

5.0 Methodology

5.1 Building the Baseline and Proposed Models

In order to obtain the results of this assessments, 3D Design Bureau (3DDB) received a series of architectural 3D digital models in Revit 2022, a BIM software application made available by Autodesk.

C+W O'Brien supplied 3DDB with a 3D model of the proposed development and landscape drawings were issued by CSR Land Planning & Design. This information was subsequently used to prepare a model for daylight and sunlight analysis calculations.

As best practice, a combination of survey information, aerial photography, available online photography and/or ordnance survey information were used to model the surrounding context and assessed buildings. **Note:** as the information gathered from online sources is not as accurate as surveyed information, some tolerance should be allowed to the placement of windows, boundary treatments and the results generated.

Baseline

The baseline state reflects the existing environment. It includes the surrounding context and the subject site in their current standing. This includes any structures that are to be demolished as part of this application. Existing trees were placed using photogrammetry information, with assumptions made regarding exact size, position and species.

Proposed

The proposed state reflects the subject site if the development is built as proposed. This includes the retention of the existing Scholarstown House, the demolishing of structures, landscaping etc. Proposed trees have been included in this state and used appropriately in the relevant studies.

5.2 Trees

It is generally not possible to accurately represent trees in a digital 3D model as the size and shape will differ greatly from tree to tree. When modeling trees for this assessment assumptions have been made and tree geometry has been simplified.

For the purpose of the analysis carried out in this report, the position and size of existing trees have been estimated using photogrammetry information. The shape of the trees have been simplified and the species of each tree has been assumed. Simplified models of proposed trees within the development have also been included according to the information provided by CSR Land Planning & Design.

Whilst evergreen trees are included in all studies, BRE 209 provides guidance on how deciduous trees should be treated depending on the study being carried out, as summarised below:

Impact to Vertical Sky Component (VSC) and Annual / Winter Probable Sunlight Hours (APSH / WPSH)

The BRE Guidelines state that when assessing the effect a new development would have on existing buildings, it is usual to ignore the effect of deciduous trees. This is because daylight is at its scarcest and most valuable in winter when most trees will not be in leaf.

Sun On Ground (SOG)

The BRE Guidelines states that when assessing the impact of buildings on sunlight in gardens:

"...trees and shrubs are not normally included in the calculation unless a dense belt or group of evergreens is specifically planned as a windbreak or for privacy purposes. This is partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees)."

As such, deciduous trees have not been included in the calculation of SOG in either the impact or scheme performance assessments. Deciduous trees may be included in shadow studies if there is a dense belt located close to the subject site. When a dense belt of deciduous trees are included in the shadow study, it will be clearly stated.

Sunlight Exposure (SE)

The BRE Guidelines state that as deciduous trees would not be in full leaf on the recommended assessment date (March 21st), sunlight would be expected to penetrate deciduous trees. However, as trees have so many variables, it is impossible to accurately represent how they would affect sunlight at a given time. The suggested methodology (BRE 209) to allow for this is to run the sunlight exposure study in two states. Once with deciduous trees as opaque objects and secondly without deciduous trees in the assessment model. This gives a range of potential sunlight hours.

Spatial Daylight Autonomy (SDA)

BRE 209 recommends when assessing daylight in a proposed building, it is appropriate to run the assessment with deciduous trees represented in both winter and summer conditions. Light transmittance values of 60% and 20% have been applied to deciduous tree canopies for winter and summer assessments respectively.

I.S. EN 17037 does not give any guidance on how trees should be represented. For the purpose of this report, the SDA calculation under the I.S. EN 17037 criteria has been carried out with deciduous trees in summertime foliage to represent the worst case scenario.

Shadow Study

The hourly renderings of the shadow study will be generated with evergreen trees represented as opaque objects and without deciduous trees. This method best represents the methodology used for the impact assessment and allows for a better understanding of potential shadows cast by the proposed development through the tree canopy. Deciduous trees may be included in shadow studies if there is a dense belt located close to the subject site. When a dense belt of deciduous trees are included in the shadow study, it will be clearly stated.

