



DAYLIGHT & SUNLIGHT

IMPACT ON NEIGHBOURING
PROPERTIES REPORT

**Central Mental Hospital,
Dundrum, Dublin**

Dún Laoghaire Rathdown County Council, in
partnership with The Land Development Agency

20 September 2024

GIA No: **17967**

PROJECT DATA:

Client
Dún Laoghaire Rathdown County Council, in partnership with The Land Development Agency

Architect **Reddy Architecture + Urbanism**

Project Title **Central Mental Hospital, Dundrum, Dublin**

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DISCLAIMER:

This report has been prepared for Dún Laoghaire Rathdown County Council, in partnership with The Land Development Agency by GIA as their appointed Daylight & Sunlight consultants. It is accurate as at the time of publication and based upon the information we have been provided with as set out in the report. It does not take into account changes that have taken place since the report was written nor does it take into account private information on internal layouts and room uses of adjoining properties unless this information is publicly available.



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1 EXECUTIVE SUMMARY

GIA have assessed the proposed Reddy Architecture + Urbanism scheme (“Proposed Development”) for the site at the former Central Mental Hospital, Dundrum, Dublin, to understand the potential changes in light to the relevant surrounding properties.

- 1.1 GIA have been instructed to undertake a detailed technical assessment for the Proposed Development for the Part 10 Application at the Central Mental Hospital site in Dundrum, Dublin (“Proposed Development”). The purpose of this assessment is to understand the potential daylight and sunlight alterations caused by the Reddy Architecture + Urbanism (“Reddy Architects”) scheme upon the relevant surrounding properties.
- 1.2 The assessments set out in this report have been undertaken with regard to the advice and recommendations set out within the Building Research Establishment Guidelines (BRE) entitled ‘Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice’ 2022, hereafter referred to as the “BRE Guidelines”. The criteria suggested within the BRE have been used to understand and compare the existing levels of light and the light achieved subsequent the implementation of the proposed masterplan development.
- 1.3 GIA note that large portions of the Site are currently vacant with the neighbouring properties sitting within close proximity to the site boundary, meaning it is inevitable that some degree of change in light condition would occur for this site to be developed at the capacity intended. It is worth mentioning at this stage that Section 1.6 of the BRE Guidelines states that

“although it gives numerical guidelines, these should be interpreted flexibly since natural light is only one of many factors in site layout design”.
- 1.4 GIA’s detailed analysis considers 1099 windows across 155 individual properties, which have been selected due to their planning use, proximity and orientation towards the development site. When assessed against the Vertical Sky Component (“VSC”) methodology for daylight, **1090/1099 (99%)** windows will satisfy BRE Guidelines. Where BRE transgressions occur, they generally range between slight or moderate in nature, with no significant impacts anticipated.
- 1.5 When assessed against the Annual Probable Sunlight Hours (“APSH”) methodology for sunlight, **640/641 (99%)** windows that face within 90° due south of the development site will meet BRE criteria for this assessment.
- 1.6 In GIAs experience, the Proposed Development performs exceptionally well from a daylight and sunlight perspective particularly when one appreciates the density sought on this Site. The massing arrangement, orientation and tiered nature of the proposed apartment blocks means that the impact on the neighbouring environment has been minimised. Whilst there are some slight to moderate BRE transgressions, there are generally mitigating circumstances associated with the impact, such as the vacant/ low rise existing site conditions, or in some cases the self-limiting nature of overhanging walkways/ projections.
- 1.7 GIA have also provided an additional cumulative analysis in order to account for the Proposed Development (Part 10 Application) in conjunction with the proposed masterplan building (highlighted yellow within figure 02). The outcome of this assessment indicates that all of the neighbouring windows assessed will not experience any further changes to daylight and sunlight amenity and will produce the same compliance rates as the proposed Strategic Housing Development. This scenario is discussed further within section 6 of this report.
- 1.8 On the balance and in context of the Site, the impacts to the neighbouring properties are considered to be within the intention and application of the BRE guidelines and therefore should be considered by GIA to be acceptable in daylight and sunlight terms.



Figure 01: Proposed Development (Part 10 Application) designed by Reddy Architecture + Urbanism



Figure 02: Masterplan Development

2 THE SITE

GIA have been instructed to review and advise on the daylight, sunlight and overshadowing impacts associated with the implementation of the Proposed Development at the former Centre Mental Hospital site in Dundrum, Dublin.

THE SITE

- 2.1 The Site is located within Dún Laoghaire–Rathdown County Council. The Site is bound by Dundrum Road and Annville Grove to the west, Mulvey Park to the north, Friarsland Road to the east and Larchfield Road to the south. In its current condition, the site comprises the Central Mental Hospital which was originally opened in 1850.
- 2.2 GIA's interpretation of the existing Site can be seen within Figure 03 (below) and within Appendix 03.

PROPOSED DEVELOPMENT

- 2.3 Dún Laoghaire Rathdown County Council, in partnership with The Land Development Agency, is seeking a ten year approval to carry out the following proposed development which is located on a total application site area of c. 9.7 ha, located on the former Central Mental Hospital, Dundrum Road, Dundrum, Dublin 14 and areas of Dundrum Road and St. Columbanus Road, Dublin 14. The subject site is in the immediate setting and curtilage of a number of protected structures, namely the 'Asylum' (RPS No. 2072), the 'Catholic Chapel' (RPS No. 2071) and the 'Hospital Building' (RPS No. 2073).
- 2.4 The development will consist of the construction of a residential scheme of 934 no. dwellings on an overall site of c. 9.7 ha.
- 2.5 The development will consist of the demolition of existing structures associated with the existing use (3,677 sq m), including:
- Single storey former swimming pool / sports hall and admissions unit (2,750 sq m);
 - Two storey redbrick building (305 sq m);
 - Single storey ancillary and temporary structures including portacabins (618sq m);
 - Removal of existing internal sub-divisions/ fencing, including removal of security fence at Dundrum Road entrance;
 - Demolition of section of porch and glazed screens at Gate Lodge building (4 sq m);
 - Removal of walls adjacent to Main Hospital Building;
 - Alterations and removal of section of wall to Walled Garden.
- 2.6 The development will also consist of alterations and partial demolition of the perimeter wall, including:
- Alterations and removal of section of perimeter wall adjacent to Rosemount Green (south);
 - Formation of a new opening in perimeter wall at Annville Grove to provide a pedestrian



