.6	240	200	559	71.3%	Y
A9-03.2	Bed	11.7	98	100	1148	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
A9-04.1	LKD	29.9	264	200	541	81.8%	Y
A9-04.2	Bed	10.1	81	100	2317	100.0%	Y
A9-05.1	LKD	31.4	275	200	1845	100.0%	Y
A9-05.2	Bed	8.2	66	100	1738	100.0%	Y
A9-05.3	Bed	12.7	101	100	1325	100.0%	Y
A10-01.1	LKD	31.2	288	200	833	100.0%	Y
A10-01.2	Bed	11.1	90	100	1241	100.0%	Y
A10-01.3	Bed	11.7	96	100	1183	100.0%	Y
A10-02.1	Studio	34.0	324	200	713	100.0%	Y
A10-03.1	LKD	40.4	380	200	2546	100.0%	Y
A10-03.2	Bed	12.7	108	100	1280	100.0%	Y
A10-03.3	Bed	13.2	110	100	1206	100.0%	Y
A10-03.4	Bed	10.5	86	100	5317	100.0%	Y
A10-03.5	Bed	15.8	135	100	5613	100.0%	Y
A11-01.1	LKD	40.4	380	200	2442	100.0%	Y
A11-01.2	Bed	12.7	108	100	1247	100.0%	Y
A11-01.3	Bed	13.2	110	100	1168	100.0%	Y
A11-01.4	Bed	10.5	86	100	4391	100.0%	Y
A11-01.5	Bed	15.8	135	100	4578	100.0%	Y

Table 14: Minimum Daylight Provision BS EN17037:2018+A1:2021 Table NA.1 compliance for habitable rooms

Appendix B - EN17037:2018 Table A.1 Daylight Provision Room Compliance Results

EN17037:2018 Table A.1 Daylight Provision Room Compliance											
Space ID	Description	Area m2	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A0-01.1	LKD	35.1	341	Minimum	64.0%	46.3%	25.8%	Minimum	76.5%	42.9%	17.1%
A0-01.2	Bed	10.7	80	High	79.6%	69.0%	54.7%	High	88.4%	73.4%	56.8%
A0-01.3	Bed	9.3	76	Medium	73.4%	57.6%	40.5%	Medium	83.9%	58.9%	37.5%
A0-01.4	Bed	11.0	92	Minimum	61.4%	41.6%	16.5%	Minimum	77.2%	43.4%	14.7%
A0-02.1	LKD	35.6	339	Medium	71.1%	56.6%	39.8%	Medium	80.6%	53.6%	30.4%
A0-02.2	Bed	8.1	66	Minimum	65.8%	47.7%	26.1%	Minimum	78.8%	47.3%	20.0%
A0-02.3	Bed	11.1	89	Minimum	61.3%	41.4%	15.5%	Minimum	79.4%	47.3%	18.5%
A0-03.1	LKD	32.3	288	Fail	7.5%	3.2%	1.3%	Fail	24.9%	2.4%	0.8%
A0-03.2	Bed	11.0	88	Medium	69.3%	50.9%	31.9%	Medium	81.9%	52.9%	29.5%
A0-03.3	Bed	12.1	96	Fail	48.5%	25.4%	16.0%	Minimum	70.9%	26.7%	14.8%
A0-04.1	LKD	32.3	288	Fail	26.3%	12.4%	5.1%	Minimum	52.6%	10.4%	2.8%
A0-04.2	Bed	11.0	88	High	78.3%	67.7%	54.5%	High	86.6%	70.1%	54.8%
A0-04.3	Bed	12.0	96	High	81.1%	71.2%	60.1%	High	87.2%	71.0%	55.6%
A0-05.1	LKD	32.3	288	Fail	5.1%	2.2%	0.8%	Fail	19.9%	1.5%	0.3%
A0-05.2	Bed	11.1	90	Minimum	50.5%	23.6%	7.6%	Minimum	74.1%	29.8%	7.0%
A0-05.3	Bed	12.1	96	Fail	36.7%	8.7%	1.8%	Minimum	64.6%	10.5%	1.1%
A0-06.1	LKD	32.3	288	Fail	25.3%	11.4%	4.8%	Minimum	52.1%	10.1%	2.8%
A0-06.2	Bed	11.1	89	High	84.1%	75.3%	66.7%	High	89.9%	77.0%	66.3%
A0-06.3	Bed	11.9	90	High	79.7%	69.7%	57.3%	High	86.7%	70.3%	55.4%
A0-07.1	Studio	34.0	324	Fail	0.2%	0.0%	0.0%	Fail	11.1%	0.0%	0.0%
A0-08.1	LKD	32.3	288	Fail	29.6%	15.1%	6.0%	Minimum	56.6%	12.8%	3.5%
A0-08.2	Bed	11.1	90	Minimum	67.1%	49.1%	30.0%	Medium	81.4%	55.7%	31.6%
A0-08.3	Bed	11.9	90	High	82.5%	73.1%	62.7%	High	88.2%	73.9%	61.0%
A0-09.1	LKD	29.9	264	Fail	24.9%	11.2%	4.9%	Minimum	50.1%	9.8%	2.7%
A0-09.2	Bed	10.1	81	High	82.8%	73.9%	64.1%	High	89.7%	76.6%	65.9%
A0-10.1	LKD	31.3	275	High	76.4%	66.1%	56.6%	Medium	83.0%	62.6%	49.4%
A0-10.2	Bed	8.2	66	Medium	75.1%	63.4%	48.5%	Medium	84.4%	63.3%	43.7%
A0-10.3	Bed	12.7	101	Medium	68.6%	52.8%	34.0%	Medium	81.0%	55.3%	32.1%
A0-11.1	LKD	30.1	273	Minimum	55.8%	36.3%	24.1%	Minimum	76.4%	45.5%	26.8%
A0-11.2	Bed	8.3	64	High	80.1%	71.2%	61.3%	High	88.5%	75.2%	64.2%
A0-11.3	Bed	13.0	102	High	74.4%	63.3%	52.3%	High	84.3%	64.9%	51.1%
A1-01.1	LKD	35.1	341	Medium	70.7%	53.3%	37.9%	Medium	80.0%	51.2%	30.1%
A1-01.2	Bed	10.6	80	High	82.0%	72.7%	59.5%	High	89.8%	77.1%	64.2%
A1-01.3	Bed	9.2	76	Medium	76.4%	63.2%	48.0%	Medium	86.3%	67.3%	48.7%
A1-01.4	Bed	11.0	92	Medium	69.4%	51.1%	33.2%	Medium	83.4%	56.0%	36.1%
A1-02.1	LKD	35.6	339	Medium	74.7%	62.4%	47.5%	Medium	83.1%	59.9%	41.2%
A1-02.2	Bed	8.1	66	Medium	73.2%	57.8%	41.3%	Medium	83.0%	57.1%	36.7%
A1-02.3	Bed	11.1	88	Medium	68.9%	51.1%	32.6%	Medium	83.4%	56.5%	36.5%
A1-03.1	LKD	32.3	288	Fail	11.0%	3.7%	1.6%	Fail	34.6%	2.4%	0.8%
A1-03.2	Bed	10.9	88	Medium	74.2%	57.6%	40.8%	Medium	85.0%	61.4%	41.1%
A1-03.3	Bed	12.1	96	Minimum	56.8%	34.8%	20.2%	Minimum	76.0%	37.6%	19.2%
A1-04.1	LKD	32.3	288	Fail	30.1%	14.9%	5.6%	Minimum	55.5%	10.2%	2.4%
A1-04.2	Bed	10.9	88	High	79.8%	70.2%	59.2%	High	87.7%	72.4%	59.2%
A1-04.3	Bed	12.1	96	High	83.4%	74.5%	64.7%	High	88.7%	74.6%	61.8%
A1-05.1	LKD	32.3	288	Fail	7.9%	2.4%	0.9%	Fail	30.6%	1.5%	0.2%
A1-05.2	Bed	11.0	88	Minimum	56.8%	33.6%	13.2%	Minimum	77.6%	40.5%	12.6%
A1-05.3	Bed	12.1	96	Fail	47.9%	19.1%	4.3%	Minimum	70.5%	21.0%	2.4%
A1-06.1	LKD	32.3	288	Fail	29.5%	14.8%	5.7%	Minimum	56.2%	11.4%	2.7%
A1-06.2	Bed	11.0	88	High	83.2%	74.5%	65.0%	High	89.2%	75.7%	64.8%

