

To the Members of Galway City Council

Ref. No. LA1/2024



- (a) Section 179 of the Planning and Development Act 2000 (as amended) and Planning and Development Regulations 2001 (as amended) (Part 8)
- (b) Local Government Act 2001 (as amended)

This Part 8 is made in accordance with the requirements of Section 179(3) b of the Planning and Development Act 2000 -2010 and in compliance with the provisions of the Local Government Act 2001 and pursuant to the requirements of the above, notice is hereby given of Galway City Council's intention to carry out the following works:

(a) Nature and Extent of development:

The proposed development is located as follows:

- Ballyburke Proposed Neighbourhood Centre and Social Housing Scheme
- (a) 84 no. social residential units comprising of: (i) 25 no. one-bedroom apartments (ii) 18 no. two-bedroom apartments (iii) 16 no. two-bedroom apartments (Age Friendly Units) (iv) 2 no. two-bedroom apartments (Universal Design) (v) 10 no. three-bedroom apartments (Universal Design+) (vi) 13 no. three-bedroom terraced houses;
- (b) a new central community/neighbourhood plaza area;
- (c) local centre units;
- (d) café;
- (e) crèche facility;
- (f) renewable energy design measures for each unit and
- (g) supporting development works including (i) access roads (ii) grouped parking spaces; (iii) landscaping; (iv) surface water attenuation tank; (v) temporary construction signage; (vi) estate signage; and (vii) all associated site works at Ballyburke, Galway

(b) Screening for Appropriate Assessment

Policy 5.2 Protected Spaces: Sites of European, National and Local Ecological Importance of the City Development Plan states that it is the policy of the Council to:

1. Protect European sites that form part of the Natura 2000 network (including Special Protection Areas and Special Areas of Conservation) in accordance with the requirements in the EU Habitats Directive (92/43/EEC), EU Birds Directive (2009/147/EC) and associated national legislation.
2. Ensure that all plans or projects within the Plan area will only be authorised and / or supported after the competent authority has ascertained based on scientific evidence, screening for appropriate assessment and /or a Habitats Directive Assessment that:
 - a. The plan or project will not give rise to an adverse direct, indirect or secondary effect on the integrity of any European site (either individually or in combination with other plans or projects); or
 - b. The plan or project will have an adverse effect on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions, and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including

- those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or
- c. The plan or project will have an adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.

Galway City Council has carried out an Appropriate Assessment (AA) Screening Report (stage 1) of the proposed development. The Screening for AA Report has been prepared by competent experts to ensure its completeness and quality and provides the best available scientific knowledge, and objective information. This Report was prepared with reference and due consideration to relevant European and national legislation and guidance, as outlined under Section 3.1. Guidance Documents of the Report, including the Habitats Directive 92/43/EEC, Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities (2010 DEHLG), and Appropriate Assessment Screening for Development Management Office of the Planning Regulator Practice Note PN01 (2021).

The report states “This assessment considers whether the proposed development of a site by Galway City Council, which will consist of an affordable and social housing scheme with public civic/plaza space incorporating a creche, local retail unit, cafe, and all associated works at Ballyburke, Knocknacarra, Co. Galway, alone or in combination with other projects or plans, will have adverse effects on the integrity of nearby sites. Following examination of the proposed development, including the nature and location of works, it is concluded that there is no potential to impact on Annex I habitats or Annex II species associated with European Sites, namely the Galway Bay Complex SAC (000268) located 1.03km south and Inner Galway Bay SPA (004031) located 1.3km south of the proposed development site. As this assessment has not identified any potential significant impacts to nearby sites, a Stage 2 Appropriate Assessment and subsequent Natura Impact Statement are not deemed necessary. The findings of this screening for Appropriate Assessment are summarised in the Findings of no Significant Effects”.

In summary, the AA Screening Report states that the development does not encroach into any protected habitats. The proposed project site does not lie within any European site, while there are 10 no. identified European sites within the potential zone of influence of the project; 6 no. SACs and 4 no. SPAs.

Following the precautionary principle, the potential for the proposed project to impact on the Galway Bay Complex SAC and Inner Galway Bay SPA is assessed in Screening for AA report, due to their proximity to the proposed project. The AA Screening Report finds that given the nature, scale and location of the proposed project, it is considered that the construction and operation of the proposed project will not have a likely significant effect on the qualifying interest habitats and species of Galway Bay Complex SAC and Inner Galway Bay SPA. No proposed projects or plans were identified that would, in-combination with the proposed project, have likely significant effects on the European sites within the zone of influence of the proposed project, or any other European site. The Report concludes that due to the scope and nature of the proposed project, it is considered that the proposed project, either alone or in combination with other

plans or projects, will not result in likely significant effects on the Galway Bay Complex SAC or Inner Galway Bay SPA, or any other European site, in view of their conservation objectives and an Appropriate Assessment (stage 2) is therefore not required in respect of this proposed development.

AA Screening Conclusion and Determination in accordance with Article 6(3) of the EC Habitats Directive and Part XAB of the Planning and Development Act 2000 (as amended): Having regard to the submitted screening for AA and Article 6(3) of the EC Habitats Directive and Part XAB of the Planning and Development Act 2000 (as amended) the Planning Authority as the competent authority, is in agreement with the Screening for AA conclusions. The Planning Authority has completed the Appropriate Assessment screening exercise in relation to the potential effects of the proposed development on designated European Sites, taking into account the nature, scale and location of the proposed development, the Screening for Appropriate Assessment Report submitted with the Part 8 application. In completing the screening exercise, the Planning Authority has determined that, by itself or in combination with other development in the vicinity, the proposed development would not be likely to have a significant effect on any identified European Site and their qualifying interests and special conservation interests, alone and or in combination with other plans and projects and that a Stage II Appropriate Assessment is not, therefore, required.

(c) Summary of submissions:

A total of 68 submission were received and the following is a synopsis of the issues raised:

- Entrances:
 - Wish the entrances to Maolin to be removed from the proposed development.
- Light and Shadow
 - Concern that the properties to the north will be overshadowed by the taller elements of the proposed development.
- Height:
 - Concerned regarding the height of elements of the proposed development.
 - The 5/6 storey building is excessive and out of place in the area,
 - The current development is out of character with the surrounding developments,
 - The development will overlook adjacent properties,
 - Concern regarding the height of proposed dwellings compared to those in Drisin as they will be higher than the existing dwellings,
 - The height of the proposed development will adversely impact upon the property values of the adjacent Maolin estate.
- Density:
 - The density of development is excessive for this site and within the overall area,
- Pedestrian access point:
 - Do not want any access points to the new estate as they believe it will lead to anti social behaviour,
- Bin Stores:
 - The location of bin stores are of a concern positioned between estates,
- Public Transport:
 - Lack of public transport to cater for the existing estates let along the new development



- Footpaths:
 - Paths on one side of the roadways are insufficient,
- Social Infrastructure:
 - There is a lack of social infrastructure, GP's, shops etc, in the area to cater for this development.
- Neighbourhood Centre:
 - The centre proposal does not have the service provision to be considered such a centre,
- Traffic
 - There should be no through traffic through Maolin,
 - Concerned this development will generate a rat run through the adjoining estate.
 - Concerned regarding safety for children with additional traffic,
 - Concerned regarding access via laneways and as it would generate anti-social behaviour,
 - Concern regarding use of facilities in a private estate by non residents,
 - The development is contrary to DMURS
 - The junctions and roads within Maolin and Drisin have not been assessed for capacity,
 - The Ballymoneen Road is at capacity and cannot take any more traffic,
- Maintenance:
 - The existing roadway in Drisin and Maolin are shared and upkeep is shared between the two estates, query if the council will enter into this arrangement if access is permitted.
- Construction:
 - Concerned regarding noise during construction phase,
- Open Space:
 - The development will result in a loss of open space in the Knocknacarra area,
 - Proposals to use the open space in other estates is not acceptable,
 - There is insufficient communal space with the proposed development.
 - Concern that outdoor recreation facilities adjacent to existing dwellings will generate a nuisance, noise and anti-social behaviour,

(d) Response to Submissions:

A detailed response, 'Architects Report addressing submissions received in respect of proposed Neighbourhood Centre and Social Housing Scheme at Ballyburke, Galway City', to the issues raised in the submissions received has prepared by the Architects Department of Galway City Council and the full details/response can be examined in the Appendix 1.

(e) The Galway City Development Plan 2023 - 2029

This element of the appraisal will examine the policy framework for such a development on these lands. In this case it is noted that the site is zoned 'R, Residential in the Galway City Council Development Plan 2023 – 2029.

Zoning:

The site is zoned 'R', Residential in the Galway City Council Development Plan 2023 – 2029, which states "To provide for residential development and for associated support development, which will ensure the protection of existing residential amenity and will contribute to sustainable

residential neighbourhoods”, in this case the proposed housing development would be open for consideration and appropriate with the zoning objectives.

Neighbourhood Areas, ‘Outer Suburbs’;

The site is located in the ‘Outer Suburbs’ as designated in the 2023-2029 Galway City Development Plan. The policy of the City Council is set out in Section 3.5 Sustainable Neighbourhoods: Outer Suburbs which states;

- *“The outer suburbs of the city are areas which have accommodated the greatest population growth in the city in recent years. As indicated in the Core Strategy, there is opportunity to further consolidate these neighbourhoods through the development of existing serviced and zoned residential land and through development of the Ardaun LAP area. New residential development will be required to adhere to the principles for sustainable neighbourhoods set out in the previous section and development management standards set out in Chapter 11. The Council will work in conjunction with stakeholders to progress improvements such as provision of additional sports, recreation and community facilities. The Council will also progress measures to improve connectivity, supporting safe walking, cycling and greenways. A new Greenspace Strategy and a social and community infrastructure audit will inform future sustainable development of these areas”.*

The Galway City Council Development Plan 2023 – 2029, Section 3.5 Sustainable Neighbourhoods: Outer Suburbs in Policy 3.4 states that developments in this area will;

- *Facilitate consolidation of existing residential development and densification where appropriate within the outer suburbs to deliver on population targets while ensuring the reasonable protection of the residential amenities.*
- *Ensure that sustainable neighbourhoods are places where housing, streets, open spaces and local facilities come together in a coherent, integrated and attractive form with appropriate community infrastructure delivered in tandem with new growth.*
- *Require the integration of biodiversity measures, green infrastructure and energy efficiency in the design and layout of residential development.*
- *Encourage a mix of housing types and sizes within residential developments.*
- *Encourage the use of homezones within residential developments.*
- *Require residential developments of over 10 units to provide recreational facilities as an integral part of the proposed open space.*
- *Ensure the design and layout of residential developments has regard to adjoining developments.*
- *Encourage the promotion of universal design principles and lifetime adaptability in the design and layout of residential developments.*
- *Promote the use of appropriate placenames for new residential development in accordance with the policy of An Coiste Logainmneacha and in support of recognition of Galway City as a Bilingual city.*

Therefore, the inclusion of a residential development on these zoned lands which is integrated and linked by vehicular and pedestrian access points and into adjoining roads and pathways is in accordance with the adopted Galway City Council Development Plan 2023 – 2029 zoning objectives and specific objectives for these lands.

(f)Appraisal of Development:

The proposed Unit mix is now outlined below.

- 84 no. social residential units
 - 25 no. one-bedroom apartments
 - 18 no. two-bedroom apartments

- 16 no. two-bedroom apartments
- 2 no. two-bedroom apartments
- 10 no. three-bedroom apartments
- 13 no. three-bedroom terraced houses;

Density/Plot ratio:

It is part of the policy and strategy of the Galway City Council Development Plan 2023 – 2029 that the scale and extent of developments should increase in relation to proximity to core urban centres and other relevant factors. This site is positioned close to places of education, residence, employment, retail, adjacent to public transportation networks which would render the site open for consideration for the development of a higher density development.

With regards to density the figures in this case would be as follows;

• Site size;	1.8 ha,
Proposed;	84 units
Units per ha:	47 units per hectare

With regards to acceptable densities the relevant document for such assessment is the 'Sustainable and Compact Settlements - Guidelines for Planning Authorities', Chapter 3, Section 3.3 Settlements, Area Types and Density Ranges 3.3.1 Cities and Metropolitan (MASP) Areas, which states:

- *City - Suburban/Urban Extension Suburban areas are the low density car orientated residential areas constructed at the edge of cities in the latter half of the 20th and early 21st century, while urban extension refers to greenfield lands at the edge of the existing built-up footprint that are zoned for residential or mixed-use (including residential) development. It is a policy and objective of these Guidelines that residential densities in the range 35 dph to 50 dph (net) shall generally be applied at suburban and urban extension locations in Limerick, Galway and Waterford, and that densities of up to 100 dph (net) shall be open for consideration at 'accessible' suburban / urban extension locations (as defined in Table 3.8).*

It is considered that the layout proposed with the density achieved is reasonable for this site and is accordance with the above guidelines.

Unit Mix/Types:

The following outlines the unit type and relevant details;

Type:	Number of units		
Conventional Units:	13	-	15%

Apartments:

One bed units:	25	-	30%
Two bed units:	36	-	43%
Three bed units:	<u>10</u>	-	12%
Total Units:	84	-	100%

With regards mix of units:

The 'Sustainable Urban Housing: Design Standards for New Apartments; Guidelines for Planning Authorities, 2022', this states in Section 2 that;

- Specific Planning Policy Requirement 1
 - *"Housing developments may include up to 50% one-bedroom or studio type units (with no more than 20-25% of the total proposed development as studios) and there shall be no minimum requirement for apartments with three or more bedrooms. Statutory development plans may specify a mix for apartment and other housing developments, but only further to an evidence-based Housing*

Need and Demand Assessment (HNDA), that has been agreed on an area, county, city or metropolitan area basis and incorporated into the relevant development plan(s)”

In this case the number of one bed units falls within the above guidelines and diversity of unit type/bed provision in the apartment units is acceptable and meets the above criteria, while the above mix of apartments to conventional dwellings would be acceptable for this zoned serviced land.

Apartment Size:

The ‘Sustainable Urban Housing: Design Standards for New Apartments; Guidelines for Planning Authorities, 2022’, this states Specific Planning Policy Requirement 3, that;

- Minimum Apartment Floor Areas:
 - *Studio apartment (1 person) 37 sq.m*
 - *1-bedroom apartment (2 persons) 45 sq.m*
 - *2-bedroom apartment (4 persons) 73 sq.m*
 - *3-bedroom apartment (5 persons) 90 sq.m*

The proposed development would meet the above requirements.

Height:

With regards to height, the applicant proposes the following building types:

- Conventional dwelling blocks, No. 5 and 6, contain 3 levels, dual pitched roof with a ridge height of 9.48 metres,

The proposed apartment blocks heights are as follows:

- Block 1: 3 levels, height 10 m,
- Block 2: 4-6 levels, height 15.65 -20.16 m,
- Block 3: 2-4 levels, height 6.9 -13.28 m,
- Block 4: 4 levels, height 13.4 m,

The Galway City Council Development Plan 2023 – 2029, Section 8.8 Urban Design and Placemaking, and Urban Height, and Galway Urban Density and Building Height Study 2021, outlines that urban design can enhance the character of Galway and convey a sense of what is unique about the city. It is essential in the creation of attractive, well-functioning, successful places. A range of national policy documents set out a framework and guidance for achieving good urban design including Design Manual for Urban Roads and Streets (2013) and (2019) update, Sustainable Residential Development in Urban Areas (2009), Urban Design Manual - A Best Practice Guide (2009), Retail Design Manual: A Companion document to the Retail Planning Guidelines for Planning Authorities (2012). The forthcoming National Policy on Architecture will support a high quality, low carbon and more resilient built environment for future generations. The Plan seeks to actively promote the awareness and understanding of the contribution of good design to the general well being of the city. It places emphasis on urban design and sustainable placemaking supporting high quality modern architecture and incorporating architectural heritage in a holistic integrated manner.

Any proposed high-level development has to have regards to the Galway City Council – Urban Density and Building Heights Study, Sept 2023. It is noted in Section 11.1 - *Layers of suitability*, indicates a general height of 5-6 levels for this location, and states:

- *“Suitability analysis takes no account of the constraints of an area which might make it more sensitive to potentially negative impacts of more dense forms of development. These factors, which include the proximity to heritage assets and the potential impact on identified key views, must be considered alongside an area’s relative suitability. Indeed, it might be that, even for the locations considered to be the most suitable (i.e.*

meeting the most suitability criteria), the particular combination of sensitivities may be such that the area is not considered an appropriate location to be identified or earmarked for higher density forms of development. However, suitability is still seen as the most fundamental part of the density and building heights strategy. Where there are few or no sensitivity factors to consider, an area could only be considered appropriate for more dense forms of development where suitable

In this case it is worth examining the proposed heights of the development, with regards to the surrounding context, the lands fall towards the west and rises towards the north where there are dwellings/buildings two to three levels in height, all positioned at a higher elevation. To the west there is constructed 3 levels dwellings and a large school, this easily establishes a consideration for building to 3-4 levels and these would fit into and be in line with established patterns of development and be in accordance with the above outlined policies, it is considered there is no issue with regards to the proposed building heights.

With regards specifically to the proposed 6 level building, as this is mentioned in numerous submissions, this height only relates to part of one building, Block No. 2, it is noted from the Site Layout plan submitted the highest portion of the building would be positioned between 45.70 m and 49.30 m from the northern boundary, in addition this section of the building would be in line with the proposed and existing access road to Drisin. In this case the distance to the northern boundary, its position at a lower level, its alignment with proposed and existing roadways, would not create undue overshadowing of existing developments on lands to the north. While the setting and context of this building, which is to be adjacent to a public square/space and would be a landmark building for the wider development and is considered to be in keeping with the overall development of these lands, aid in achieving a sustainable density of development and as previously outlined would be in keeping with the relevant policies and guidelines for such developments. This issue is also addressed in the response to submissions.

With regards to overshadowing, as can be seen in the site sections submitted, the site is lower than the lands and housing estates located to the north while the buildings proposed either match the existing north south alignments of the street layout in the existing estates to the north or are designed so that the higher sections of buildings are positioned furthest away from the northern boundary tapering upwards towards the south away from existing dwellings and rear gardens. In this case it is considered that the layout proposed is the optimal layout of buildings for this site and in its design has mitigated against undue overshadowing and adjacency/height impacts.

Design/Layout:

The Galway City Council Development Plan 2023 – 2029 section 8.8 Urban Design and Placemaking and the Urban Height and Density Study, outlines that urban design can enhance the character of Galway and convey a sense of what is unique about the city. It is essential in the creation of attractive, well-functioning, successful places. A range of national policy documents set out a framework and guidance for achieving good urban design including Design Manual for Urban Roads and Streets (2013) and (2019) update, Sustainable Residential Development in Urban Areas (2009), Urban Design Manual - A Best Practice Guide (2009), Retail Design Manual: A Companion document to the Retail Planning Guidelines for Planning Authorities (2012). The forthcoming National Policy on Architecture will support a high quality, low carbon, and more resilient built environment for future generations. The Plan seeks to actively promote the awareness and understanding of the contribution of good design to the general well-being of the city. It places emphasis on urban design and sustainable placemaking supporting high quality modern architecture and incorporating architectural heritage in a holistic integrated manner.

The principles of good urban design are listed and elaborated in the CDP which include the following:

- Character
- Legibility
- Ease of movement and connectivity
- Quality of public realm
- Continuity and enclosure
- Diversity and adaptability
- Environmental responsibility

In this case a contemporary design is proposed which is to incorporating elements of glazing, and a mix of finishes. Regarding the design and appearance of the buildings there would be no objections to the that proposed and would be in line with the above outlined CDP policies.

Pathways/connectivity:

Three connection points are indicated, with 2 aspirational connections into Drisin with roadways and footpaths aligning with opposing potential points of access are indicated.

In addition one vehicular and pedestrian access point is shown from the proposed development to Maolin, this would connect into an existing roadway in Maolin, currently blocked by a gate. This access point was specifically conditions in the Grant of Permission for Maolin under Conditions 4 and 5 which are outlined below:

- 4 *Future access shall be permitted from this site towards the south by a road connection and a pedestrian connection as indicated in the drawings submitted. Access shall also be permitted to the lands to the west and northwest as indicated in the drawings submitted. No buffer strip shall be located at the edges of any of the above highlighted areas. Temporary hoardings shall be erected at each of the highlighted points and shall be removed when the adjacent connecting points are finalised. The details of the hoarding and their location shall be submitted for the written agreement with the Planning Authority prior to the commencement of development.*
- 5 *The roadway and footpath located running to the southern boundary shall be constructed fully to facilitate future connections, and no buffer strip shall be retained along this section of roadway or footpath.*

These conditions in combination with the permitted layout for that estate clearly establish that a link to future developments to the south was always to be permitted from Maolin towards the lands to the south.

In addition to the above the Galway City Development Plan 2023 – 2029 reiterates the importance of linked communities and neighbourhoods in a number of the chapters of the development as outlined below

- Chapter 3.4 Sustainable Neighbourhood Concept, and states:
 - *Streets and Movement The layout of residential development needs to create spaces where the car becomes secondary, where through vehicular traffic is discouraged through design and where the street has an important public realm function beyond the movement of traffic. Design principles and measures should consider the following:*
 - *Connectivity and Permeability: Provide universal convenient access to places, particularly to schools and places of work. Routes within the area should be accessible for everyone including the needs of all users, including the elderly and people with a disability, and should be as direct as possible.*



- Chapter 3.5 states that:
 - *“The Council will also progress measures to improve connectivity, supporting safe walking, cycling and greenways”*
- Policy 4.4 states under Point No.8 that it is the policy of the council to:
 - *“Promote, facilitate and maintain maximum connectivity and permeability for pedestrians and cyclists in the design and management of new public and private projects and in upgrading and retrofitting existing developments in accordance with the Design Manual for Urban Roads and Streets (2019) and Permeability a Best Practice Guide, NTA (2015)”*.
- Table 8.1 states:
 - *“Ease of Movement and Connectivity The promotion of accessibility, permeability and universal access making places easy to get to and move within. Ease of movement within a city centre may be through pedestrianisation schemes, creation of new streets, and permeability through shops. In the wider area it may be through enhanced public transport, provision of greenways and linkages from residential areas to local services and facilities. New development should ensure maximum permeability and accessibility for all”*.

In conclusion this development has the benefit of connecting into an already provided for, by condition, connection point in the adjacent estate, while the concept of connected neighbourhoods which provide ease of access for all is core policy of the Galway City Council Development Plan 2023 – 2029 which was recently adopted by the Council, this proposed development has been designed to be in accordance with the requirements of the development plan and clearly adheres to and is compliant with the policy and requirements outlined above in providing such connections.

Overlooking:

The Galway City Council Development Plan 2023 – 2029 Section 11.3.1 (d) Overlooking states;

- *Residential units shall not directly overlook private open space or land with development potential from above ground floor level by less than 11 metres minimum.*
- *In the case of developments exceeding 2 storeys in height a greater distance than 11 metres may be required, depending on the specific site characteristics.*

However the ‘Sustainable Residential Development and Compact Settlements Guidelines for Planning Authorities Prepared by the Department of Housing, Local Government and Heritage’ supersedes the development plan standards and states;

- SPPR 1 - Separation Distances
 - *It is a specific planning policy requirement of these Guidelines that statutory development plans shall not include an objective in respect of minimum separation distances that exceed 16 metres between opposing windows serving habitable rooms at the rear or side of houses, duplex units or apartment units above ground floor level. When considering a planning application for residential development, a separation distance of at least 16 metres between opposing windows serving habitable rooms at the rear or side of houses, duplex units and apartment units, above ground floor level shall be maintained. Separation distances below 16 metres may be considered acceptable in circumstances where there are no opposing windows serving habitable rooms and where suitable privacy measures have been designed into the scheme to prevent undue overlooking of habitable rooms and private amenity spaces. There shall be no specified minimum separation distance at ground level or to the front of houses, duplex units and apartment units in statutory development plans and planning applications shall be determined on a case-by-case basis to*

prevent undue loss of privacy. In all cases, the obligation will be on the project proposer to demonstrate to the satisfaction of the planning authority or An Bord Pleanála that residents will enjoy a high standard of amenity and that the proposed development will not have a significant negative impact on the amenity of occupiers of existing residential properties.

In this case the distances provided are in excess of 8 metres to the site boundary more than 16 metres to any opposing windows.

Bicycle Parking Provision.

The applicant has provided structures to accommodate bicycles for the development these are located within the courtyards of the apartment blocks and would be easily accessible and secure and are satisfactory in their design and location.

Amenity Open Spaces:

Open Spaces Requirements:

The Galway City Council Development Plan 2023 – 2029 section 11.3.1 (c) Open Space Requirements 11.3.1 (c) Amenity Open Space Provision in Residential Developments All residential developments shall provide for amenity open space areas made up of the following ratios:

- Communal Open Space: Communal recreation and amenity space is required at a rate of 15% of the gross site area.
- It should be provided as multi-functional open space in new residential developments easily accessible to all, encouraging active and passive use for persons of all abilities regardless of mobility and/or age
- Communal open space in all types of residential development should:
 - Be visually as well as functionally accessible to the maximum number of dwellings within the residential area.
 - Be overlooked by residential units.
 - Integrate natural features (for example natural contours, outcrops of rock), where appropriate, as part of the open space.
 - Be viable spaces, linked together where possible, designed as an integral part of the overall layout and adjoining neighbouring communal open spaces.
 - Not include narrow pedestrian walkways, which are not overlooked by house frontages.
 - Create safe, convenient and accessible amenity areas for persons of all abilities regardless of mobility or age. Land Use Zoning Objectives and Development Standards and Guidelines, Galway City Development Plan 2023-2029
 - Generally no rear boundaries should face onto public open space. Blank gables shall not, generally face onto roads or streets. Side boundary walls, which face onto public open space, should be minimised.
 - Provide for quality hard and soft landscaping and incorporate urban greening and encourage biodiversity.

In this case the site area is 18,000 sq.m and the proposed development should provide an area of 2,700 sq.m. The applicant has proposed one area of communal space at the mid section side of the site, this accounts for 2,605 sq.m along with a plaza area of 930 sq.m, in this case the level of space provided meets the quantitative and qualitative requirements for the provision of communal space with regards to orientation and useability.

Recreational Facility:

The Galway City Council Development Plan 2023 – 2029 section 11.3.1 (c) and Table 11.2 states the following;

- In all proposed residential development over ten units, a recreational facility shall be provided as part of the communal open space and funded by the developer. The recreational facility should be provided to serve the needs of the residents and should reflect the profile of future residents, the scale and type of development.
- Indicative examples of recreational facilities for different sizes of developments are shown in Table 11.2. The Recreation and Amenity Department will give further guidance in relation to any proposed recreation facility and should be consulted in advance regarding suitable facilities.
- Table 11. 2 Indicative Examples of Recreational Facilities for Different Sizes of Residential Developments. Number of Residential Units Examples of Recreational Facilities
 - 51-100 MUGA, outdoor gym, self-directed play (may include skateboard or other equipment)

The details landscaping plan has been provided and the development has provided a communal plaza area and a larger communal space which includes a playground a terraced area formal and informal spaces and it is considered that it would meet the above requirements.

Private Open Space:

In the case of the Duplex apartment units private open space assessment would fall within the remit of the “Sustainable Urban Housing: Design Standards for New Apartments; Guidelines for Planning Authorities, December 2022”. In this case the provision for private amenity open space for the apartments would meet the requirements.

With regards to the private amenity space for the conventional dwellings the applicant has submitted an appropriate schedule which would meet the requirements of the CDP for conventional dwellings. With regards to the apartment blocks private space has been provided in the form of recessed balconies and shared courtyard areas which again are acceptable in the qualitative and quantitative provision.

Car Parking:

With regards to car parking, it is noted that the conventional dwellings would have shared car parking, it is considered that other than the visitor parking generation, provision of 1.5 space, by these units are required 19 spaces are therefore required.

The Sustainable Urban Housing: Design Standards for New Apartments, 2022, under Section 4.24 states:

“As a benchmark guideline for apartments in relatively peripheral or less accessible urban locations, one car parking space per unit, together with an element of visitor parking, such as one space for every 3-4 apartments, should generally be required”.

Proposed residential shared spaces:	84 units @ 1	=	84
residential visitor spaces:	84 units / 4	=	21
Conventional Dwellings:		=	19
Visitor space for conventional dwellings		=	3
Total car parking generation:		=	127

The applicant is proposing the provision of 119 no. surface shared car parking spaces, while a small shortfall is generated it is considered that the location of the site in the context of access to public transport, employment and education along with the provision of services/retail allow for the a shortfall to be considered therefore the proposed development would meet the above outlines requirements.

With regards to the creche and local shops/services car parking requirement. These facilities are to be used to service the locality and it is considered that the car parking generation by these

uses can be accounted for by their accessibility which will encourage walking rather than the use of car to reach these services, in this case it is considered that these element would not add to the car parking requirement for this development.

(g) Recommendation

All public submissions have been thoroughly examined and responded to in detail in the attached report in Appendix 1.

It is considered that the scheme does not warrant any significant modification consequent on assessment of these submissions.

The proposed development is fully consistent with the policies, objectives and standards of the Galway City Development Plan 2023 -2029 and the Galway Transport Strategy and would be consistent with the proper planning and sustainable development of the area.

It is recommended that the proposed development should be proceeded with as proposed.

Signed:



John Doody
Executive Planner
18/4/24



Signed: _____

James Russell
Senior Planner
24/04/24

BALLYBURKE

Proposed Neighbourhood Centre and Social Housing Scheme Stage 3 Consultation – Part VIII & Public Consultation Process

Architects Report addressing submissions received in respect of proposed Neighbourhood
Centre and Social Housing Scheme at Ballyburke, Galway City.



This document forms part of the formal response to the observations received in relation to the proposed Neighbourhood Centre and Social Housing Scheme at Ballyburke, Galway City. The proposed scheme complies with local and national policy in respect of all elements including those raised in the observations. The scheme has been designed in accordance with good urban design practice, following extensive engagement with internal sections of Galway City Council, and is in compliance with the City Development Plan across all relevant areas including permeability, open space provision, vehicular access and parking, cycle parking provision etc. The scheme design has taken account of local constraints particular to the site location, including ownership and existing use of adjacent land, topography and site shape and the nature of proposed scheme. The proposed design has adhered closely to all relevant technical guidance documentation, including the following:

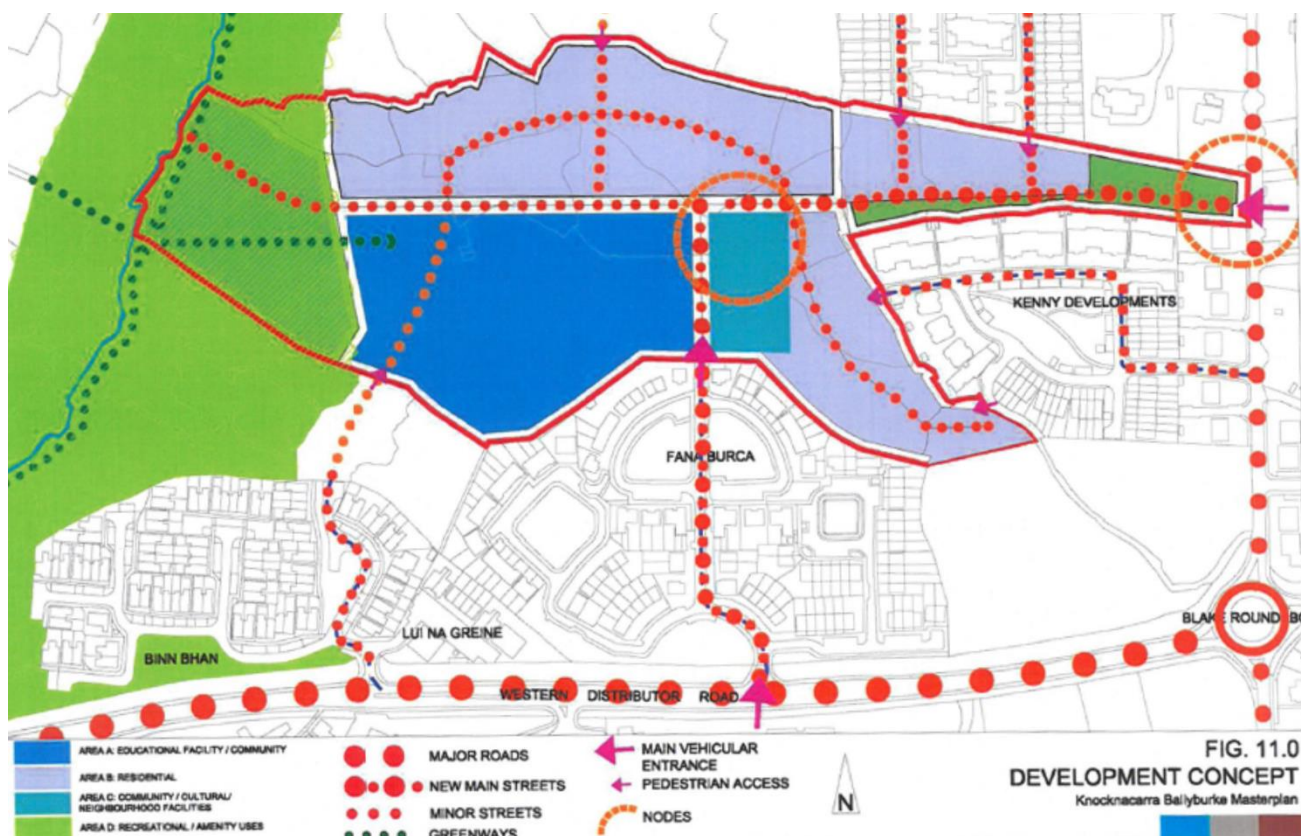
- Quality Housing for Sustainable Communities,
- Sustainable Urban Housing: Design Standards for New Apartments (July, 2023),
- Urban Design Manual – A Best Practice Guide,
- Guidelines for Planning Authorities,
- Galway City Development Plan 2023 – 2029.