Figure 03: Existing Site

- and cyclist access;
 - Alterations and removal of sections of wall adjacent to Dundrum Road (including removal of existing gates and entrance canopy), including reduction in height of section, widening of existing vehicular access, and provision of a new vehicle, cyclist and pedestrian access;
 - Alterations and removal of section of perimeter wall adjacent to Mulvey Park to provide a pedestrian and cyclist access.
- 2.7 The development with a total gross floor area of c. 94,058 sq m (c. 93,980 sq m excluding retained existing buildings), will consist of 934 no. residential units comprising:
- 926 no. apartments (consisting of 342 no. one bedroom units; 98 no. two bedroom (3 person) units; 352 no. two bedroom (4 person) units; and 134 no. three bedroom units) arranged in 9 blocks (Blocks 02-10) ranging between 2 and 8 storeys in height (with a lower ground floor to Blocks 02 and Block 10 and Basements in Blocks 03 and 04), together with private balconies and private terraces and communal amenity open space provision (including courtyards) and ancillary residential facilities, including an 130 sq m internal residential amenity area at the Ground Floor Level of Block 3;
 - 6 no. three bedroom duplex apartments located at Block 02, together with private balconies and terraces.
 - 2 no. 5 bedroom assisted living units and private rear gardens located at Block 02.
- 2.8 The development will also consist of 4,380 sq m of non-residential uses, comprising:
- Change of use and renovation of existing single storey Gate Lodge building (former reception/staff area) to provide a café unit (78 sq m);
 - 1 no. restaurant unit (266 sq m) located at ground floor level at Block 03;
 - 3 no. retail units (1,160 sq m) located at ground floor level at Blocks 03 and 07;
 - 1 no. medical unit (288 sq m) located at ground floor level at Block 02;
 - A new childcare facility (716 sq m) and associated outdoor play area located at lower ground and ground floor level at Block 10;
 - A management suite (123 sq m) located at ground floor level at Block 10; and
- A new community centre facility, including a multi-purpose hall, changing rooms, meeting rooms, storage and associated facilities (1,749 sq m) located at ground and first floor level at Block 06.
- 2.9 Vehicular access to the site will be from a new signalised access off Dundrum Road to the south of the existing access and the existing access of Dundrum Road will be retained for emergency vehicle, pedestrian and cyclist access only. The development will also consist of the provision of public open space and related play areas; hard and soft landscaping including internal roads, cycle and pedestrian routes, active travel routes for cyclists and pedestrians, pathways and boundary treatments, street furniture, wetland features, part-basement, car parking (524 no. spaces in total, including car sharing and accessible spaces); motorcycle parking; electric vehicle charging points; bicycle parking (long and short stay spaces including stands); ESB substations, piped infrastructural services and connections (including connection into existing surface water sewer in St. Columbanus Road); ducting; plant (including external plant for Air Source Heat Pumps and associated internal heating plantrooms); waste management provision; SuDS measures (including green roofs, blue roofs, bio-retention areas); attenuation tanks; sustainability measures (including solar panels); signage; public lighting; any making good works to perimeter wall and all site development and excavation works above and below ground.

3 LEGISLATION AND POLICY

- 3.1 Below we have detailed sections from the following documents as they are, in our opinion, the most pertinent in relation to daylight and sunlight matters and how we have approached the effects of the Proposed Development on the relevant neighbouring properties.
- *The Planning and Development Act 2000 as amended*
 - *Project Ireland 2040 - 'National Development Plan 2018-2027' and 'National Planning Framework'*
 - *Regional Spatial and Economic Strategy (RSES) for Eastern and Midland Regional Assembly*
 - *Dún Laoghaire-Rathdown County Development Plan (2022-2028)*
 - *Design Standards for New Apartments (DSFNA) (2018)*
 - *Sustainable Residential Development and Compact Settlement Guidelines for Planning Authorities (2024)*
 - *Building Research Establishment (BRE) Guidelines "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" (2022) (Best Practice Guidance).*

THE PLANNING AND DEVELOPMENT ACT (2000)

- 3.2 The Planning and Development Act 2000 is the primary legislation which deals with a number of planning-related issues. This legislation combines all former planning acts, setting out the details of the regional planning guidelines, development plans and local area plans. Moreover, it provides the statutory basis for the protection of natural and architectural heritage, the provision of social and affordable housing, and conduction of Environmental Impact Assessments.

PROJECT IRELAND 2040 - 'NATIONAL DEVELOPEMNT PLAN 2018 - 2027' AND 'NATIONAL PLANNING FRAMEWORK'

- 3.3 Project Ireland 2040 is the government's long-term strategy to improve Ireland as the population increases by transforming investment decisions for public infrastructure through a reformed integrated strategy that will prevent urban sprawl. This is achieved through the integration of two key documents; The National Development Plan 2018-

2027, and The National Planning Framework.

- 3.4 The National Planning Framework ('NPF') seeks to guide development and investment decisions for each region of Ireland to ensure planning and development that follows national objectives.
- 3.5 The National Development Plan ('NDP') provides a ten-year strategy for public capital investment of around €116 Billion to enable the implementation of the NPF.

REGIONAL SPATIAL AND ECONOMIC STRATEGY (RSES) FOR THE EASTERN AND MIDLAND REGION

- 3.6 The RSES is a strategic plan which identifies regional assets, opportunities and pressures and provides appropriate policy responses in the form of Regional Policy Objectives. At this strategic level it provides a framework for investment to better manage spatial planning and economic development to sustainably grow the Region to 2031 and beyond.
- 3.7 The principal statutory purpose of the RSES is to support the implementation of Project Ireland 2040 – National Planning Framework and National Development Plan 2019-2027 and the economic policies of the Government by providing a long-term strategic planning and economic framework for the development of the Regions.

DUN LOAGHAIRE-RATHDOWN COUNTY DEVELOPMENT PLAN (2022-2028)

- 3.8 The County Development Plan 2022-2028 was adopted by the Council on the 21st April 2022. The new Plan embraces inclusivity, quality of life and healthy placemaking and will guide development for the next 6 years.
- 3.9 Section 12.3.4.2 states that

All habitable rooms within new residential units shall have access to appropriate levels of natural /daylight and ventilation. Development shall be guided by the principles of Site Layout Planning for Daylight and Sunlight, A guide to good

practice (Building Research Establishment Report, 2011) and/or any updated, or subsequent guidance, in this regard. A daylight analysis will be required for all proposed developments of 50+ units, or as otherwise required by the Planning Authority. The impact of any development on existing habitable rooms should also be considered.

3.10 Section 12.8.5.3 refers to the quality of communal open spaces and specify that development should allow “adequate levels of sunlight to reach communal amenity space throughout the year in accordance with BRE 209 ‘Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice’, (2011)”.

3.11 It is stated in Section 12,8.5.4 that roof gardens will be considered “as communal open space shall be on a case by case basis and will not normally be acceptable on a site where there is scope to provide communal open space at grade, as roof gardens do not provide the same standard of amenity particularly to young children”. In relation to sunlight assessments on the roof top amenity area it is stated that “where all communal open space is provided by way of a roof garden, daylight and sunlight standards should be higher than minimum standards for more than 50% of the development”

3.1 **SUSTAINABLE URBAN HOUSING: DESIGN STANDARDS FOR NEW APARTMENTS (2022)**

Paragraph 6.6 of this document 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.”

Paragraph 6.7 goes on to explain that; “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 specifics. 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.”

SUSTAINABLE RESIDENTIAL DEVELOPMENT AND COMPACT SETTLEMENT GUIDELINES FOR PLANNING AUTHORITIES (2024)

3.12 Section 5.3.7 states:

“The provision of acceptable levels of daylight in new residential developments is an important planning consideration, in the interests of ensuring a high quality living environment for future residents. It is also important to safeguard against a detrimental impact on the amenity of other sensitive occupiers of adjacent properties.