EN17037:2018 Table A.1 Daylight Provision Room Compliance											
Space ID	Description	Area m2	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A1-06.3	Bed	11.7	96	High	78.2%	67.7%	54.5%	High	86.5%	69.6%	53.8%
A1-07.1	Studio	34.0	324	Fail	0.5%	0.0%	0.0%	Fail	22.9%	0.0%	0.0%
A1-08.1	LKD	32.3	288	Fail	34.3%	16.5%	6.7%	Minimum	60.0%	13.9%	3.3%
A1-08.2	Bed	11.0	88	Medium	71.0%	57.0%	38.4%	Medium	83.1%	59.6%	36.8%
A1-08.3	Bed	11.7	96	High	80.3%	70.7%	60.0%	High	87.9%	72.8%	59.7%
A1-09.1	LKD	29.9	264	Fail	29.7%	14.6%	5.3%	Minimum	53.4%	9.9%	2.4%
A1-09.2	Bed	10.1	81	High	83.6%	75.0%	66.5%	High	90.4%	78.7%	68.7%
A1-10.1	LKD	31.3	275	High	74.5%	63.7%	52.9%	Medium	81.9%	60.3%	45.7%
A1-10.2	Bed	8.2	66	High	77.8%	67.3%	55.1%	High	86.0%	67.7%	51.5%
A1-10.3	Bed	12.7	101	Medium	71.9%	59.1%	42.6%	Medium	83.4%	60.8%	40.3%
A1-11.1	LKD	30.1	273	Minimum	57.7%	39.5%	27.2%	Minimum	77.7%	49.4%	30.3%
A1-11.2	Bed	8.2	64	High	83.4%	75.9%	68.0%	High	90.6%	80.4%	71.5%
A1-11.3	Bed	12.9	100	High	78.9%	69.2%	59.0%	High	86.4%	71.4%	59.2%
A2-01.1	LKD	35.1	341	Medium	73.1%	57.6%	43.3%	Medium	83.3%	57.9%	39.1%
A2-01.2	Bed	10.6	80	High	82.6%	73.8%	62.2%	High	89.9%	77.5%	65.6%
A2-01.3	Bed	9.2	76	Medium	76.4%	63.4%	48.7%	Medium	85.5%	65.2%	47.0%
A2-01.4	Bed	11.0	92	Medium	71.7%	55.0%	38.5%	Medium	84.6%	61.0%	41.1%
A2-02.1	LKD	35.6	339	High	76.0%	64.7%	50.7%	Medium	84.2%	63.0%	45.2%
A2-02.2	Bed	8.1	66	Medium	74.9%	61.0%	45.6%	Medium	85.0%	62.9%	43.3%
A2-02.3	Bed	11.1	88	Medium	71.6%	55.3%	38.3%	Medium	84.9%	62.2%	42.1%
A2-03.1	LKD	32.3	288	Fail	13.9%	4.8%	2.1%	Fail	39.9%	3.0%	0.8%
A2-03.2	Bed	10.9	88	Medium	76.1%	61.1%	45.6%	Medium	85.8%	64.9%	45.9%
A2-03.3	Bed	12.1	96	Minimum	59.9%	39.4%	23.2%	Minimum	77.1%	41.3%	21.0%
A2-04.1	LKD	32.3	288	Fail	32.3%	14.9%	6.0%	Minimum	59.1%	13.3%	3.0%
A2-04.2	Bed	10.9	88	High	80.3%	70.8%	60.5%	High	88.1%	73.7%	61.1%
A2-04.3	Bed	12.1	96	High	84.3%	76.0%	67.5%	High	89.2%	75.8%	64.4%
A2-05.1	LKD	32.3	288	Fail	12.6%	3.5%	1.4%	Fail	38.9%	2.0%	0.6%
A2-05.2	Bed	11.0	88	Minimum	59.8%	39.4%	17.6%	Minimum	79.3%	46.6%	18.0%
A2-05.3	Bed	12.1	96	Minimum	50.4%	23.6%	7.4%	Minimum	73.4%	28.0%	4.7%
A2-06.1	LKD	32.3	288	Fail	31.7%	15.0%	5.8%	Minimum	58.9%	12.4%	3.2%
A2-06.2	Bed	11.0	88	High	83.4%	74.7%	65.6%	High	89.4%	76.2%	65.5%
A2-06.3	Bed	11.7	96	High	78.2%	67.9%	55.2%	High	86.5%	69.7%	54.1%
A2-07.1	Studio	34.0	324	Fail	1.9%	0.0%	0.0%	Fail	31.5%	0.0%	0.0%
A2-08.1	LKD	32.3	288	Fail	36.1%	17.4%	6.7%	Minimum	61.5%	15.1%	4.3%
A2-08.2	Bed	11.0	88	Medium	71.2%	57.7%	39.8%	Medium	83.2%	60.6%	39.5%
A2-08.3	Bed	11.7	96	High	80.0%	70.6%	60.0%	High	87.6%	72.4%	59.9%
A2-09.1	LKD	29.9	264	Fail	30.8%	14.6%	5.3%	Minimum	56.6%	10.6%	2.7%
A2-09.2	Bed	10.1	81	High	84.2%	75.7%	67.5%	High	90.5%	79.2%	69.4%
A2-10.1	LKD	31.4	275	High	80.4%	71.8%	62.5%	High	85.4%	68.0%	55.9%
A2-10.2	Bed	8.2	66	High	77.6%	67.2%	55.3%	High	86.0%	67.8%	51.7%
A2-10.3	Bed	12.7	101	Medium	71.9%	59.4%	42.9%	Medium	83.3%	60.9%	41.3%
A2-11.1	LKD	30.1	273	Minimum	50.6%	32.1%	19.4%	Minimum	65.1%	27.8%	10.1%
A2-11.2	Bed	8.3	64	High	84.0%	77.0%	69.5%	High	91.3%	81.7%	73.2%
A2-11.3	Bed	12.9	101	High	79.9%	70.6%	61.0%	High	87.2%	73.6%	61.6%
A2-12.1	LKD	31.4	293	Fail	19.4%	4.7%	2.1%	Fail	36.0%	3.6%	0.6%
A2-12.2	Bed	7.7	53	High	79.8%	70.2%	60.1%	High	87.0%	72.7%	60.4%
A2-12.3	Bed	12.0	97	Medium	69.5%	55.9%	41.5%	Medium	81.7%	58.5%	41.3%
A2-13.1	LKD	35.3	321	Medium	65.5%	50.8%	40.3%	Minimum	71.8%	40.5%	25.3%
A2-13.2	Bed	12.0	98	High	74.0%	62.6%	50.5%	Medium	83.8%	64.0%	48.9%
A2-13.3	Bed	15.2	126	Medium	69.1%	55.3%	42.6%	Medium	79.6%	53.6%	38.7%