68 individual submissions from 61 separate households were received in relation to the proposed scheme. Most submissions were from residents of Maoilín and Drisín, with a couple coming from Clairín, Monalee Heights and no specified addresses of Ballyburke. The main areas of concerns outlined in the public observations have been addressed under the following headings:

1. Interconnectivity / Permeability
2. Density and Building Height
3. Traffic & Infrastructure
4. Proposed Neighbourhood Centre
5. Public Open Space & Embracing the Natural Environment
6. Overshadowing / Daylighting
 - Appendix A – Daylight, Sunlight and Overshadowing Study
 - Appendix B – Site Notices monitoring memo

Interconnectivity / Permeability

As stated in the Design Statement, the Galway City Development Plan 2017-2023 and the newly adopted development plan 2023-2029 highlights the proposed site as significant in the area and requires the need for a local centre at this location. The focal point of this new local centre will be a central plaza area with local commercial / services units fronting onto it. This local centre will serve the wider community in Ballyburke and so, potential links have been identified across the site into the adjacent estates, namely, Clairin, Maoilín, and Drisín. This scheme may not be in a position to deliver all routes over adjoining lands due to ownership and legalities, but it has a designed layout that will allow this transformation in the future. Several linkages, however, have been recommended in the previous granted planning applications for all existing estates, including five specified connections: 1 in Drisín, 2 in Maoilín and 2 in Clairín. Furthermore, a draft masterplan was prepared in 2005 for the future development of lands at Ballyburke which set out the concept of the proposal of a civic space connecting the neighbouring areas in one central location.



Above: Exert from draft Knocknacarra / Ballyburke Masterplanning Study 2005

With regard to antisocial behaviour concerns raised through the opening of connecting streets, the design of the project has clearly considered passive policing principles. We have created active frontages with all street and squares being well lit and well overlooked. There are no unsupervised areas or hidden open laneways.

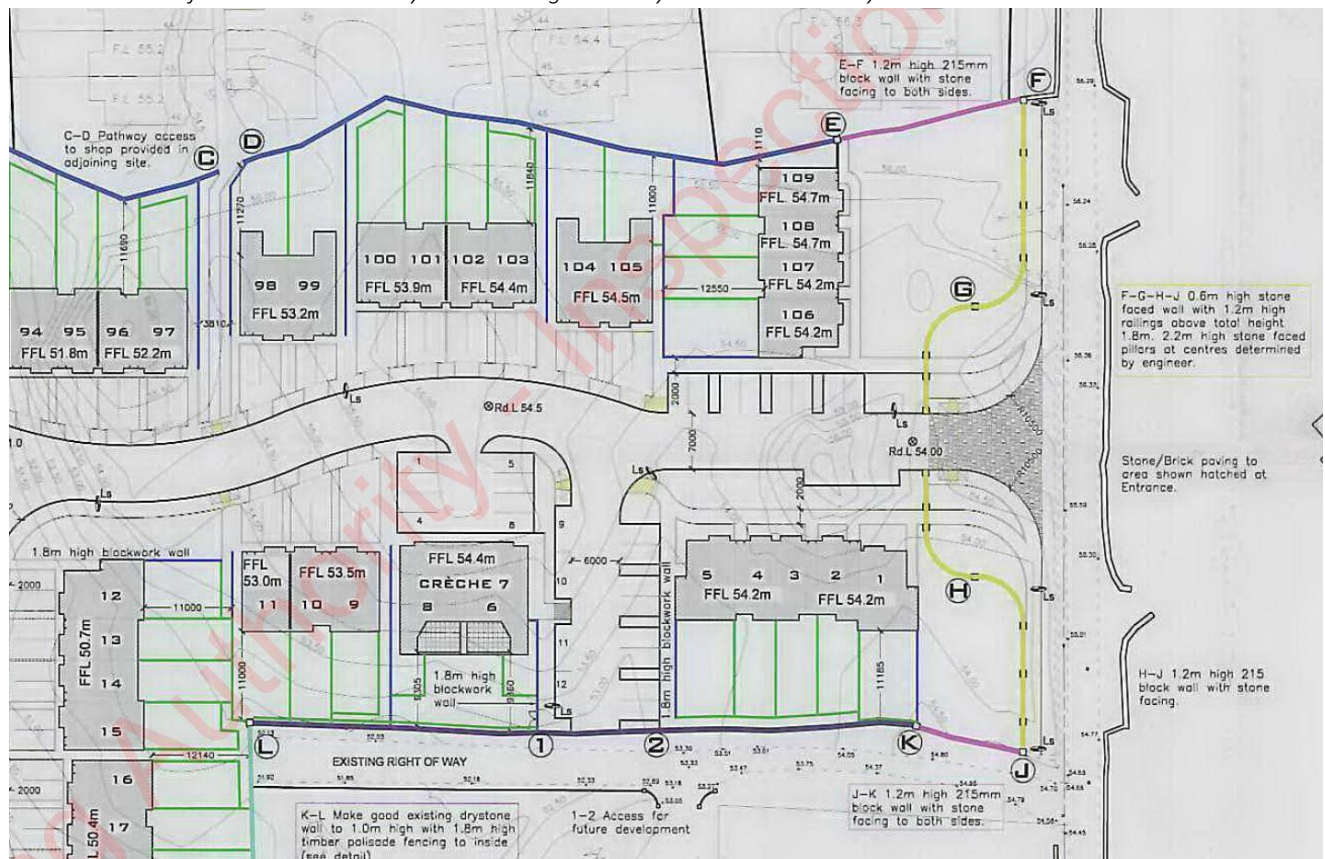
The following sections outlines the existing planning conditions on the provisions of interconnectivity in the area through previous approved planning permissions which helped inform the proposed design.

Drísín Planning Application 749/03

An access point for future development is specified as part of the scheme layout on the 2003 Planning Application, and additional submissions of further information and unsolicited information received by GCC. It is located at the creche and Dwelling 05. This connection will be reviewed again on further development of potential lands when the remaining site becomes available. The other three connection points are referenced in the Masterplan of the area and have been left ready to connect, as can be seen in the images below.

Planning Ref 749/03 - Condition 1.

"The development shall be carried out and completed in accordance with the application made on the 20th August 2003, subject to the amendments detailed in the plans and documents submitted as Further Information on the 21st of November 2003, as amended by the Clarification of Further information as submitted on the 13th January 2004, as further amended by the unsolicited information received by the Planning Authority on the 19th January 2004"



Above: Exert from Drísín Planning Application 749/03 showing "1 – 2 Access for future development."



Above: Drishin connection points to adjoining lands, which are identified on the Masterplan.

Maoilín Planning Application 11/105

Two connection points were identified in the Maoilín Planning application, one pedestrian / cyclist link to Clairín and one vehicular connection point to the proposed scheme. Throughout the internal consultation meetings with GCC Planning Department, it has been consistently highlighted that Maoilín development was granted under the condition that linkages would be provided on development of the adjoining lands and loss of connections would be unacceptable. This link between the two estates is primarily focused on connectivity and permeability objectives, creating access to the new creche, neighbourhood centre with local services and cafe, public plaza and landscaped amphitheatre with children's playground. Further detail is provided in the section "Public Open Space & Embracing the Natural Environment" below on the amenity areas to be provided which will be valuable to the predominantly residential area. Access to the adjacent secondary school and proposed primary school are also seen a positive for the neighbouring communities.



Above: Exert from Maoilín Planning Application (11/105) Design Statement – Section 3.1 Movement. "The proposed road layout proposes vehicular links from the Ballymoneen Road, through the adjacent Driseen site, linking through to the RA lands. Further vehicular links are proposed to the proposed nursing home site which will form part of a future application, as well as potential future links to the residential zoned lands to the north and south of the application site.... A number of pedestrian links provide access to the amenity lands as well as the proposed residential scheme to the south. The permeability of the site will encourage maximum accessibility".



Above: Exert from Maoilín Planning Application (11/105) Design Statement – Section 2.4 Adjoining Development / Lands. “Driseen... consists of 110 residential units...Access to the proposed development will be gained by means of an easement through this scheme from the Ballymoneen Road, secondary routes may be established at a future date, subject to approval by adjacent developments.”

Planning Ref 11/105 - Condition 4. “Future access shall be permitted from this site towards the south by a road connection and a pedestrian connection as indicated in the drawings submitted. Access shall also be permitted to the lands to the west and northwest as indicated in the drawings submitted. No buffer strip shall be located at the edges of any of the above highlighted areas. Temporary hoardings shall be erected at each of the highlighted points and shall be removed when the adjacent connection points are finalised.” “Reason - In the interest of proper planning and sustainable development and the orderly development of the area”

Planning Ref 11/105 - Condition 5. “The roadway and footpath located running to the southern boundary shall be constructed fully to facilitate future connections, and no buffer strip shall be retained along this section of roadway or footpath.” “Reason - In the interest of orderly and proper planning and sustainable development of the area.”

Clairín Planning Application – PPP Scheme

Clairín is a GCC social housing development that was completed circa 2021 through the PPP scheme. The Part 8 drawings clearly define the future link to the adjoining lands on the east, with an indicative future housing layout to show intent to develop. The Design Statement accompanying the Part 8 drawings included a summary of the pre planning meeting between the project architects and GCC Planning Department. Note 4 of this summary states “It is important that potential future accesses to the north and east are clearly highlighted.”

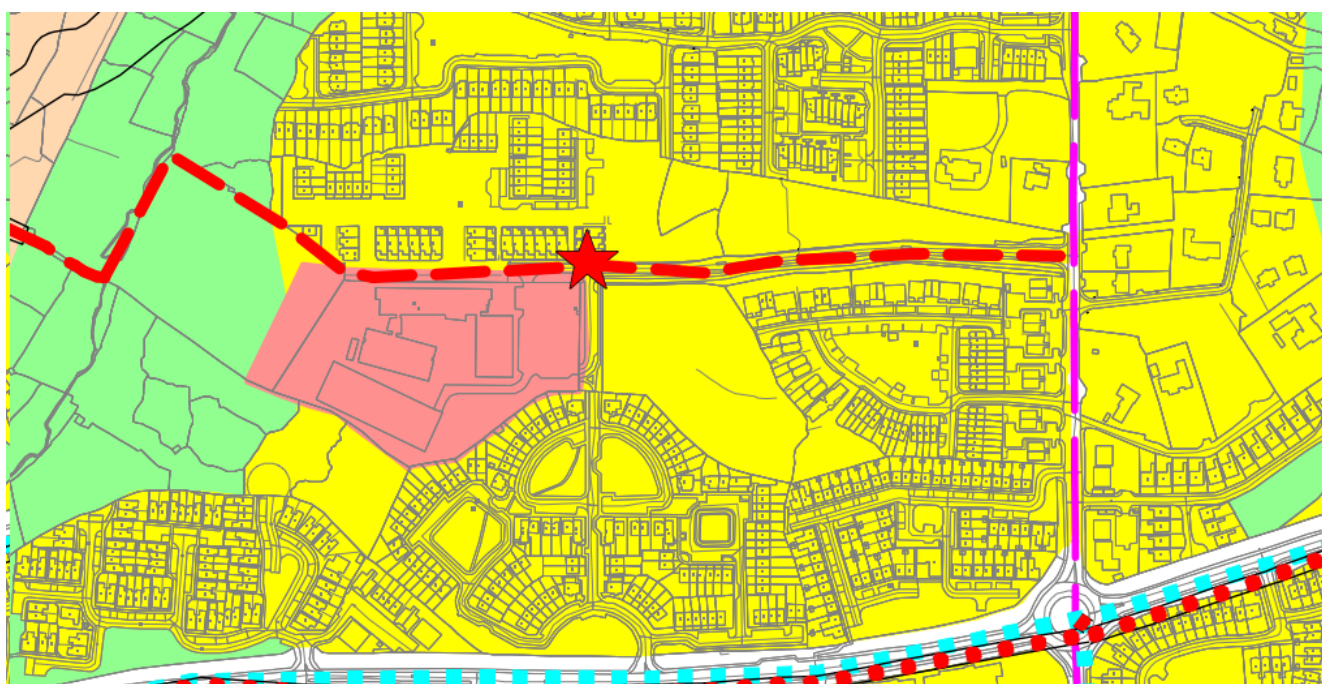


In response to this the design team removed a section of embankment at the east point where central spine road terminates to allow for gated access to future developable lands, which remains in place.

Left: Exert from Clairín Part 8 Site Layout Plan showing east connection to proposed scheme and north connection to Maoilín.

Galway City Development plan 2023 - 2029

“The development of a compact city is characterised by the consolidation of existing neighbourhoods and the establishment of new neighbourhoods. Sustainable neighbourhoods are areas where an efficient use of land, effective integration in the provision of physical and social infrastructure and high quality design are combined to create places where people wish to live, have a sense of belonging, foster community spirit and feel socially inclusive and safe. Sustainable neighbourhoods support a diverse society providing housing choice and affordability for people of all ages and abilities throughout their lifecycle. They contribute to a good quality of life presenting an attractive built and natural environment with good public space. The concept reflects the ambition for a 15 minute city where the daily needs of neighbourhoods, including local services, can be easily accessed within a 15 minute walk, cycle or by public transport. Higher level facilities such as those associated with the city centre/major employment hubs/major attractors would be more readily accessible by the public transport network. While the concept supports a mix of uses within a neighbourhood to support the resident population, it also takes account of the hierarchy of centres set out in Chapter 6, recognising that certain services are more appropriate at a particular location or at a certain scale and nature commensurate with catchment demand. It is the policy of the Council to promote the neighbourhood concept in existing residential areas and in new developments” (3.4 Sustainable Neighbourhood Concept GCC Development Plan 2023-2029)



Above: Exert from Galway City Development Plan 2023-2029 identifying the proposed local centre

Density and Building Height

The density has been clearly defined in section A.5.1 of the Design Statement. The Development Plan outlines the plot ratio for mixed use residential zoned land as 1:1 and this shall not normally be exceeded. In reference to 'Outer Suburban' sites, where the project is situated, section 5.11 of the Department of Environment Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities (DECLG 2009) states: "The greatest efficiency in land usage on such lands will be achieved by providing net residential densities in the general range of 35- 50 dwellings per hectare and such densities (involving a variety of housing types where possible) should be encouraged generally". Proposed is a density of 47 units/hectare and a plot ratio of 0.6:1.

Further guidance has since been issued by the Government of Ireland on Sustainable Residential Developments and Compact Settlements, January 2024, which encourages greater densities and height to support compact growth. In suburban / urban extensions of Galway city densities of 35-50 dwellings per hectare shall generally be applied, with densities up to 100

City - Suburban/Urban Extension

Suburban areas are the low density car orientated residential areas constructed at the edge of cities in the latter half of the 20th and early 21st century, while urban extension refers to greenfield lands at the edge of the existing built-up footprint that are zoned for residential or mixed-use (including residential) development. It is a policy and objective of these Guidelines that residential densities in the range 35 dph to 50 dph (net) shall generally be applied at suburban and urban extension locations in Limerick, Galway and Waterford, and that densities of up to 100 dph (net) shall be open for consideration at 'accessible' suburban / urban extension locations (as defined in Table 3.8).

dwellings per hectare open for consideration at 'accessible' suburban / urban extension locations. Accessible locations are defined as "Lands within 500 meters (i.e. up to 5–6-minute walk) of existing or planned high frequency (i.e. 10-minute peak hour frequency) urban bus services". Further detail will be provided on the Public Transport Network in the Traffic & Infrastructure section below.

Above: Exert from Sustainable and Compact Settlements Table 3.2 - Area and Density Ranges Limerick, Galway and Waterford City and Suburbs.

The massing and scale of the design is considered sensitive to the existing built fabric to the north, stepping in height as it moves away from Maoilín and Drisín and bringing focus to the proposed local centre and new community area. A building height study has been carried out to show the percentage of storeys proposed. The scheme is predominately 2 storeys (31.5%) as shown in yellow in diagrams, with these located adjacent to the neighbouring northern estates. The 3 storey elements (pink) account for 19.5% of the scheme and are divided among all blocks. The 4 storey sections (green) make up 38.5% of the overall building heights and are located at prime areas in the scheme; at the entrance to the Ballyburke road and adjoining the local centre and plaza. The 6-storey block (orange) accounts for only 10.5% of the overall scheme and is designed to create a focal point at the new neighbourhood centre and is located at the furthest possible point from the neighbouring estates to the North.

2 Story = 31.5%



3 Story = 19.5%



4 Story = 38.5%



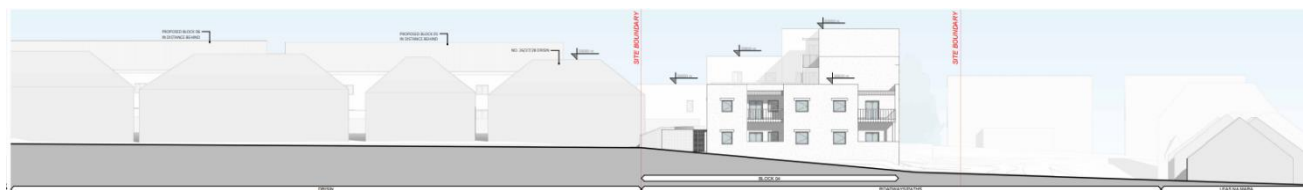
6 Story = 10.5%



Above: Building Height Study showing proposed storey heights.



There is no tall building that significantly exceeds the prevailing benchmark. This due to two main factors; topography and increase height in the area. Topography, as per the above section, demonstrates the fall in ground level allowing for the increase in height to be mitigated. Increased heights in the area: See below for recent developments at Gleann na Mona on the Blake Roundabout / Western Distributor Road, which is 5 storeys high, Leana Mór on the Cappagh Road and Árd Cré on the Upper Ballymoneen Road



Regular meetings were held with the Planning Department throughout the design of the proposed scheme. It was highlighted that the building heights in Block 02 could be taller to help define the community aspect of the design. No issues were raised in relation to the building heights and no requests were made for Tall Building Statements or Impact Assessments, further to the contents of the Design Statement.

See below for recent developments at Gleann na Mona on the Blake Roundabout / Western Distributor Road, which is 5 storeys high, Leana Mór on the Cappagh Road and Árd Cré on the Upper Ballymoneen Road.



Above: Gleann na Mona estate at the Blake Roundabout.



Above Left: Leana Mór Estate on the Cappagh Road.



Above Right: Árd Cré on the Upper Ballymoneen Road.

GALWAY URBAN DENSITY AND BUILDING HEIGHTS STUDY

“4. Tall building statement Where a tall building, one that significantly exceeds the prevailing benchmark heights is proposed, it shall be accompanied by a Tall Building Statement which gives justification for an exception for such height and includes at a minimum the case for the proposal based on location, design, context and assimilative capacity.”

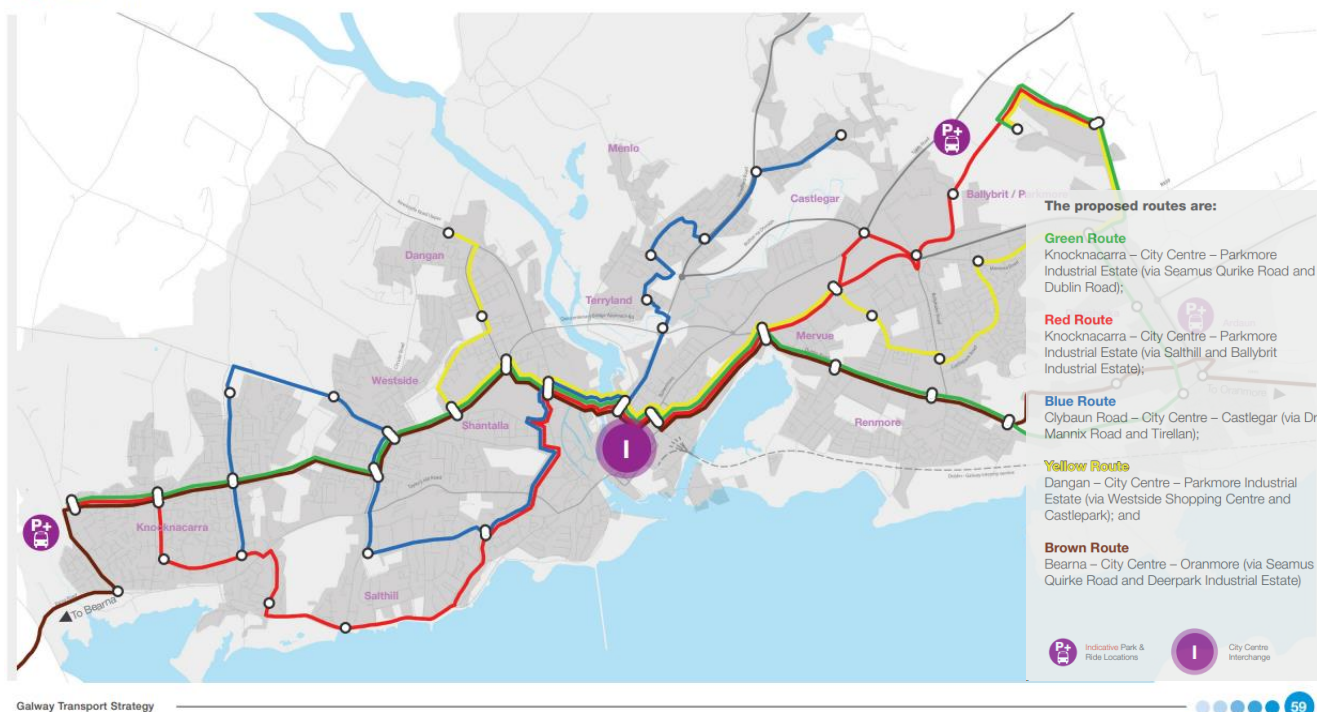
“5. Impact assessment An assessment of all visual and environmental impacts including microclimate, daylight and sunlight, overlooking, overshadowing, impact on skyline and views, ecological assets and green spaces and the provision of appropriate mitigation where required.”

Traffic & Infrastructure

Galway City Council & Galway County Council, in partnership with the National Transport Authority, have developed the Galway Transport Strategy (GTS), an Integrated Transport Strategy for Galway City & Environs. The GTS sets out a series of actions and measures, covering infrastructural, operational and policy elements to be implemented in Galway over the next 20 years and sets out a framework to deliver the projects in a phased manner. Section 5.2 Developing the Galway City Public Transport Network referenced the cross-city network proposal that was developed using the existing bus route alignments as a starting point. To ensure that the bus is a convenient and fast transport option in Galway, as well as to ensure that interchange is considered as an integral element of the bus network, it is essential that the frequency and reliability of bus services is maintained across the bus network, and throughout the day. It is an aspiration of this strategy that all 5 routes identified in the map below will operate at a 15-minute frequency or better during the peak period (with the red and green routes likely to operate at a 10-minute frequency or better initially based on existing demand). It is also an objective of this strategy to ensure that a high bus frequency is maintained across the whole day to ensure that the bus network is a viable alternative to other trip purposes, as well as peak hour commuting.

A Park & Ride has also been identified in Ballyburke as part of the bus network development to provide alternatives to the private car for those accessing the city from the county and wider region, and thereby reduce traffic flows to and from the city.

Figure 5.1 Proposed Bus Routes



Above: Exert from GTS Section 5.2 Developing the Galway City Public Transport Network

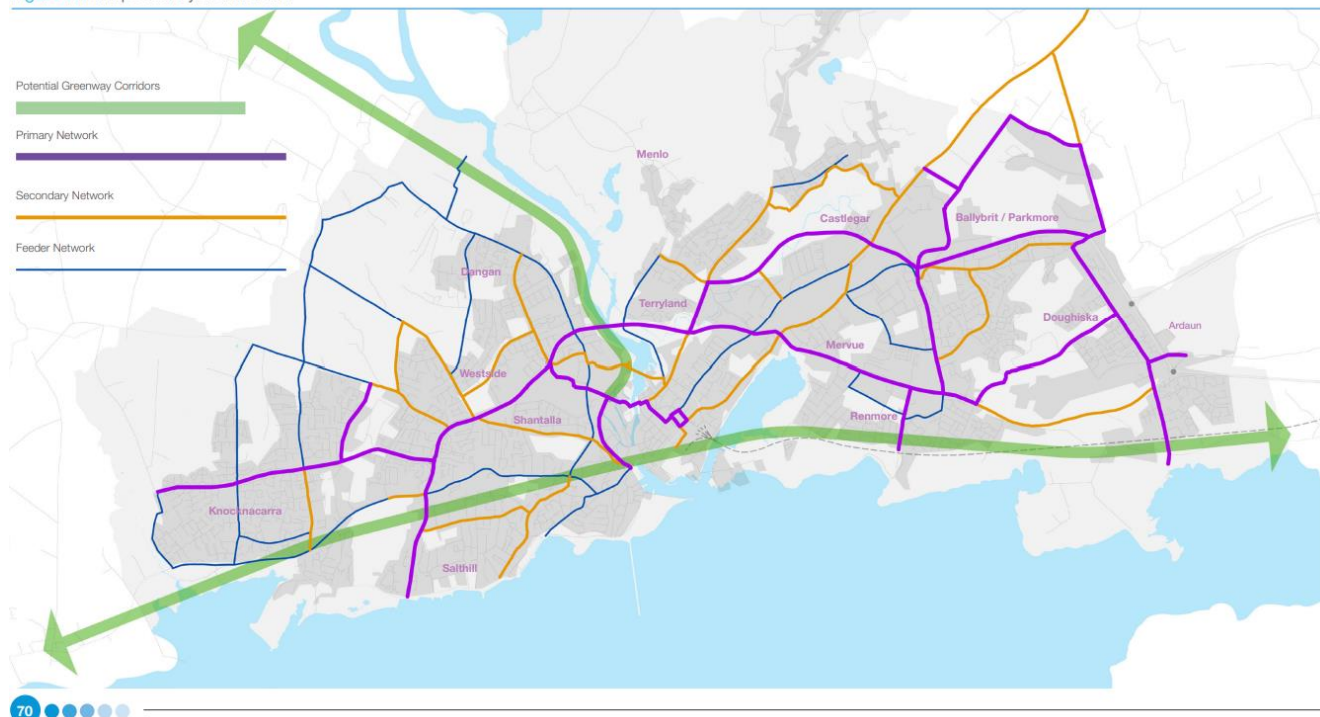
The NTA have also undertaken a bus rerouting exercise, which is a redesign of the existing networks in operation within Galway City and it is proposed to commence the implementation of the new bus network between 2025 and 2026, having them in place by 2026/2027. Last year, the NTA carried out an extensive review of the bus network in Galway, in collaboration with Galway City Council, Galway County Council, local bus operators, and with the specialised expertise of transport designers Jarrett Walker and Associates. In April 2023, a draft new network was published, and the feedback and submissions received have informed the final new bus network. The redesign of the bus network is one of the nine key elements of BusConnects Galway that aims to fundamentally transform the city's bus system, making public transport more useful to more people. Overall, 67% of residents will live within 400 metres of a high frequency bus route (running every 15 minutes or better).

Right: Exert from Bus Connects Planned Network Map



Section 7.1 of the Galway Transport Strategy highlights the overall cycle plan for Galway city, developed on the basis of three levels of network which support each other and reinforce connections across the study area. These networks are classified as 'primary', 'secondary' and 'feeder' routes indicating the desired function and character of the cycle route. The Ballymoneen Road is identified as a 'feeder' network which will aim to be a cycle-friendly advisory route where traffic calming and management measures will allow cyclists and motorists to mix safely. The Western Distributor Road is identified as a 'primary' network, which will be either segregated off-road cycle only paths or dedicated cycle lanes along new or existing routes. Wherever possible, these routes will be separated from traffic by kerbs or edge markings. The full document can be found on GCC's website which details strategies for traffic networks, local public transport, regional public transport, cycling, walking and public realm.

Figure 7.1 Proposed Cycle Network



Above: Exert from GTS – Figure 7.1 Proposed Cycle Network

An external consultant was appointed to carry out an independent Traffic and Transport Assessment. Their study concluded that the influence of the proposed traffic generated by the proposed residential development is considered minor, with no adverse impact on the capacity of the evaluated junctions in all future design years.