5.3 Generating Results

The 3D models as stated above were brought into specialist software packages specifically designed for the purpose of daylight and sunlight analysis.

The results are generated and analysed considering the BRE Guidelines, as expanded on below.

5.3.1 VSC

Assessment Criteria

The effect on Vertical Sky Component (VSC) has been calculated on surrounding windows that are within the 25° rule as recommended in the BRE Guidelines. This rule states that if any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, does not subtend an angle of more than 25° to the horizontal, then the daylighting and sunlighting of the existing building are unlikely to be adversely affected.

Under BRE Guidelines, only habitable rooms need to be assessed for effect on daylight and sunlight. In the absence of design layouts or floor plans, or information pertaining to the internal 'as-built' layouts, assumptions have been made regarding the function of the windows of the existing surrounding properties (i.e. what room type is served by the window being assessed).

Typically, the effect on ground floor windows is greater than the effect on windows of subsequent floors. However, floors above ground floor level have been included in this study to give a more comprehensive assessment.

Assessment Points

The assessment points for measuring VSC or AP SH are taken from the centre point of a standard window.

If the window being assessed is a full height window, the assessment point is taken at 1600 mm above the finished floor level.

Weighted Averages

If there would be a significant loss of light to the main window but the room also has one or more smaller windows, an overall VSC may be derived by weighting each VSC element in accordance with the proportion of the total glazing area represented by its window.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, each window has been assessed and a weighted average has been calculated using the methodology as outlined above, but it should be noted that assumptions typically need to be made regarding window sizes, so a tolerance should be applied regarding calculated weighted averages.

APSH/WPSH

Impact Assessment

Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH) has been calculated on the windows assessed in the VSC study. The BRE Guidelines suggest that windows within the 25° rule and also with an orientation within 90 degrees of due south should be assessed. Therefore, the APSH/WPSH of windows that do not have an orientation within 90° of due south have not been assessed for the purposes of this report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, the APSH/WPSH will be assessed for the room as opposed to each individual window. When APSH/WPSH is assessed for a room it considers sunlight coming from all windows, but does not double count if sunlight is reaching multiple windows at the same time.

The assessment points for APSH/WPSH are equivalent to the VSC study.

The assessment points for measuring VSC or AP SH are taken from the centre point of a standard window.

5.3.2 Sun On Ground

Assessment Criteria

Effect on sunlight to existing neighbouring gardens and/or amenity areas has been assessed to the north of the proposed development, as areas located to the south are unlikely to be affected due to sun direction. Overshadowing is highly unlikely to occur in areas that are due south of any proposed development.

The levels of sunlighting to proposed amenity areas, as indicated by the architect, have been assessed. However, it should be noted that the numbering of these spaces in the Daylight and Sunlight Assessment Report has been assigned by 3DDB specifically for the purposes of this report. If other consultants are referencing these spaces in their own reports, it is unlikely they will be numbered the same.

5.3.3 Sunlight Exposure

Assessment Criteria

Sunlight exposure is carried out on habitable rooms within a proposed development. If a room has multiple windows, the amount of sunlight received by each can be added together provided they occur at different times and sunlight hours are not double counted.

The assessment point is taken from the centre of the opening width and at least 1.2m above the floor and 0.3m above the sill (whichever is the higher).

The sunlight exposure of all habitable rooms within the proposed development have been assessed.

Scheme compliance is calculated as a percentage of compliant units as opposed to compliant rooms.

5.3.4 Spatial Daylight Autonomy

SDA Target Values

There are two methods for calculating SDA:

- **Calculation method using daylight factor:** The daylight factor method assumes a constant ratio between internal and external illuminance. The daylight factors in the space shall be calculated by any reliable method that is based on the ISO 15469:2004 standard overcast sky (TYPE 1 or TYPE 16). Daylight factors are to be predicted across grid of points on a plane 0.85m above the floor of the space. The daylight factor of at least half the required area of the space should equal or exceed the target values.
- **Calculation method using illuminance level:** This requires the use of a detailed daylight calculation method where hourly (or sub-hourly) internal daylight illuminance values for a typical year are computed using hourly (or sub-hourly) sky and sun conditions derived from climate data appropriate to the site. This calculation method determines daylight provision directly from simulated illuminance values on the reference plane. The illuminance value of at least half the required area of the space should equal or exceed the target values.