EN17037:2018 Table A.1 Daylight Provision Room Compliance											
Space ID	Description	Area m2	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A2-14.1	LKD	36.7	327	Minimum	54.3%	39.6%	26.6%	Minimum	58.2%	21.0%	3.7%
A2-14.2	Bed	12.3	103	Medium	68.2%	51.9%	35.7%	Medium	82.4%	57.8%	38.9%
A2-14.3	Bed	8.9	69	Medium	73.7%	60.3%	45.5%	Medium	83.4%	61.3%	43.0%
A2-15.1	LKD	27.5	242	Medium	72.3%	56.3%	40.5%	Medium	85.7%	65.1%	45.7%
A2-15.2	Bed	12.9	100	Minimum	66.6%	49.5%	32.1%	Minimum	78.5%	49.7%	29.5%
A2-16.1	Studio	28.6	255	Minimum	52.4%	26.4%	1.0%	Minimum	75.3%	34.8%	2.4%
A3-01.1	LKD	35.1	341	Medium	75.7%	63.2%	48.3%	Medium	85.2%	64.5%	45.7%
A3-01.2	Bed	10.6	80	High	83.5%	75.1%	64.5%	High	90.6%	78.9%	68.9%
A3-01.3	Bed	9.2	76	High	77.5%	66.1%	52.0%	High	86.7%	69.5%	52.0%
A3-01.4	Bed	11.0	92	Medium	73.7%	58.2%	42.1%	Medium	86.0%	66.7%	46.9%
A3-02.1	LKD	35.6	339	High	77.1%	66.6%	53.0%	Medium	85.1%	65.0%	47.5%
A3-02.2	Bed	8.1	66	Medium	76.7%	64.7%	49.5%	Medium	85.8%	66.3%	47.2%
A3-02.3	Bed	11.1	88	Medium	73.4%	57.9%	41.5%	Medium	86.1%	66.6%	47.0%
A3-03.1	LKD	32.3	288	Fail	17.6%	5.9%	2.4%	Fail	45.6%	3.9%	1.2%
A3-03.2	Bed	10.9	88	High	77.6%	64.9%	50.5%	High	86.7%	68.9%	51.1%
A3-03.3	Bed	12.1	96	Minimum	65.8%	47.1%	28.3%	Minimum	80.2%	49.6%	26.7%
A3-04.1	LKD	32.3	288	Fail	34.4%	15.5%	6.1%	Minimum	59.8%	13.5%	3.0%
A3-04.2	Bed	10.9	88	High	80.5%	71.1%	61.0%	High	88.1%	73.8%	61.6%
A3-04.3	Bed	12.1	96	High	84.7%	76.5%	68.3%	High	89.7%	76.3%	65.1%
A3-05.1	LKD	32.3	288	Fail	15.9%	5.2%	2.0%	Fail	44.1%	3.0%	0.8%
A3-05.2	Bed	11.0	88	Minimum	64.0%	44.8%	22.4%	Medium	81.3%	50.7%	24.5%
A3-05.3	Bed	12.1	96	Minimum	54.8%	31.3%	11.0%	Minimum	75.8%	34.4%	9.1%
A3-06.1	LKD	32.3	288	Fail	33.9%	15.2%	6.1%	Minimum	60.2%	13.5%	3.1%
A3-06.2	Bed	11.0	88	High	83.5%	74.8%	66.0%	High	89.7%	76.6%	66.1%
A3-06.3	Bed	11.7	96	High	77.9%	67.6%	55.1%	High	86.6%	70.2%	55.3%
A3-07.1	Studio	34.0	324	Fail	6.5%	0.2%	0.0%	Fail	39.6%	0.0%	0.0%
A3-08.1	LKD	32.3	288	Fail	36.6%	17.3%	7.0%	Minimum	62.0%	15.8%	4.3%
A3-08.2	Bed	11.0	88	Medium	71.8%	59.4%	42.0%	Medium	83.9%	61.8%	41.8%
A3-08.3	Bed	11.7	96	High	80.4%	70.9%	60.6%	High	87.9%	73.3%	60.7%
A3-09.1	LKD	29.9	264	Fail	32.6%	14.8%	5.3%	Minimum	57.6%	11.6%	2.9%
A3-09.2	Bed	10.1	81	High	84.4%	76.1%	68.0%	High	90.6%	79.4%	69.9%
A3-10.1	LKD	31.4	275	High	75.4%	64.8%	54.9%	Medium	82.6%	62.1%	48.3%
A3-10.2	Bed	8.2	66	High	78.2%	68.0%	56.0%	High	86.1%	68.7%	53.1%
A3-10.3	Bed	12.7	101	Medium	72.4%	60.0%	44.0%	Medium	83.9%	62.6%	42.9%
A3-11.1	LKD	30.1	273	Minimum	51.8%	33.2%	20.6%	Minimum	67.1%	30.5%	13.3%
A3-11.2	Bed	8.3	64	High	84.2%	77.5%	69.9%	High	91.4%	82.1%	73.6%
A3-11.3	Bed	12.9	101	High	79.9%	70.5%	61.1%	High	87.9%	74.5%	63.2%
A3-12.1	LKD	31.4	293	Fail	22.4%	5.3%	2.1%	Fail	37.4%	3.5%	0.7%
A3-12.2	Bed	7.7	53	High	79.9%	70.5%	60.5%	High	87.2%	73.2%	61.1%
A3-12.3	Bed	12.0	97	Medium	70.7%	57.1%	43.3%	Medium	82.5%	60.5%	43.5%
A3-13.1	LKD	35.3	321	Medium	66.0%	52.1%	40.4%	Minimum	73.3%	42.1%	26.5%
A3-13.2	Bed	12.0	98	High	74.0%	63.1%	50.8%	High	84.2%	65.1%	50.1%
A3-13.3	Bed	15.2	126	Medium	69.5%	55.7%	43.1%	Medium	80.1%	55.0%	39.6%
A3-14.1	LKD	36.7	327	Minimum	55.4%	40.6%	27.7%	Minimum	60.3%	24.3%	4.5%
A3-14.2	Bed	12.3	103	Medium	71.4%	56.6%	41.5%	Medium	84.2%	63.1%	44.1%
A3-14.3	Bed	8.9	69	Medium	76.1%	64.1%	49.5%	Medium	85.1%	66.1%	48.3%
A3-15.1	LKD	27.5	242	Medium	75.9%	63.0%	47.2%	High	87.0%	70.2%	52.4%
A3-15.2	Bed	12.9	100	Medium	70.7%	55.3%	39.3%	Medium	81.1%	55.1%	34.8%
A3-16.1	Studio	28.6	255	Fail	42.6%	8.0%	0.0%	Minimum	71.5%	21.5%	0.0%