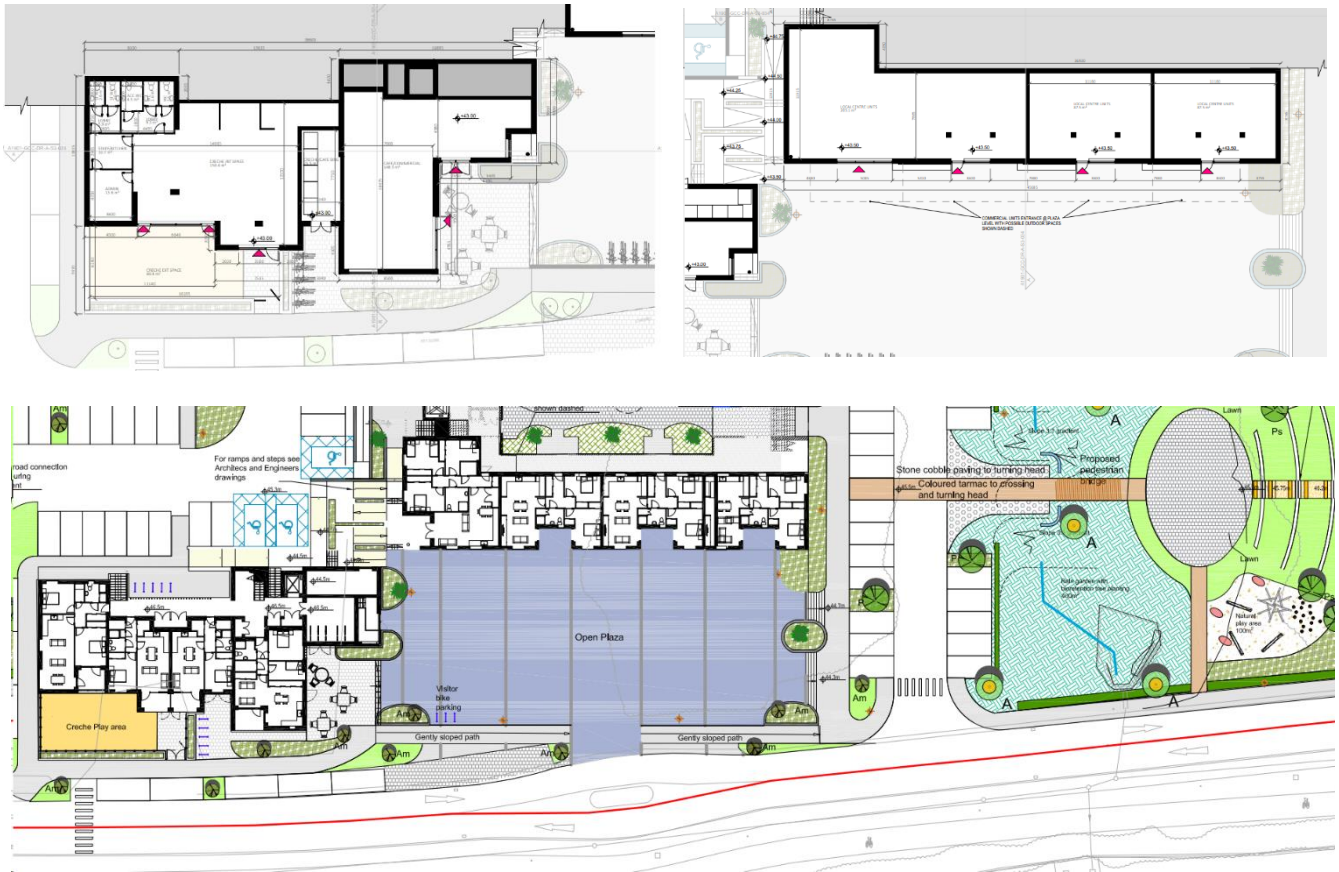
A Mobility Management Plan was carried out by the same consultant, with several ongoing recommendations outlined for over a number of years. One of the recommendations in this plan, which has been referenced in the submissions, is the Stakeholder Survey (Residents Questionnaire). This questionnaire is intended for the mobility management plan coordinator who is recommended to be appointed prior to the completion of the proposed development. Their role will be to implement the measures discussed in the Mobility Management Plan, one of which is to issue the Residents Questionnaire annually to establish changing travel patterns and targets.

A Road Safety Audit was also carried out by a separate independent consultant during the design process. The items highlighted were addressed and changes incorporated into the design. Appendix B of their report summarises the measures taken to address the RSA concerns.

Proposed Neighbourhood Centre

As per the Design Statement, the proposed site is significant for the area in forming a local centre for the surrounding neighbourhood. This has formed the key design elements of the site in the provision of a large formal open space plaza as the focal point for the local centre. This plaza will aim to serve as a multi-purpose civic space for use by the immediate and wider ranging community. Provision of local community-based centre units (examples could include convenience store, café, hairdresser, dentist, physio etc.) directly fronting onto the landscaped plaza will provide activity daily in the use of the plaza whilst also offering the opportunity to hold various events (weekends markets) in the space as required.

There is also a large secondary school currently adjacent to the site and a proposed primary school is envisioned for the vacant lands south of the development, all without services and within walking distance. In addition to the proposed crèche there will be a lot of daytime activity in this area between the plaza, landscaped green with playground and local services.



Above Left: Block 02 Ground Floor – Crèche & Café potential

Above Right: Block 03 Ground Floor – Commercial Units onto Plaza.

Above: Public Plaza connecting to stepped landscaped green and playground area.

Public Open Space & Embracing the Natural Environment

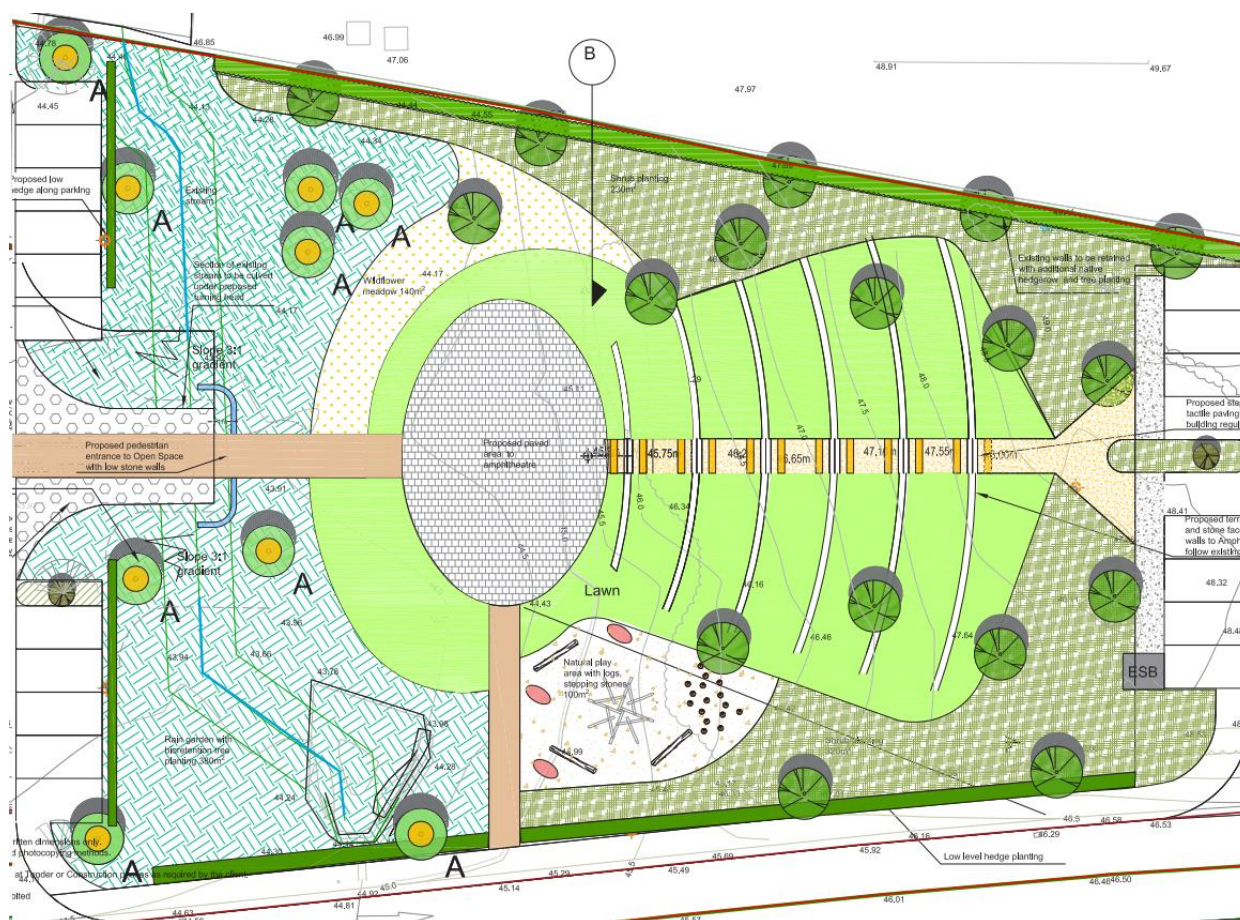
As outlined in the planning design statement “The proposed development takes into consideration the topography of the site. The site varies in level with very few mature trees on site. Where possible, these have been retained. The existing culvert present on site has been surveyed and as recommended by the consulting engineers, will be maintained, and kept independent of the proposed drainage strategy of the site. Locally opening-up and cleaning out of the culvert will be carried out to safeguard design flow capacity. Provision has been made for soft and hard landscaping in public open spaces with low maintenance requirements. Proposed planting will be mostly indigenous species and preference will be given to those likely to provide an attractive wildlife habitat. Pollinator / wild-flower planting will be used where possible in green spaces not requiring access”.

The development also proposes that “Public / communal open space is provided for by means on the new proposed central plaza and the central landscaped open space as shown on the accompanying drawings. The Galway City development plans requires a 15% provision of the overall developmental area which has been exceeded in the proposal by provision of 3,377sqm of communal open space. It is envisioned that this plaza space and landscaped central open space will greatly benefit the local community and provide for communal areas to congregate and be utilised by the proposed and neighbouring developments. The proposed and potential future connecting linkages to the North will ensure these spaces are actively used throughout the day whilst the incorporation of local centre amenity units will ensure the local centre provides for a sustainable urban addition to the wider local community.”

The provision of an increased amount of public open space (c.4% / c.670 square meters) serves to benefit the development and the overall area in general and aid in the formation of the new proposed local centre area as per the city development plan requirement for this location. These and additional spaces can be highlighted as follows in extracts taken from the landscape architects detailed design proposal:

- **Amphitheatre / Public open space**

The proposed c.2605 square meter amphitheatre / public open space will create a new community park space to serve both the proposed development and neighbouring communities.



Above: Proposed central open space plan extract from landscape architects planning package



Above: Proposed central open space 3d visualisations and examples extracted from landscape architects planning package

- **Proposed Plaza**

The proposed c.930 square meter public plaza open space will create a new neighbourhood community space to serve both the proposed development and neighbouring communities. This space will aim to bring services in the adjoining units (cafe, convenience shop, creche, community hub etc.) along with providing a usable space for the wider community for hosting neighbourhood events such as small markets etc.



Above: Proposed plaza space 3d visualisations extracted from landscape architects planning package



Above: Proposed plaza space 3d visualisations extracted from landscape architects planning package

- **Semi-Private Courtyards**

The proposed semi-private courtyards are an additional open space that residents of the proposed developments can utilise as spaces for congregating and meeting with their neighbours in an area directly adjacent to the entrances to their dwellings. These spaces will aim to provide a safe area where the proposed residents, of which many may be elderly and families, can mix and socialise within their community. They will provide further open spaces for children of the development to play and socialise in a safe environment.



Above: Proposed semi-private courtyard space 3d visualisations to blocks 01, 03 & 04 extracted from landscape architects planning package

Overshadowing / Daylighting

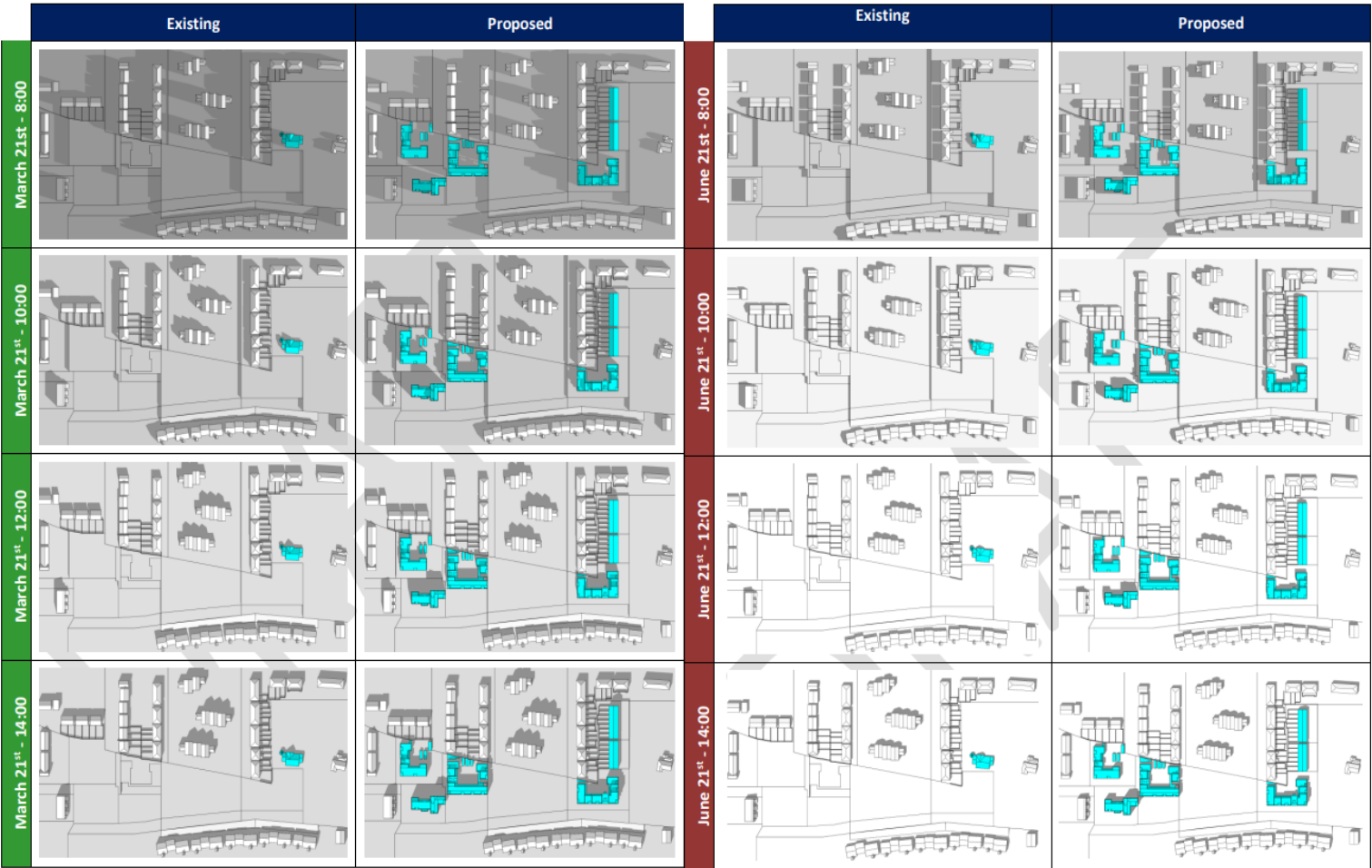
As outlined in the planning design statement “the proposed layout responds to existing established pattern of development in that the building lines of the proposed apartment blocks south of Maoilín and Drisín align with the existing building line of these estates. The treatment of the proposed building heights in these areas also responds to the adjacent form of 2 storey development in that the apartment blocks step up from 2 storey elements adjacent the existing housing developments to limit any overshadowing concerns and raise up to 3-6 storey elements where applicable to ensure a suitable density is achieved on the site.” The proposed design of the development has always been cognisant of the fact that the neighbouring predominant building height is two storeys in height so by stepping the apartment blocks in height away from the neighbouring developments, the potential for overlooking and shadowing has been thoroughly considered throughout the design process. This was further reviewed in planning review meetings with the relevant city executive planner to ensure the design was deemed acceptable as outlined previously in this response document.

Following consultation with residents and councillors, as part of the planning part 8 process, it was decided to seek an independent review of potential overshadowing and daylighting concerns. GCC appointed a consultant to review and verify the design proposal and a copy of this detailed analysis can be found as an appendix to this response document.

The following extracts outline some of the main neighbouring issues being addressed in this document:

Overshadowing

In terms of the possible impacts of overshadowing on the neighbouring developments, detailed analysis was taken of the current and proposed situation for the neighbouring dwellings closest to the proposed apartment and terraced housing blocks. A full 2D and 3D analysis was prepared for the site and neighbouring developments on 3 separate days and at different times across the days also. Below is an extract of the effect seen on the 21st March between 08:00 and 14:00 and on the 21st June between 08:00 and 14:00. Minimal overshadowing impacts. The full and detailed analysis images can be found in the accompanying appendix to this document.

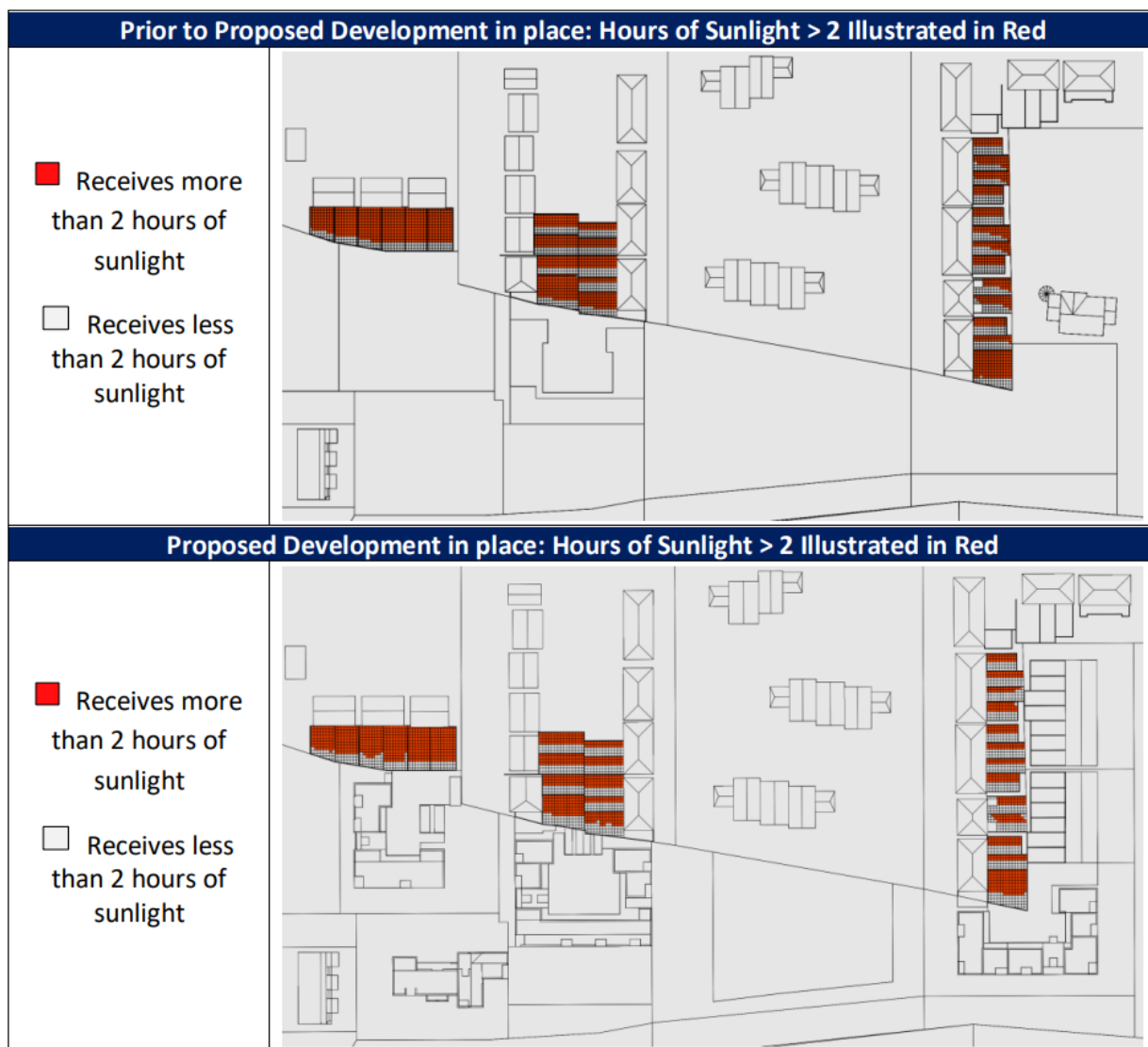


Above: 3D shadow analysis extract from accompanying report

The extracted image below from the accompanying overshadowing study also identifies the private amenity spaces to be studied numbered 1 – 28 and impacts of overshadowing on these spaces in detail.

Right: External amenity spaces for analysis

The requirement for a space to be deemed adequately sunlit is outlined in the accompanying report as “As outlined in Section 3.3.17 of the BRE Guide (3rd Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity space should receive at least 2 hours of sunlight on March 21st.” The following extracted image outlines the hours of sunlight received on the 21st of March prior to the development and then also following the developments construction.



Above: 2D shadow analysis extract from accompanying report of private amenity space of neighbouring dwellings

The below table gives the overall impact of overshadowing for all the neighbouring amenity spaces studied.

Ref	Area (m ²)	Existing Area >2 hrs		Existing Area with Proposed Development in Place >2 hrs		Proposed vs Existing (%)	Comment
		(m ²)	(%)	(m ²)	(%)		
1	88	68	77%	68	77%	100%	✓
2	102	82	80%	78	76%	95%	✓
3	116	98	84%	93	80%	95%	✓
4	120	96	80%	93	78%	97%	✓
5	110	88	80%	88	80%	100%	✓
6	125	100	80%	100	80%	100%	✓
7	110	65	59%	65	59%	100%	✓
8	105	60	57%	60	57%	100%	✓
9	98	53	54%	53	54%	100%	✓
10	154	121	79%	101	66%	83%	✓
11	68	29	43%	29	43%	100%	✓
12	79	40	51%	40	51%	100%	✓
13	97	58	60%	58	60%	100%	✓
14	65	26	40%	26	40%	100%	✓
15	105	74	70%	59	56%	80%	✓
16	60	30	50%	30	50%	100%	✓
17	66	32	48%	32	48%	100%	✓
18	59	22	37%	22	37%	100%	✓
19	65	35	54%	35	54%	100%	✓
20	64	31	48%	31	48%	100%	✓
21	71	32	45%	32	45%	100%	✓
22	62	23	37%	23	37%	100%	✓
23	67	34	51%	34	51%	100%	✓
24	68	30	44%	30	44%	100%	✓
25	70	36	51%	36	51%	100%	✓
26	67	35	52%	35	52%	100%	✓
27	67	27	40%	27	40%	100%	✓
28	162	129	80%	108	67%	84%	✓

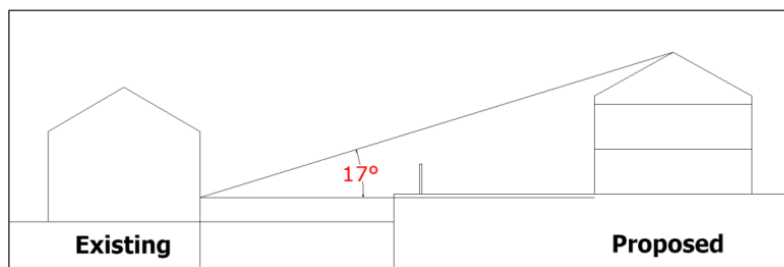
Above: Shadow analysis extract from accompanying report

- **Daylighting**

In terms of daylighting, to be deemed as a factor warranting a full calculated analysis of the amount of daylight affected entering neighbouring dwellings, the angle between the neighbouring dwelling elevation at window level (for elevations on which windows are located) and the top of the proposed development must be greater than 25 degrees. This is defined in the accompanying study as “Section 2.2.5 of the BRE Guide states that if in a section perpendicular to the window wall, no angle subtended more than 25 degrees, as shown in the image below, it is not necessary to do a full calculation as the daylight impact will be unnoticeable to the occupants.” The following extracts show the confirmation that none of the proposed neighbouring developments outside of Galway City Councils ownership fall into this category and that daylight impact will be unnoticeable to occupants.



Plan View – Key Image

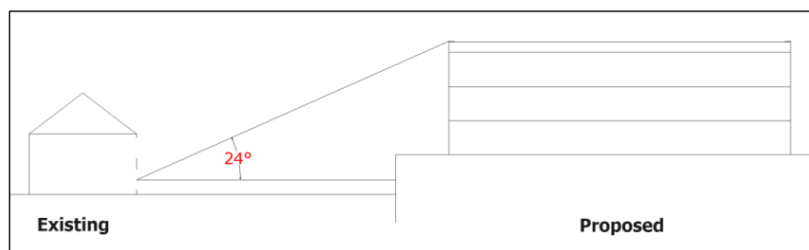


Can be excluded from the calculations – Angle 17° (less than 25°)

Above: Proposed Blocks 05 & 06 relative to Neighbouring Drisín Development



Plan View – Key Image

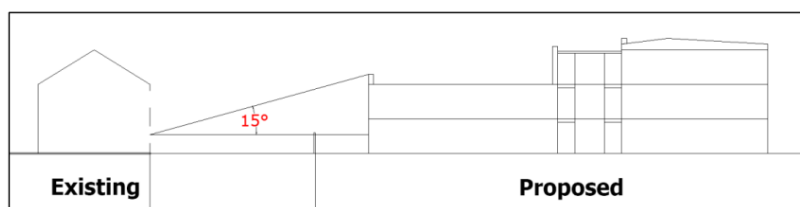


Can be excluded from the calculations – Angle 24° (less than 25°)

Above: Proposed Block 01 relative to Neighbouring Clairin Development



Plan View – Key Image



Can be excluded from the calculations – Angle 15° (less than 25°)

Above: Proposed Block 01 relative to Neighbouring Maoilín Development

Given the above, the attached detailed study outlines that “the surrounding dwellings adjacent to the proposed development were verified noting that, in a section perpendicular to the window wall, no angle subtended more than 25° and, in some cases, they were also sitting to the south of the proposed development. None of the existing properties have been included in the assessment, as noted in Section 3.2.9 of the BRE Guide 3rd Edition, that these windows need not be analysed as sunlight impact will be unnoticeable to the existing occupants.”

Conclusion

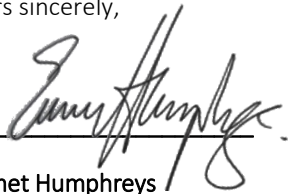
This proposal seeks to address and meet some of the critical need for housing in the Galway City area. There is a balanced approach between the Compact growth principles, the NDP 50% increase of population, Climate Change/low density sprawl and the City Development Plan in the design of the proposed development. The lands have been zoned residential in the City Development Plan since the first masterplans for the area which set the pattern of development for this area. The three adjoining estates all refer to connection to future development sites in their applications and the permeable design of their layouts. The proposed development provides a local centre which had also been identified in the masterplans and the current development plan providing services for the wider area and not just the proposed dwellings on this site alone.

The height and the density has been carefully considered with a proposed 47 U/H. The acceptable range in the development plans for this area is 35-50 U/H. There is scope for a possible uplift of this figure to 100 U/H in the new compact growth guidance. However, we sought a balance between the need for compact growth and the existing community. We also retained 22 meters between the rear window elevations of the neighbouring estates dwellings, for which this figure could potentially be reduced to 16 meters using the new compact growth guidelines.

The area is very predominately standard housing typologies at present with our housing needs assessments clearly demonstrating that there is a need for a diverse typology of homes. The proposal has looked at addressing these needs in this area to create housing for all.

I trust this is to your satisfaction. If you have any queries in relation to the matter, please contact the undersigned.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Emmet Humphreys', is written over a horizontal line.

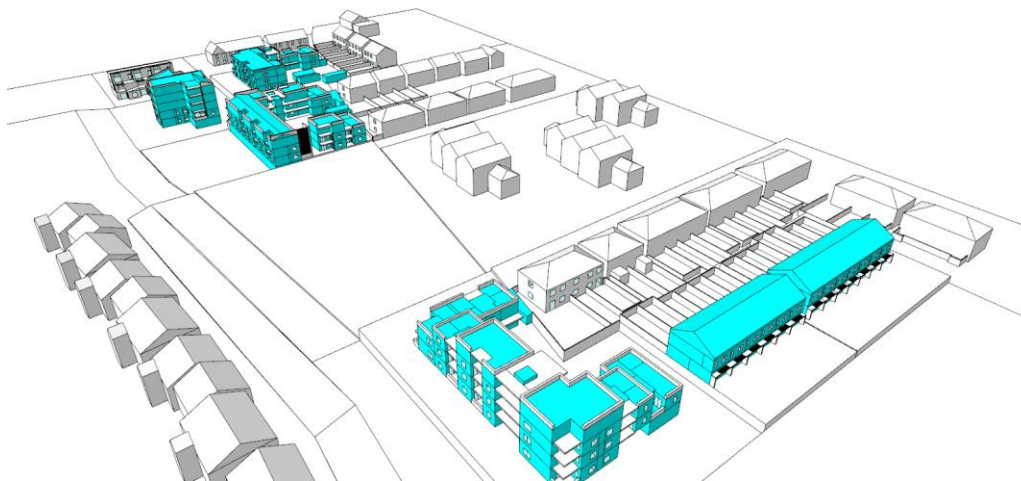
Emmet Humphreys

Senior Executive Architect
Infrastructure Development & Planning
Galway City Council



Ballyburke Galway

Daylight, Sunlight and Overshadowing Study



Report For: Galway City Council
Not Marked
Project No: 17892

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1 Executive Summary

This report summarises the analyses undertaken to quantify the Sunlight and Daylight performance of the proposed Ballyburke Residential Development located in Galway, Ireland. The report focuses on measuring the daylight and sunlight impact to the existing surrounding dwellings as well as the daylight and sunlight performance within the proposed development.

1.1 Planning Authority Guidelines

The Sustainable Urban Housing: Design Standards for New Apartments 2023 states the following in Section 6.6:

“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 EN17037:2018 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.”

With regards to daylighting and external sunlight exposure in particular, where different methodologies are found in each of the different standards, all methodologies have been employed for completeness to ensure appropriate and reasonable regard has been taken to address all assessments under all of the different standards. For clarity these are listed below and the following Section 1.2 denotes which standard is applicable for each assessment type:

- BRE Guide –3rd Edition of BR 209 BRE Site Layout Planning for Daylight and Sunlight
- IS EN 17037-2018+A1-2021 – Daylight in Buildings
 - This is the Irish implementation of the European EN 17037-2018+A1-2021 standard
- BS EN 17037-2018+A1-2021 – Daylight in Buildings
 - This is the UK implementation of the European EN 17037-2018+A1-2021 standard. It supersedes BS 8206-2:2008 which is withdrawn in the UK. The BS EN standard includes a National Annex which addresses daylight requirements specific to dwellings which is notable as Ireland’s climate matches closely with the UK.

1.2 Reference Standards & Summary of Assessments Undertaken

The various daylight and sunlight assessments that were undertaken using the IES VE software are based on a number of different standards which are referenced in the individual sections of this report. For clarity, the assessments that were undertaken are summarised below as well as the reference standards that were used for each (where applicable):

- **Shadow Analysis**
 - Assessed using shadow images cast at key times throughout the year, i.e. March 21st, June 21st and December 21st to determine if any overshadowing impact occurs and to what extent to any existing neighbouring dwellings in accordance with the BRE Guide (3rd Edition).

- **Sunlight to Amenity Spaces**
 - Assessed using annual Solar Exposure calculations to determine any impact to existing amenities and the sunlight received and also to assess the proposed developments amenity spaces to derive how much sunlight they can expect to receive in accordance with the BRE Guide (3rd Edition).
- **Sunlight to Existing Buildings**
 - Assessed using the Annual Probable Sunlight Hours (APSH) method in accordance with the BRE Guide (3rd Edition) - to determine any impact to sunlight received to the existing neighbouring building main living areas.
- **Sunlight to Proposed Buildings**
 - Assessed using Solar Exposure calculations in accordance with IS/BS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition)
 - In both assessments above the aim is to derive how much sunlight proposed development can expect to receive.
- **Daylight to Existing Buildings**
 - Assessed using the Vertical Sky Component (VSC) method in accordance with the BRE Guide (3rd Edition) - to determine any impact to existing daylight received to the existing building neighbouring the site.
- **Daylight to Proposed Development**
 - Assessed in accordance with IS EN 17037-2018+A1-2021 Method 2 (BRE Guide 3rd Edition)
 - Assessed in accordance with BS EN 17037-2018+A1-2021 National Annex Method 2 (BRE Guide 3rd Edition)
 - In all assessments above the aim is to derive how much daylight will be received within each of the apartments within the proposed development.
- **View Out**
 - Assessed in accordance with IS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition)
- **Glare**
 - Assessed in accordance with IS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition)

The following can be concluded based on the assessments undertaken:

1.3 Shadow Analysis

The shadow analysis illustrates different shadows being cast at key times of the year (March 21st, June 21st and December 21st) for the Existing Situation and the Proposed Scheme. The results from the study are summarised as follows:

Clairin Development

Minimal additional shading visible from the proposed development on this building on March at 0800, June at 0800 and December* at 1000. No additional overshadowing throughout the rest of the year.