The calculations carried out in this report use the calculation method using illuminance level.

The target values to be achieved depend on the guidelines that are followed.

The recommended target illuminance level to be achieved across at least 50% of the working plane for at least half of the daylight hours in BRE 209 depend on the function of the room. 200 Lux is recommended for kitchens, 150 Lux for living rooms and 100 Lux for bedrooms.

Where a room serves more than one purpose, such as the modern day apartment design of the living/kitchen/dining (LKD), the target SDA should be taken for the room with the highest value.

Following this advice, a target SDA value of 200 Lux has been applied to LKDs within the proposed scheme.

The target SDA values recommended within I.S. EN 17037 do not vary depending on the room function. In which, at least 50% of the working plane should receive above 300 lux for at least half the daylight hours, with 95% of the working plane receiving above 100 Lux.

Should full SDA compliance be sought, design changes could be needed, such as the removal of balconies or a reduction of unit sizes. Such mitigation measures could reduce the quality of living within the proposed units to a greater degree than the improvements that would be gained with increased SDA values.

In new developments, some internal spaces (e.g. studio apartments, shared communal areas etc.) can possibly be of a nature that do not have a predefined target value in BRE 209. In such instances, 3DDB have applied a target value they deem to be appropriate. In the case of the proposed development there are not such spaces.

Defining Rooms

Definition of rooms has been taken directly from the architectural drawings supplied by C+W O'Brien.

Circulation spaces, corridors, bathrooms etc. have not been assessed.

Indication of the assessed space in each room is provided in the floor plans that correspond to the SDA results in section "C.3 Spatial Daylight Autonomy (SDA) in Proposed Units" on page 71 of the appendix section.

Working Plane

The calculation of SDA is carried out on a hypothetical working plane which lies 850 mm from the finished floor level in residential units and 700 mm in academic and office spaces.

In the BRE 209 study the working plane is offset 300 mm from the room boundaries. Room boundaries are taken from the inside face of the interior walls.

Under the I.S. En 17037 criteria the working plane is offset 500 mm from the room boundaries.

The working plane has a grid density of approximately 300 mm.

Material Palette

Following consultation with the project architect, material values used for SDA calculations are as per the table below:

Object	Material	Reflectance	Object	Material	Reflectance
					Transmittance
Exterior walls	Standard Brick	0.3	Interior Walls	Pastel paint	0.70
	Light Brick	0.4	Interior Ceiling	White paint	0.8
	Dark Brick	0.15	Interior Floor	Light timber	0.4
	Render	0.6	Miscellaneous	Miscellaneous	0.5
	Concrete	0.4	Glass	Double glazing	0.68
Ground cover	Paving	0.4		Maintenance Factor	0.91
	Tarmac	0.2		Glass adjusted for maintenance	0.62
	Grass	0.2		Frosted glass	0.5

5.4 Shadow Study

The shadow study renderings have been carried out in order to give a visual representation to the results set out in the sunlight assessment section of this report.

Hourly renderings have been shown from sunrise to sunset on the following dates:

- Spring equinox: March 21st Sunrise 6:25 | Sunset 18:40.
- Summer solstice: June 21st. Sunrise 4:57 | Sunset 21:57.
- Winter solstice: December 21st Sunrise 8:38 | Sunset 16:08.

The hourly renderings of the shadow study will be generated without deciduous trees and with evergreen trees represented as opaque objects.

The hourly renderings of the shadow study can be found in the hourly shadow diagrams in the appendix results section B.0 on page 47 of the appendix section.

Note: Considering the spring equinox (March 21st) and autumn equinox (22nd September) yield similar results, only the spring equinox was generated.