(a) The potential for poor daylight performance in a proposed development or for a material impact on neighbouring properties will generally arise in cases where the buildings are close together, where higher buildings are involved, or where there are other obstructions to daylight. Planning authorities do not need to undertake a detailed technical assessment in relation to daylight performance in all cases. It should be clear from the assessment of architectural drawings (including sections) in the case of low-rise housing with good separation from existing and proposed buildings that undue impact would not arise, and planning authorities may apply a level of discretion in this regard.

(b) In cases where a technical assessment of daylight performance is considered by the planning authority to be necessary regard should be had to quantitative performance approaches to daylight provision outlined in guides like A New European Standard for Daylighting in Buildings IS EN17037:2018,

UK National Annex BS EN17037:2019 and the associated BRE Guide 209 2022 Edition (June 2022), or any relevant future standards or guidance specific to the Irish context.

3.13 *In drawing conclusions in relation to daylight performance, planning authorities must weigh up the overall quality of the design and layout of the scheme and the measures proposed to maximise daylight provision, against the location of the site and the general presumption in favour of increased scales of urban residential development. Poor performance may arise due to design constraints associated with the site or location and there is a need to balance 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."*

BUILDING RESEARCH ESTABLISHMENT (BRE) GUIDELINES "SITE LAYOUT PLANNING FOR DAYLIGHT AND SUNLIGHT: A GUIDE TO GOOD PRACTICE" (2022) (BEST PRACTICE GUIDANCE)

3.14 The most recognised guidance document is published by the Building Research Establishment and entitles 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', Second Edition, 2011; herein referred to as the 'BRE Guidelines'.

3.15 The BRE Guidelines are not mandatory and themselves state that they should not be used as an instrument of planning policy, however in practice they are heavily relied upon as they provide a good guide to approach, methodology and evaluation of daylight and sunlight impacts.

3.16 In conjunction with the BRE Guidelines further guidance is given within the British Standard (BS) 8206-2:2008:

'Lighting for buildings – Part 2: Code of practice for daylighting'.

3.17 In this assessment, the BRE Guidelines has been used to establish the extent to which the Proposed Development meets current best practice guidelines. In cases where the Development is likely to reduce light to key windows the study has compared results against the BRE criteria.

3.18 Whilst the BRE Guidelines provide numerical guidance for daylight, sunlight and overshadowing, these criteria should not be seen as absolute targets since, as the document states, the intention of the guide is to help rather than constrain the designer. The Guide is not an instrument of planning policy, therefore whilst the methods given are technically robust, it is acknowledged that some level of flexibility should be applied where appropriate.

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4 BRE GUIDELINES & CONTEXT METHODOLOGY

The Building Research Establishment (BRE) have set out in their handbook *'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2022)'*, guidelines and methodology for the measurement and assessment of daylight and sunlight.

DAYLIGHT

- 4.1 Section 2.2.5 of the BRE Guidelines outlines an initial assessment to understand whether a neighbouring residential property will require testing for daylight impacts. The 25-degree rule is completed by undertaking the following steps;

"First, draw a section in a plane perpendicular to each affected main window wall of the existing building (BRE Guidelines - Figure 14). Measure the angle to the horizontal subtended by the new development at the level of the centre of the lowest window. If this angle is less than 25° for the whole of the development, then it is considered unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing building. If, for any part of the new development, this angle is more than 25°, a more detailed check is needed to find the loss of skylight to the existing building."

- 4.2 The flowchart illustrated in figure 05 (page to the right) demonstrates the steps and criteria outlined within the BRE Guidelines to understand whether the daylighting (VSC and NSL) may be significantly affected.

- 4.3 The BRE Guidelines provide two methodologies for daylight assessment of neighbouring properties, namely;

- The Vertical Sky Component (VSC); and
- The No Sky Line (NSL).

The Vertical Sky Component (VSC);

- 4.4 The VSC considers the potential for daylight by calculating the angle of vertical sky at the centre of each of the windows serving the residential buildings which look towards the site. This is a more simplistic approach and it could be considered as a "rule of thumb" to highlight whether there are any potential concerns to the amenity serving a particular property.

2.2.7 'If this VSC is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the VSC, with the new development in place, is both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight'.

- 4.5 It is acknowledged that the BRE document are predicated against a 2-3 storey suburban model, therefore the application of its guidelines in inner urban environments should be treated flexibly.