12-16 Maoilin

Minimal additional shading visible from the proposed development on these buildings on December* at 1000-1400. No additional overshadowing throughout the rest of the year.

11 Maoilin & 67 Drisin

Minimal additional shading visible from the proposed development on these buildings on March* at 1200-1400 and December at 1000-1400. No additional overshadowing throughout the rest of the year.

29, 30, 36, 64-66 Drisin

No additional shading is visible from the proposed development on these properties throughout the year.

16-28 Drisin

Minimal additional shading visible from the proposed development on these buildings on March at 0800 and December* at 1000. No additional overshadowing throughout the rest of the year.

* Overshadowing can be expected in December when the sun is lower in the sky and shadows cast are much longer. Although this is the case, overshadowing is least noticeable during the winter months as there is a lot less sunlight available at this time of year and so the overall impact is vastly reduced.

The potential shading impact is quantified via the “Sunlight to Amenity Spaces” and “Daylight to Existing Buildings” sections of this report.

1.4 Sunlight to Amenity Spaces

As outlined in Section 3.3.17 of the BRE Guide (3rd Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity area should receive at least 2 hours of sunlight on March 21st. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation.

Existing Amenity Spaces

On March 21st the existing amenity spaces will receive similar levels of sunlight with the proposed development in place when compared to the existing situation. In all cases the results comply with the recommendations in the BRE Guide outlined above.

Proposed Amenity Spaces

On March 21st, 100% of the proposed public amenity areas situated within the development site will receive at least 2 hours of sunlight over both areas. With regards to the apartment private communal areas, 100% of these spaces comply with the requirements when considered against the minimum areas required for the development. There is a significant overprovision of communal amenity space and therefore these areas will be quality spaces in terms of provision as well as sunlight, particularly when the provision of high quality public open space in close proximity to the apartments is considered in conjunction with these communal areas. Regarding the housing private amenity areas, all are passing the BRE guidelines with at least 2 hours of sunlight over more than 50% of each area.

1.5 Sunlight to Existing Buildings

This study considers the proposed scheme and tests if the Annual Probable Sunlight Hours (APSH) results for the living room windows are greater than 25% annual and 5% winter sunlight or are greater

than 0.8 times their former value with the proposed development in place or the reduction in sunlight across the year is less than 4% with the proposed development in place.

Based on the criteria outlined in Section 3.2.9 of the BRE Guide 3rd Edition, none of the existing buildings fit the requirements to be assessed and as such the APSH assessment was not conducted. The BRE guide (3rd Edition) notes that there should be no impact to sunlight for these properties “It is not always necessary to do a full calculation to check sunlight potential. The guideline above is met provided either the following is true:

- If the window wall faces within 90° of due south and no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal. Again, obstructions within 90° of due north need not be counted.”

Given the statement above, the surrounding dwellings adjacent to the proposed development were verified noting that, in a section perpendicular to the window wall, no angle subtended more than 25°, and in other cases they were not facing within 90 degrees due south, therefore as noted in Section 3.2.9 of the BRE Guide 3rd Edition, these windows need not be analysed as sunlight impact will be unnoticeable to the existing occupants.

1.6 Sunlight to Proposed Development

As the sunlight exposure assessment in accordance with BRE Guide 3rd Edition / IS/BS EN 17037-2018+A1-2021 considers the orientation of the rooms the following should be noted from section 3.1.11 of the guide.

“The BS EN 17037 criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met.”

Of the 83 no. points tested, 83 no. points (100%) meet the BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 sunlight exposure recommendations of greater than 1.5 hours on March 21st.

It should be noted that in the development of any apartment type building in particular, achieving in the region of 75% to 80% for this assessment would be considered very high and factors such site constraints and ultimately orientation play a huge part to the outcome of this assessment. In some instance and particularly a scheme like this where you have apartments on either side of a rectangular block that is constrained by the site orientation, 50% would be as highest percentage achievable with the apartments on one side not able meet requirements purely on orientation as noted and the inclusion of balconies within the design scheme (as a requirement).

Overall, the sunlight provision results to the proposed development in accordance with IS/BS EN 17037:2018 are considered excellent.

Finally, the sunlight exposure results are visually represented in Appendix B.

1.7 Daylight to Existing Buildings

The BRE Guidelines state that if the VSC value, with the new development in place, is both less than 27% and less than 80% of its former value, the occupants of the existing building will notice the reduction in the amount of skylight.

Based on the criteria outlined in Section 2.2.5 of the BRE guidance (3rd Edition), only one of the neighbouring buildings required inclusion within the VSC assessment as all other buildings met the criterion as laid out within the BRE guide which is as follows.

It is not always necessary to do a full calculation to check daylight potential. The guideline above is met provided the following is true:

- no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal.

Therefore, as noted above, only the adjacent recently completed Clairin Development to the west have been included within the VSC assessment as the daylight impact will be unnoticeable to the occupants of the other neighbouring elevations. Please refer to section 7.3 25 Degree Rule for the section images produced as evidence for each of the qualifying views.

When considering daylight to the Clairin Development to the west, 89% (16 out of 18) of the points tested are in line with the recommended values set out in the BRE Guidelines. The two points that fall below recommendations are marginally outside the recommendations and do have very large window openings in place and therefore will have adequate daylight. Therefore, taking all the information into consideration, the proposed development will have a negligible impact on the existing neighbouring properties daylight.

1.8 Daylight to Proposed Development

For the daylight to proposed development assessment, two standards have been analysed: IS EN 17037-2018+A1-2021 and BS EN 17037-2018+A1-2021 National Annex (BRE Guide 3rd Edition). The results under each standard are summarised below.

BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021

It is important to note that IS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition) does not provide different illuminance targets for different space types. Therefore, in the case of residential developments; bedrooms, living rooms, kitchens and combined LKDs all have the same daylight provision targets.

There are two methods to assess daylight provision to the interior which are based on target values in either Table A.1 or Table A.3 of IS EN 17037-2018+A1-2021 which are summarised as follows:

Method 1: This calculation method uses the daylight factor targets on the reference plane as per Table A.3 (refer to Section 10.1.2 of this report). The assessment is carried out on a representative day and time during the year, i.e. 21st September @ 12:00 under standard CIE overcast sky conditions.

Method 2: This calculation method uses the illuminance targets on the reference plane as per Table A.1 (refer to Section 10.1.2 of this report). The assessment is carried out for each hour over the course of the year (8,760 hours) using a local weather file which accounts for varying sky conditions and sun positions throughout the year.

As outlined in Section 5.1.4 of the standard, the verification of daylight provision can be determined using either an adequate software or on-site measurements. When using a software, *“a representative model of the space is required together with the key parameters (such as any significant nearby obstructions, the assigned surface reflectance values and glazing transmissivity) that are a reasonable representation of those for the actual, completed building. This can be determined using either Method 1 or Method 2.”*

Based on the above criteria, the daylight provision to the proposed development has been assessed using an adequate software (i.e. IES VE), using the Method 2 climate-based approach and targeting the minimum recommended values outlined in Table A.1 of IS EN 17037-2018+A1-2021.

The Method 2 climate-based approach was selected as it is a far more accurate assessment method compared to Method 1. Climate based daylight modelling (CBDM) is more accurate compared to a calculation based on a single day during the year, i.e. Method 1. The amount of daylight varies throughout the year, primarily due to the sun's position, so it is essential the impact of daylight variance is properly considered. CBDM utilises an annual simulation linking location, shading, climate data (including solar intensity and cloud cover) together with the building properties. This provides a complete overview on how the daylight performance varies throughout the year due to changes in these factors.

Across the proposed development, 86% of the tested rooms are achieving the daylight provision targets in accordance with Table A.1 of IS EN 17037-2018+A1-2021 using Method 2.

BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 National Annex

In the UK, EN 17037-2018+A1-2021 was adopted to form “BS EN 17037-2018+A1-2021”. However, a National Annex was included which states:

“The UK committee supports the recommendations for daylight in buildings given in BS EN 17037:2018; however, it is the opinion of the UK committee that the recommendations for daylight provision in a space (see Clause A.2) 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 (for example, dwellings situated in a dense urban area or with tall trees outside), or for existing buildings being refurbished or converted into dwellings. This National Annex therefore provides the UK committee’s guidance on minimum daylight provision in all UK dwellings.”

Whereas IS EN 17037-2018+A1-2021 does not provide different illuminance targets for different space types, the BS EN 17037-2018+A1-2021 National Annex provides target illuminance values for bedrooms, living rooms and kitchens within residential developments as per Table NA.1 (refer to Section 10.1.3 of this report). It is also important to note that as the climate in Ireland is similar to the UK, the targets outlined in the BS EN National Annex could also be applied to dwellings in Ireland.

The BS National Annex also states:

“Where one room in a UK dwelling serves more than a single purpose, the UK committee recommends that the target illuminance is that for the room type with the highest value – for example, in a space that combines a living room and a kitchen the target illuminance is recommended to be 200 lx.”

Therefore, combined LKDs were assessed using a 200-lux target illuminance (E_T).

Across the proposed development, 98% of the tested rooms are achieving the daylight provision targets in accordance with Table NA.1 of BS EN 17037-2018+A1-2021 using Method 2.

Compensatory Measures

With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments 2023, 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 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.”

Having regard to the statements above, it should be noted that throughout the design process the design team worked hard to optimise the whole development to maximise the daylight within the proposed scheme.

Design features have been incorporated into the development where rooms do not achieve the daylight provision targets in accordance with the standards they were assessed against. These design features again help to balance off and compensate the lower levels of daylight measured in the applicable spaces and are summarised as follows:

- 61% of the apartments have a floor area 10% greater than the minimum floor area requirements as required by the Design Standards (March 2023). This would be 51% of the overall units within the development. Note that larger floor areas make it more difficult to achieve the recommended daylight levels. However, larger windows have been incorporated into the design which also improves the view out for the building occupants.
- 94% of the apartments are dual aspect which is above the 50% minimum requirement as required by the Design Standards (March 2023). As a result, more apartment units than the recommended minimum will achieve quality daylight from dual-aspect orientations.
- The proposed scheme provides 1135sq.m of communal amenity space for the apartments alone, thus exceeding the 461sq.m required pursuant to the Design Standards (March 2023).

In addition to this, specific compensatory measures for each space below the recommendations can be found in the table within Appendix A section 12.2.

1.9 View Out

The View Out assessment is related to buildings such as offices or schools where seating layouts are typically fixed compared to domestic settings where an occupant can move around the space freely. In their own home occupants can choose to sit near to or even at a window which will inevitably provide the varying layers of a 'View Out' such as the ground, landscape or sky. This ability to choose their position within a domestic setting means they would always have access to a position in the apartment with the minimum requirements of 'View Out'. Therefore, all the properties would meet the minimum requirement as outlined in IS EN 17037-2018+A1-2021 / BS EN 17037-2018+A1-2021 National Annex (BRE Guide 3rd Edition).

1.10 Glare

As outlined in IS EN 17037-2018+A1-2021 / BS EN 17037-2018+A1-2021 National Annex (BRE Guide 3rd Edition), a Glare assessment is suggested in spaces where the *"expected activities are comparable to reading, writing or using display devices and the user is not able to choose freely their position and viewing direction"*. Given that occupants within a domestic setting are free to move around, on this basis a glare assessment for the proposed development has not been carried out.

1.11 Observations

It is important to note that the recommendations within the BRE Guide (3rd Edition) itself states *"although it gives numerical guidelines these should be interpreted flexibly because natural lighting is only one of many factors in site layout design"*, Although this is true appropriate and reasonable regard has still been taken to the BRE guide.

Whilst the results shown relate to the criteria as laid out in the BRE Guide (3rd Edition), it is important to note that the BRE targets are guidance only and should therefore be used with flexibility and caution when dealing with different types of sites.

In addition, BRE Guide 3rd Edition also notes:

"This report is a comprehensive revision of the 2011 edition of Site layout planning for daylight and sunlight: a guide to good practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location."

Taking all of the above information into account and based on the results from each of the assessments undertaken, the proposed development performs well when compared to the recommendations in the BRE Guide 3rd Edition and IS EN 17037-2018+A1-2021 / BS EN 17037-2018+A1-2021 National Annex. With regards to the existing properties there is a negligible impact when considering sunlight and daylight as a result of the proposed development and the proposed development itself performs very well with the same regard.

2 Introduction

This report summarises the analyses undertaken to quantify the Sunlight and Daylight performance of the proposed Ballyburke Residential Development located in Galway, Ireland. The report focuses on measuring the daylight and sunlight impact to the existing surrounding dwellings as well as the daylight and sunlight performance within the proposed development.

2.1 Development Description

The proposed development consists of the demolition of one existing dwelling to allow for the consolidation of the lands owned by Galway City Council in order to develop a key new “Local Centre” housing development accommodating 84 no. social housing units. The Galway City Development Plan 2017-2023 and the newly adopted development plan 2023-2029 highlights the site as significant in the area and requires the need for a local centre at this location. The focal point of this new local centre will be a central plaza area with local centre units fronting onto it. This will provide for a communal open space which will serve the local and surrounding areas. It is envisioned, in line with the development plan, that local services will be provided in these units possibly as a convenience store, café, hairdresser, community uses etc. The provision of these facilities will also aim to serve the proposed social housing on the site as many of the occupiers will be identified with additional needs accommodated through the construction of Universal Design and Age Friendly units.

Terraced housing is proposed to the North East corner of the site to integrate with the existing terraced housing of Drisin whilst also providing for a pedestrian/cycle link onto the existing Ballymoneen Road to the East. Communal parking is provided across the site in line with the requirements of the development plan whilst not dominating the open space environs. A mixed provision of 1, 2, and 3 bed apartments are provided across the site with a large percentage of these units (40%) designed to Universal Design (UD), UD-Plus standards and also Age Friendly suitable accommodation.

3 BRE – Site Layout Planning for Daylight and Sunlight (3rd Edition)

Access to daylight and sunlight is a vital part of a healthy environment. Sensitive design should provide sufficient daylight and sunlight to new residential developments while not obstructing light to existing homes nearby.

The 3rd Edition of the BR 209 BRE Site Layout Planning for Daylight and Sunlight, advise on planning developments for good access to daylight and sunlight and is widely used by local authorities to help determine the performance of new developments.

3.1 Impact Classification Discussion

BRE guidance in Appendix H (BRE Guide 3rd Edition) – Environmental Impact Assessment suggests impact classifications as minor, moderate and major adverse. It provides further classifications of these impacts with respect to criteria summarised in the table below.

Where the loss of skylight or sunlight fully meets the guidelines in the BRE guide (3rd Edition), the impact is assessed as negligible or minor adverse. Where the loss of skylight or sunlight does not meet the BRE guidelines, the impact is assessed as minor, moderate or major adverse.

Impact	Description
<i>Negligible adverse impact</i>	• <i>Loss of light well within guidelines, or</i> • <i>only a small number of windows losing light (within the guidelines) or limited area of open space losing light (within the guidelines)</i>
<i>Minor adverse impact (a)</i>	• <i>Loss of light only just within guidelines and</i> ○ <i>a larger number of windows are affected or</i> ○ <i>larger area of open space is affected (within the guidelines)</i>
<i>Minor adverse impact (b)</i>	• <i>only a small number of windows or limited open space areas are affected</i> • <i>the loss of light is only marginally outside the guidelines</i> • <i>an affected room has other sources of skylight or sunlight</i> • <i>the affected building or open space only has a low-level requirement for skylight or sunlight</i> • <i>there are particular reasons why an alternative, less stringent, guideline should be applied</i>
<i>Major adverse impact</i>	• <i>large number of windows or large open space areas are affected</i> • <i>the loss of light is substantially outside the guidelines</i> • <i>all the windows in a particular property are affected</i> • <i>the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight (living rooms / playground)</i>

4 Methodology

4.1 Planning Authority Guidelines

The Sustainable Urban Housing: Design Standards for New Apartments 2023 states the following in Section 6.6:

“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 EN17037:2018 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.”

With regards to daylighting and external sunlight exposure in particular, where different methodologies are found in each of the different standards, all methodologies have been employed for completeness to ensure appropriate and reasonable regard has been taken to address all assessments under all of the different standards. For clarity these are listed below and the following Section 1.2 denotes which standard is applicable for each assessment type:

- BRE Guide –3rd Edition of BR 209 BRE Site Layout Planning for Daylight and Sunlight
- IS EN 17037-2018+A1-2021 – Daylight in Buildings
 - This is the Irish implementation of the European EN 17037-2018+A1-2021 standard
- BS EN 17037-2018+A1-2021 – Daylight in Buildings
 - This is the UK implementation of the European EN 17037-2018+A1-2021 standard. It supersedes BS 8206-2:2008 which is withdrawn in the UK. The BS EN standard includes a National Annex which addresses daylight requirements specific to dwellings which is notable as Ireland’s climate matches closely with the UK.

Furthermore, the EN 17037-2018+A1-2021 standard has already been adopted in the UK to inform the BS EN 17037-2018+A1-2021 standard which supersedes BS 8206-2:2008 which is now withdrawn. It is important to note that BS EN 17037-2018+A1-2021 includes a National Annex which specifically addresses daylight provision in residential dwellings in the UK. A similar annex is not included in the IS EN 17037-2018+A1-2021 standard.

Finally, the latest BRE guide ‘Site Layout Planning for Daylight and Sunlight’ (3rd Edition) has just been published (June 2022). This now directly links to the new daylighting standards EN 17037-2018+A1-2021. Aside refinements to the BRE guide, the assessments are the same to what is found within the BRE guide 2nd Edition.

Therefore, with regards to interior daylighting and external sunlight exposure in particular, where different methodologies are found in each of the different standards, all have been carried out for completeness to ensure appropriate and reasonable regard has been taken to address all assessments under all of the different standards.

4.2 Reference Standards & Summary of Assessments Undertaken

The various daylight and sunlight assessments that were undertaken using the IES VE software are based on a number of different standards which are referenced in the individual sections of this report. For clarity, the assessments that were undertaken are summarised below as well as the reference standards that were used for each (where applicable):

- **Shadow Analysis**
 - Assessed using shadow images cast at key times throughout the year, i.e. March 21st, June 21st and December 21st to determine if any overshadowing impact occurs and to what extent to any existing neighbouring dwellings in accordance with the BRE Guide (3rd Edition).
- **Sunlight to Amenity Spaces**
 - Assessed using annual Solar Exposure calculations to determine any impact to existing amenities and the sunlight received and also to assess the proposed developments amenity spaces to derive how much sunlight they can expect to receive in accordance with the BRE Guide (3rd Edition).
- **Sunlight to Existing Buildings**
 - Assessed using the Annual Probable Sunlight Hours (APSH) method in accordance with the BRE Guide (3rd Edition) - to determine any impact to sunlight received to the existing neighbouring building main living areas.
- **Sunlight to Proposed Buildings**
 - Assessed using Solar Exposure calculations in accordance with IS/BS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition)
 - In both assessments above the aim is to derive how much sunlight proposed development can expect to receive.
- **Daylight to Existing Buildings**
 - Assessed using the Vertical Sky Component (VSC) method in accordance with the BRE Guide (3rd Edition) - to determine any impact to existing daylight received to the existing building neighbouring the site.
- **Daylight to Proposed Development**
 - Assessed in accordance with IS EN 17037-2018+A1-2021 Method 2 (BRE Guide 3rd Edition)
 - Assessed in accordance with BS EN 17037-2018+A1-2021 National Annex Method 2 (BRE Guide 3rd Edition)
 - In all assessments above the aim is to derive how much daylight will be received within each of the apartments within the proposed development.
- **View Out**
 - Assessed in accordance with IS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition)
- **Glare**
 - Assessed in accordance with IS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition)

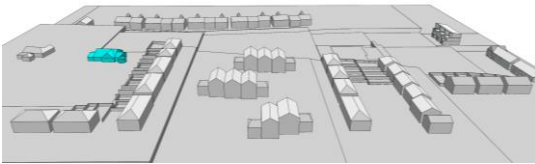
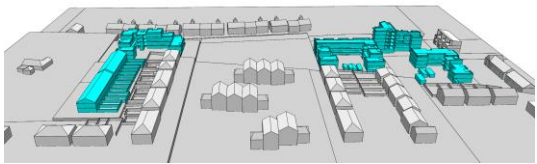
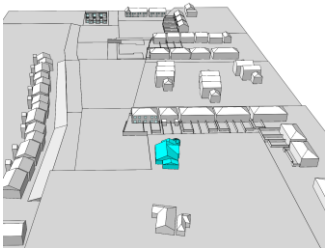
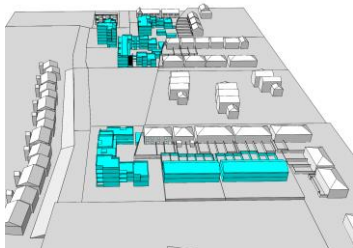
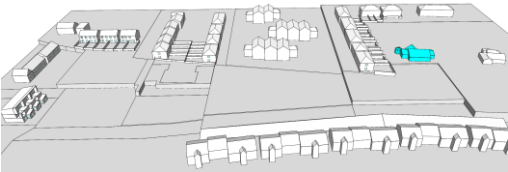
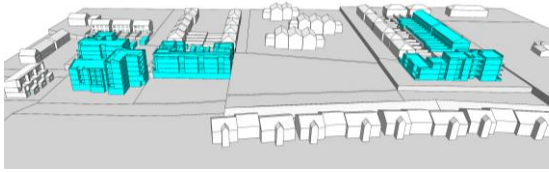
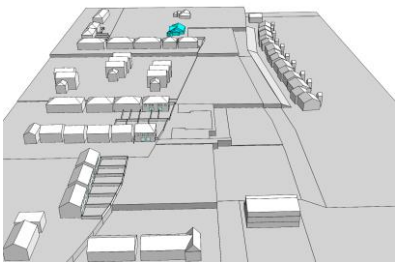
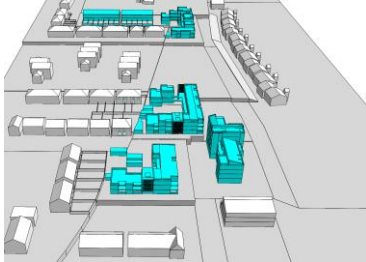
4.3 Orientation

The model orientation has been taken from drawings provided by the Architect with the resulting angle shown below used in the analysis.



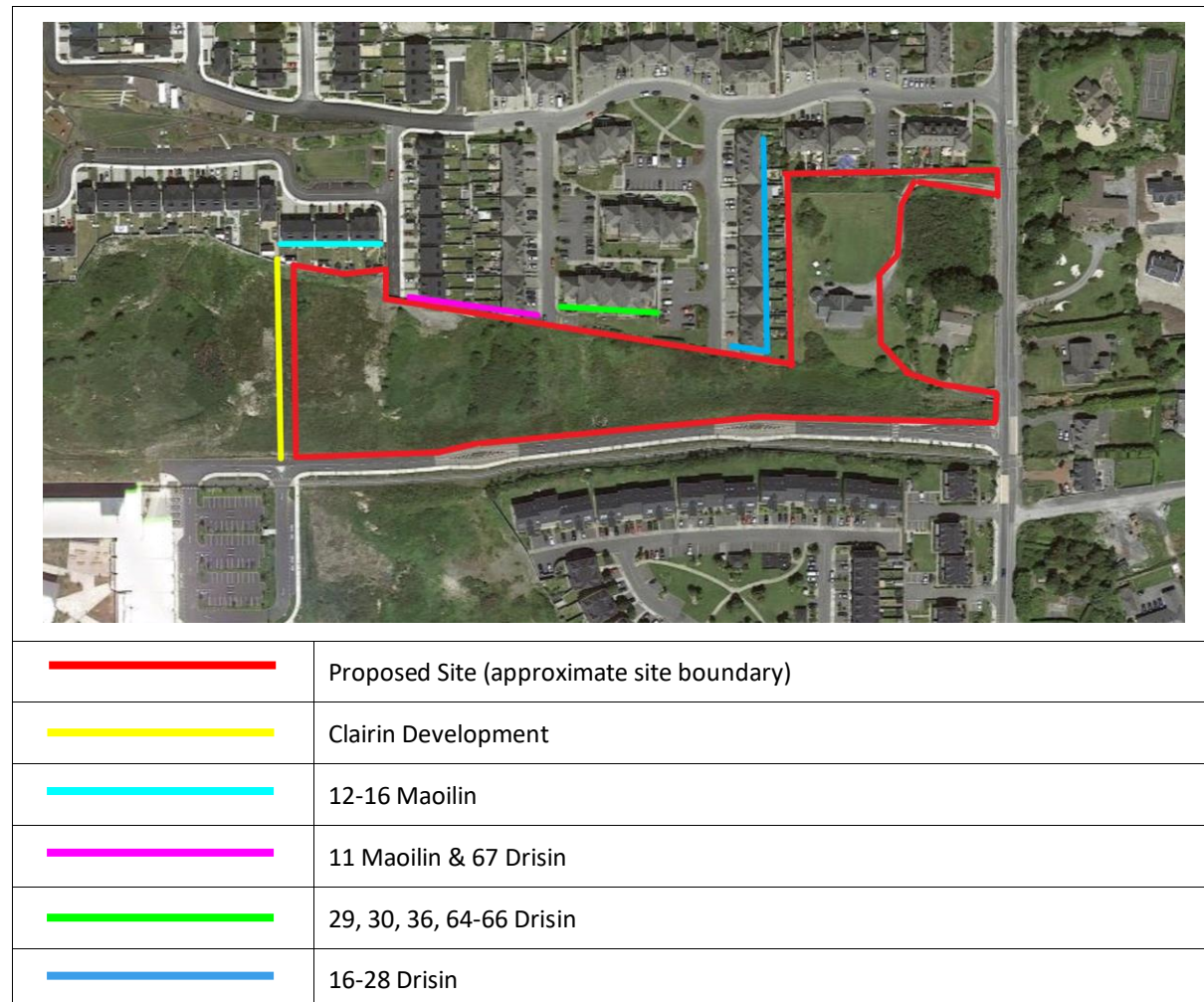
4.4 Proposed Model

The following images illustrate the models created from the architectural information provided and the use of Google/Bing maps where information was absent.

	Existing Situation	Proposed Scheme
View looking from North of Site		
View looking from East of Site		
View looking from South of Site		
View looking from West of Site		

4.5 Potential Sensitive Receptors

To help understand the potential impact to surrounding buildings, potential sensitive receptors were identified as illustrated below.



5 Shadow Analysis

The statistics of Met Eireann, the Irish Meteorological Service, show that the sunniest months in Ireland are May and June, based on 1981-2010 averages or latest:

<https://www.met.ie/climate/30-year-averages>.

The following can also be shown:

- During December a mean daily duration of 1.7 hours of sunlight out of a potential 7.3 hours sunlight each day is received (i.e. only 23% of potential sunlight hours).
- During June a mean daily duration of 5.8 hours of sunlight out of a potential 15.9 hours sunlight each day is received (i.e. only 36% of potential sunlight hours).

Therefore, the impacts caused by overshadowing are generally most noticeable during the summer months and least noticeable during the winter months.

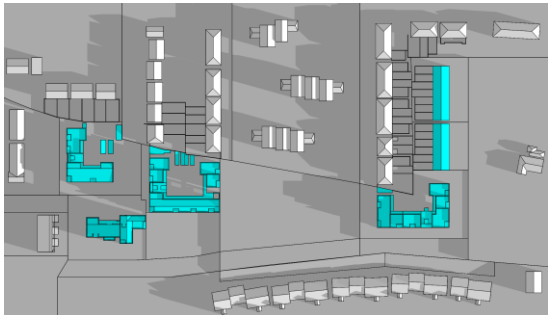
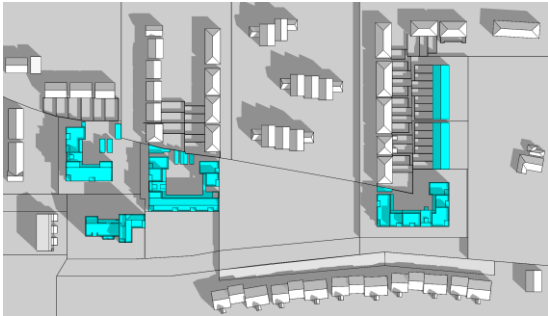
This section will consider the shadows cast by the proposed development on the following dates:

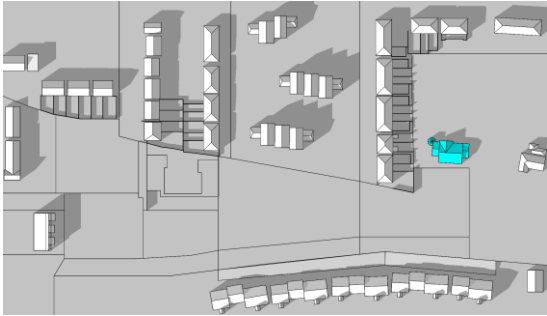
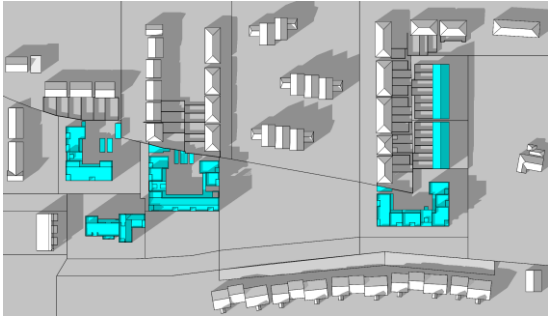
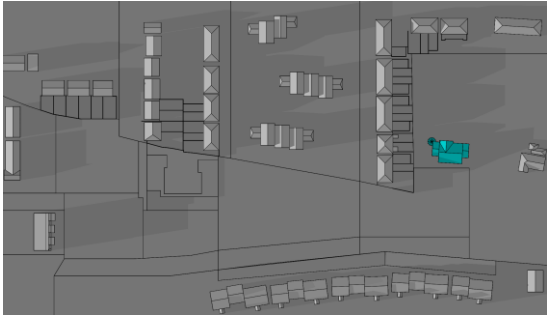
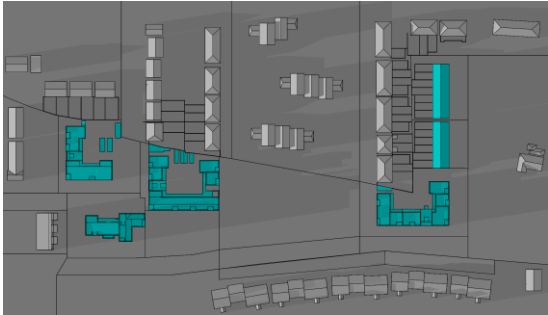
- March 21st / September 21st (Equinox)
- June 21st (Summer Solstice)
- December 21st (Winter Solstice)

These images illustrate shadows cast for 'perfect sunny' conditions with no clouds and assumed that the sun is shining for every hour shown. Given the discussion above it is important to remember that this is not always going to be the case.