6.0 Analysis of Results

Results were generated and analysed for the following studies:

- Vertical Sky Component
 - 17, 19 Orlagh Green, Scholarstown Road
 - 20, 22 Orlagh Crescent, Scholarstown Road
 - Orlagh Local Services, Orlagh Grove
 - Rossmore Lodge, Scholarstown Road
 - Ros Mor View, Scholarstown Road
 - Saint Colmcilles Community School, Scholarstown Road
- Annual and Winter Probable Sunlight Hours
 - 20, 22 Orlagh Crescent, Scholarstown Road
 - Orlagh Local Services, Orlagh Grove
 - Rossmore Lodge, Scholarstown Road
 - Ros Mor View, Scholarstown Road
- Sun On Ground in Existing Gardens/Amenity Spaces
 - 17, 19 Orlagh Green, Scholarstown Road
 - 20, 22 Orlagh Crescent, Scholarstown Road
 - Rossmore Lodge, Scholarstown Road
 - Ros Mor View, Scholarstown Road
- Sun On Ground in Proposed Gardens/Amenity Spaces
 - 3 no. spaces in the proposed development.
- Sunlight Exposure in proposed units
 - 74 no. units in the proposed apartment block.
 - 2 no. units in the existing Scholarstown House
- Spatial Daylight Autonomy in proposed habitable rooms
 - 199 no. rooms in the proposed apartment block.
 - 9 no. units in the existing Scholarstown House

6.1 Analysis of Impact Assessment Results

6.1.1 Effect on Vertical Sky Component (VSC)

The effect on VSC has been assessed for 104 no. windows/rooms across the surrounding properties. Using the rationale explained in section 3.2 on page 10, the effect to VSC on all of these windows (or rooms if an average of multiple windows has been taken) would be considered *negligible*.

This shows that 100% of the assessed windows will experience a negligible level of effect.

This can be considered excellent results and can be attributed to the design and layout of the proposed scheme allowing sufficient separation of it from all the neighbouring properties which could be affected.

The results of the study on VSC caused by can be found in section A.1 on page 27 of the appendix section.

6.1.2 Effect on Annual/Winter Probable Sunlight Hours (APSH/WPSH)

The APSH/WPSH assessment has been carried out on the relevant windows of the surrounding properties that have an orientation within 90 degrees of due south.

The effect on APSH has been assessed for 50 no. of windows/rooms of the surrounding existing properties across 20, 22 Orlagh Crescent| Orlagh Local Services| Rossmore Lodge| Ros Mor View. Using the rationale explained in section 3.2 on page 10, the effect on the APSH of all of these windows or rooms would be considered *negligible*.

100% of these windows have met the criteria for effect on APSH as set out in the BRE Guidelines.

The effect on WPSH has been assessed for the same 50 no. of windows/rooms of the surrounding existing properties. The effect on the WPSH of all of these windows or rooms would be considered *negligible* as well.

100% of these windows have met the criteria for effect on WPSH as set out in the BRE Guidelines.

This can be considered excellent results and can be attributed to reasons stated above for VSC impact.

The results of the study on APSH/WPSH can be found in Section A.2 on page 36 of the appendix section.

6.1.3 Effect on Sun On Ground in Existing Gardens

This study has assessed the effect the proposed development would have on the level of sunlight on March 21st in the rear gardens of the neighbouring properties that are located along 17,19 Orlagh Green| 20,22 Orlagh Crescent| Rossmore Lodge| Ros Mor View.

In total 6 no. spaces have been assessed. Using the rationale explained in section 3.2 on page 10, all of them would experience an *negligible* level of effect.

100% of these outdoor spaces have met the criteria for effect on sunlighting as set out in the BRE Guidelines.

This can be considered excellent results and can be attributed to reasons stated above for VSC impact.

The results of the study on effect on sunlight the neighbouring gardens can be found In section A.3 on page 45.

A visual representation of these readings can be seen in the 2 hour false colour plans in section A.3 and in the hourly shadow diagrams for March 21st in section A.3 on page 45 of the appendix section.

6.2 Analysis of Scheme Performance Results

6.2.1 Sun On Ground in Proposed Outdoor Amenity Areas

This study has assessed the level of sunlight on March 21st within the proposed amenity areas.