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Space ID	Description	Area m2	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A4-01.1	LKD	35.6	339	High	79.0%	69.2%	57.2%	High	85.9%	67.7%	51.2%
A4-01.2	Bed	8.1	66	High	77.8%	66.7%	52.3%	High	86.4%	68.2%	50.2%
A4-01.3	Bed	11.1	88	Medium	74.3%	60.2%	44.7%	Medium	86.3%	68.0%	49.4%
A4-02.1	LKD	32.3	288	Fail	21.4%	7.6%	3.1%	Minimum	51.2%	5.8%	1.8%
A4-02.2	Bed	10.9	88	High	78.8%	68.3%	54.2%	High	87.9%	72.7%	56.0%
A4-02.3	Bed	12.1	96	Medium	73.4%	57.2%	41.5%	Medium	84.2%	60.0%	40.2%
A4-03.1	LKD	32.3	288	Fail	34.0%	15.2%	5.9%	Minimum	60.3%	13.8%	3.0%
A4-03.2	Bed	10.9	88	High	80.9%	71.3%	61.5%	High	88.1%	73.7%	61.8%
A4-03.3	Bed	12.1	96	High	85.3%	77.5%	69.2%	High	89.9%	77.0%	66.5%
A4-04.1	LKD	32.3	288	Fail	22.0%	6.9%	2.6%	Fail	48.7%	4.5%	1.3%
A4-04.2	Bed	11.0	88	Medium	68.9%	50.7%	31.4%	Medium	82.9%	55.1%	32.5%
A4-04.3	Bed	12.1	96	Minimum	58.3%	37.7%	16.2%	Minimum	77.9%	41.7%	15.4%
A4-05.1	LKD	32.3	288	Fail	34.5%	15.6%	5.9%	Minimum	61.0%	14.0%	3.4%
A4-05.2	Bed	11.0	88	High	83.3%	74.7%	66.0%	High	89.7%	76.8%	66.4%
A4-05.3	Bed	11.7	96	High	78.0%	67.6%	55.2%	High	86.6%	70.4%	56.2%
A4-06.1	Studio	34.0	324	Fail	14.8%	1.6%	0.1%	Fail	45.5%	0.6%	0.0%
A4-07.1	LKD	32.3	288	Fail	38.6%	17.7%	7.0%	Minimum	62.6%	16.2%	4.3%
A4-07.2	Bed	11.0	88	Medium	72.0%	59.5%	42.4%	Medium	83.9%	62.2%	42.1%
A4-07.3	Bed	11.7	96	High	81.0%	71.6%	61.7%	High	88.0%	73.4%	61.0%
A4-08.1	LKD	29.9	264	Fail	33.3%	15.1%	5.7%	Minimum	57.7%	12.1%	2.8%
A4-08.2	Bed	8.2	66	High	78.1%	67.8%	56.0%	High	86.1%	68.3%	52.6%
A4-08.2	Bed	10.1	81	High	84.3%	76.0%	67.9%	High	90.8%	79.6%	70.2%
A4-08.3	Bed	12.7	101	Medium	72.7%	60.6%	44.6%	Medium	84.2%	63.0%	44.1%
A4-09.1	LKD	31.4	275	High	80.9%	72.5%	63.4%	High	86.0%	69.7%	57.6%
A4-09.1	LKD	30.1	273	Minimum	52.8%	34.4%	21.1%	Minimum	67.3%	30.8%	13.9%
A4-09.2	Bed	8.3	64	High	84.9%	78.1%	70.8%	High	91.6%	82.3%	74.1%
A4-09.3	Bed	12.9	101	High	80.3%	71.7%	61.9%	High	88.0%	74.7%	63.4%
A4-10.1	LKD	31.4	293	Fail	22.9%	5.4%	2.2%	Fail	39.1%	3.7%	0.8%
A4-10.2	Bed	7.7	53	High	80.1%	71.0%	61.2%	High	87.8%	73.8%	62.4%
A4-10.3	Bed	12.0	97	Medium	71.0%	57.7%	44.2%	Medium	82.6%	60.9%	44.3%
A4-11.1	LKD	35.3	321	Medium	67.0%	53.3%	41.2%	Minimum	73.7%	43.3%	26.9%
A4-11.2	Bed	12.0	98	High	74.6%	63.5%	52.0%	High	84.5%	65.5%	51.4%
A4-11.3	Bed	15.2	126	Medium	70.1%	57.1%	44.9%	Medium	80.4%	56.2%	39.9%
A4-12.1	LKD	36.7	327	Minimum	57.3%	42.4%	30.2%	Minimum	61.6%	27.4%	4.7%
A4-12.2	Bed	12.3	103	Medium	73.7%	60.2%	45.2%	Medium	85.3%	66.5%	48.9%
A4-12.3	Bed	8.9	69	High	77.9%	67.0%	54.0%	High	86.4%	69.8%	53.7%
A4-13.1	LKD	27.5	242	High	77.2%	65.5%	50.2%	High	87.7%	72.3%	56.1%
A4-13.2	Bed	12.9	100	Medium	73.6%	59.5%	44.2%	Medium	83.1%	60.3%	41.3%
A4-14.1	Studio	28.6	255	Fail	44.2%	11.6%	0.0%	Minimum	72.6%	26.3%	0.1%
A5-01.1	LKD	32.3	288	Fail	26.0%	9.6%	3.5%	Minimum	53.5%	7.8%	2.3%
A5-01.2	Bed	10.9	88	High	80.1%	70.1%	56.6%	High	88.1%	73.4%	57.3%
A5-01.3	Bed	12.1	96	High	88.5%	83.8%	77.0%	High	94.2%	85.4%	77.8%
A5-02.1	LKD	32.3	288	Fail	35.3%	15.7%	6.0%	Minimum	61.2%	14.4%	3.5%
A5-02.2	Bed	10.9	88	High	80.6%	71.2%	61.4%	High	88.4%	74.6%	63.0%
A5-02.3	Bed	12.1	96	High	85.7%	78.4%	70.2%	High	90.1%	77.9%	67.5%
A5-03.1	LKD	32.3	288	Fail	25.3%	9.0%	3.2%	Minimum	53.4%	6.8%	1.9%
A5-03.2	Bed	11.0	88	Medium	71.7%	54.3%	36.9%	Medium	84.2%	58.7%	38.7%
A5-03.3	Bed	12.1	96	Minimum	65.5%	46.3%	25.1%	Minimum	79.4%	46.9%	21.2%
A5-04.1	LKD	32.3	288	Fail	35.3%	15.7%	6.3%	Minimum	61.0%	14.1%	3.4%
A5-04.2	Bed	11.0	88	High	84.2%	75.6%	67.2%	High	89.9%	77.2%	67.0%
A5-04.3	Bed	11.7	96	High	78.2%	67.8%	56.2%	High	86.7%	70.6%	56.3%