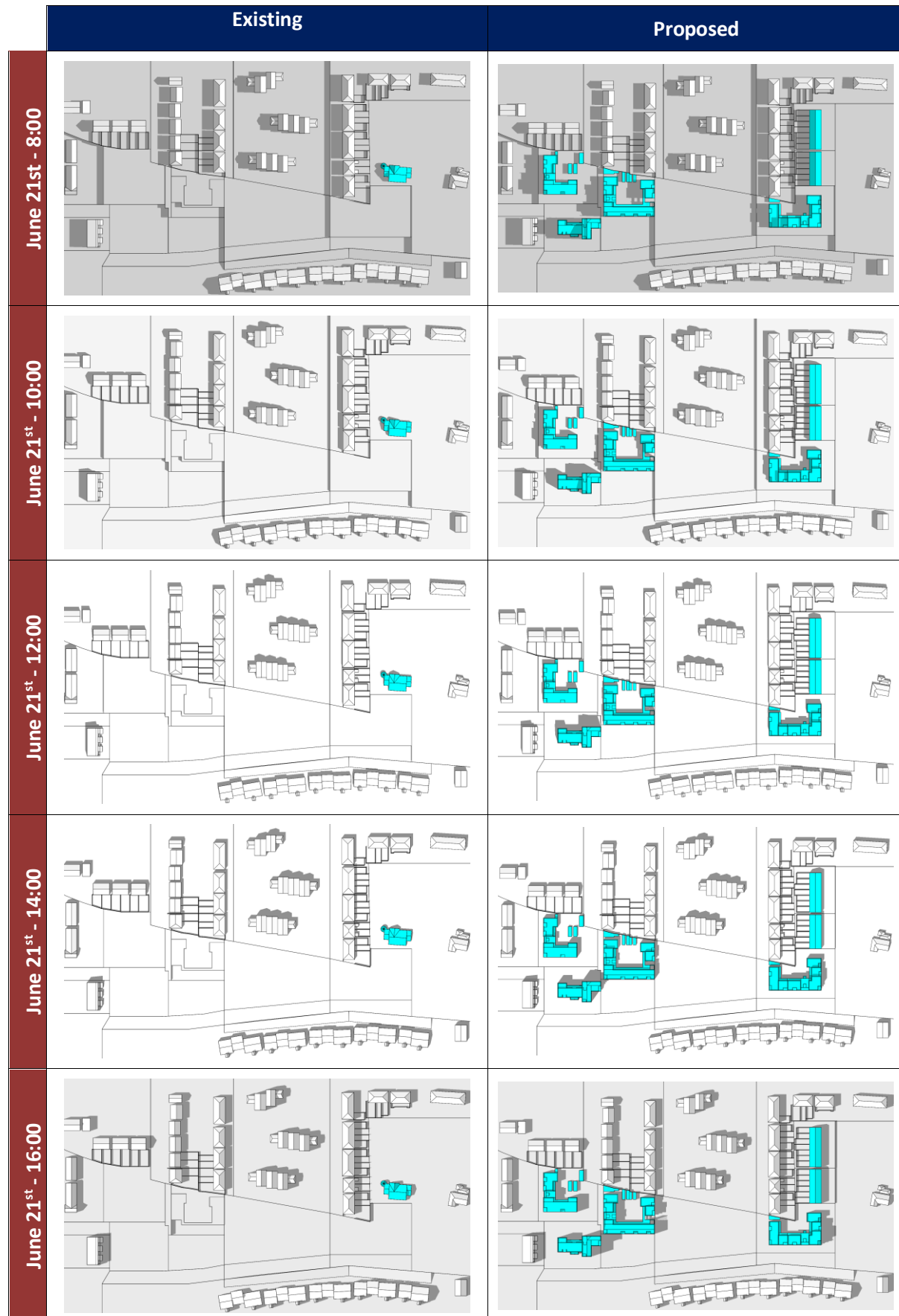
5.1 Plan View

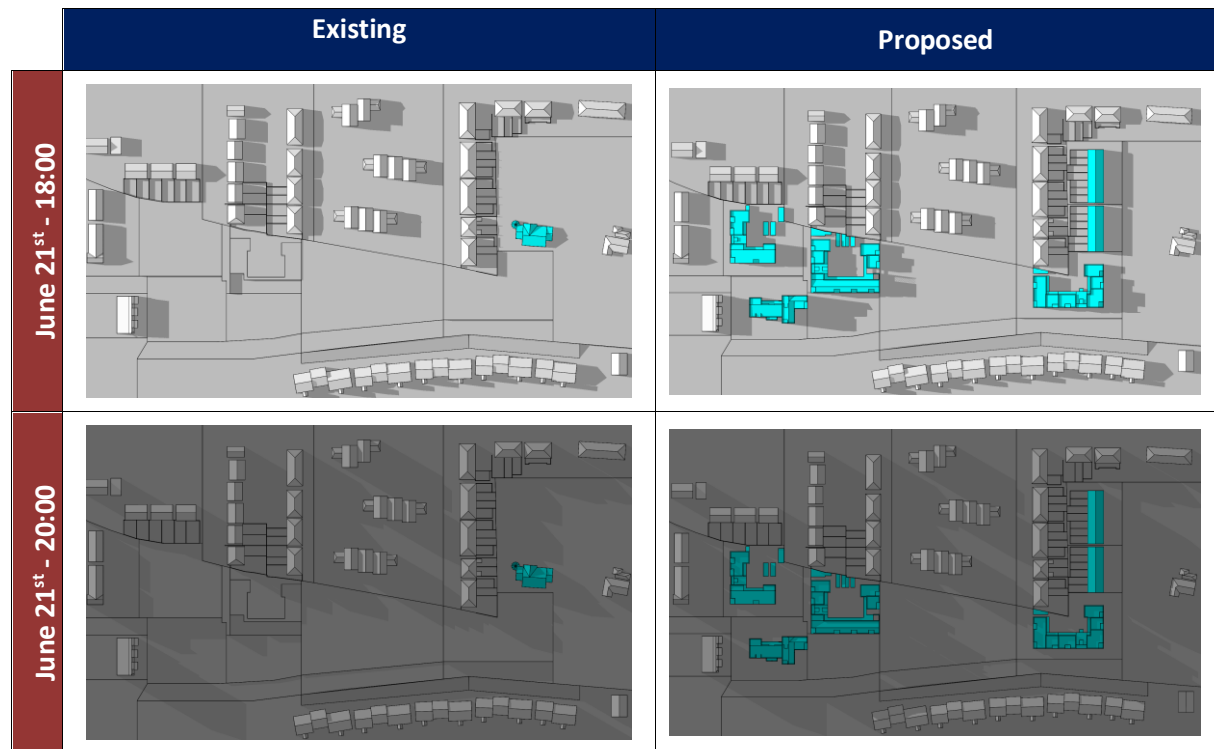
5.1.1 March 21st

	Existing	Proposed
March 21 st - 8:00		
March 21 st - 10:00		
March 21 st - 12:00		
March 21 st - 14:00		

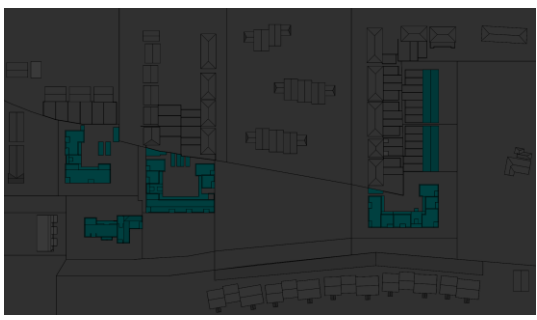
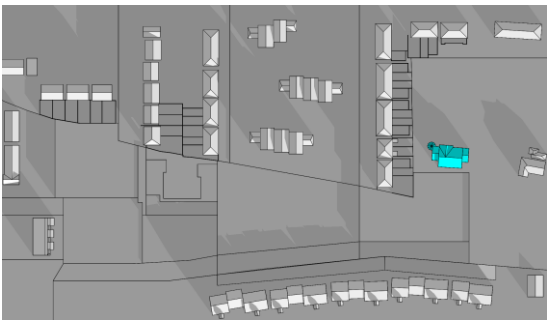
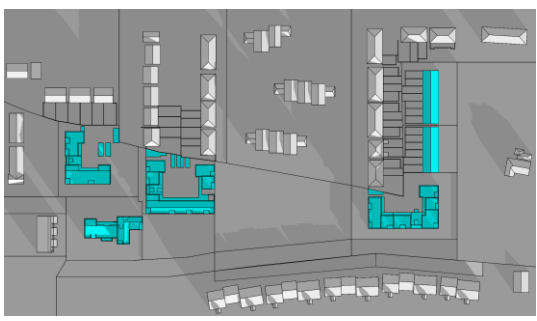
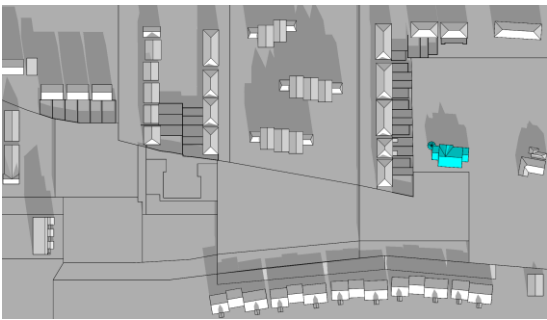
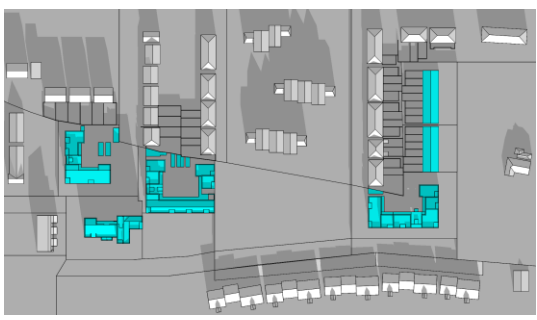
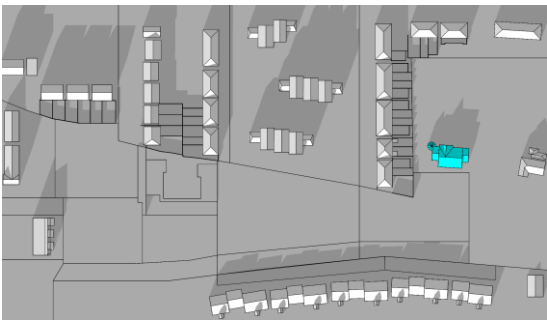
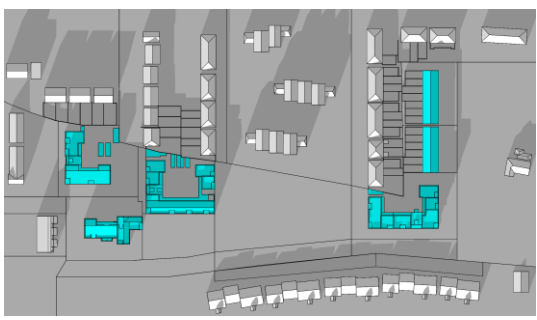
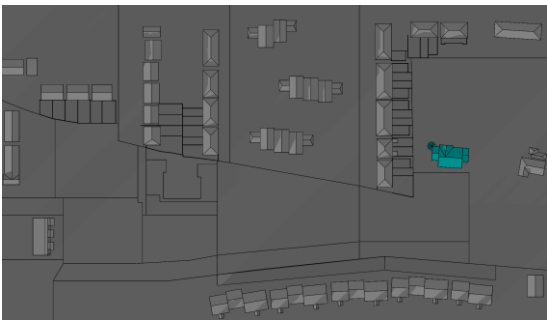
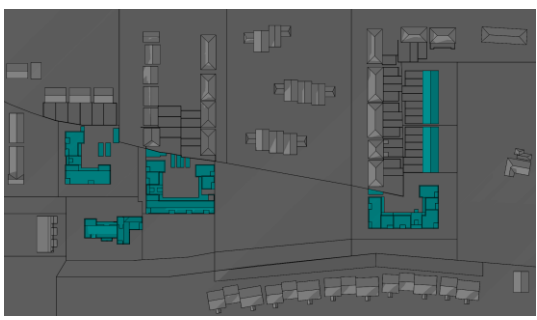
	Existing	Proposed
March 21 st - 16:00		
March 21 st - 18:00		

5.1.2 June 21st





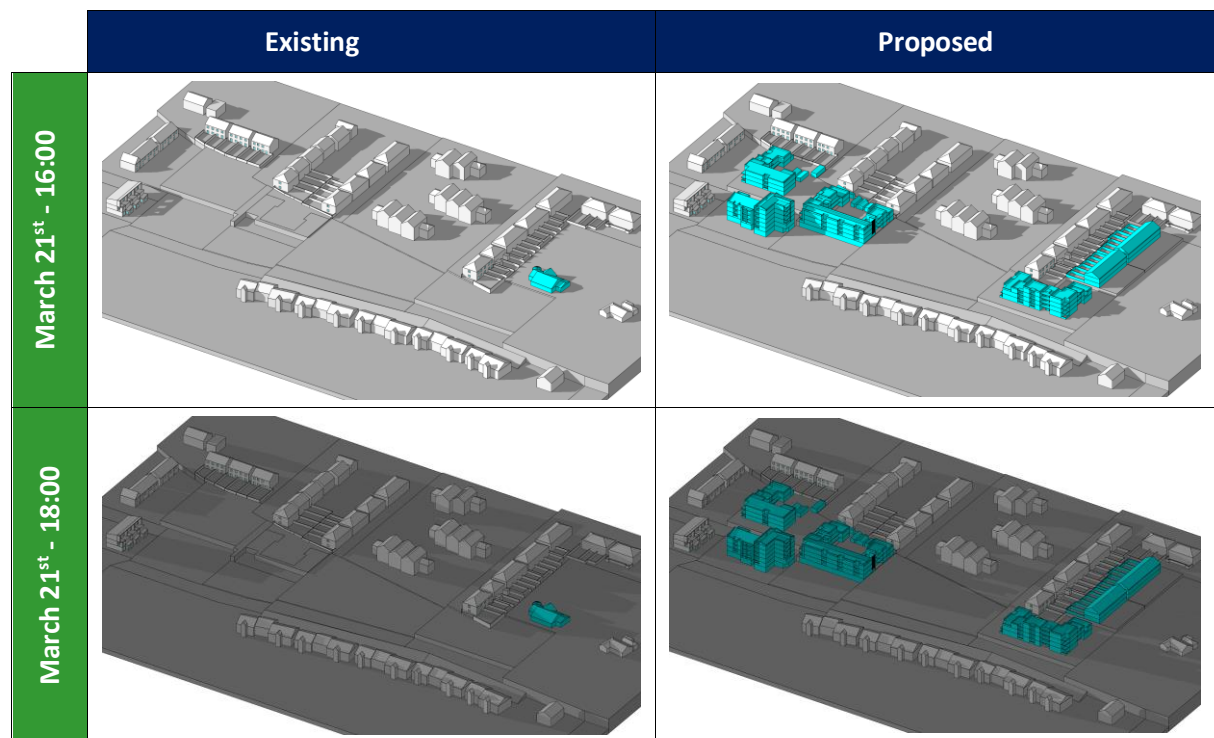
5.1.3 December 21st

	Existing	Proposed
December 21 st - 8:00		
December 21 st - 10:00		
December 21 st - 12:00		
December 21 st - 14:00		
December 21 st - 16:00		

5.2 3D View

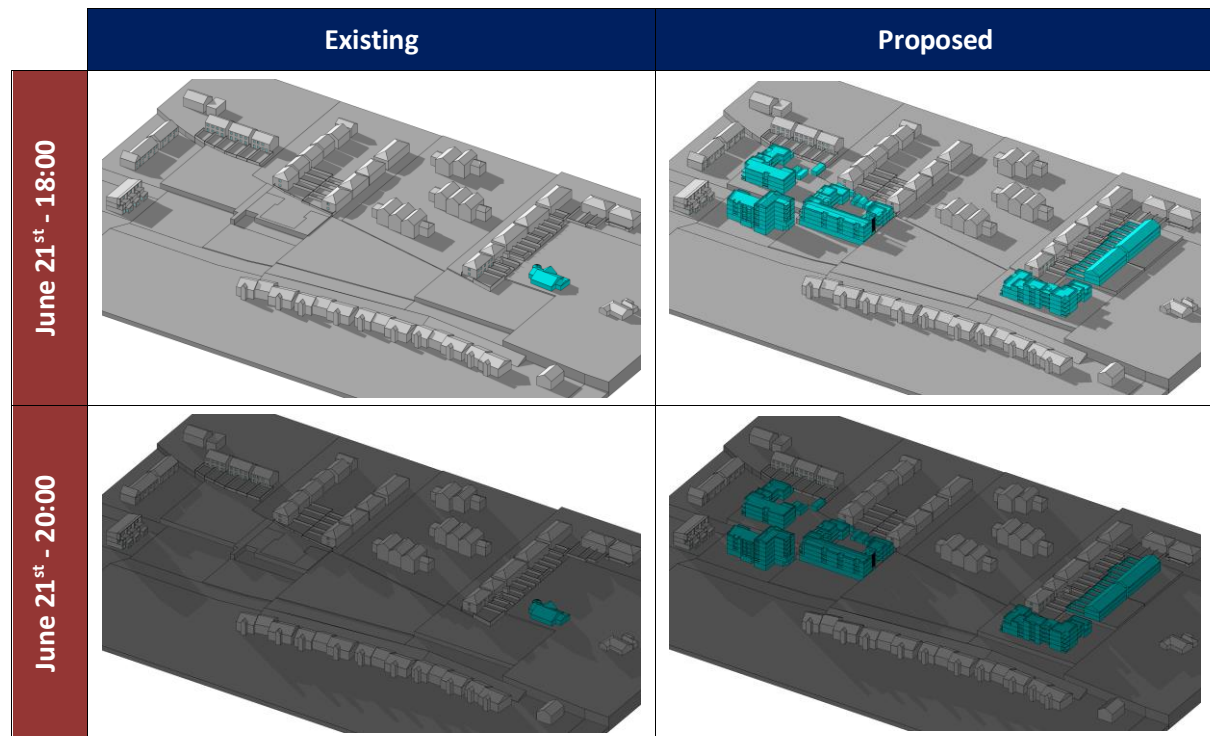
5.2.1 March 21st

	Existing	Proposed
March 21 st - 8:00		
March 21 st - 10:00		
March 21 st - 12:00		
March 21 st - 14:00		

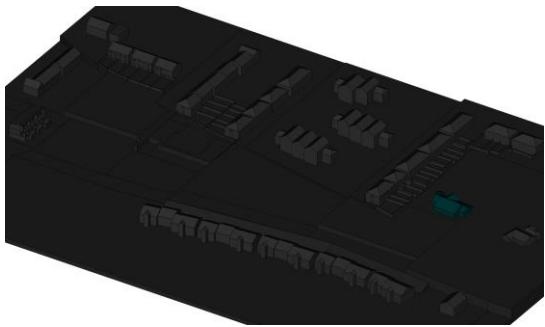
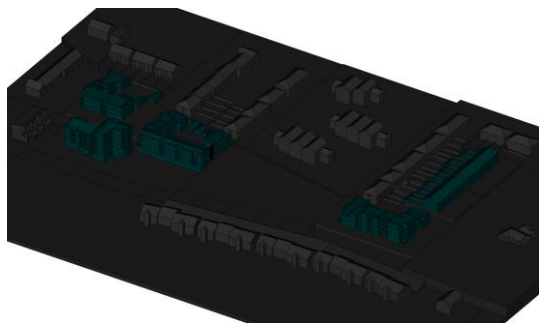
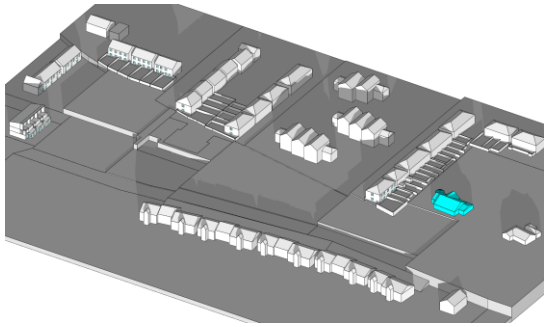
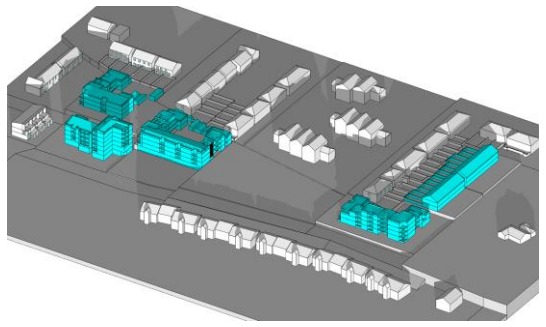
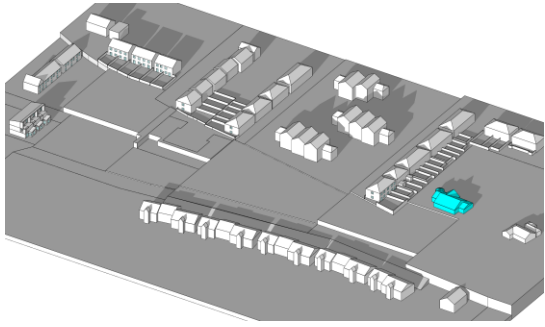
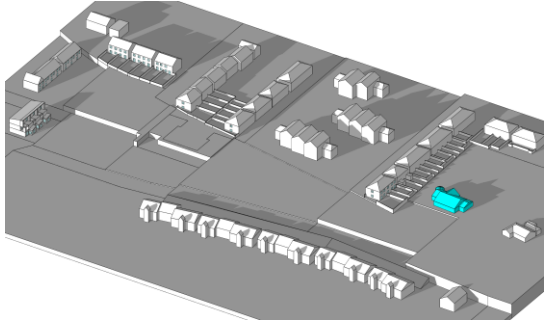
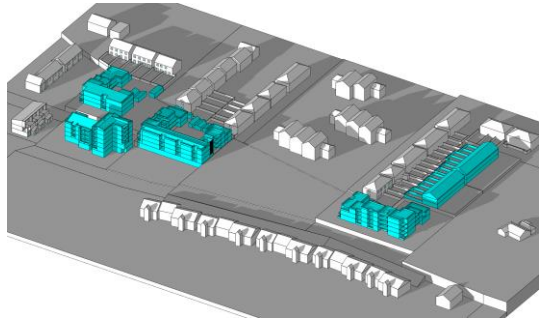
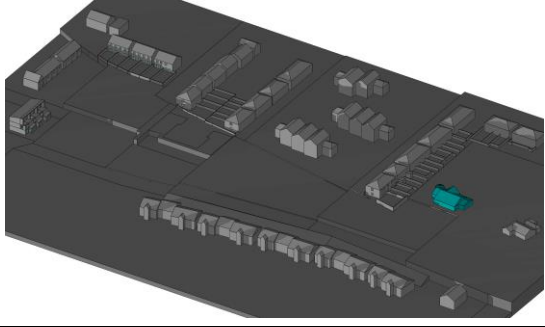
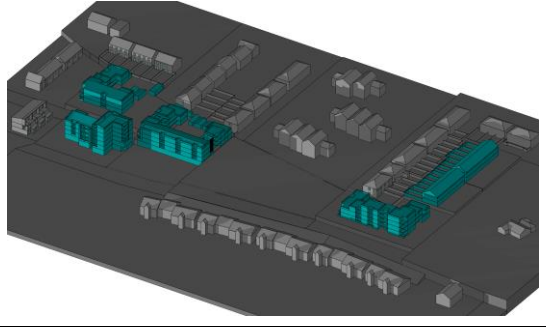


5.2.2 June 21st

	Existing	Proposed
June 21 st - 8:00		
June 21 st - 10:00		
June 21 st - 12:00		
June 21 st - 14:00		
June 21 st - 16:00		



5.2.3 December 21st

	Existing	Proposed
December 21 st - 8:00		
December 21 st - 10:00		
December 21 st - 12:00		
December 21 st - 14:00		
December 21 st - 16:00		

5.3 Discussion

The shadow analysis illustrates different shadows being cast at key times of the year (March 21st, June 21st and December 21st) for the Existing Situation and the Proposed Scheme. The results from the study are summarised as follows:

Clairin Development

Minimal additional shading visible from the proposed development on this building on March at 0800, June at 0800 and December* at 1000. No additional overshadowing throughout the rest of the year.

12-16 Maoilin

Minimal additional shading visible from the proposed development on these buildings on December* at 1000-1400. No additional overshadowing throughout the rest of the year.

11 Maoilin & 67 Drisin

Minimal additional shading visible from the proposed development on these buildings on March* at 1200-1400 and December at 1000-1400. No additional overshadowing throughout the rest of the year.

29, 30, 36, 64-66 Drisin

No additional shading is visible from the proposed development on these properties throughout the year.

16-28 Drisin

Minimal additional shading visible from the proposed development on these buildings on March at 0800 and December* at 1000. No additional overshadowing throughout the rest of the year.

*Overshadowing is showing in December when the sun is lower in the sky and shadows cast are much longer. Although this is the case, overshadowing is least noticeable during the winter months as there is a lot less sunlight available at this time of year and so the overall impact is vastly reduced.

The potential shading impact is quantified via the “Sunlight to Amenity Spaces” and “Daylight to Existing Buildings” sections of this report.

6 Sunlight to Amenity Spaces

6.1 Guidance Requirements

The impact of the proposed development on the sunlight availability to the amenity spaces will be considered to determine how the amenity spaces perform when assessed against the BRE Guide (3rd Edition) which states the following in Section 3.3.17:

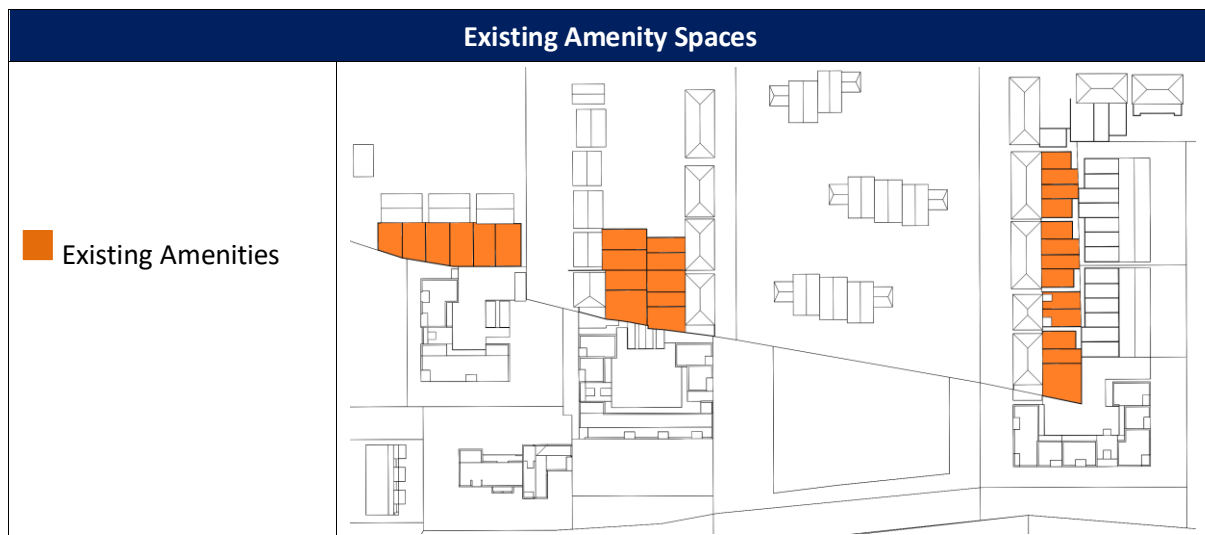
Summary

3.3.17 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 that can receive two hours of sun on 21 March is less than 0.80 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.

The BRE Guide (3rd Edition) states that for a space to appear adequately sunlit throughout the year, at least half of a garden or amenity space should receive at least 2 hours of sunlight on March 21st. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation.

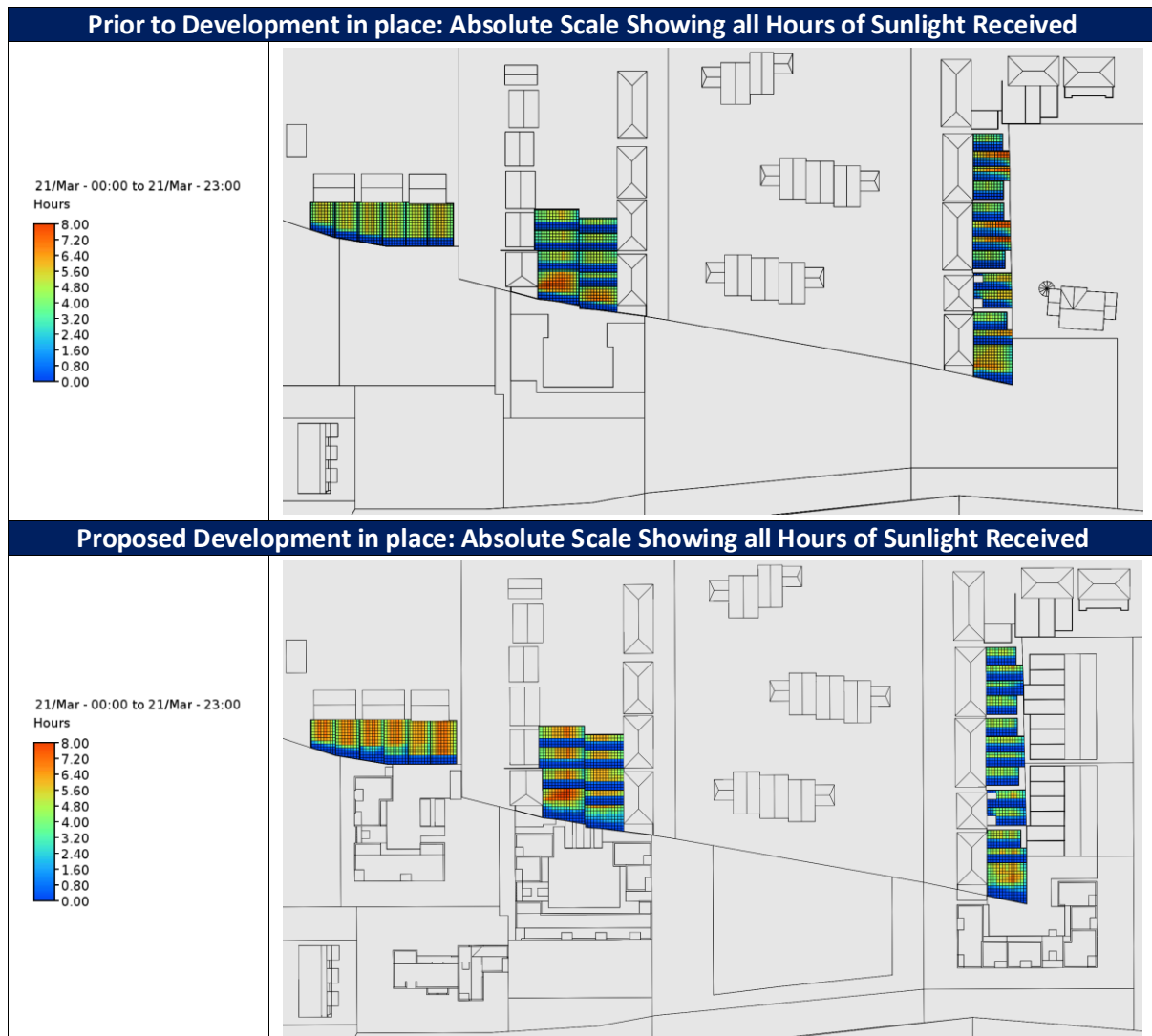
6.2 Existing Amenity Spaces

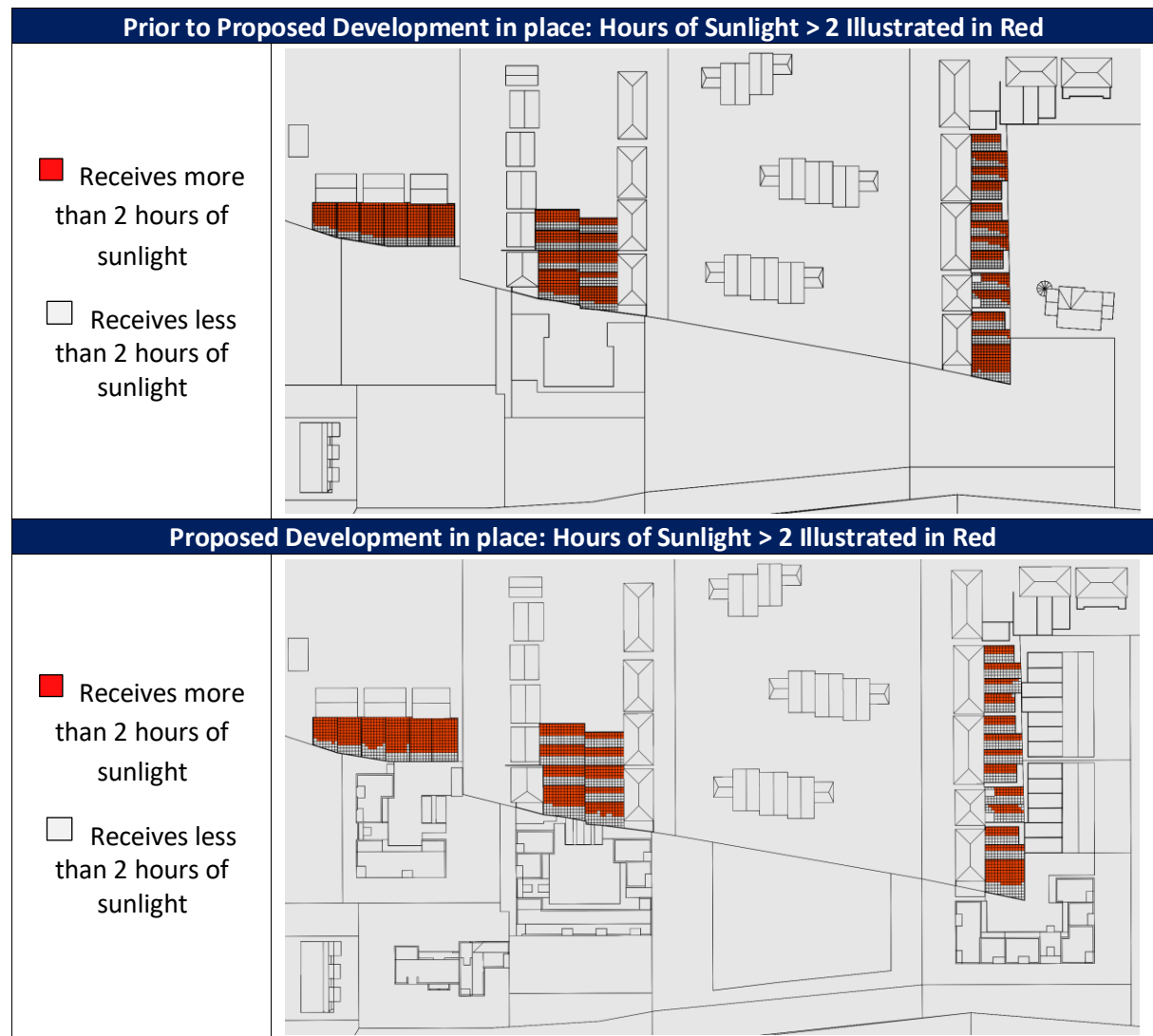
This analysis will be performed on the amenity space illustrated in the image below.