In total 3 no. spaces have been assessed, 1 no. of which would meet the criteria as set out in the BRE Guidelines.

The 2 no. private gardens of the existing Scholarstown House will receive lower levels of sunlight than the minimum required by the BRE Guidelines. This is mainly due to the overshadowing caused by the proposed apartment block to the south of the existing house, but also by the house itself which is located on the south side of the private gardens. However, the proposed public amenity area is displaying good levels of sunlight. Providing extra private space to the east side of the house would likely increase the sunlight levels for these private gardens. This can be seen from the false colour plan in section C.1 on page 56. However, this would take away well sunlit space from a public amenity area which will be enjoyed by all the future occupants of the proposed scheme, including the house occupants.

Effect on sunlight to existing neighbouring gardens and/or amenity areas has been assessed to the north of the proposed development, as areas located to the south are unlikely to be affected due to sun direction. Overshadowing is highly unlikely to occur in areas that are due south of any proposed development.

The results for the study on sunlighting in the proposed outdoor amenity spaces can be found in section C.1 on page 56 of the appendix section.

A visual representation of these readings can be seen in the false colour plan in section C.1 and in the hourly shadow diagrams for March 21st in section B.1 on page 47 of the appendix section.

6.2.2 Sunlight Exposure (SE)

A sunlight exposure assessment has been carried out on all habitable rooms within the proposed development with deciduous trees represented both as opaque objects and removed from the model.

Proposed apartment block

In total 74 no. units have been assessed. Using the rationale explained in section 3.3 on page 11, the level of sunlight exposure for 42-44 no. units is considered *high*, 9-13 no. *medium*, 5-7 no, have reached the *minimum* recommendation with 12-16 units below the *minimum* recommendation.

The SE assessment has shown that circa ~ (78% - 84%) of the proposed units meet the criteria for sunlight exposure as set out in the BRE Guidelines.

Existing Scholarstown House

In total 2 no. units have been assessed. Using the rationale explained in section 3.3 on page 11, the level of sunlight exposure for both of them is considered *high*.

The SE assessment has shown that 100% of the proposed units meet the criteria for sunlight exposure as set out in the BRE Guidelines.

Whilst, the criterion applies to rooms of all orientations, it should be noted that if a room faces significantly north of due east or west it is unlikely to be met. As such, it is not always possible to achieve full compliance. **Note:** As previously stated, for a unit to be compliant under BRE 209, only one habitable room within the unit needs to meet the guideline values.

No recommendation is made regarding the performance of a development as a whole for SE performance, but 3DDB consider the proposed development to perform favourably in this regard. The proposed apartment block presents a good number of dual and triple aspect units. The noticeable difference between winter and summer state compliance rates suggests that the large number of trees in the surrounding context would contribute towards a reduction of direct sunlight in some units when trees are in full leaves during summer. However, they also reduce the risk of potential heat gain and can be considered to provide a favourable outlook for occupants.

The results for the study on SE in the habitable rooms of the proposed units can be seen in section C.2 on page 58 of the appendix section.

6.2.3 Spatial Daylight Autonomy (SDA)

This study has assessed the Spatial Daylight Autonomy (SDA) received in all habitable rooms across all floors of the proposed development. This has ensured that a clear understanding has been obtained regarding the daylight performance of the proposed development.

Proposed apartment block

This proposed block consists of 74 no. units, which makes up approximately 199 no. habitable rooms.

Under the criteria as set out in the BRE 209, the SDA value in 184-188 no. habitable rooms meet or exceed their target values in the summer and winter time calculations respectively. This gives a circa compliance rate of ~ (92% - 94%). This could be considered a very good level of compliance, which demonstrates that consideration has been given to the daylight and sunlight when designing the proposed scheme and internal layouts. Also, the design team worked closely with 3DDB to put in place targeted amendments to the interior layout to increase the compliance rate. This was done through the increase of glazing areas where required and the reconfiguration of some internal spaces/layouts. Also, the landscape design was amended, and proposed trees have been repositioned and resized where they were heavily affecting the daylight levels to some units.