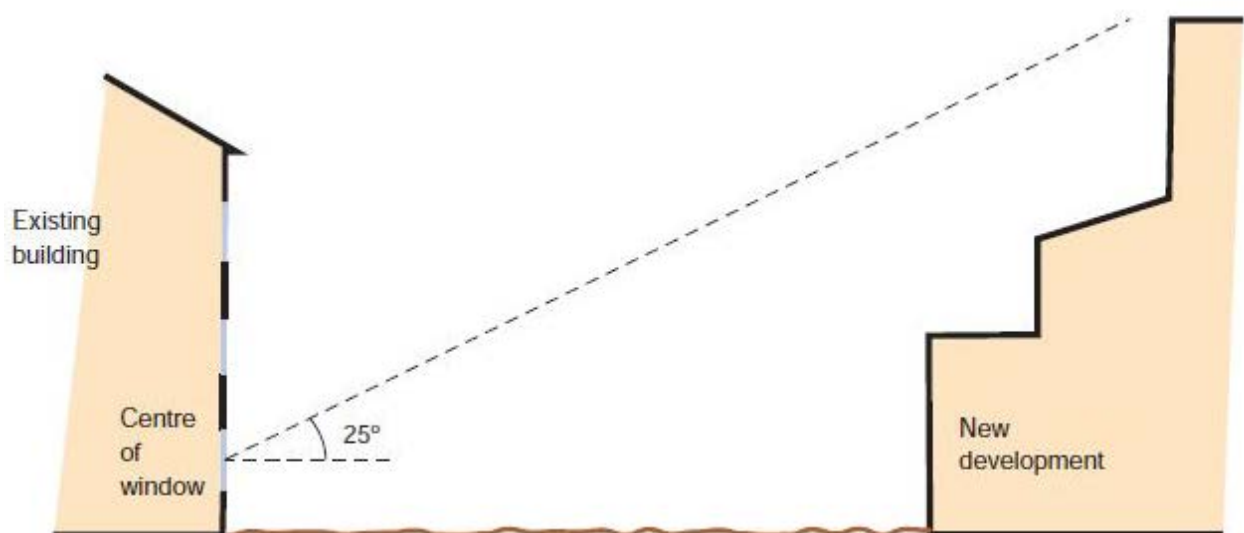


Figure 04: BRE Guidelines Figure 14

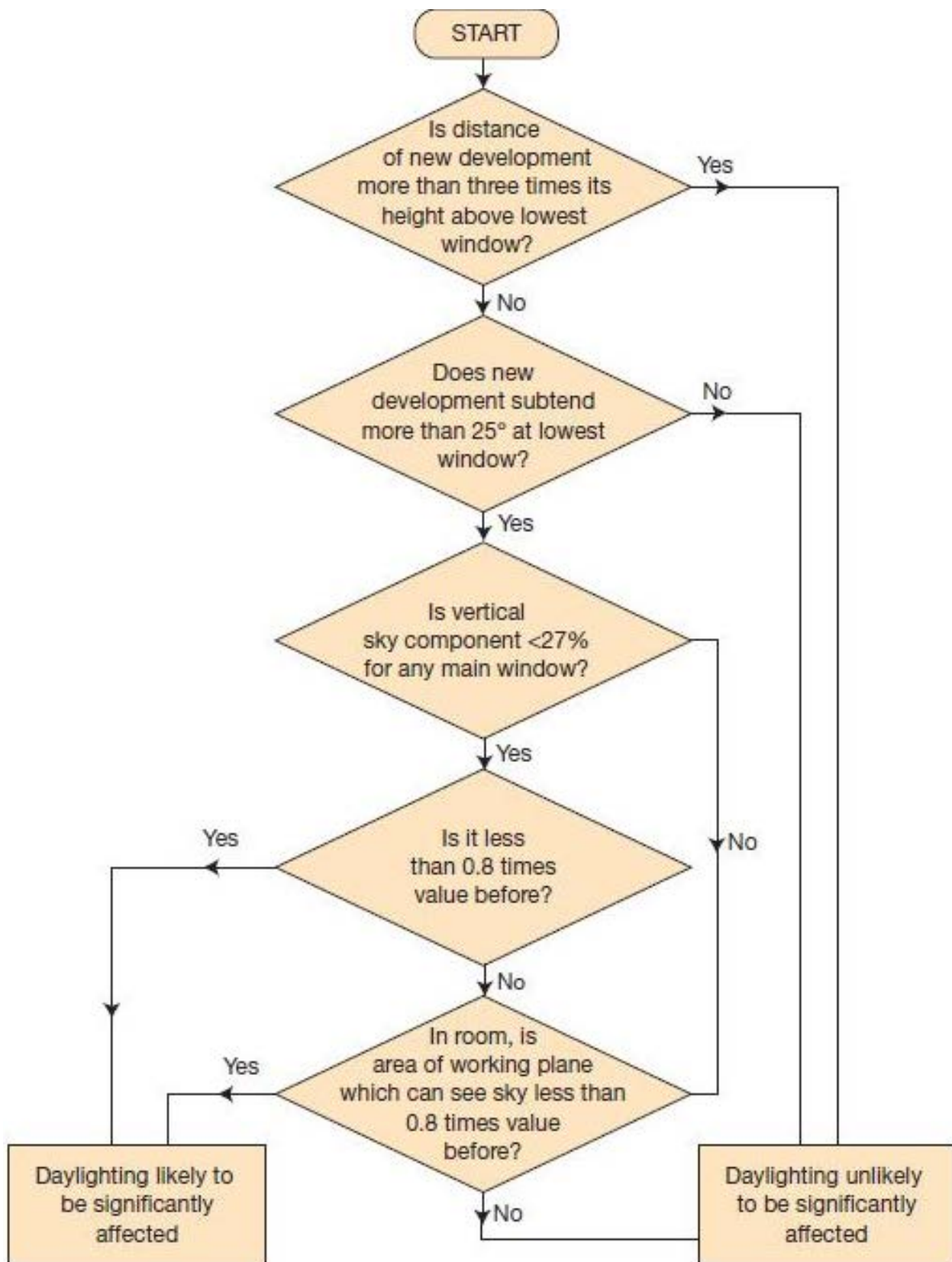


Figure 05: BRE Guidelines Figure 20

4.6 Note that the BRE acknowledges this and states;

2.2.3 The numerical values given here are purely advisory. Different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

The No Sky Line (NSL);

4.7 The No Sky Line or Daylight Distribution method simply assesses the change in position of where in the room the sky can be seen or not seen in the existing and proposed situations. It takes into account the number and size of windows to a room, but still does not give any qualitative or quantitative assessment of the light in the room, only where sky can or cannot be seen. The NSL assessment is only appropriate where room layouts are known.

Sunlight

4.8 There is one methodology provided by the BRE Guidelines for sunlight assessment, denoted as Annual Probable Sunlight Hours (APSH).

Annual Probable Sunlight Hours (APSH);

4.9 This assessment is used to assess only those receptors which face within 90 degrees due south of the development. APSH is a measure of sunlight that any given window may expect over a year period. The BRE guidance recognises that sunlight is less important than daylight in the amenity of a room and is heavily influenced by orientation.

4.10 Section 3.2.13 of BRE Guidelines summarizes that for existing buildings, the sunlight to a window may be adversely affected if a point at the centre of a window receives:

- Less than 25% of the APSH during the whole year, of which 5% APSH must be in the winter period;
- Receives less than 0.8 times its former sunlight hours in either time period;
- Has a reduction in Sunlight for the whole year of more than 4% APSH.

4.11 It is an inevitable consequence of the built-up urban environment that daylight and sunlight will be more limited in dense urban areas. It is well acknowledged that in such situations there may be many planning

and urban design matters to consider other than daylight and sunlight.

Overshadowing

4.12 The BRE Guidelines provide two methods of overshadowing assessment, the Sun Hours on Ground and Transient Overshadowing studies.

Sun Hours On Ground (SHOG)

4.13 Section 3.3.17 of the BRE Guidelines 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 the 21st 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 the 21st 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 21st March".

Transient Overshadowing Study (TOS)

4.14 The Transient Overshadowing Study is a qualitative assessment which takes into account the shadow case by the sun path at various times of the day. Section 3.3.13 of the BRE Guidelines states:

"Where a large building is proposed which may affect a number of gardens or open spaces it is often illustrative to plot a shadow plan showing the location of the shadows at different times of day and year".

4.15 Appendix 01 of this report elaborates on the mechanics of each of the above assessment criteria, explains the appropriateness of their use and the parameters of each specific recommendation.

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5 DAYLIGHT & SUNLIGHT IMPACTS TO NEIGHBOURING PROPERTIES

This section details the daylight and sunlight impacts in relation to the relevant properties neighbouring the Site.

5.1 GIA have created a three-dimensional computer model of the site and surrounding properties based on photogrammetric modelling techniques. This contextual model has been used to measure the daylight, sunlight and overshadowing implications of the proposed scheme. All relevant assumptions made in producing this model can be found in Appendix 01.

SURROUNDING PROPERTIES

5.2 GIA have considered 155 neighbouring residential properties due to their use, proximity and orientation of windows overlooking the site. All relevant properties have been highlighted either orange or yellow on the map within Figure 07.

5.3 The properties at Mulvey Park (north) that are highlighted yellow within Figure 06 have been discounted from our detailed technical assessments as they have been assessed with reference to the 25° angle test in accordance with BRE methodology.

5.4 The purpose of this assessment is to ascertain whether or not these properties are likely to experience a noticeable impact to their current levels of daylight and sunlight upon the implementation of the proposed development. The BRE suggests that if the whole of the development sits within the 25° angle, then it is considered unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing buildings. If any part of the new development sits beyond the profile of the 25° angle, a more detailed check is needed to find the loss of skylight to the existing building.