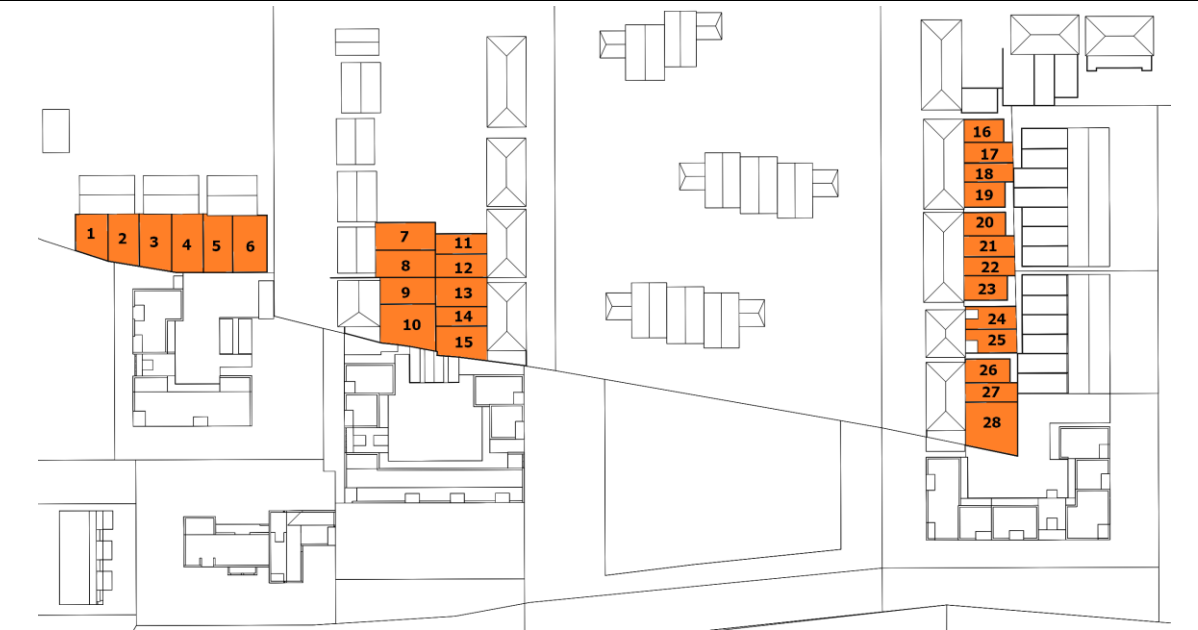
The following images illustrate the predicted results with respect to this space receiving at least 2 hours of sunlight on March 21st. Any areas that receive less than 2 hours of sunlight are colour-coded in grey.

6.2.1 Existing Private Amenity Spaces Results



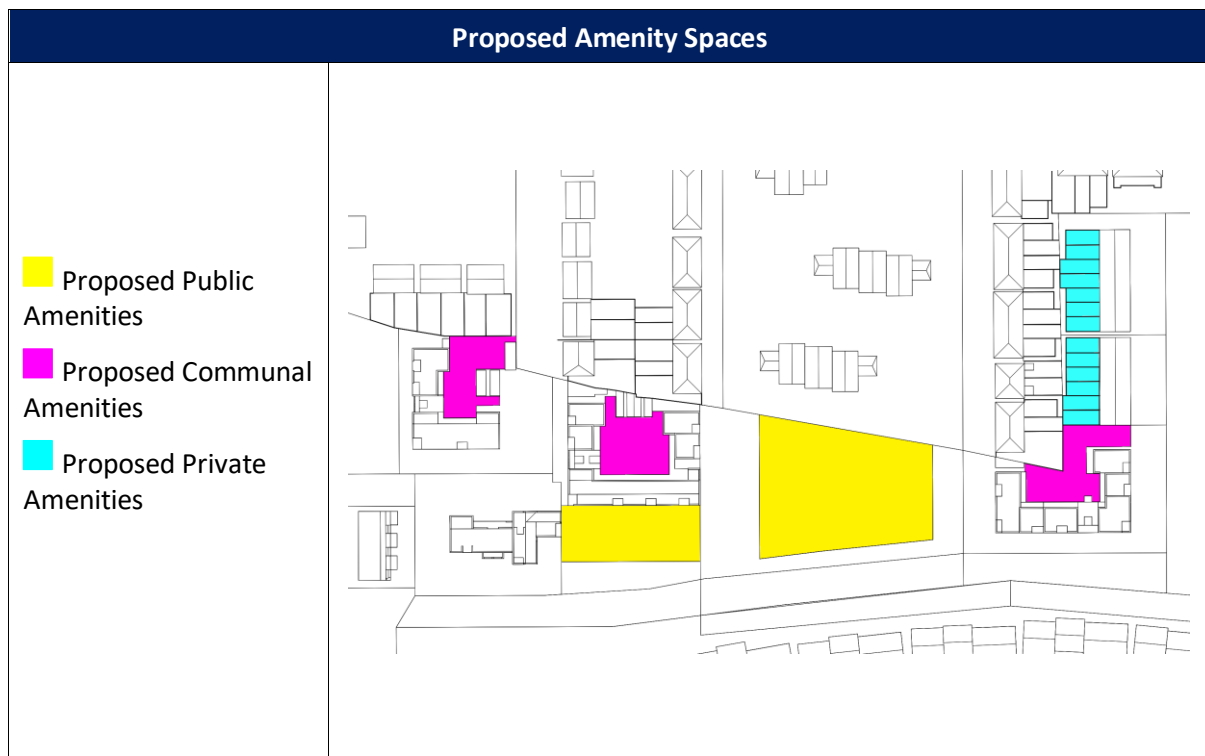


6.2.2 Existing Private Amenity Results

Existing Amenity Results							
							
Ref	Area (m ²)	Existing Area >2 hrs		Existing Area with Proposed Development in Place >2 hrs		Proposed vs Existing (%)	Comment
		(m ²)	(%)	(m ²)	(%)		
1	88	68	77%	68	77%	100%	✓
2	102	82	80%	78	76%	95%	✓
3	116	98	84%	93	80%	95%	✓
4	120	96	80%	93	78%	97%	✓
5	110	88	80%	88	80%	100%	✓
6	125	100	80%	100	80%	100%	✓
7	110	65	59%	65	59%	100%	✓
8	105	60	57%	60	57%	100%	✓
9	98	53	54%	53	54%	100%	✓
10	154	121	79%	101	66%	83%	✓
11	68	29	43%	29	43%	100%	✓
12	79	40	51%	40	51%	100%	✓
13	97	58	60%	58	60%	100%	✓
14	65	26	40%	26	40%	100%	✓
15	105	74	70%	59	56%	80%	✓
16	60	30	50%	30	50%	100%	✓
17	66	32	48%	32	48%	100%	✓
18	59	22	37%	22	37%	100%	✓
19	65	35	54%	35	54%	100%	✓
20	64	31	48%	31	48%	100%	✓
21	71	32	45%	32	45%	100%	✓
22	62	23	37%	23	37%	100%	✓
23	67	34	51%	34	51%	100%	✓
24	68	30	44%	30	44%	100%	✓
25	70	36	51%	36	51%	100%	✓
26	67	35	52%	35	52%	100%	✓
27	67	27	40%	27	40%	100%	✓
28	162	129	80%	108	67%	84%	✓

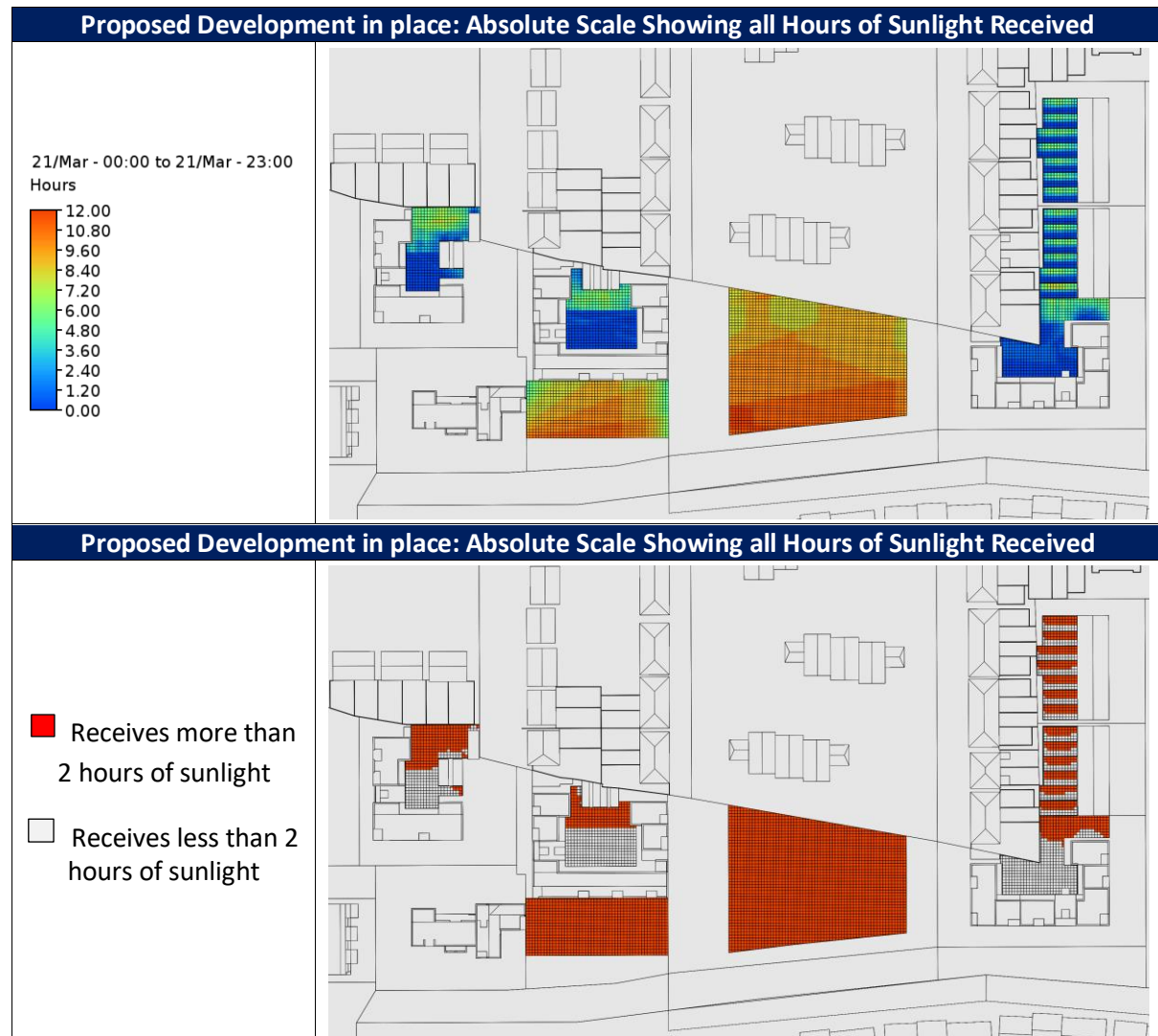
6.3 Proposed Amenity Spaces

This analysis will be performed on the amenity spaces illustrated in the image below.

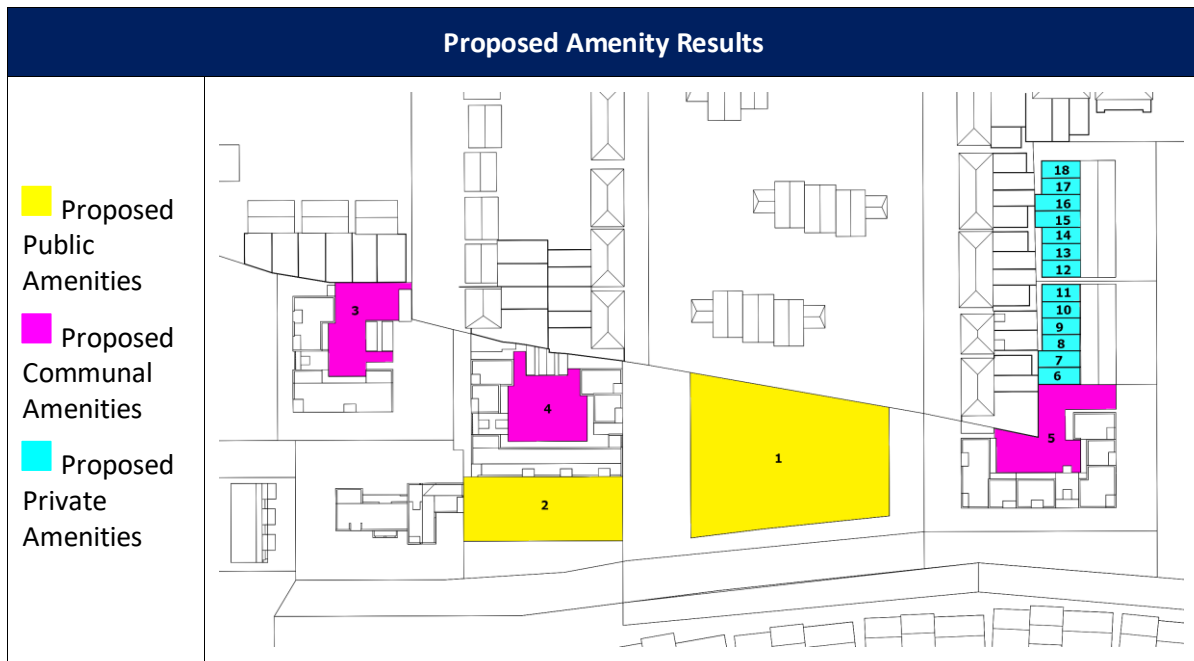


The following images illustrate the predicted results with respect to this space receiving at least 2 hours of sunlight on March 21st. Any areas that receive less than 2 hours of sunlight are colour-coded in grey.

6.3.1 Proposed Amenity Space Results



6.3.3 Proposed Amenity Results



Public Amenities:

Ref	Total Area (m ²)	Area Receiving >2h (m ²)	Percent Receiving >2h	Comment
1 (Public)	2,605	2,605	100%	✓
2 (Public)	930	930	100%	✓
Total Public	3,535	3,535	100%	✓

Communal Amenities:

Ref	Total Area (m ²)	Area Receiving >2h (m ²)	Percent Receiving >2h	Minimum Area Required (m ²)	Percent Receiving >2h	Comment
3 (Apt Blk 1 Communal)	444	237	53%	92	100%	✓
4 (Apt Blk 3 Communal)	493	178	36%	148	100%	✓
5 (Apt Blk 4 Communal)	532	162	30%	120	100%	✓
Total Communal	1,469	577	39%	360	100%	✓

Private Amenities:

Ref	Total Area (m ²)	Area Receiving >2h (m ²)	Percent Receiving >2h	Comment
6 (Private)	60	36	60%	✓
7 (Private)	60	32	53%	✓
8 (Private)	55	33	60%	✓
9 (Private)	55	30	55%	✓
10 (Private)	55	30	55%	✓

11 (Private)	55	30	55%	✓
12 (Private)	55	34	62%	✓
13 (Private)	55	34	62%	✓
14 (Private)	55	34	62%	✓
15 (Private)	64	39	61%	✓
16 (Private)	64	39	61%	✓
17 (Private)	57	34	60%	✓
18 (Private)	57	34	60%	✓

6.4 Discussion

As outlined in Section 3.3.17 of the BRE Guide (3rd Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity area should receive at least 2 hours of sunlight on March 21st. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation.

Existing Amenity Spaces

On March 21st the existing amenity spaces will receive similar levels of sunlight with the proposed development in place when compared to the existing situation. In all cases the results comply with the recommendations in the BRE Guide outlined above.

Proposed Amenity Spaces

On March 21st, 100% of the proposed public amenity areas situated within the development site will receive at least 2 hours of sunlight over both areas. With regards to the apartment private communal areas, 100% of these spaces comply with the requirements when considered against the minimum areas required for the development. There is a significant overprovision of communal amenity space and therefore these areas will be quality spaces in terms of provision as well as sunlight, particularly when the provision of high quality public open space in close proximity to the apartments is considered in conjunction with these communal areas. Regarding the housing private amenity areas, all are passing the BRE guidelines with at least 2 hours of sunlight over more than 50% of each area.

7 Sunlight to Existing Buildings

7.1 Guidance – BRE Guide (3rd Edition)

The BRE Guide (3rd Edition) states that interiors where the occupants expect sunlight should receive at least one quarter (25%) of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months, between 21st September and 21st March.

Here 'probable sunlight hours' means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question.

If a window reference point can receive more than 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months between 21st September and 21st March, then the room should still receive enough sunlight. Any reduction in sunlight access below this level should be kept to a minimum.

If the available sunlight hours are both less than the amount given and less than 0.8 times their former value, either over the whole year or just during the winter months (21st September to 21st March) and reduction in sunlight across the year has a greater reduction than 4%, then the occupants of the existing building will notice the loss of sunlight.

Summary

3.2.13 If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:

- receives less than 25% of annual probable sunlight hours and less than 0.80 times its former annual value; or less than 5% of annual probable sunlight hours between 21 September and 21 March and less than 0.80 times its former value during that period;
- and also has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

BRE 3rd Edition guidance document Site Layout Planning for Daylight and Sunlight

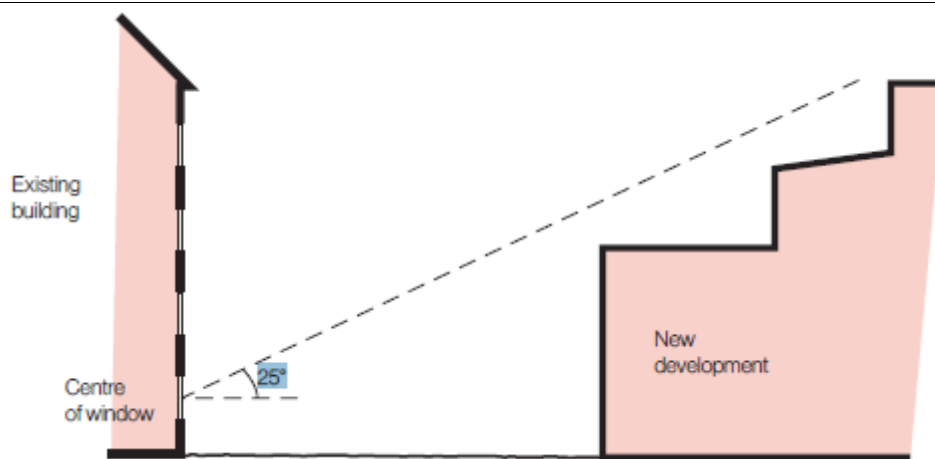
As such this study will compare the Existing Scheme and Proposed Schemes and consider if the values on the existing buildings meet the requirements outlined above when compared to their former value (that of the Existing scheme).

7.2 APSH Exclusions

The BRE recommendations note that if a new development sits within 90° of due south of any main living room window of an existing dwelling, then these should be assessed for APSH. However, there are several exceptional cases in which APSH is not required to be calculated, as indicated below:

3.2.9 It is not always necessary to do a full calculation to check sunlight potential. The guideline above is met provided either of the following is true:

- 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 (note: obstructions within 90° of due north of the existing window need not count here).
- The window wall faces within 90° of due south and no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal (Figure 14 in section 2.2). Again, obstructions within 90° of due north of the existing window need not be counted.
- The window wall faces within 20° of due south and the reference point has a VSC (section 2.1) of 27% or more.



BRE 3rd Edition guidance document Site Layout Planning for Daylight and Sunlight

Consequently, APSH will only be calculated for adjacent windows which meet the following conditions:

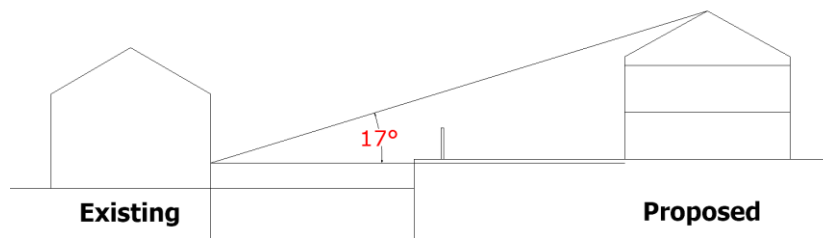
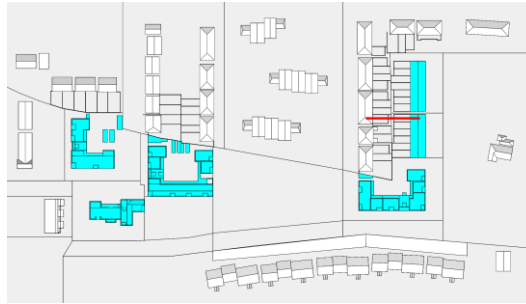
1. The height distance rule is not met and the existing building has a living room with a main window which faces within 90 degrees of due south with the 25° rule not being met either.
2. Existing building is located to the North, East, or West of the Proposed Development.
3. The existing main living room window lies within 20 degrees of due south and has a VSC of less than 27%.

Taking the above into consideration, the existing properties north facing the proposed development have been excluded from this analysis. The existing dwellings which have living area windows that face within 90 degrees of South have been included in this assessment.

7.3 25-Degree Rule

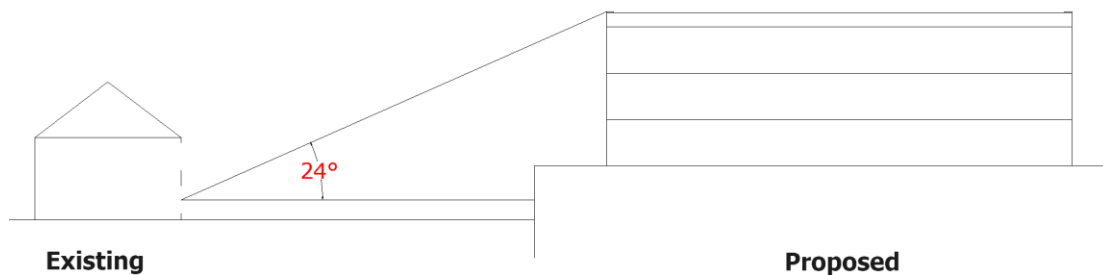
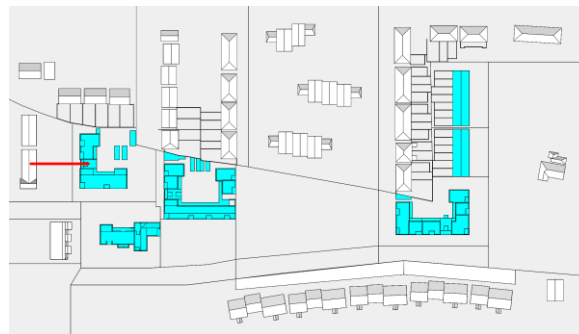
Given the statement above the surrounding elevations adjacent to the proposed development were verified noting that, in a section perpendicular to the window wall, no angle subtended more than 25° in some cases as shown the 25-degree test sections following.

View 01



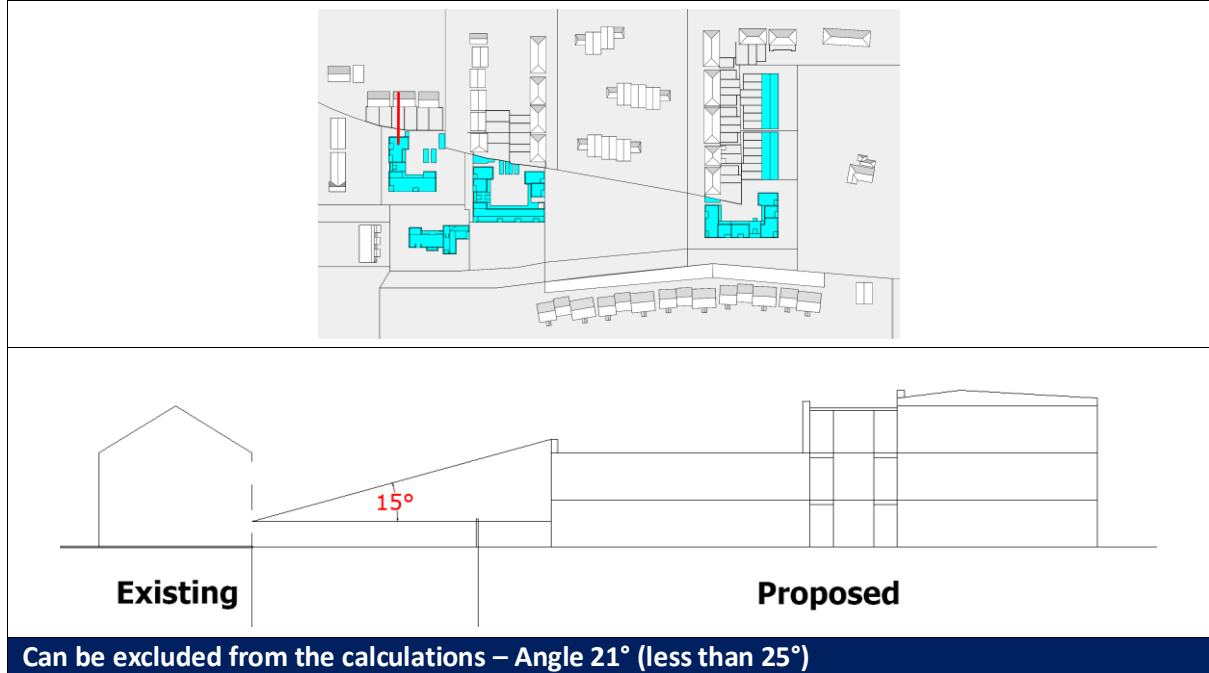
Can be excluded from the calculations – Angle 17° (less than 25°)

View 02



Can be excluded from the calculations – Angle 24° (less than 25°)

View 03



7.4 Discussion

This study considers the proposed scheme and tests if the Annual Probable Sunlight Hours (APSH) results for the living room windows are greater than 25% annual and 5% winter sunlight or are greater than 0.8 times their former value with the proposed development in place or the reduction in sunlight across the year is less than 4% with the proposed development in place.

Based on the criteria outlined in Section 3.2.9 of the BRE Guide 3rd Edition, none of the existing buildings fit the requirements to be assessed and as such the APSH assessment was not conducted. The BRE guide (3rd Edition) notes that there should be no impact to sunlight for these properties “It is not always necessary to do a full calculation to check sunlight potential. The guideline above is met provided either the following is true:

- If the window wall faces within 90° of due south and no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal. Again, obstructions within 90° of due north need not be counted.”

Given the statement above, the surrounding dwellings adjacent to the proposed development were verified noting that, in a section perpendicular to the window wall, no angle subtended more than 25°, and in other cases they were not facing within 90 degrees due south, therefore as noted in Section 3.2.9 of the BRE Guide 3rd Edition, these windows need not be analysed as sunlight impact will be unnoticeable to the existing occupants.

8 Sunlight to Proposed Development

8.1 Guidance – BRE Guide 3rd Edition / IS/BS EN 17037-2018+A1-2021

Section 5.3.1 of IS/BS EN 17037-2018+A1-2021 states that “*exposure to sunlight is an important quality criterion of an interior space and can contribute to human well-being.*” Table A.6 from IS/BS EN 17037-2018+A1-2021 summarises the recommendation for daily sunlight exposure.

Table A.6 — Recommendation for daily sunlight exposure

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

Within the context of a domestic property, BRE Guide 3rd Edition/IS EN 17037:2018 states that at least one habitable space within a dwelling should receive the recommended minimum value of 1.5 hours of sunlight on the 21st of March. The test is carried out on a clear, cloud free day.

8.2 Sunlight Exposure Assessment

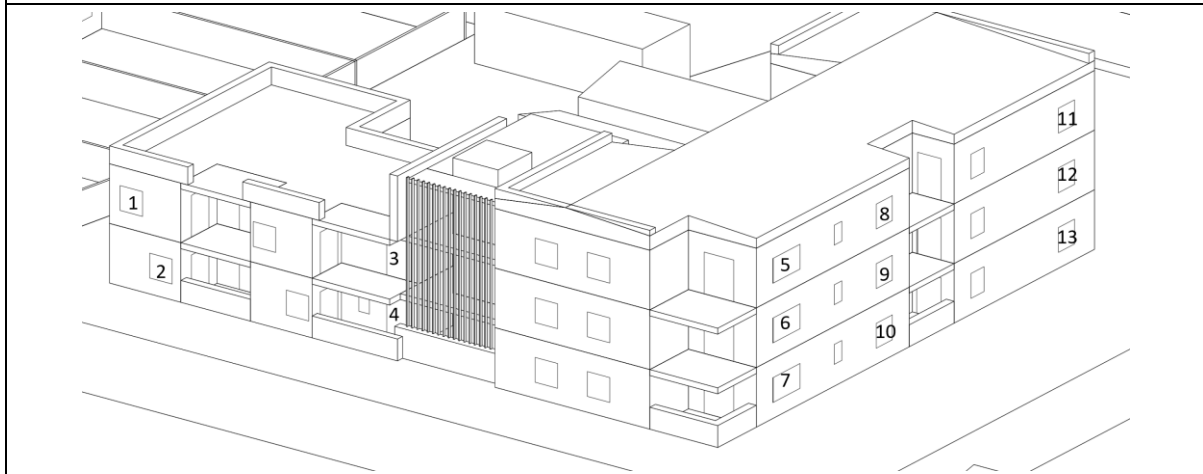
Based on the above criteria for BRE Guide 3rd Edition/IS/BS EN 17037-2018+A1-2021, all main living room windows within the proposed development have been assessed with the results included in the following sections.