It should be also noted that a supplementary assessment has been carried out with the removal of the 3 no. existing trees along Orlagh Grove and the 2 no. big evergreen trees to the south of the proposed building, to assess if the non-compliance of some rooms was attributed to the design itself or the presence of those trees. The findings have shown that LKDs of units 0118, 0210, 0211 would meet the recommended Lux levels for SDA (respectively with an SDA of 72%, 53%, 54% in summer state) without those trees in place, bringing the compliance rate to ~ (94% - 96%). However trees are an integral part of any scheme with regard to environmental and planning grounds along with biodiversity. Whilst trees can contribute towards a reduction of daylight in units they also reduce the risk of potential heat gain and can be considered to provide a favourable outlook for occupants.

I.S. EN 17037 sets out more onerous recommendations for SDA. As such, the number of rooms achieving compliance is 108, giving a reduced circa compliance rate of ~54%.

With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments December 2020, states the following:

"Where an applicant cannot fully meet all of the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, which planning authorities should apply their discretion in accepting taking account of its assessment of specific (sic). This may arise due to design constraints associated with the site or location and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution."

Where rooms are compliant with the criteria of BRE 209 and non-compliant with I.S. EN 17037, it could be considered that this is due to the exceptionally high standards required to achieve compliance with I.S. EN 17037 rather than an indication of insufficient daylight.

Based on the above statements, compensatory measures have been incorporated into the design of the proposed development where rooms do not achieve the daylight provision targets in accordance with the standards they were assessed against within the primary study (BRE 209).

Please also refer to the architectural design statement for further rationale.

Unit 0001 - Kit/Liv/Din

The Kitchen/Living/Dining room within this unit is provided with 35.7sqm floor area which is 5.7sqm above the minimum 30sqm requirement. This unit is also provided with a private garden of 62sqm which includes a 12.6sqm terrace area and private access gate directly onto Orlagh Grove.

Unit 0002 - Kit/Liv/Din

The Kitchen/Living/Dining room within this unit is provided with 34.9sqm floor area which is 4.9sqm above the minimum 30sqm requirement. This unit is also provided with a private garden of 60sqm which includes a 12.6sqm terrace area and private access gate directly

Unit 0002 - Bedroom 2

This bedroom achieves the BRE 209 requirements in the winter condition. Therefore the leaves on the street trees create the shading and reduce the light into the bedroom during the summer. We believe the amenity benefits of the street tree outweigh the slight reduction in daylight into the room in the summer condition. The bedroom is also 1sqm above the area required for a double bedroom and the overall apartment is 11sqm above the minimum area required.

Unit 0003 - Kit/Liv/Din

The Kitchen/Living/Dining room within this unit is provided with 34.5sqm floor area which is 4.5sqm above the minimum 30sqm requirement. This unit is also provided with a private garden of 61sqm which includes a 12.6sqm terrace area and private access gate directly onto Orlagh Grove.

Unit 0003 - Bedroom 1

This bedroom achieves the BRE 209 requirements in the winter condition. Therefore the leaves on the street trees create the shading and reduce the light into the bedroom during the summer. We believe the amenity benefits of the street tree outweigh the slight reduction in daylight into the room in the summer condition. The overall apartment is 5.5sqm above the minimum area required.

**Unit 0005 - Kit/Liv/Din**

The Kitchen/Living/Dining room within this unit is dual aspect and provided with 27.2sqm floor area which is 4.2sqm above the minimum 23sqm requirement. This unit is also provided with a private garden terrace of 9.2sqm with surrounding buffer low level hedge and accessed directly from the living space. This unit also benefits from attractive views of Scholarstown House and associated landscaping.

Unit 0006 - Kit/Liv/Din

The overall floor area of this dual aspect apartment is 99sqm which is 26sqm above the minimum required. The living space overlooks the existing heritage building Scholarstown House and associated vista, quality landscaping and preserved mature sycamore tree and benefits from the addition of bay window which provides additional floor space to the internal living/kitchen/dining but also offer significant dual aspect views of these significant amenity spaces.