EN17037:2018 Table A.1 Daylight Provision Room Compliance

Space ID	Description	Area m2	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A5-05.1	Studio	34.0	324	Fail	24.6%	5.8%	2.0%	Minimum	52.7%	4.3%	1.1%
A5-06.1	LKD	32.3	288	Fail	38.6%	18.0%	6.9%	Minimum	62.8%	16.2%	4.5%
A5-06.2	Bed	11.0	88	Medium	72.5%	59.7%	43.0%	Medium	84.0%	62.8%	43.2%
A5-06.3	Bed	11.7	96	High	81.3%	71.8%	62.1%	High	87.9%	73.4%	61.5%
A5-07.1	LKD	29.9	264	Fail	33.6%	14.7%	5.2%	Minimum	59.4%	13.1%	3.1%
A5-07.2	Bed	10.1	81	High	84.4%	76.1%	68.2%	High	90.8%	80.0%	70.7%
A5-08.1	LKD	31.4	275	High	75.9%	65.3%	55.7%	Medium	82.8%	62.5%	48.9%
A5-08.2	Bed	8.2	66	High	78.4%	68.1%	56.6%	High	86.1%	68.4%	52.9%
A5-08.3	Bed	12.7	101	Medium	72.9%	60.4%	44.5%	Medium	84.1%	63.3%	43.7%
A5-09.1	LKD	30.1	273	Minimum	54.3%	35.3%	22.0%	Minimum	67.6%	31.4%	14.1%
A5-09.2	Bed	8.3	64	High	84.3%	77.6%	70.1%	High	92.1%	82.7%	74.6%
A5-09.3	Bed	12.9	101	High	80.7%	72.0%	62.5%	High	88.4%	75.5%	64.3%
A5-10.1	LKD	31.4	293	Fail	23.9%	5.8%	2.3%	Fail	38.9%	4.0%	0.8%
A5-10.2	Bed	7.7	53	High	80.6%	71.6%	61.8%	High	88.0%	74.3%	63.0%
A5-10.3	Bed	12.0	97	Medium	71.3%	58.1%	44.5%	Medium	83.3%	62.3%	46.1%
A5-11.1	LKD	34.1	320	Fail	30.0%	9.4%	2.1%	Fail	42.2%	5.6%	0.4%
A5-11.2	Bed	14.7	126	High	82.5%	74.3%	65.6%	High	89.6%	77.9%	68.0%
A5-11.3	Bed	8.2	63	High	81.5%	72.9%	63.4%	High	89.3%	77.3%	66.4%
A5-11.4	Bed	15.2	126	Medium	70.8%	57.9%	46.2%	Medium	80.5%	56.5%	40.3%
A5-12.1	LKD	27.5	242	High	80.4%	70.9%	57.0%	High	88.8%	75.0%	60.8%
A5-12.2	Bed	12.9	100	Medium	73.8%	60.1%	44.7%	Medium	83.9%	62.8%	43.4%
A5-13.1	Studio	28.6	255	Fail	46.4%	14.2%	0.0%	Minimum	73.2%	29.1%	0.2%
A6-01.1	LKD	32.3	288	Fail	42.0%	16.9%	8.5%	Minimum	63.4%	14.6%	5.0%
A6-01.2	Bed	10.9	88	High	80.9%	71.6%	59.4%	High	88.2%	74.3%	59.7%
A6-01.3	Bed	12.1	96	High	88.4%	83.8%	77.0%	High	94.0%	85.3%	77.6%
A6-02.1	LKD	32.3	288	Fail	48.0%	23.8%	13.5%	Minimum	66.6%	21.4%	8.4%
A6-02.2	Bed	10.9	88	High	80.9%	71.6%	61.8%	High	88.4%	74.8%	63.2%
A6-02.3	Bed	12.1	96	High	85.9%	78.9%	70.9%	High	90.4%	78.7%	68.6%
A6-03.1	LKD	32.3	288	Fail	29.7%	10.9%	4.0%	Minimum	55.5%	9.3%	2.2%
A6-03.1	LKD	12.1	96	Medium	69.7%	51.9%	33.8%	Medium	82.8%	55.2%	32.8%
A6-03.2	Bed	11.0	88	Medium	74.1%	58.1%	42.2%	Medium	85.0%	62.6%	43.3%
A6-04.1	LKD	32.3	288	Fail	36.3%	16.7%	6.1%	Minimum	61.2%	13.9%	3.2%
A6-04.2	Bed	11.0	88	High	83.6%	75.1%	66.6%	High	89.9%	77.3%	67.0%
A6-04.3	Bed	11.7	96	High	78.7%	68.5%	56.7%	High	86.6%	70.7%	56.6%
A6-05.1	Studio	34.0	324	Fail	39.3%	14.2%	6.3%	Minimum	63.1%	13.0%	4.2%
A6-06.1	LKD	32.3	288	Fail	39.9%	18.3%	7.1%	Minimum	62.8%	16.3%	4.2%
A6-06.2	Bed	11.0	88	Medium	72.6%	59.9%	43.7%	Medium	84.2%	63.1%	43.6%
A6-06.3	Bed	11.7	96	High	81.1%	71.5%	61.6%	High	88.2%	74.1%	61.9%
A6-07.1	LKD	29.9	264	Fail	34.4%	15.0%	5.8%	Minimum	58.7%	13.1%	3.0%
A6-07.2	Bed	10.1	81	High	84.7%	76.7%	69.0%	High	90.8%	79.8%	70.4%
A6-08.1	LKD	31.4	275	High	81.3%	73.1%	63.7%	High	86.1%	70.3%	57.9%
A6-08.2	Bed	8.2	66	High	78.3%	68.0%	56.6%	High	86.1%	68.6%	53.1%
A6-08.3	Bed	12.7	101	Medium	72.6%	60.4%	44.6%	Medium	84.3%	63.7%	44.7%
A6-09.1	LKD	30.1	273	Minimum	54.8%	35.8%	22.8%	Minimum	67.9%	31.8%	14.1%
A6-09.2	Bed	8.3	64	High	84.9%	78.0%	70.6%	High	92.2%	82.9%	75.1%
A6-09.3	Bed	12.9	101	High	81.2%	72.5%	62.9%	High	88.5%	75.9%	64.7%
A6-10.1	LKD	31.4	293	Fail	25.1%	5.8%	2.2%	Fail	39.1%	3.7%	0.8%
A6-10.2	Bed	7.7	53	High	80.8%	71.7%	62.0%	High	88.0%	74.6%	63.2%
A6-10.3	Bed	12.0	97	Medium	71.6%	58.4%	45.4%	Medium	83.5%	62.7%	46.4%
A6-11.1	LKD	34.1	320	Medium	72.0%	58.7%	44.2%	Medium	82.4%	59.3%	39.6%