5.5 It is clear from Figures 07 and 08 on the right that both the Proposed Development and wider masterplan development will sit comfortably below the profile of the 25° angles which has been drawn from the centre of the lowest windows on the ground floor of the properties at Mulvey Park, therefore, it is reasonable to conclude that no adverse impact to neighbouring daylight and sunlight amenity will occur to these properties following implementation



Figure 06: Sensitive Receptors

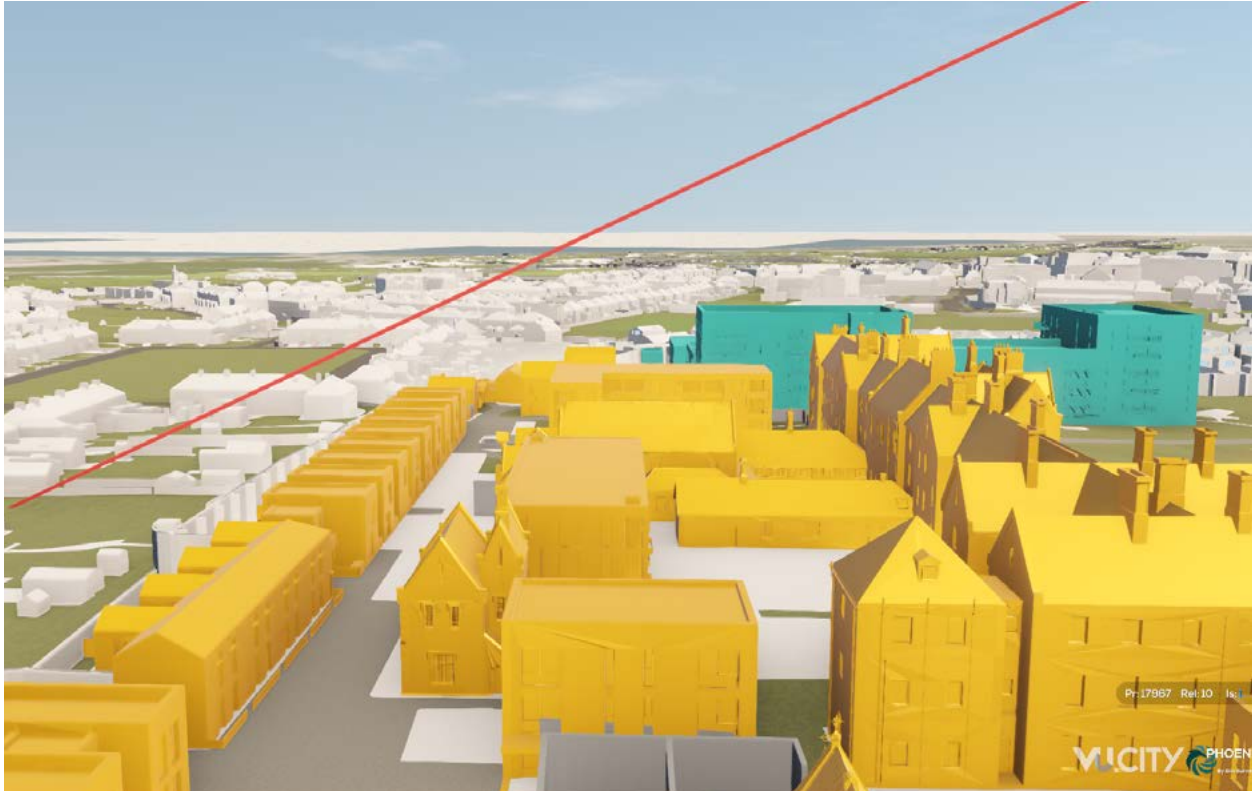


Figure 07: Example of 25-degree angle test



Figure 08: Example of 25-degree angle test

of the developments and therefore further detailed testing is not deemed relevant.

5.6 GIA have conducted detailed daylight and sunlight testing on **1099** windows across **155** residential properties neighbouring the site. Our technical analysis reveals that **151 of the properties adhere to numerical values set out within the BRE Guidelines** and are therefore not discussed further. The full set of results can be found within Appendix 04 of this report. The four properties that fall below guidance for daylight and/or sunlight are highlighted orange within Figure 10 and are listed below;

- J Dundrum Road
- Annville Residence (Block 2)
- 2-3 Annville Grove
- 1 Annville Grove

5.7 Where changes in daylight and sunlight occur to the above mentioned properties, the impacts are fully discussed in the following sections. We have included window maps for each property to indicate the location of windows which fall below guidance are on the building. Windows which meet BRE guidance will be shown in green, whereas windows which fall below BRE guidance will be shown in orange. All results can be found in Appendix 04.

DISCUSSION OF RESULTS

5.8 GIA have summarised the daylight results in table format (Table 01) for the four properties falling below BRE guidance for daylight and/or sunlight.



Figure 09: Not fully BRE compliant (in orange) against Proposed Development (Part 10 Application)

Address	DAYLIGHT						SUNLIGHT					
	VSC						APSH					
	Total No. Windows	No. Windows that meet the BRE	Below BRE Guidelines				Total No. of Windows	No. Windows that meet the BRE	Below BRE Guidelines			
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			APSH Below 25%	Total	WPSH Below 5%	Total
J DUNDRUM ROAD (SORRENTO)	2	0	2	0	0	2	2	2	0	0	0	0
ANNAVILLE RESIDENCE BLOCK 2	12	6	4	2	0	6	0	0	0	0	0	0
1 ANNAVILLE GROVE	9	9	0	0	0	0	5	4	1	1	1	1
2-3 ANNAVILLE LODGE	22	21	1	0	0	1	12	12	0	0	0	0

Table 01: Daylight & Sunlight Results (for properties which experience BRE transgressions)

Impacted Properties

5.9 There is one property along Dundrum Road that experiences transgressions to daylight (J Dundrum Road) upon implementation of the Proposed Development, as seen within Figure 10 and illustrated by orange shading. The north-eastern portion of the Site is currently vacant and not built upon. A consequence of an underdeveloped site from a natural daylight and sunlight perspective is that the neighbouring properties along Dundrum Road sit within close proximity to the western site boundary and will inevitably experience some degree of change in light condition when taller buildings are proposed opposite. Daylight impacts to the single property

along Dundrum Road are considered to be minor in nature and are in keeping with the intention and flexible application of the BRE Guidelines.

5.10 The remaining properties experiencing impacts along Annville Grove are discussed in the subsequent pages of the report.

5.11 It should be noted that in some cases (properties along Dundrum Road) we were unable to determine the street name/ number due to lack of publicly available information, and therefore we have adopted our own lettering system which correlates with the numerical results appended to this report.