Unit 0006 - Bedroom 1

The overall floor area of this dual aspect apartment is 99sqm which is 26sqm above the minimum required. The floor area of this bedroom is 7sqm above the minimum area required which provides additional internal space for the occupant but makes the inner areas of the bedroom achieve less daylight.

Unit 0006 - Bedroom 2

The overall floor area of this dual aspect apartment is 99sqm which is 26sqm above the minimum required. The floor area of this bedroom is 1sqm above the minimum area required which provides additional internal space for the occupant but makes the inner areas of the bedroom achieve less daylight. This bedroom achieves the BRE 209 requirements in the winter condition. Therefore the leaves on the trees create the shading and reduce the light into the bedroom during the summer.

Unit 0106 - Kit/Liv/Din

The Kitchen/Living/Dining room within this unit is provided with 34.9sqm floor area which is 4.9sqm above the minimum 30sqm requirement. This unit is also provided with a private balcony of 7.5sqm accessed directly from the living space. This living space receives a reduction of daylight due to the existing street trees, we believe the amenity benefits of the street tree outweigh the slight reduction in daylight into the room.

Unit 0107 - Kit/Liv/Din

The Kitchen/Living/Dining room within this unit is provided with 34.5sqm floor area which is 4.5sqm above the minimum 30sqm requirement. This unit is also provided with a private balcony of 7.5sqm accessed directly from the living space. This living space receives a reduction of daylight due to the existing street trees, we believe the amenity benefits of the street tree outweigh the slight reduction in daylight into the room.

Unit 0107 - Bedroom 1

This bedroom achieves the BRE 209 requirements in the winter condition. Therefore the leaves on the street trees create the shading and reduce the light into the bedroom during the summer. We believe the amenity benefits of the street tree outweigh the slight reduction in daylight into the room in the summer condition. The overall apartment is 5.5sqm above the minimum area required.

Unit 0118 - Kit/Liv/Din

The overall floor area of this dual aspect apartment is 46.5sqm which is 1.5sqm above the minimum required. The apartment benefits from a south facing aspect at first floor level. The living space of this apartment receives a reduction in daylight ingress due to the existing mature Monterey Cypress tree across the access road. This Cypress tree will also be pruned to arborist guidelines at the initial construction stage which will increase daylight into the apartments further. We believe the amenity benefits of the cypress tree outweigh the slight reduction in daylight into the room and offers a significant quality of visual amenity to this apartment unit.

Unit 0210 - Kit/Liv/Din

The Kitchen/Living/Dining room within this unit is provided with 34.9sqm floor area which is 4.9sqm above the minimum 30sqm requirement. This unit is also provided with a private balcony of 7.5sqm accessed directly from the living space. This living space receives a reduction of daylight due to the existing street trees, we believe the amenity benefits of the street tree outweigh the slight reduction in daylight into the room.

Unit 0211 - Kit/Liv/Din

The Kitchen/Living/Dining room within this unit is provided with 34.5sqm floor area which is 4.5sqm above the minimum 30sqm requirement. This unit is also provided with a private balcony of 7.5sqm accessed directly from the living space. This living space receives a reduction of daylight due to the existing street trees, we believe the amenity benefits of the street tree outweigh the slight reduction in daylight into the room.



Existing Scholarstown House

The existing house in the proposed layout consists of 2 no. units, which makes up approximately 9 no. habitable rooms. Under the criteria as set out in the BRE 209, the SDA value meets or exceeds its target value only in 1 no. instance.

As stated in section 1.4 on page 6, the existing Scholarstown House is a protected structure, hence there will be no alterations to the external facades. The levels of daylight would not be sufficient to comply with BRE Guidelines in most cases, and an increase in glazing areas would not be possible. However, the house has been re-arranged internally for use as two separate units as opposed to the current one unit, with attention to a daylight-conscious design with the relocation of the staircore to the north and the habitable rooms to the south. These proposed design amendments will improve the house condition and interior layout will better respond to current housing needs.

The results for the study on SDA can be seen in section C.3 on page 71 of the appendix section.