Please note, the “Comment” symbol in each of the tables represents the following:

BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021

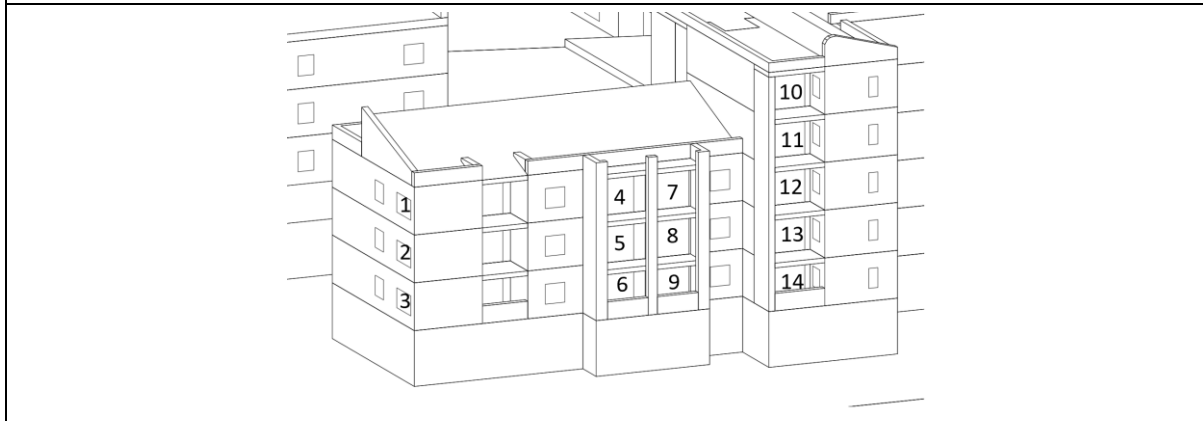
- ✓ These rooms achieve the minimum 1.5 hours of recommended sunlight exposure on March 21st.
- x These rooms do not achieve the minimum 1.5 hours of recommended sunlight exposure on March 21st.

8.2.1 View 01 – Block 1



Ref.	BRE Guide 3 rd Edition IS EN 17037:2018 Sunlight Exposure > 1.5 hrs
	Comment
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓
10	✓
11	✓
12	✓
13	✓

8.2.2 View 02 – Block 2



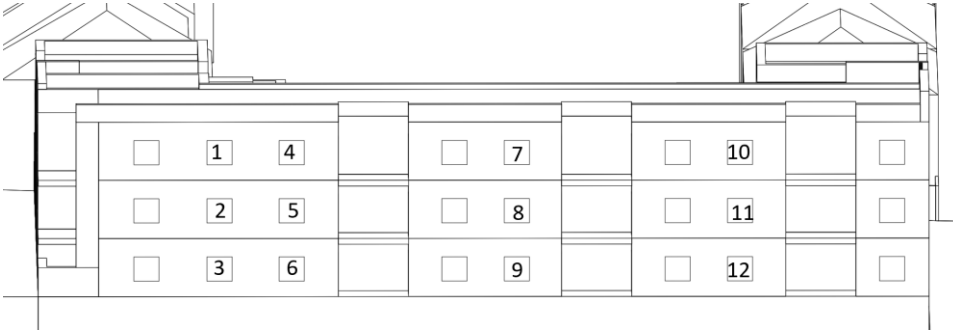
Ref.	BRE Guide 3 rd Edition IS EN 17037:2018 Sunlight Exposure > 1.5 hrs
	Comment
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓
10	✓
11	✓
12	✓
13	✓
14	✓

8.2.3 View 03 – Block 2

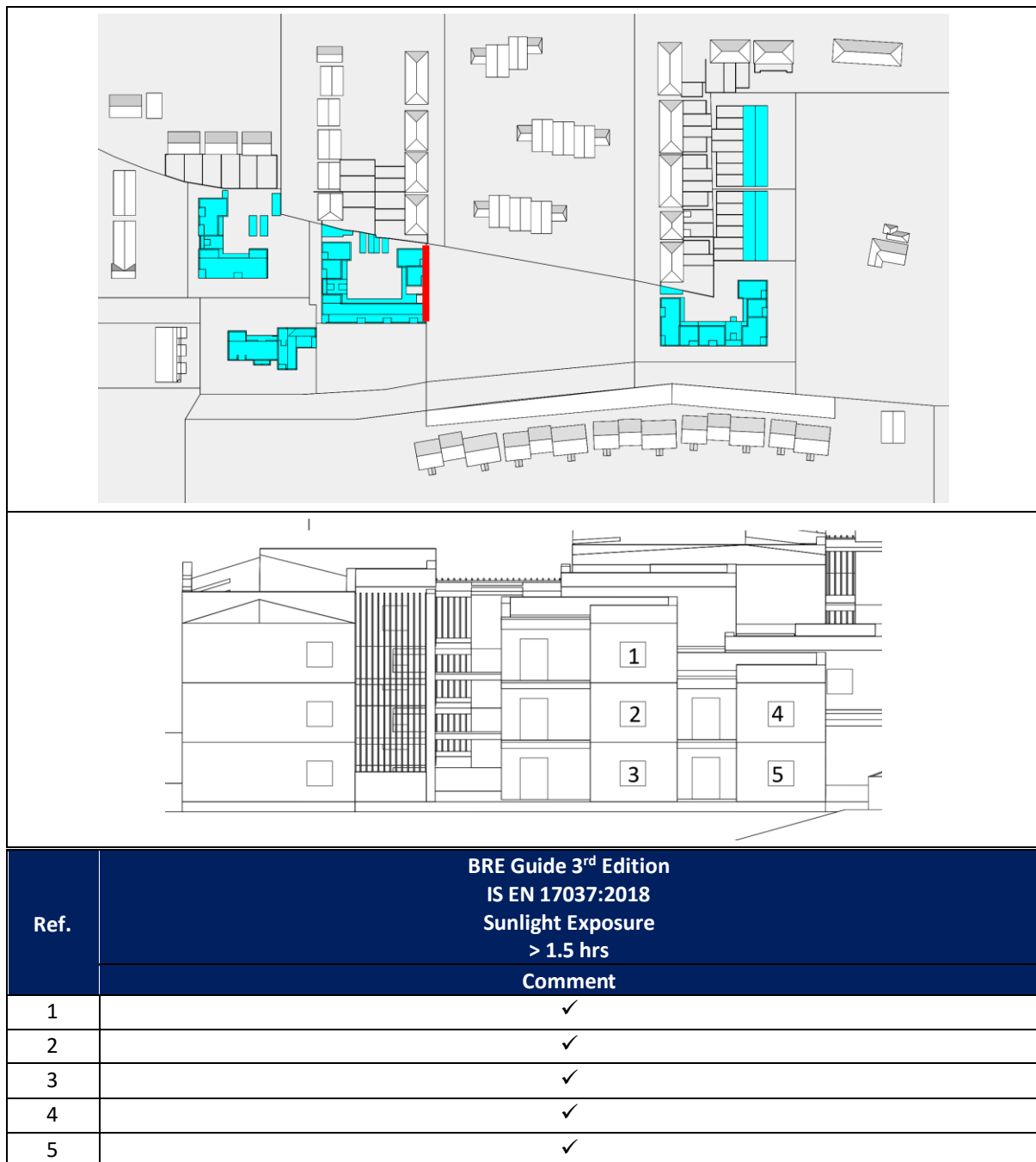


Ref.	BRE Guide 3 rd Edition IS EN 17037:2018 Sunlight Exposure > 1.5 hrs
	Comment
1	✓
2	✓
3	✓
4	✓

8.2.4 View 04 – Block 3

	
	
Ref.	BRE Guide 3 rd Edition IS EN 17037:2018 Sunlight Exposure > 1.5 hrs Comment
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓
10	✓
11	✓
12	✓

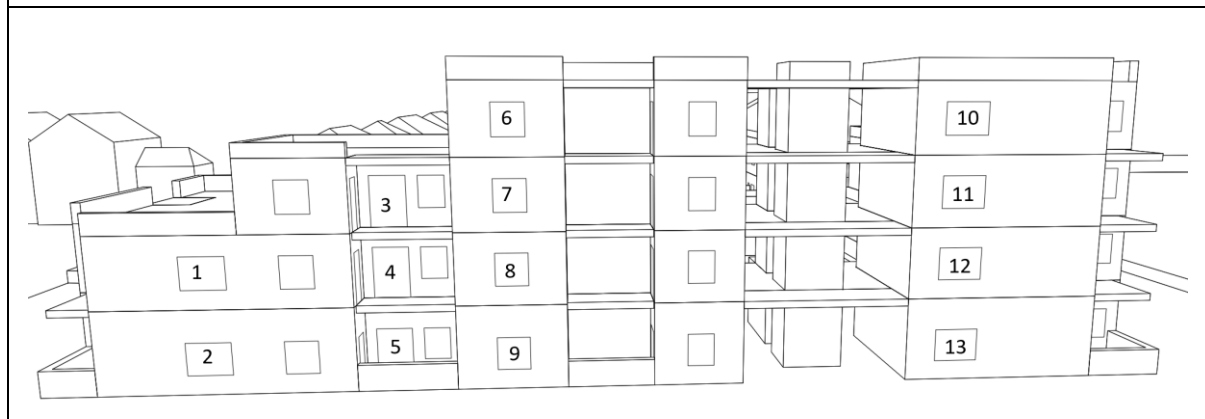
8.2.5 View 05 – Block 3



8.2.6 View 06 – Block 3

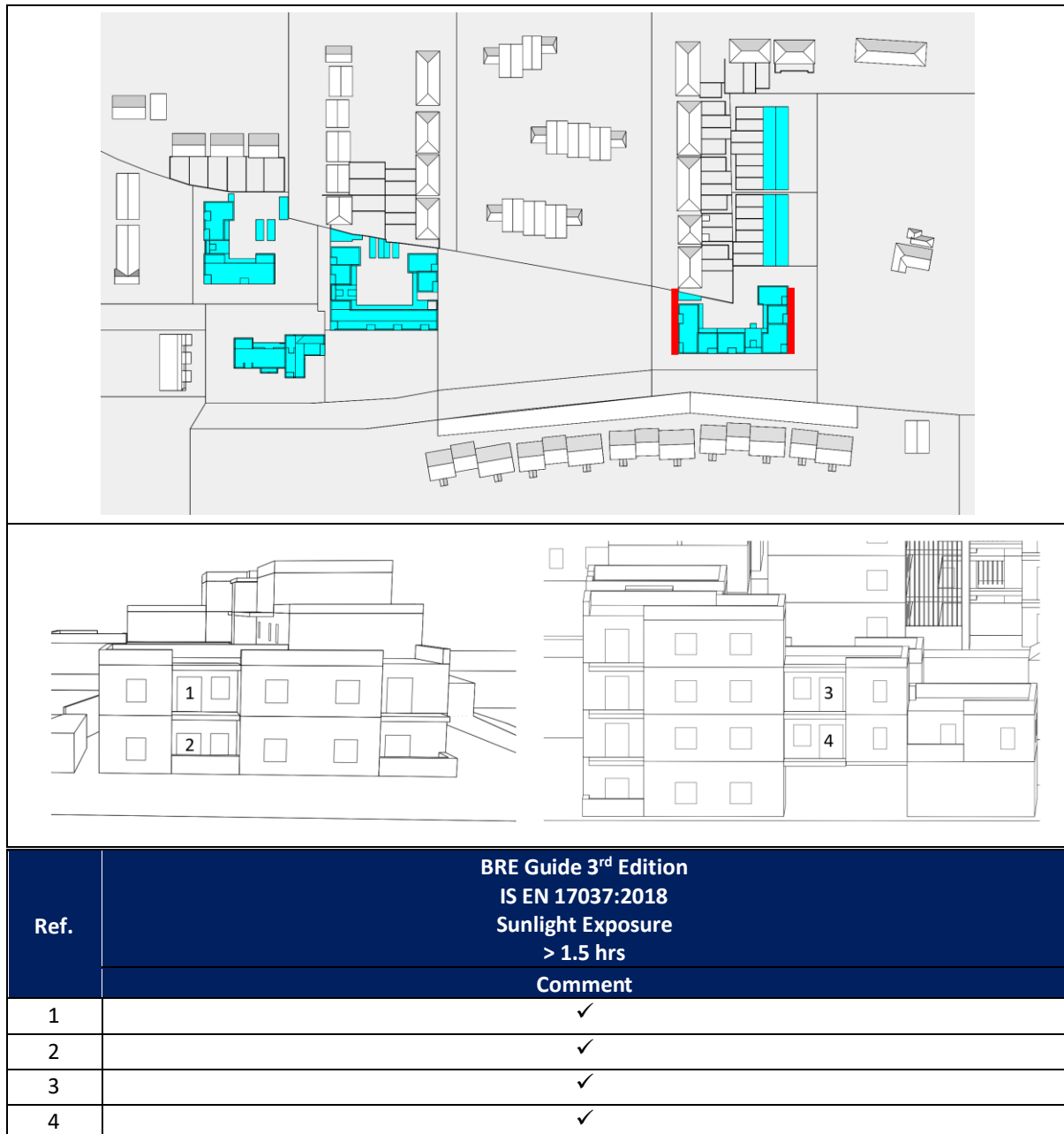


8.2.7 View 07 – Block 4

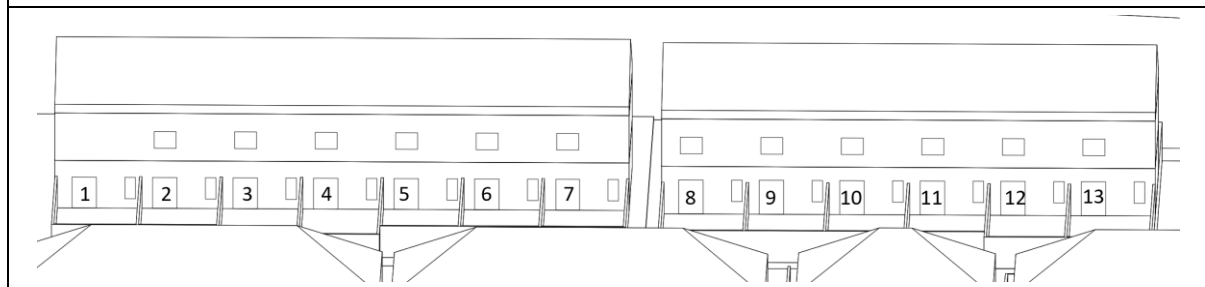


Ref.	BRE Guide 3 rd Edition IS EN 17037:2018 Sunlight Exposure > 1.5 hrs	
	Comment	
1	✓	
2	✓	
3	✓	
4	✓	
5	✓	
6	✓	
7	✓	
8	✓	
9	✓	
10	✓	
11	✓	
12	✓	
13	✓	

8.2.8 View 08 – Block 4



8.2.9 View 09 – Blocks 5 & 6 (Houses)



Ref.	BRE Guide 3 rd Edition IS EN 17037:2018 Sunlight Exposure > 1.5 hrs	
	Comment	
1	✓	
2	✓	
3	✓	
4	✓	
5	✓	
6	✓	
7	✓	
8	✓	
9	✓	
10	✓	
11	✓	
12	✓	
13	✓	

8.3 Discussion

BRE Guide 3rd Edition / IS/BS EN 17037-2018+A1-2021

As the sunlight exposure assessment in accordance with BRE Guide 3rd Edition / IS/BS EN 17037-2018+A1-2021 considers the orientation of the rooms the following should be noted from section 3.1.11 of the guide.

“The BS EN 17037 criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met.”

Of the 83 no. points tested, 83 no. points (100%) meet the BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 sunlight exposure recommendations of greater than 1.5 hours on March 21st.

It should be noted that in the development of any apartment type building in particular, achieving in the region of 75% to 80% for this assessment would be considered very high and factors such site constraints and ultimately orientation play a huge part to the outcome of this assessment. In some instance and particularly a scheme like this where you have apartments on either side of a rectangular block that is constrained by the site orientation, 50% would be as highest percentage achievable with the apartments on one side not able meet requirements purely on orientation as noted and the inclusion of balconies within the design scheme (as a requirement).

Overall, the sunlight provision results to the proposed development in accordance with IS/BS EN 17037:23018 are considered excellent.

Finally, the sunlight exposure results are visually represented in Appendix B.

9 Daylight to Existing Buildings

9.1 Guidance – BRE Guide (3rd Edition) / IS/BS EN 17037-2018+A1-2021

When designing a new development, it is important to safeguard the daylight to nearby buildings. The BRE Guide provides numerical values that are purely advisory. Different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints. Another issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light. Any reduction in the total amount of skylight can be calculated by determining the vertical sky component at the centre of key reference points. The vertical sky component definition from the BRE Guide (3rd Edition) is described below:

Vertical sky component (VSC)	This is a measure of the amount of light reaching a window. It is the ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from a CIE standard overcast sky, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. Usually the 'given vertical plane' is the outside of a window wall. The VSC does not include reflected light, either from the ground or from other buildings.
-------------------------------------	---

The maximum possible VSC value for an opening in a vertical wall, assuming no obstructions, is 40%. This VSC at any given point can be tested in RadianceIES, a module of IES VE.

For typical residential schemes the BRE Guide (3rd Edition) states the following in Section 2.2.7:

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. The area lit by the window is likely to appear more gloomy, and electric lighting will be needed more of the time.

As such this study will compare the Existing scheme and Proposed scheme and consider if the values on the existing buildings are above 27% or not less than 0.8 times their former value (that of the Existing scheme).

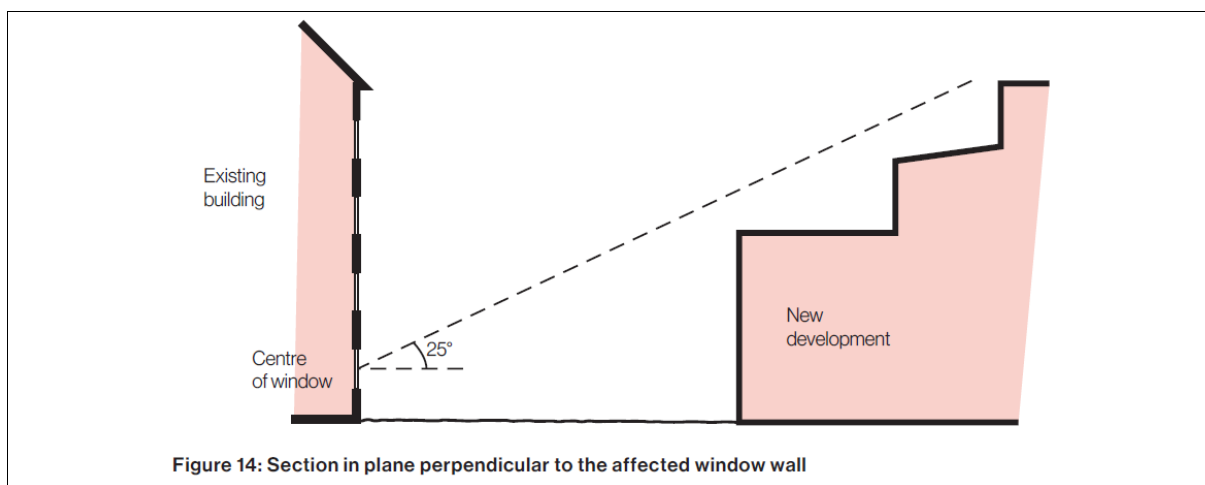
It is also important to note that Section 2.1.6 of the BRE Guide states that if the VSC is between 15% and 27%, special measures such as larger windows can provide adequate daylight (refer to extract below).

2.1.6 The amount of daylight a room needs depends on what it is being used for. But roughly speaking, if θ is:

- greater than 65° (obstruction angle less than 25° or VSC at least 27%) conventional window design will usually give reasonable results.
- between 45° and 65° (obstruction angle between 25° and 45°, VSC between 15% and 27%) special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight.
- between 25° and 45° (obstruction angle between 45° and 65°, VSC between 5% and 15%) it is very difficult to provide adequate daylight unless very large windows are used.
- less than 25° (obstruction angle greater than 65°, VSC less than 5%) it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.

9.2 25 Degree Rule

Section 2.2.5 of the BRE Guide states that if in a section perpendicular to the window wall, no angle subtended more than 25 degrees, as shown in the image below, it is not necessary to do a full calculation as the daylight impact will be unnoticeable to the occupants. Please refer to section 7.3 25 Degree Rule for the section images produced as evidence for each of the qualifying views. All neighbouring elevations met the criteria and have been excluded from the VSC assessment.

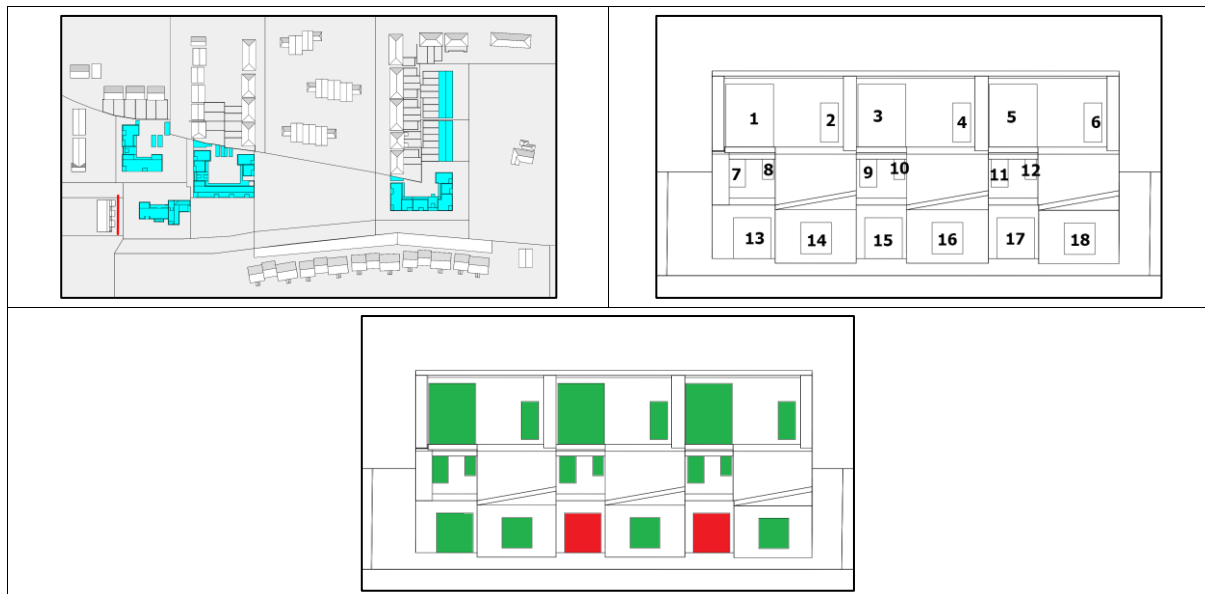


9.3 Assessment

Based on the above criteria, the locations in the following sections have been modelled and analysed with the results also included.

Please note, the “Comment” symbol in each of the tables represents the following:

- ✓ For these locations, the Proposed Scheme VSC value is greater than 27% or 0.8 times their former value (that of the Existing Situation Scheme).
- x For these locations, the Proposed Scheme VSC value is less than 27% and less than 0.8 times its former value (that of the Existing Situation), therefore, it does not achieve the BRE recommendations.



Ref	Existing Situation VSC (%)	Proposed Scheme VSC (%)	Proposed VSC % of Existing Situation	Comment
1	24.25	22.73	94%	✓
2	22.06	20.47	93%	✓
3	24.58	22.40	91%	✓
4	22.09	20.21	91%	✓
5	24.25	21.70	89%	✓
6	22.07	19.61	89%	✓
7	21.90	19.14	87%	✓
8	17.44	16.54	95%	✓
9	17.31	14.35	83%	✓
10	17.24	14.83	86%	✓
11	16.98	14.11	83%	✓
12	16.79	14.51	86%	✓
13	31.79	28.35	89%	✓
14	37.97	31.60	83%	✓
15	24.77	19.20	78%	x
16	37.75	30.13	80%	✓
17	24.26	18.01	74%	x
18	37.58	28.74	76%	✓

9.4 Discussion

The BRE Guidelines state that if the VSC value, with the new development in place, is both less than 27% and less than 80% of its former value, the occupants of the existing building will notice the reduction in the amount of skylight.

Based on the criteria outlined in Section 2.2.5 of the BRE guidance (3rd Edition), only one of the neighbouring buildings required inclusion within the VSC assessment as all other buildings met the criterion as laid out within the BRE guide which is as follows.

It is not always necessary to do a full calculation to check daylight potential. The guideline above is met provided the following is true:

- no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal.

Therefore, as noted above, only the adjacent recently completed Clairin Development to the west have been included within the VSC assessment as the daylight impact will be unnoticeable to the occupants of the other neighbouring elevations. Please refer to section 7.3 25 Degree Rule for the section images produced as evidence for each of the qualifying views.

When considering daylight to the Clairin Development to the west, 89% (16 out of 18) of the points tested are in line with the recommended values set out in the BRE Guidelines. The two points that fall below recommendations are marginally outside the recommendations and do have very large window openings in place and therefore will have adequate daylight. Therefore, taking all the information into consideration, the proposed development will have a negligible impact on the existing neighbouring properties daylight.

10 Daylight to Proposed Development

This section addresses daylight provision to the proposed development. The purpose of the calculations is to quantify an overall percentage of units which exceeds the daylight provision recommendations. Our proposed methodology is to complete the calculations for 53 apartments within the apartment blocks and all the houses within the development. The objective of the design team is to maximise the number of units which exceed the minimum recommendations. Below is a key plan outlining the sample of houses and duplexes assessed.

10.1 Reference Standards

The daylight provision to the proposed development was assessed against the following standards for completeness:

- BRE Guide (3rd Edition) / IS EN 17037-2018+A1-2021
- BRE Guide (3rd Edition) / BS EN 17037-2018+A1-2021

The following sections summarise the various requirements of each standard.

10.1.1 BRE Guide (3rd Edition) / IS EN 17037-2018+A1-2021

As outlined in Section 5.1.2 of the IS EN 17037-2018+A1-2021 standard:

“A space is considered to provide adequate daylight if a target illuminance level is achieved across a fraction of the reference plane within a space for at least half of the daylight hours. In addition, for spaces with vertical or inclined daylight openings, a minimum target illuminance level is also to be achieved across the reference plane”.

Annex A of IS EN 17037-2018+A1-2021 gives three levels of recommendation for the assessment of daylight provision in interior spaces which are summarised as follows:

“The three levels are: minimum, medium and high, and the minimum recommendation should be provided.”

It is important to note that IS EN 17037-2018+A1-2021 does not provide different illuminance targets for different space types. Therefore, in the case of residential developments; bedrooms, living rooms, kitchens and combined LKDs all have the same daylight provision targets.

Table A.1 of IS EN 17037-2018+A1-2021 (included below) provides recommendations for daylight provision by daylight openings in vertical and inclined surfaces. Note, Table A.2 provides similar recommendations for daylight openings in horizontal surfaces, e.g. rooflights. As there are no rooflights in the proposed development, the recommendations in Table A.2 are not followed.

To achieve the minimum level of daylight provision for vertical and inclined openings as per Table A.1, the following must be achieved:

- A target illuminance (E_T) of 300 lux must be achieved on over 50% of the floor area for over 50% of the available daylight hours, and
- A minimum target illuminance (E_{TM}) of 100 lux must be achieved on over 95% of the floor area for over 50% of the available daylight hours.

- Both targets above must be satisfied for a space to be deemed compliant with the requirements.

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

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

The recommendations in Table A.1 can also be expressed in terms of a daylight factor “D”. Table A.3 provides the corresponding daylight factor (D) relative to a recommended target illuminance E_T (lx) and target minimum illuminance E_{TM} (lx) depending on the location for daylight openings in vertical and inclined surfaces. Note, Table A.4 provides similar target values for openings in horizontal surfaces, e.g. rooflights. As there are no rooflights in the proposed development, the recommendations in Table A.4 are not followed.

The extract from Table A.3 below is for Dublin with the daylight factor targets highlighted, i.e. to achieve the target illuminance (E_T) of 300 lux outlined in Table A.1, an equivalent target daylight factor is 2.0%. Furthermore, to achieve the minimum target illuminance (E_{TM}) of 100 lux outlined in Table A.1, an equivalent target daylight factor is 0.7%.

Table A.3 — Values of D for daylight openings to exceed an illuminance level of 100, 300, 500 or 750 lx for a fraction of daylight hours $F_{time,\%} = 50\%$ for 33 capitals of CEN national members

Nation	Capital ^a	Geographical latitude φ [°]	Median External Diffuse Illuminance $E_{v,d,med}$	D to exceed 100 lx	D to exceed 300 lx	D to exceed 500 lx	D to exceed 750 lx
Ireland	Dublin	53,43	14 900	0,7 %	2,0 %	3,4 %	5,0 %

Therefore, to achieve the minimum level of daylight provision for vertical and inclined openings as per Table A.3, the following must be achieved:

- A target daylight factor (D_T) of 2.0% must be achieved on over 50% of the floor area for over 50% of the available daylight hours, and
- A minimum target daylight factor (D_{TM}) of 0.7% must be achieved on over 95% of the floor area for over 50% of the available daylight hours.
- Both targets above must be satisfied for a space to be deemed compliant with the requirements.

There are two methods to assess daylight provision to the interior which are based on target values in either Table A.1 or Table A.3 which are summarised as follows:

Method 1: This calculation method uses the daylight factor targets on the reference plane as per Table A.3. The assessment is carried out on a representative day and time during the year, i.e. 21st September @ 12:00 under standard CIE overcast sky conditions.

Method 2: This calculation method uses the illuminance targets on the reference plane as per Table A.1. The assessment is carried out for each hour over the course of the year (8,760 hours) using a local weather file which accounts for varying sky conditions and sun positions throughout the year.

As outlined in Section 5.1.4, the verification of daylight provision can be determined using either an adequate software or on-site measurements. When using a software, *“a representative model of the space is required together with the key parameters (such as any significant nearby obstructions, the assigned surface reflectance values and glazing transmissivity) that are a reasonable representation of those for the actual, completed building. This can be determined using either Method 1 or Method 2.”*

Based on the above criteria, the daylight provision to the proposed development has been assessed using an adequate software (i.e. IES VE), using the Method 2 climate-based approach and targeting the minimum recommended values outlined in Table A.1 of IS EN 17037-2018+A1-2021.

The Method 2 climate-based approach was selected as it is a far more accurate assessment method compared to Method 1. Climate based daylight modelling (CBDM) is more accurate compared to a calculation based on a single day during the year, i.e. Method 1. The amount of daylight varies throughout the year, primarily due to the sun's position, so it is essential the impact of daylight variance is properly considered. CBDM utilises an annual simulation linking location, shading, climate data (including solar intensity and cloud cover) together with the building properties. This provides a complete overview on how the daylight performance varies throughout the year due to changes in these factors.

10.1.2 BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 National Annex

In the UK, EN17037-2018+A1-2021 was adopted to form “BS EN 17037-2018+A1-2021”. However, a “National Annex NA” was included which states:

“The UK committee supports the recommendations for daylight in buildings given in BS EN 17037:2018; however, it is the opinion of the UK committee that the recommendations for daylight provision in a space (see Clause A.2) 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 (for example, dwellings situated in a dense urban area or with tall trees outside), or for existing buildings being refurbished or converted into dwellings. This National Annex therefore provides the UK committee's guidance on minimum daylight provision in all UK dwellings.”