EN17037:2018 Table A.1 Daylight Provision Room Compliance											
Space ID	Description	Area m2	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A6-11.2	Bed	14.1	118	High	82.2%	74.1%	65.5%	High	89.6%	78.0%	68.2%
A6-11.3	Bed	7.6	55	High	81.0%	72.1%	62.8%	High	89.3%	77.5%	66.8%
A6-11.4	Bed	15.2	126	Medium	70.8%	57.7%	46.3%	Medium	81.4%	58.0%	42.0%
A6-12.1	LKD	27.3	252	Minimum	53.1%	27.2%	0.6%	Minimum	73.0%	29.7%	0.1%
A6-12.2	Bed	10.9	89	Minimum	65.3%	45.2%	20.0%	Minimum	79.9%	49.0%	20.0%
A7-01.1	LKD	32.3	288	Fail	35.3%	13.2%	4.9%	Minimum	59.9%	11.5%	3.0%
A7-01.2	Bed	11.0	88	Medium	75.2%	61.3%	45.5%	Medium	85.4%	64.8%	45.7%
A7-01.3	Bed	12.1	96	Medium	72.5%	55.8%	39.2%	Medium	84.2%	59.8%	40.1%
A7-02.1	LKD	32.3	288	Fail	39.2%	17.6%	6.3%	Minimum	62.4%	16.2%	3.3%
A7-02.2	Bed	11.0	88	High	83.8%	75.2%	66.7%	High	89.9%	77.3%	67.1%
A7-02.3	Bed	11.7	96	High	75.3%	64.4%	50.7%	High	85.7%	66.8%	50.0%
A7-03.1	Studio	34.0	324	Fail	48.6%	23.2%	11.3%	Minimum	72.0%	26.9%	9.4%
A7-04.1	LKD	32.3	288	Fail	41.4%	19.1%	7.3%	Minimum	64.0%	17.4%	4.6%
A7-04.2	Bed	11.0	88	Medium	72.3%	59.6%	43.6%	Medium	84.4%	63.4%	44.4%
A7-04.3	Bed	11.7	96	High	78.7%	68.7%	57.5%	High	86.6%	70.2%	55.7%
A7-05.1	LKD	29.9	264	Fail	34.0%	15.3%	5.5%	Minimum	59.3%	13.0%	2.9%
A7-05.2	Bed	10.1	81	High	84.7%	76.8%	69.1%	High	90.8%	79.8%	70.4%
A7-06.1	LKD	31.4	275	High	76.2%	65.9%	56.2%	High	83.2%	63.5%	50.3%
A7-06.2	Bed	8.2	66	High	77.9%	67.6%	56.3%	High	86.1%	68.7%	53.4%
A7-06.3	Bed	12.7	101	Medium	72.8%	60.7%	45.0%	Medium	84.1%	63.2%	44.3%
A7-07.1	LKD	30.1	273	Minimum	56.2%	36.5%	23.1%	Minimum	68.9%	32.9%	14.7%
A7-07.2	Bed	8.3	64	High	85.0%	78.2%	70.8%	High	92.2%	82.8%	74.8%
A7-07.3	Bed	12.9	101	High	81.3%	72.7%	63.4%	High	88.5%	75.8%	64.6%
A7-08.1	LKD	31.4	293	Fail	26.0%	6.1%	2.3%	Fail	40.1%	3.7%	0.7%
A7-08.2	Bed	7.7	53	High	81.3%	72.4%	62.9%	High	88.5%	75.3%	64.0%
A7-08.3	Bed	12.0	97	Medium	72.4%	60.0%	47.1%	Medium	83.9%	63.5%	47.9%
A7-09.1	LKD	34.1	320	Medium	66.7%	51.8%	35.2%	Medium	78.7%	51.5%	30.4%
A7-09.2	Bed	14.7	126	High	82.7%	74.8%	66.1%	High	89.9%	78.5%	69.0%
A7-09.3	Bed	8.2	63	High	82.1%	73.6%	64.6%	High	89.2%	77.3%	66.5%
A7-09.4	Bed	15.2	126	Medium	70.5%	57.6%	46.1%	Medium	79.7%	54.2%	39.0%
A8-01.1	LKD	31.2	288	Medium	72.9%	57.0%	41.8%	Medium	86.0%	67.3%	48.4%
A8-01.2	Bed	11.1	90	Medium	76.3%	63.4%	48.2%	Medium	85.8%	66.8%	48.3%
A8-01.3	Bed	11.7	96	Medium	75.0%	60.8%	44.8%	Medium	85.0%	63.8%	44.4%
A8-02.1	LKD	29.1	264	Medium	73.2%	58.9%	42.4%	Medium	85.8%	66.9%	47.5%
A8-02.2	Bed	12.7	109	Medium	72.6%	60.4%	44.8%	Medium	85.3%	65.9%	49.2%
A8-03.1	Studio	34.0	324	Minimum	55.3%	33.3%	16.9%	Minimum	75.0%	36.6%	14.1%
A8-04.1	LKD	27.6	240	Fail	42.1%	19.4%	7.5%	Minimum	62.6%	16.3%	4.4%
A8-04.2	Bed	11.7	98	Medium	71.9%	59.2%	43.2%	Medium	85.4%	66.0%	48.4%
A8-05.1	LKD	29.9	264	Fail	34.6%	15.4%	6.0%	Minimum	58.4%	12.6%	2.8%
A8-05.2	Bed	10.1	81	High	84.5%	76.5%	68.5%	High	90.8%	79.6%	70.3%
A8-06.1	LKD	31.4	275	High	81.5%	73.3%	64.0%	High	86.1%	70.3%	58.0%
A8-06.2	Bed	8.2	66	High	78.9%	69.0%	57.6%	High	86.2%	69.2%	53.9%
A8-06.3	Bed	12.7	101	Medium	73.3%	61.2%	45.5%	Medium	84.4%	63.8%	45.0%
A8-07.1	LKD	30.1	273	Minimum	58.3%	39.2%	24.8%	Minimum	70.2%	34.2%	15.7%
A8-07.2	Bed	8.3	64	High	85.0%	78.2%	70.8%	High	92.2%	82.8%	74.8%
A8-07.3	Bed	12.9	101	High	81.2%	72.5%	63.1%	High	88.6%	75.8%	64.7%
A8-08.1	LKD	31.4	293	Fail	35.1%	13.2%	3.4%	Minimum	53.5%	10.0%	1.9%
A8-08.2	Bed	7.7	53	High	81.9%	73.4%	64.0%	High	88.7%	76.0%	64.7%
A8-08.3	Bed	12.0	97	High	74.0%	62.5%	50.4%	Medium	84.5%	64.4%	49.5%