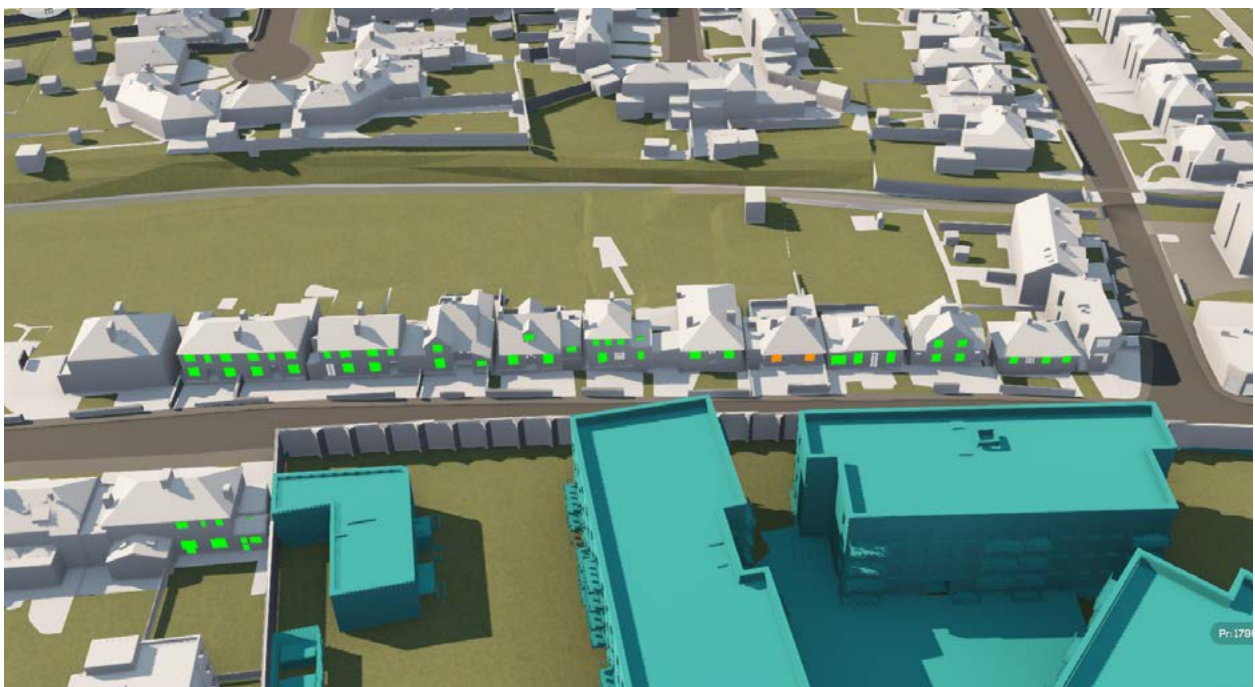


Figure 10: Windows falling below BRE Guidance for VSC in orange. Those passing are shown in green.

J Dundrum Road (Sorrento)



5.12 The single level residential dwelling on Dundrum Road known as 'Sorrento' is located to the west of the development Site. GIA have been able to source floor plans for this property in order to understand the uses of rooms that have windows directly orientated towards the development Site. The existing floor plans were obtained from a refused planning application (planning reference: D17B/0124) which were available on the online Dun Loaghaire-Rathdown planning portal. When undertaking our technical analysis of this building, GIA have considered there to be two windows serving two rooms (bedroom and study) which are relevant for assessment.

Sunlight

5.15 When assessed against the sunlight methodology (APSH), both windows that face within 90° due south of the development site will experience less than a 20% change, or enjoy more than 25% of APSH, meaning they will meet BRE criteria for this assessment.

Daylight

5.13 When assessed against the VSC methodology for daylight, the two windows assessed will experience slight VSC alterations of 22.2% and 20.5% respectively (against a BRE target value of 20%). The windows retain good VSC values of 20.7% and 21% respectively.

5.14 As we have been able to obtain floor plans for this property we have also considered the daylight assessment known as No Sky Line ('NSL') which considers the change in daylight distribution within a room in the existing and proposed scenarios. When the two site facing rooms within this property are assessed against the NSL daylight methodology, both rooms will experience an alteration of less than 20% and will therefore satisfy BRE criteria for this assessment.

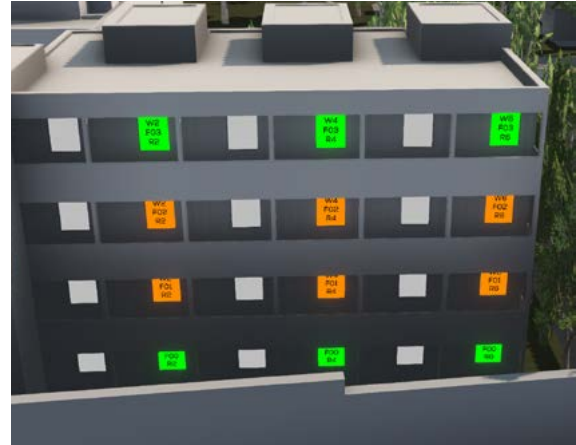
Annville Residences (Block 2)



- 5.16 Block 2 at Annville Residences is a four-storey residential apartment complex located to the south of Block 10 within the development site. GIA have sourced floor plans for this property in order to understand the uses of rooms that have windows directly orientated towards the development site. The floor plans were obtained from a planning application (reference: D03A/0279) which were available on the Dun Loaghaire–Rathdown planning portal. There are 24 windows facing onto the development site, however, floor plans indicate that every second window on the row will serve an entrance/ utility room, which have therefore been discounted from the analysis as non-habitable space. When undertaking our technical analysis of this building, GIA have therefore considered there to be 12 windows serving 12 kitchens which are relevant for assessment.

Daylight

- 5.17 When assessed against the VSC daylight methodology, 6/12 windows (50%) will meet the BRE criteria for this assessment. The remaining six windows falling below BRE recommendations serve single aspect kitchens, four of which experience slight VSC alterations between 21.4% and 29.7%. The remaining two kitchens located on the 1st floor experience slightly greater VSC alterations of 30.1% and 30.7% respectively. It is important to note that all impacted windows are recessed beneath external walkways which can self-limit the amount of light reaching the centre point of the window.



- 5.18 GIA have included a waldram analysis as seen within Figure 11 (visual representation of VSC test) to demonstrate the burden overhanging structures can have on the VSC or APSH analysis.
- 5.19 As we have been able to obtain floor plans from a planning application (planning reference: D03A/0279) from the online Dun Loaghaire–Rathdown planning portal for this property, we have also considered the daylight assessment known as No Sky Line ('NSL') which considers the change in daylight distribution within a room in the existing and proposed scenarios. When the 12 site facing rooms within this property are assessed against the NSL daylight methodology, all 12 rooms will experience less than a 20% change and will therefore satisfy BRE criteria for this assessment.

Sunlight

- 5.20 GIA do not consider there to be any windows within this property which face within 90° due south of the development Site relevant for sunlight assessment.



Figure 11: Waldram Image

2-3 Annville Lodge



5.21 2-3 Annville Lodge is located to the west of Block 06 within the development Site. GIA have been unable to acquire floor plans for this property; therefore, certain assumptions have been made where rooms layouts and uses are unknown. Based on external observations of a typical house type, we assume that the first floor will serve bedrooms/circulation space and the ground floor will serve a living area.

5.22 When undertaking our technical analysis of this building, GIA have considered there to be 22 windows which are relevant for assessment, some of which are pictured above and others located to the rear of the building.