EN17037:2018 Table A.1 Daylight Provision Room Compliance											
Space ID	Description	Area m2	Sensor Count	Target Compliance	300lux_50	500lux_50	750lux_50	Minimum Compliance	100lux_95	300lux_95	500lux_95
A9-01.1	LKD	31.2	288	Medium	72.7%	57.1%	42.0%	Medium	85.9%	67.2%	48.5%
A9-01.2	Bed	11.1	90	High	77.1%	64.8%	50.0%	High	86.2%	67.8%	50.1%
A9-01.3	Bed	11.7	96	Medium	75.5%	62.3%	46.8%	Medium	85.5%	65.5%	46.8%
A9-02.1	Studio	34.0	324	Minimum	59.7%	39.8%	21.4%	Minimum	76.4%	42.3%	19.0%
A9-03.1	LKD	27.6	240	Fail	44.7%	22.3%	12.2%	Minimum	63.1%	18.0%	5.2%
A9-03.2	Bed	11.7	98	Medium	69.6%	55.0%	37.4%	Medium	83.7%	61.8%	42.0%
A9-04.1	LKD	29.9	264	Fail	47.0%	23.5%	13.3%	Minimum	64.8%	19.7%	5.6%
A9-04.2	Bed	10.1	81	High	83.6%	75.2%	66.8%	High	90.8%	79.7%	70.3%
A9-05.1	LKD	31.4	275	High	75.4%	64.7%	54.8%	Medium	81.6%	59.6%	44.2%
A9-05.2	Bed	8.2	66	High	77.9%	67.6%	56.3%	High	86.3%	69.6%	54.9%
A9-05.3	Bed	12.7	101	Medium	72.4%	60.2%	44.5%	Medium	84.4%	63.7%	44.8%
A10-01.1	LKD	31.2	288	Medium	73.4%	58.7%	43.8%	High	86.3%	68.9%	50.5%
A10-01.2	Bed	11.1	90	High	77.0%	64.5%	50.1%	High	86.3%	67.8%	50.1%
A10-01.3	Bed	11.7	96	Medium	76.6%	63.8%	48.8%	Medium	85.8%	66.3%	48.1%
A10-02.1	Studio	34.0	324	Minimum	62.6%	43.6%	25.4%	Minimum	77.0%	44.1%	20.2%
A10-03.1	LKD	40.4	380	High	85.8%	79.9%	74.1%	High	92.7%	83.6%	76.8%
A10-03.2	Bed	12.7	108	High	76.6%	66.9%	55.3%	High	86.6%	71.1%	58.2%
A10-03.3	Bed	13.2	110	High	75.1%	64.3%	51.3%	High	85.4%	67.1%	52.0%
A10-03.4	Bed	10.5	86	High	88.9%	84.5%	79.3%	High	94.6%	86.2%	80.9%
A10-03.5	Bed	15.8	135	High	92.6%	88.6%	85.1%	High	97.5%	89.2%	84.8%
A11-01.1	LKD	40.4	380	High	85.6%	79.3%	73.7%	High	92.5%	83.4%	76.4%
A11-01.2	Bed	12.7	108	High	76.5%	66.6%	54.9%	High	86.4%	70.6%	57.4%
A11-01.3	Bed	13.2	110	High	74.4%	63.6%	50.4%	High	85.5%	67.2%	52.0%
A11-01.4	Bed	10.5	86	High	87.8%	83.2%	77.2%	High	93.9%	85.6%	79.4%
A11-01.5	Bed	15.8	135	High	90.9%	87.0%	83.1%	High	96.4%	88.0%	83.4%

Table 15: Daylight Provision individual room compliance values for all habitable rooms to EN 17037 Table A.1.

Appendix C - Sunlight Hours for Living Spaces

Sunlight Hours			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
A0-01.1	No	0.7	Below criteria
A0-02.1	Yes	4.3	High
A0-03.1	No	0.0	Below criteria
A0-04.1	Yes	3.2	Medium
A0-05.1	No	0.0	Below criteria
A0-06.1	Yes	2.9	Minimum
A0-07.1	No	0.0	Below criteria
A0-08.1	Yes	2.9	Minimum
A0-09.1	Yes	2.9	Minimum
A0-10.1	Yes	9.9	High
A0-11.1	Yes	3.1	Medium
A1-01.1	No	0.8	Below criteria
A1-02.1	Yes	4.3	High
A1-03.1	No	0.2	Below criteria
A1-04.1	Yes	2.8	Minimum
A1-05.1	No	0.0	Below criteria
A1-06.1	Yes	2.7	Minimum
A1-07.1	No	0.0	Below criteria
A1-08.1	Yes	2.6	Minimum
A1-09.1	Yes	2.6	Minimum
A1-10.1	Yes	10.3	High
A1-11.1	Yes	2.8	Minimum
A2-01.1	No	1.5	Minimum
A2-02.1	Yes	4.3	High
A2-03.1	No	0.4	Below criteria
A2-04.1	Yes	2.8	Minimum
A2-05.1	No	0.0	Below criteria
A2-06.1	Yes	2.8	Minimum
A2-07.1	No	0.0	Below criteria
A2-08.1	Yes	2.8	Minimum
A2-09.1	Yes	2.8	Minimum
A2-10.1	Yes	10.3	High
A2-11.1	Yes	2.8	Minimum
A2-12.1	Yes	0.0	Below criteria
A2-13.1	Yes	9.5	High
A2-14.1	Yes	9.9	High
A2-15.1	No	0.0	Below criteria
A2-16.1	No	0.0	Below criteria
A3-01.1	No	1.8	Minimum
A3-02.1	Yes	4.3	High
A3-03.1	No	0.7	Below criteria
A3-04.1	Yes	2.8	Minimum
A3-05.1	No	0.0	Below criteria
A3-06.1	Yes	2.8	Minimum
A3-07.1	No	0.0	Below criteria
A3-08.1	Yes	2.8	Minimum
A3-09.1	Yes	2.8	Minimum
A3-10.1	Yes	10.3	High
A3-11.1	Yes	2.8	Minimum
A3-12.1	Yes	0.0	Below criteria
A3-13.1	Yes	9.5	High

Sunlight Hours			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
A3-14.1	Yes	9.9	High
A3-15.1	No	0.0	Below criteria
A3-16.1	No	0.0	Below criteria
A4-01.1	Yes	4.3	High
A4-02.1	No	1.6	Minimum
A4-03.1	Yes	2.8	Minimum
A4-04.1	No	0.3	Below criteria
A4-05.1	Yes	2.8	Minimum
A4-06.1	No	0.0	Below criteria
A4-07.1	Yes	2.8	Minimum
A4-08.1	Yes	2.8	Minimum
A4-09.1	Yes	10.3	High
A4-10.1	Yes	2.8	Minimum
A4-11.1	Yes	0.0	Below criteria
A4-12.1	Yes	9.5	High
A4-13.1	Yes	9.9	High
A4-14.1	No	0.7	Below criteria
A4-15.1	No	0.0	Below criteria
A5-01.1	No	2.3	Minimum
A5-02.1	Yes	2.8	Minimum
A5-03.1	No	1.8	Minimum
A5-04.1	Yes	2.8	Minimum
A5-05.1	No	0.0	Below criteria
A5-06.1	Yes	2.8	Minimum
A5-07.1	Yes	2.8	Minimum
A5-08.1	Yes	10.3	High
A5-09.1	Yes	2.8	Minimum
A5-10.1	Yes	0.0	Below criteria
A5-11.1	Yes	2.8	Minimum
A5-12.1	Yes	1.3	Below criteria
A5-13.1	No	0.0	Below criteria
A6-01.1	No	3.5	Medium
A6-02.1	Yes	4.3	High
A6-03.1	No	2.2	Minimum
A6-04.1	Yes	2.8	Minimum
A6-05.1	No	0.2	Below criteria
A6-06.1	Yes	2.8	Minimum
A6-07.1	Yes	2.8	Minimum
A6-08.1	Yes	10.3	High
A6-09.1	Yes	2.8	Minimum
A6-10.1	Yes	0.0	Below criteria
A6-11.1	Yes	2.8	Minimum
A6-12.1	Yes	0.0	Below criteria
A7-01.1	No	2.3	Minimum
A7-02.1	Yes	2.8	Minimum
A7-03.1	No	2.0	Minimum
A7-04.1	Yes	2.8	Minimum
A7-05.1	No	2.8	Minimum
A7-06.1	Yes	10.3	High
A7-07.1	Yes	2.8	Minimum
A7-08.1	Yes	0.0	Below criteria

Sunlight Hours			
Unit ID	LKD window within 90° South	No. sunlight hours on 21st March	Compliance
A7-09.1	Yes	2.8	Minimum
A8-01.1	No	2.3	Minimum
A8-02.1	Yes	4.1	High
A8-03.1	No	4.5	High
A8-04.1	Yes	2.8	Minimum
A8-05.1	Yes	2.8	Minimum
A8-06.1	Yes	10.3	High
A8-07.1	Yes	2.9	Minimum
A8-08.1	Yes	1.3	Below criteria
A9-01.1	No	2.3	Minimum
A9-02.1	No	4.7	High
A9-03.1	Yes	4.1	High
A9-04.1	Yes	4.1	High
A9-05.1	Yes	10.3	High
A10-01.1	No	2.9	Minimum
A10-02.1	No	4.7	High
A10-03.1	Yes	1.8	Minimum
A11-01.1	Yes	1.5	Minimum

Table 16: Sunlight hours to living spaces