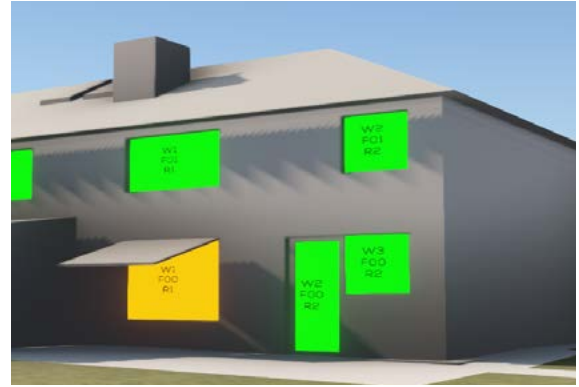
Daylight

5.23 When assessed against the VSC daylight methodology, 21/22 (95%) windows demonstrate BRE compliance as they will experience either no change at all (by virtue of being at the rear of the property and not facing the site) or less than 20% change. The single window (W2/F01) falling short of guidance experiences a slight VSC change of 21.6% (against a BRE target value of 20%). It is important to note that windows is recessed beneath the overhanging roof structure, meaning that the amount of light being received is typically less as the overhang above the window cuts out light from the top part of the sky. This means that even a small obstruction opposite can have a relatively large impact on VSC which is the case here.

Sunlight

5.24 There are 12 windows within this property that face within 90° due south of the development site. When assessed against the sunlight methodology (APSH) all 12 windows will experience less than a 20% change, or enjoy more than 25% of APSH, meaning they will meet BRE criteria for this assessment.

1 Annville Grove



5.25 1 Annville Grove is a two-storey semi-detached dwelling located to the west of Block 06 within the development Site. GIA have been unable to acquire floor plans for this property, therefore, certain assumptions have been made where rooms layouts and uses are unknown. Based on external observations of a typical house type, it is likely that the ground floor rooms serve a kitchen/living space and first floor rooms serve bedrooms/circulation space.

5.26 When undertaking our technical analysis of this building, GIA have considered there to be nine windows which are relevant for assessment given their proximity and orientation overlooking the site.

Daylight

5.27 When assessed against the VSC daylight methodology, 9/9 (100%) windows will experience less than a 20% change and will therefore meet BRE criteria for this assessment.

Sunlight

5.28 There are five windows within this property that face within 90° due south of the development Site. When assessed against the sunlight methodology (APSH), 4/5 (80%) will experience less than a 20% change, or enjoy more than 25% of APSH, meaning they will meet BRE criteria for this assessment. The one window (W1/F00) that falls short of BRE guidance will see annual sunlight levels reduced from 15% to 10% (against a BRE target value of 25%) and winter sunlight levels reduced from 4% to 2% (against a BRE target value of 5%). This window sits beneath an overhanging structure which would limit the access to direct sunlight. However, it is clear from the image above that the structure itself appears to let light through, whereas GIA have adopted as worst case and modelled it as if it were solid.

5.29 It is in GIA's view that isolated sunlight impact to one window is in keeping with the intention and flexible application of the BRE Guidelines.

6 CUMULATIVE ASSESSMENT

This section details the cumulative impact of the Part 10 application and the additional building located to the north of the Site that form part of the Masterplan Development at the Central Mental Hospital site in Dundrum, Dublin 14.

- 6.1 GIA have also been asked to review the cumulative schemes within the wider site boundary and neighbouring the development site. Of those, our professional opinion is that we should only consider the cumulative impact of the buildings within the northern portion of the Site at form part of the Masterplan Application and their impact upon the neighbouring properties.

MASTERPLAN DEVELOPMENT

- 6.2 GIA's interpretation of the Proposed Development (Part 10 Application) (in teal) and the remaining buildings that form part of the Masterplan Development (highlighted yellow) can be seen within Figure 12. Further drawings can be seen within Appendix 03 of this report.
- 6.3 GIA have considered the same properties as assessed against the Part 10 Application which have also been highlighted orange within Figure 14.
- 6.4 When we consider the cumulative impact the entire Masterplan Development, none of the neighbouring properties will experience any further reduction in daylight and sunlight amenity. The compliance rates for Vertical Sky Component daylight methodology and Annual Probable Sunlight Hours methodology will both remain at 99% for this cumulative assessment.

NEIGHBOURING SCHEMES

- 6.5 Within Table 02 (overleaf) we have provided an extensive list of the approved planning applications which are located within close proximity to the development site that have been selected, in consultation with expert consultants for the purposes of EIA cumulative impact assessment. Further detail surrounding the selected projects is set out in Chapter 21 of the enclosed EIAR. GIA can confirm that due to the significant separation distances between these applications, the development site and the pertinent neighbouring properties, cumulative analysis in relation to daylight and sunlight is not deemed to be necessary.'



Figure 13: Masterplan Development

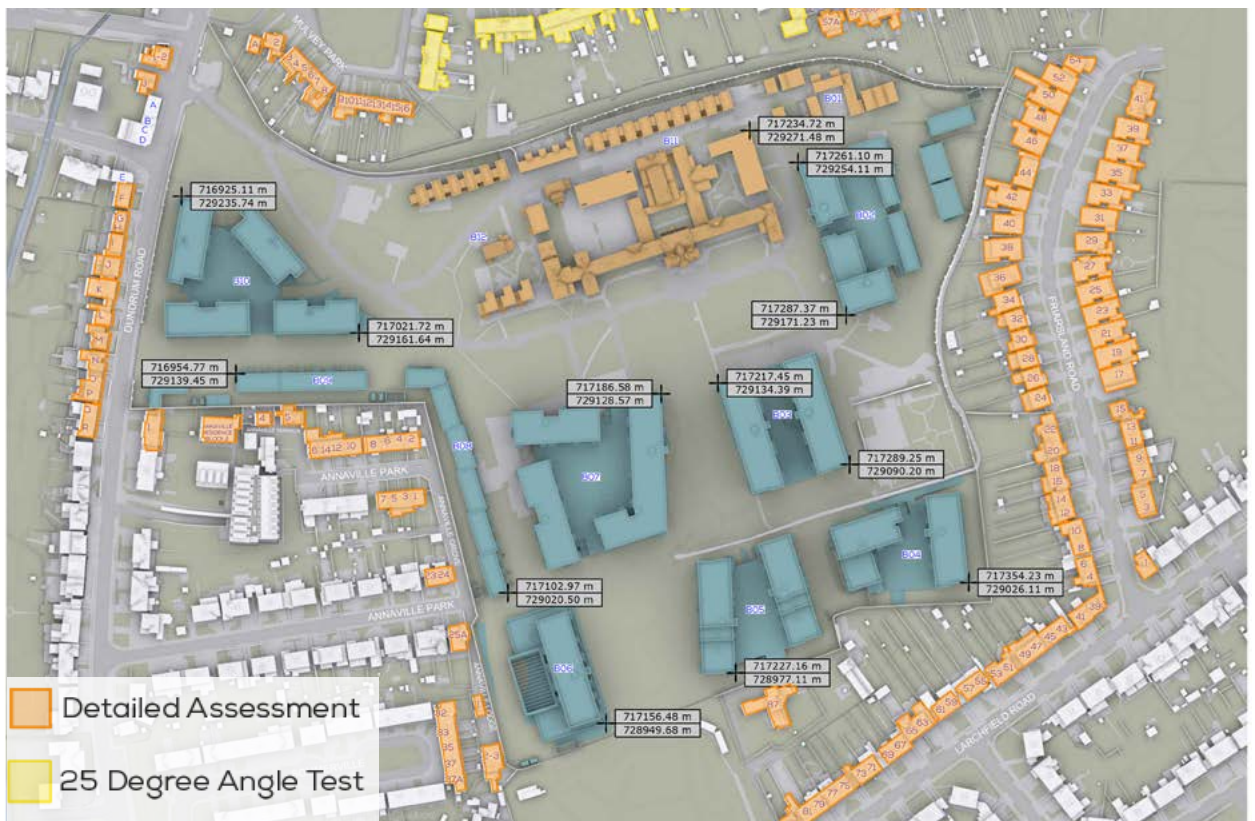


Figure 12: Sensitive Receptors (cumulative scenario)

6 CUMULATIVE ASSESSMENT (Continued)

PLANNING REF.	ADDRESS	DECISION DATE	DECISION
ABP30943021	2.12 ha at Our Lady's Grove, Goatstown Road, Dublin 14	12/02/2021	GRANT PERMISSION
ABP31128721	c.0.9ha at No. 97A Highfield Park (D14P710), and No. 1 Frankfort Castle (D14 HY03), No. 2 Frankfort Castle (D14DE72) and Frankfort Lodge (D14C9P2), Old Frankfort, Dublin 14	03 Sep 2021	GRANT PERMISSION
ABP31182621	Lands at Knockrabo, Mount Anville Road,, Goatstown, Dublin 14	01/11/2021	GRANT PERMISSION
ABP31013821	Mount Saint Mary's and Saint Joseph's, Dundrum Road, Dundrum, Dublin 14	06/05/2021	GRANT PERMISSION
ABP30768320	Green Acres Convent, Drumahill House and the Long Acre, Upper Kilmacud Road, Dundrum, Dublin 14	24/07/2020	GRANT PERMISSION
ABP30446919	Greenacres, Longacre and Drumahill House, Upper Kilmacud Road, Dundrum, Dublin 14	16/05/2019	GRANT PERMISSION
ABP248265 & D16A/0818	Green Acres Convent, Kilmacud Road Upper, Dublin 14.	29/3/2017	GRANT PERMISSION
D20A/0328	University College Dublin, Belfield, Dublin 4	13/11/2020	GRANT PERMISSION
TA0001	University College Dublin, Belfield, Dublin 4.	21/9/2017	GRANT PERMISSION
ABP315883	'Dunelm', Rydalmount, Milltown Road, Dublin 6	22/2/2023	GRANT PERMISSION
ABP305261	Building 5, Dundrum Town Centre, Sandyford Road, Dundrum, Dublin 16	23/8/2019	GRANT PERMISSION
ABP300024	Lands at the former Paper Mills site, bounded by the River Dodder to the East, Clonskeagh Road to the West, Clonskeagh Bridge to the South West, Dublin 6	24/10/2017	GRANT PERMISSION
ABP311439	Site measuring 0.29ha, Bounded by Kilmacud Road Upper to the north, Drummartin Link Road to the west, and Hazelbrook Apartments to the east and south, Dublin 14	21/9/2021	GRANT PERMISSION
ABP313048	9/14 and 11C, Milltown Road, Milltown, Dublin 6. The application site consists of the former Murphy and Gunn site (currently Autovision) and the former Saint Joseph's Junior Education Centre site.	16/3/2022	GRANT PERMISSION
ABP312539	Cunningham House, Trinity Hall, Dartry, Dublin 6.	20/1/2022	GRANT PERMISSION
ABP312170	Marmalade Lane, Wyckham Avenue, Dundrum, Dublin 16.	10/12/2021	GRANT PERMISSION
ABP309931	24,26 28, Fosters Avenue, Mount Merrion, Blackrock, Co Dublin	12/4/2021	GRANT PERMISSION

Table 02: Neighbouring Cumulative Schemes

7 OVERSHADOWING

7.1 GIA have completed a Transient Overshadowing Study ('TOS') to demonstrate the overshadowing effect of the proposed schemes on the surrounding built environment. The full analysis can be viewed within Appendix 05, containing visuals of the overshadowing position at regular hourly intervals between 8:00am and 5:00pm on the 21st March (Spring Equinox) and 21st June (Summer Solstice). The plots for the 21st December (Winter Solstice) contain visuals at hourly intervals between 9:00am and 3:00pm.

7.2 The Transient Overshadowing assessment is a qualitative assessment which takes into account the shadow case by the sun path at various times of the day. Section 3.3.13 of the BRE Guidelines states: "Where a large building is proposed which may affect a number of gardens or open spaces it is often illustrative to plot a shadow plan showing the location of the shadows at different times of day and year".

7.3 Overall, it is clear from the imagery that any shadowing on neighbouring properties will be generally be brief and insignificant.



Figure 14: Example of Transient Overshadowing Study

8 CONCLUSIONS

GIA have undertaken a daylight and sunlight assessment in relation to the Proposed Development (Part 10 Application) at the Central Mental Hospital site in Dundrum, Dublin 14. The technical analysis has been undertaken in accordance with the BRE Guidelines.

- 8.1 GIA have completed a comprehensive technical analysis of the daylight and sunlight impacts produced by the Reddy Architects masterplan scheme at the former Central Mental Hospital site in Dundrum, Dublin.
- 8.2 In accordance with Section 2.2.5 of the BRE Guidelines, we conducted an initial daylight assessment, the 25° angle test, on the neighbours to the north at Mulvey Park. This assessment revealed that the proposed buildings within the proposed development and cumulative development would fall below that parameters of the 25° angle test, indicating there will be no adverse impact to the daylight and sunlight amenity following the implementation of the developments. These select properties were therefore discounted from more detailed testing.
- 8.3 Our detailed analysis considers 1099 windows across 155 individual properties, which have overall demonstrated excellent compliance rates of 99% when assessed against the VSC methodology for daylight and 99% Against the APSH method for sunlight. The results of the cumulative assessment produces the same compliance results which is very positive.
- 8.4 It should be noted that where BRE transgressions do occur within five of the neighbouring properties, they are generally slightly beyond BRE guidance, and in most cases will still enjoy relatively good levels of daylight and sunlight. In some cases there are contributing factors, such as overhanging walkways or balconies or structural features which contribute to the reason certain windows do not strictly meet the recommended guidance. Therefore, it is worth reiterating the sentiment in Section 1.6 of the BRE Guidelines which states that
- 8.5 *“although it gives numerical guidelines, these should be interpreted flexibly since natural light is only one of many factors in site layout design”.*
- 8.6 GIA’s professional opinion is that on the balance and in context of the site, the impacts to the neighbouring properties are within the intention and application of the BRE guidelines and therefore should be considered acceptable in daylight and sunlight terms.



What we do:

Building Surveying

Daylight & Sunlight

Light Obstruction Notices

Measured Surveys

Party Wall & Neighbourly Matters

Rights of Light

Solar PV

Wind Analysis

Where we are:

Belfast

Birmingham

Bristol

Dublin

London

Manchester