Whereas IS EN 17037-2018+A1-2021 does not provide different illuminance targets for different space types, the BS EN 17037:2018 National Annex provides target illuminance values for bedrooms, living rooms and kitchens within residential developments as per Table NA.1 below. It is also important to

note that as the climate in Ireland is similar to the UK, the targets outlined in the BS EN National Annex could also be applied to dwellings in Ireland.

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

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

The BS National Annex also states:

“Where one room in a UK dwelling serves more than a single purpose, the UK committee recommends that the target illuminance is that for the room type with the highest value – for example, in a space that combines a living room and a kitchen the target illuminance is recommended to be 200 lx.”

Therefore, combined LKDs are to be assessed using a 200 lux target illuminance (E_T).

Finally, the BS National Annex also states that:

“It is the opinion of the UK committee that the recommendation in Clause A.2 – that a target illuminance level should be achieved across the entire (i.e. 95 %) fraction of the reference plane within a space – need not be applied to rooms in dwellings.”

Therefore, when assessing the daylight provisions in residential dwellings in accordance with BS EN 17037-2018+A1-2021, only the target illuminance (E_T) or target daylight factor (D_T) will be assessed for Bedrooms, Living Rooms, Kitchens (or combined LKDs) on over 50% of the floor area over 50% of the available daylight hours. The minimum target illuminance (E_{TM}) or minimum target daylight factor (D_{TM}) will not be assessed.

Based on the above criteria, the daylight provision to the proposed development has been assessed using an adequate software (i.e. IES VE), using the Method 2 climate-based approach and targeting the minimum recommended values outlined in Table NA.1 of BS EN 17037-2018+A1-2021.

10.2 Daylight Model Inputs

The following inputs were used in the study:

BRE Guide (3rd Edition) / IS EN / BS EN 17037-2018+A1-2021

- Weather File: galway.epw (15-year average)

Common Inputs to all Standards

- Working Plane Height: 0.85m
- Glazing Light Transmittance: 70%
- Window Frame thickness: 50 mm

The following surface reflectance values are used in the study:

Material Surface	Reflectance
External Wall	0.20
Internal Partition – White	0.80
Roof – Default	0.20
Ground – Default	0.20
Floor– Light Veneers	0.40
Ceiling– White	0.80

10.3 Daylight Results

The following tables summarise the daylight provision results for the apartment block assessed against the various standards. Individual room results can be viewed in Appendix A.

The purpose of the calculations is to quantify an overall percentage of rooms which exceed the recommendations. The objective of the design team is to maximise the number of units which exceed the recommendations.

The results are summarised in the following tables:

Total for Block 1

The daylight provision results for the tested spaces in Block 1 of the development under the various standards are summarised below. Under BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 Method 2, a compliance rate of 83% is achieved which increases to 98% under BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 Method 2 National Annex.

Rooms Tested	Total No. Rooms
Total No. Bedrooms Tested	27
Total No. LKDs Tested	13
Total No. Spaces Tested	40

BRE Guide 3 rd Edition / IS EN 17037:2018 Method 2 Assessment				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	20	74%	7	26%
No. LKDs	13	100%	0	0%
Total No.	33	83%	7	17%

BRE Guide 3 rd Edition / BS EN 17037:2018 Method 2 Assessment - National Annex				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	26	96%	1	4%
No. LKDs	13	100%	0	0%
Total No.	39	98%	1	2%

Total for Block 2

The daylight provision results for the tested spaces in Block 2 of the development under the various standards are summarised below. Under BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 Method 2, a compliance rate of 100% is achieved which remains 100% under BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 Method 2 National Annex.

Rooms Tested	Total No. Rooms
Total No. Bedrooms Tested	13
Total No. LKDs Tested	9
Total No. Spaces Tested	22

BRE Guide 3 rd Edition / IS EN 17037:2018 Method 2 Assessment				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	13	100%	0	0%
No. LKDs	9	100%	0	0%
Total No.	22	100%	0	0%

BRE Guide 3 rd Edition / BS EN 17037:2018 Method 2 Assessment - National Annex				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	13	100%	0	0%
No. LKDs	9	100%	0	0%
Total No.	22	100%	0	0%

Total for Block 3

The daylight provision results for the tested spaces in Block 3 of the development under the various standards are summarised below. Under BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 Method 2, a compliance rate of 70% is achieved which increases to 98% under BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 Method 2 National Annex.

Rooms Tested	Total No. Rooms
Total No. Bedrooms Tested	30
Total No. LKDs Tested	16
Total No. Spaces Tested	46

BRE Guide 3 rd Edition / IS EN 17037:2018 Method 2 Assessment				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	20	67%	10	33%
No. LKDs	12	75%	4	25%
Total No.	32	70%	14	30%

BRE Guide 3 rd Edition / BS EN 17037:2018 Method 2 Assessment - National Annex				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	29	97%	1	3%
No. LKDs	16	100%	0	0%
Total No.	45	98%	1	2%

Total for Block 4

The daylight provision results for the tested spaces in Block 4 of the development under the various standards are summarised below. Under BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 Method 2, a compliance rate of 87% is achieved which increases to 95% under BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 Method 2 National Annex.

Rooms Tested	Total No. Rooms
Total No. Bedrooms Tested	28
Total No. LKDs Tested	16
Total No. Spaces Tested	44

BRE Guide 3 rd Edition / IS EN 17037:2018 Method 2 Assessment				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	24	86%	4	14%
No. LKDs	15	94%	1	6%
Total No.	39	87%	5	13%

BRE Guide 3 rd Edition / BS EN 17037:2018 Method 2 Assessment - National Annex				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	27	96%	1	4%
No. LKDs	15	94%	1	6%
Total No.	42	95%	2	5%

Total for Block 5 (Houses)

The daylight provision results for the tested spaces in Block 5 of the development under the various standards are summarised below. Under BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 Method 2, a compliance rate of 100% is achieved which remains 100% under BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 Method 2 National Annex.

Rooms Tested	Total No. Rooms
Total No. Bedrooms Tested	6
Total No. LKDs Tested	12
Total No. Spaces Tested	18

BRE Guide 3 rd Edition / IS EN 17037:2018 Method 2 Assessment				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	6	100%	0	0%
No. LKDs	12	100%	0	0%
Total No.	18	100%	0	0%

BRE Guide 3 rd Edition / BS EN 17037:2018 Method 2 Assessment - National Annex				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	6	100%	0	0%
No. LKDs	12	100%	0	0%
Total No.	18	100%	0	0%

Total for Block 6 (Houses)

The daylight provision results for the tested spaces in Block 6 of the development under the various standards are summarised below. Under BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 Method 2, a compliance rate of 100% is achieved which remains 100% under BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 Method 2 National Annex.

Rooms Tested	Total No. Rooms
Total No. Bedrooms Tested	7
Total No. LKDs Tested	14
Total No. Spaces Tested	21

BRE Guide 3 rd Edition / IS EN 17037:2018 Method 2 Assessment				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	7	100%	0	0%
No. LKDs	14	100%	0	0%
Total No.	21	100%	0	0%

BRE Guide 3 rd Edition / BS EN 17037:2018 Method 2 Assessment - National Annex				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	7	100%	0	0%
No. LKDs	14	100%	0	0%
Total No.	21	100%	0	0%

Total for the Development

The daylight provision results for the tested spaces in the development under the various standards are summarised below. Under BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 Method 2, a compliance rate of 86% is achieved which increases to 98% under BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 Method 2 National Annex.

Rooms Tested	Total No. Rooms
Total No. Bedrooms Tested	124
Total No. LKDs Tested	67
Total No. Spaces Tested	191

BRE Guide 3 rd Edition / IS EN 17037:2018 Method 2 Assessment				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	103	83%	21	17%
No. LKDs	62	93%	5	7%
Total No.	165	86%	26	14%

BRE Guide 3 rd Edition / BS EN 17037:2018 Method 2 Assessment - National Annex				
Room Type	Pass (No.)	Pass (%)	Fail (No.)	Fail (%)
No. Bedrooms	121	98%	3	2%
No. LKDs	66	99%	1	1%
Total No.	187	98%	4	2%

10.4 Compensatory Measures

10.5 Irish Standards and Design Development

With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments 2023, 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 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.”

Having regard to the statements above, it should be noted that throughout the design process the design team worked hard to optimise the whole development to maximise the daylight within the proposed scheme.

Design features have been incorporated into the development where rooms do not achieve the daylight provision targets in accordance with the standards they were assessed against. These design features again help to balance off and compensate the lower levels of daylight measured in the applicable spaces and are summarised as follows:

- 61% of the apartments have a floor area 10% greater than the minimum floor area requirements as required by the Design Standards (March 2023). This would be 51% of the overall units within the development. Note that larger floor areas make it more difficult to achieve the recommended daylight levels. However, larger windows have been incorporated into the design which also improves the view out for the building occupants.
- 94% of the apartments are dual aspect which is above the 50% minimum requirement as required by the Design Standards (March 2023). As a result, more apartment units than the recommended minimum will achieve quality daylight from dual-aspect orientations.
- The proposed scheme provides 1135sq.m of communal amenity space for the apartments alone, thus exceeding the 461sq.m required pursuant to the Design Standards (March 2023).

In addition to this, specific compensatory measures for each space below the recommendations can be found in the table within Appendix A section 12.2.

11 Conclusion

The following can be concluded based on the assessments undertaken:

11.1 Shadow Analysis

The shadow analysis illustrates different shadows being cast at key times of the year (March 21st, June 21st and December 21st) for the Existing Situation and the Proposed Scheme. The results from the study are summarised as follows:

Clairin Development

Minimal additional shading visible from the proposed development on this building on March at 0800, June at 0800 and December* at 1000. No additional overshadowing throughout the rest of the year.

12-16 Maoilin

Minimal additional shading visible from the proposed development on these buildings on December* at 1000-1400. No additional overshadowing throughout the rest of the year.

11 Maoilin & 67 Drisin

Minimal additional shading visible from the proposed development on these buildings on March* at 1200-1400 and December at 1000-1400. No additional overshadowing throughout the rest of the year.

29, 30, 36, 64-66 Drisin

No additional shading is visible from the proposed development on these properties throughout the year.

16-28 Drisin

Minimal additional shading visible from the proposed development on these buildings on March at 0800 and December* at 1000. No additional overshadowing throughout the rest of the year.

* Overshadowing can be expected in December when the sun is lower in the sky and shadows cast are much longer. Although this is the case, overshadowing is least noticeable during the winter months as there is a lot less sunlight available at this time of year and so the overall impact is vastly reduced.

The potential shading impact is quantified via the “Sunlight to Amenity Spaces” and “Daylight to Existing Buildings” sections of this report.

11.2 Sunlight to Amenity Spaces

As outlined in Section 3.3.17 of the BRE Guide (3rd Edition), for a space to appear adequately sunlit throughout the year, at least half of the garden or amenity area should receive at least 2 hours of sunlight on March 21st. In the case of existing amenity spaces, if they are already below the 50% threshold then the BRE recommends the results kept to within 80% of the existing situation.

Existing Amenity Spaces

On March 21st the existing amenity spaces will receive similar levels of sunlight with the proposed development in place when compared to the existing situation. In all cases the results comply with the recommendations in the BRE Guide outlined above.

Proposed Amenity Spaces

On March 21st, 100% of the proposed public amenity areas situated within the development site will receive at least 2 hours of sunlight over both areas. With regards to the apartment private communal areas, 100% of these spaces comply with the requirements when considered against the minimum areas required for the development. There is a significant overprovision of communal amenity space and therefore these areas will be quality spaces in terms of provision as well as sunlight, particularly when the provision of high quality public open space in close proximity to the apartments is considered in conjunction with these communal areas. Regarding the housing private amenity areas, all are passing the BRE guidelines with at least 2 hours of sunlight over more than 50% of each area.

11.3 Sunlight to Existing Buildings

This study considers the proposed scheme and tests if the Annual Probable Sunlight Hours (APSH) results for the living room windows are greater than 25% annual and 5% winter sunlight or are greater than 0.8 times their former value with the proposed development in place or the reduction in sunlight across the year is less than 4% with the proposed development in place.

Based on the criteria outlined in Section 3.2.9 of the BRE Guide 3rd Edition, none of the existing buildings fit the requirements to be assessed and as such the APSH assessment was not conducted. The BRE guide (3rd Edition) notes that there should be no impact to sunlight for these properties “It is not always necessary to do a full calculation to check sunlight potential. The guideline above is met provided either the following is true:

- If the window wall faces within 90° of due south and no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal. Again, obstructions within 90° of due north need not be counted.”

Given the statement above, the surrounding dwellings adjacent to the proposed development were verified noting that, in a section perpendicular to the window wall, no angle subtended more than 25°, and in other cases they were not facing within 90 degrees due south, therefore as noted in Section 3.2.9 of the BRE Guide 3rd Edition, these windows need not be analysed as sunlight impact will be unnoticeable to the existing occupants.

11.4 Sunlight to Proposed Development

As the sunlight exposure assessment in accordance with BRE Guide 3rd Edition / IS/BS EN 17037-2018+A1-2021 considers the orientation of the rooms the following should be noted from section 3.1.11 of the guide.

“The BS EN 17037 criterion applies to rooms of all orientations, although if a room faces significantly north of due east or west it is unlikely to be met.”

Of the 83 no. points tested, 83 no. points (100%) meet the BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021 sunlight exposure recommendations of greater than 1.5 hours on March 21st.

It should be noted that in the development of any apartment type building in particular, achieving in the region of 75% to 80% for this assessment would be considered very high and factors such site constraints and ultimately orientation play a huge part to the outcome of this assessment. In some instance and particularly a scheme like this where you have apartments on either side of a rectangular block that is constrained by the site orientation, 50% would be as highest percentage achievable with the apartments on one side not able meet requirements purely on orientation as noted and the inclusion of balconies within the design scheme (as a requirement).

Overall, the sunlight provision results to the proposed development in accordance with IS/BS EN 17037:23018 are considered excellent.

Finally, the sunlight exposure results are visually represented in Appendix B.

11.5 Daylight to Existing Buildings

The BRE Guidelines state that if the VSC value, with the new development in place, is both less than 27% and less than 80% of its former value, the occupants of the existing building will notice the reduction in the amount of skylight.

Based on the criteria outlined in Section 2.2.5 of the BRE guidance (3rd Edition), only one of the neighbouring buildings required inclusion within the VSC assessment as all other buildings met the criterion as laid out within the BRE guide which is as follows.

It is not always necessary to do a full calculation to check daylight potential. The guideline above is met provided the following is true:

- no obstruction, measured in the section perpendicular to the window wall, subtends an angle of more than 25° to the horizontal.

Therefore, as noted above, only the adjacent recently completed Clairin Development to the west have been included within the VSC assessment as the daylight impact will be unnoticeable to the occupants of the other neighbouring elevations. Please refer to section 7.3 25 Degree Rule for the section images produced as evidence for each of the qualifying views.

When considering daylight to the Clairin Development to the west, 89% (16 out of 18) of the points tested are in line with the recommended values set out in the BRE Guidelines. The two points that fall below recommendations are marginally outside the recommendations and do have very large window openings in place and therefore will have adequate daylight. Therefore, taking all the information into consideration, the proposed development will have a negligible impact on the existing neighbouring properties daylight.

11.6 Daylight to Proposed Development

For the daylight to proposed development assessment, two standards have been analysed: IS EN 17037-2018+A1-2021 and BS EN 17037-2018+A1-2021 National Annex (BRE Guide 3rd Edition). The results under each standard are summarised below.

BRE Guide 3rd Edition / IS EN 17037-2018+A1-2021

It is important to note that IS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition) does not provide different illuminance targets for different space types. Therefore, in the case of residential developments; bedrooms, living rooms, kitchens and combined LKDs all have the same daylight provision targets.

There are two methods to assess daylight provision to the interior which are based on target values in either Table A.1 or Table A.3 of IS EN 17037-2018+A1-2021 which are summarised as follows:

Method 1: This calculation method uses the daylight factor targets on the reference plane as per Table A.3 (refer to Section 10.1.2 of this report). The assessment is carried out on a representative day and time during the year, i.e. 21st September @ 12:00 under standard CIE overcast sky conditions.

Method 2: This calculation method uses the illuminance targets on the reference plane as per Table A.1 (refer to Section 10.1.2 of this report). The assessment is carried out for each hour over the course of the year (8,760 hours) using a local weather file which accounts for varying sky conditions and sun positions throughout the year.

As outlined in Section 5.1.4 of the standard, the verification of daylight provision can be determined using either an adequate software or on-site measurements. When using a software, *“a representative model of the space is required together with the key parameters (such as any significant nearby obstructions, the assigned surface reflectance values and glazing transmissivity) that are a reasonable representation of those for the actual, completed building. This can be determined using either Method 1 or Method 2.”*

Based on the above criteria, the daylight provision to the proposed development has been assessed using an adequate software (i.e. IES VE), using the Method 2 climate-based approach and targeting the minimum recommended values outlined in Table A.1 of IS EN 17037-2018+A1-2021.

The Method 2 climate-based approach was selected as it is a far more accurate assessment method compared to Method 1. Climate based daylight modelling (CBDM) is more accurate compared to a calculation based on a single day during the year, i.e. Method 1. The amount of daylight varies throughout the year, primarily due to the sun's position, so it is essential the impact of daylight variance is properly considered. CBDM utilises an annual simulation linking location, shading, climate data (including solar intensity and cloud cover) together with the building properties. This provides a complete overview on how the daylight performance varies throughout the year due to changes in these factors.

Across the proposed development, 84% of the tested rooms are achieving the daylight provision targets in accordance with Table A.1 of IS EN 17037-2018+A1-2021 using Method 2.

BRE Guide 3rd Edition / BS EN 17037-2018+A1-2021 National Annex

In the UK, EN 17037-2018+A1-2021 was adopted to form “BS EN 17037-2018+A1-2021”. However, a National Annex was included which states:

“The UK committee supports the recommendations for daylight in buildings given in BS EN 17037:2018; however, it is the opinion of the UK committee that the recommendations for daylight provision in a space (see Clause A.2) 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 (for example, dwellings situated in a dense urban area or with tall trees outside), or for existing buildings being refurbished or converted into dwellings. This National Annex therefore provides the UK committee’s guidance on minimum daylight provision in all UK dwellings.”

Whereas IS EN 17037-2018+A1-2021 does not provide different illuminance targets for different space types, the BS EN 17037-2018+A1-2021 National Annex provides target illuminance values for bedrooms, living rooms and kitchens within residential developments as per Table NA.1 (refer to Section 10.1.3 of this report). It is also important to note that as the climate in Ireland is similar to the UK, the targets outlined in the BS EN National Annex could also be applied to dwellings in Ireland.

The BS National Annex also states:

“Where one room in a UK dwelling serves more than a single purpose, the UK committee recommends that the target illuminance is that for the room type with the highest value – for example, in a space that combines a living room and a kitchen the target illuminance is recommended to be 200 lx.”

Therefore, combined LKDs were assessed using a 200 lux target illuminance (E_T).

Across the proposed development, 98% of the tested rooms are achieving the daylight provision targets in accordance with Table NA.1 of BS EN 17037-2018+A1-2021 using Method 2.

Compensatory Measures

With regards to internal daylighting, Section 6.7 of the Sustainable Urban Housing: Design Standards for New Apartments 2023, 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 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.”

Having regard to the statements above, it should be noted that throughout the design process the design team worked hard to optimise the whole development to maximise the daylight within the proposed scheme.

Design features have been incorporated into the development where rooms do not achieve the daylight provision targets in accordance with the standards they were assessed against. These design features again help to balance off and compensate the lower levels of daylight measured in the applicable spaces and are summarised as follows:

- 61% of the apartments have a floor area 10% greater than the minimum floor area requirements as required by the Design Standards (March 2023). This would be 51% of the overall units within the development. Note that larger floor areas make it more difficult to achieve the recommended daylight levels. However, larger windows have been incorporated into the design which also improves the view out for the building occupants.
- 94% of the apartments are dual aspect which is above the 50% minimum requirement as required by the Design Standards (March 2023). As a result, more apartment units than the recommended minimum will achieve quality daylight from dual-aspect orientations.
- The proposed scheme provides 1135sq.m of communal amenity space for the apartments alone, thus exceeding the 461sq.m required pursuant to the Design Standards (March 2023).

In addition to this, specific compensatory measures for each space below the recommendations can be found in the table within Appendix A section 12.2.

11.7 View Out

The View Out assessment is related to buildings such as offices or schools where seating layouts are typically fixed compared to domestic settings where an occupant can move around the space freely. In their own home occupants can choose to sit near to or even at a window which will inevitably provide the varying layers of a 'View Out' such as the ground, landscape or sky. This ability to choose their position within a domestic setting means they would always have access to a position in the apartment with the minimum requirements of 'View Out'. Therefore, all the properties would meet the minimum requirement as outlined in IS EN 17037-2018+A1-2021 / BS EN 17037-2018+A1-2021 National Annex (BRE Guide 3rd Edition).

11.8 Glare

As outlined in IS EN 17037-2018+A1-2021 / BS EN 17037-2018+A1-2021 National Annex (BRE Guide 3rd Edition), a Glare assessment is suggested in spaces where the *"expected activities are comparable to reading, writing or using display devices and the user is not able to choose freely their position and viewing direction"*. Given that occupants within a domestic setting are free to move around, on this basis a glare assessment for the proposed development has not been carried out.

11.9 Observations

It is important to note that the recommendations within the BRE Guide (3rd Edition) itself states *"although it gives numerical guidelines these should be interpreted flexibly because natural lighting is only one of many factors in site layout design"*, Although this is true appropriate and reasonable regard has still been taken to the BRE guide.

Whilst the results shown relate to the criteria as laid out in the BRE Guide (3rd Edition), it is important to note that the BRE targets are guidance only and should therefore be used with flexibility and caution when dealing with different types of sites. They

In addition, BRE Guide 3rd Edition also notes:

“This report is a comprehensive revision of the 2011 edition of Site layout planning for daylight and sunlight: a guide to good practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.”

Taking all of the above information into account and based on the results from each of the assessments undertaken, the proposed development performs well when compared to the recommendations in the BRE Guide 3rd Edition and IS EN 17037-2018+A1-2021 /BS EN 17037-2018+A1-2021 National Annex. With regards to the existing properties there is a negligible impact when considering sunlight and daylight as a result of the proposed development and the proposed development itself performs very well with the same regard.

12 Appendix A – Daylight Provision Results

The tables in the following sections summarise the daylight provision results for the rooms that were assessed in the proposed development. Note, within the tables the code “LKD” equates to combined Living, Kitchen, Dining area.

The results for the following daylight standards are included in each table:

- BRE Guide (3rd Edition) / IS EN 17037-2018+A1-2021
- BRE Guide (3rd Edition) / BS EN 17037-2018+A1-2021 National Annex

Please note, the “Comment” symbol in each of the tables represents the following:

BRE Guide (3rd Edition) / IS EN 17037-2018+A1-2021

- ✓ These rooms achieve both the target illuminance (E_T) and minimum target illuminance (E_{TM}) over the minimum floor area requirements, i.e. 300 lux for over 50% of their floor area (E_T) and 100 lux for over 95% of their floor area (E_{TM}).
- x These rooms do not achieve both the target illuminance (E_T) and minimum target illuminance (E_{TM}) over the minimum floor area requirements.

BRE Guide (3rd Edition) / BS EN 17037-2018+A1-2021 National Annex

- ✓ These rooms achieve the target illuminance (E_T) over the minimum floor area requirements, i.e. 100 lux for over 50% of bedroom floor areas, and 200 lux for over 50% of LKD floor areas.
- x These rooms do not achieve the target illuminance (E_T) over the minimum floor area requirements.

12.1 Daylight Provision Results

12.1.1 Block 1 – L00



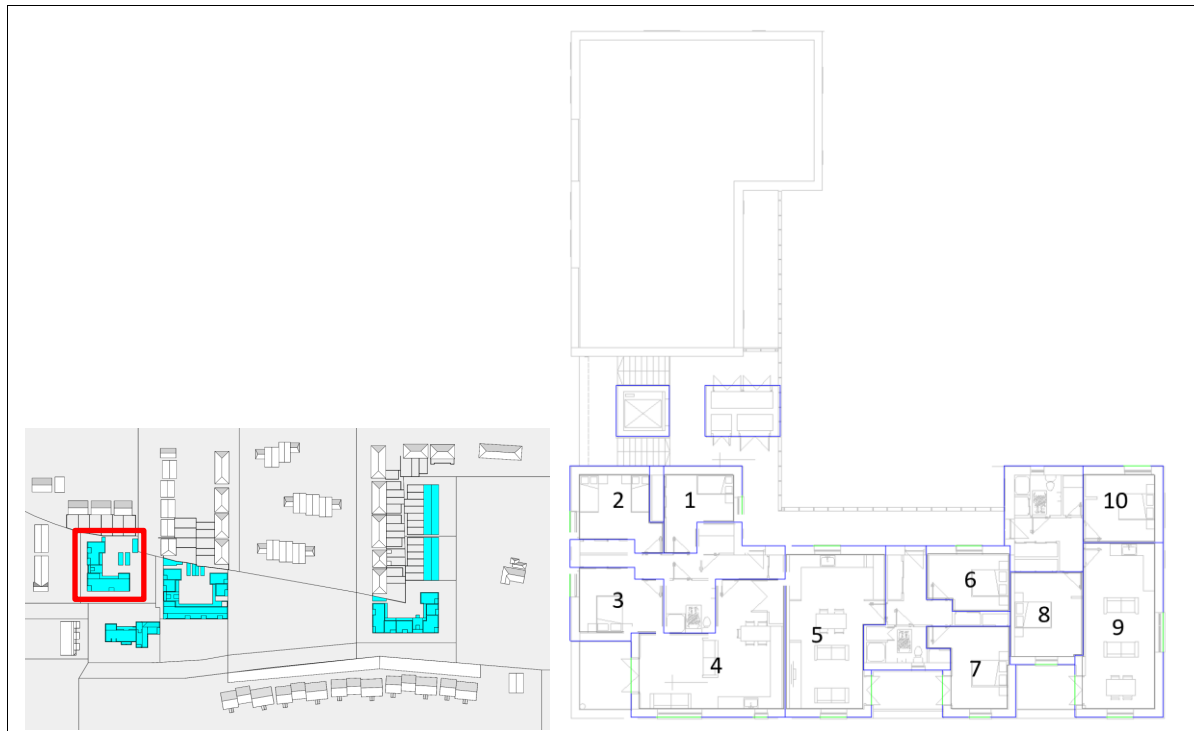
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	100	100	✓	100	✓
2	LKD	100	100	✓	100	✓
3	Bedroom	6	100	x	100	✓
4	Bedroom	100	100	✓	100	✓
5	LKD	93	100	✓	100	✓
6	Bedroom	3	72	x	72	✓
7	Bedroom	62	100	✓	100	✓
8	Bedroom	86	100	✓	100	✓
9	LKD	88	100	✓	100	✓
10	LKD	98	100	✓	100	✓
11	Bedroom	54	100	✓	100	✓
12	Bedroom	83	100	✓	100	✓
13	LKD	100	100	✓	100	✓
14	Bedroom	100	100	✓	100	✓
15	Bedroom	93	100	✓	100	✓

12.1.2 Block 1 – L01



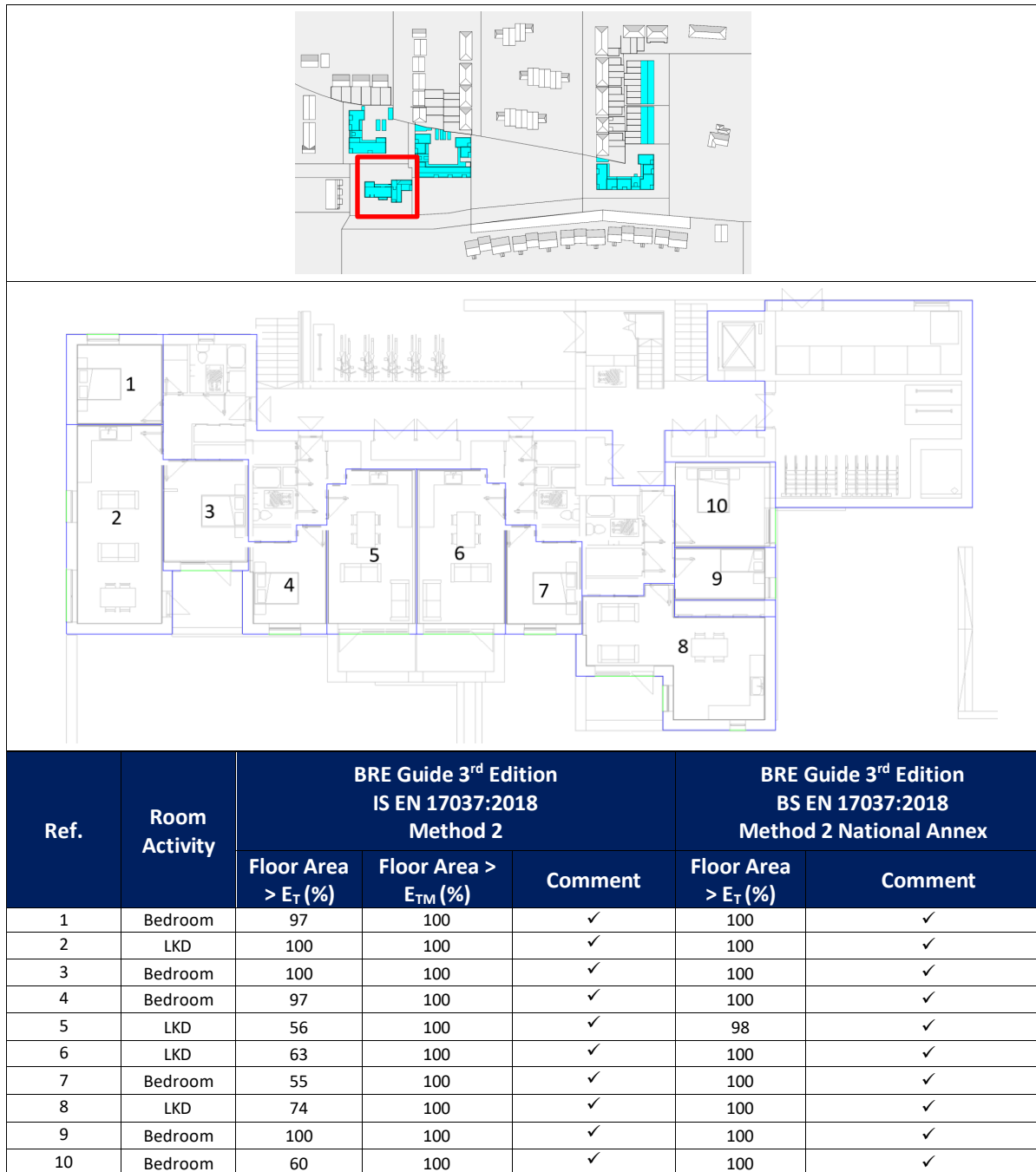
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	100	100	✓	100	✓
2	LKD	100	100	✓	100	✓
3	Bedroom	6	100	x	100	✓
4	Bedroom	100	100	✓	100	✓
5	LKD	100	100	✓	100	✓
6	Bedroom	0	28	x	28	x
7	Bedroom	74	100	✓	100	✓
8	Bedroom	88	100	✓	100	✓
9	LKD	88	100	✓	100	✓
10	LKD	90	100	✓	100	✓
11	Bedroom	65	100	✓	100	✓
12	Bedroom	60	100	✓	100	✓
13	Bedroom	14	76	x	76	✓
14	LKD	76	100	✓	94	✓
15	Bedroom	100	100	✓	100	✓

12.1.3 Block 1 – L02

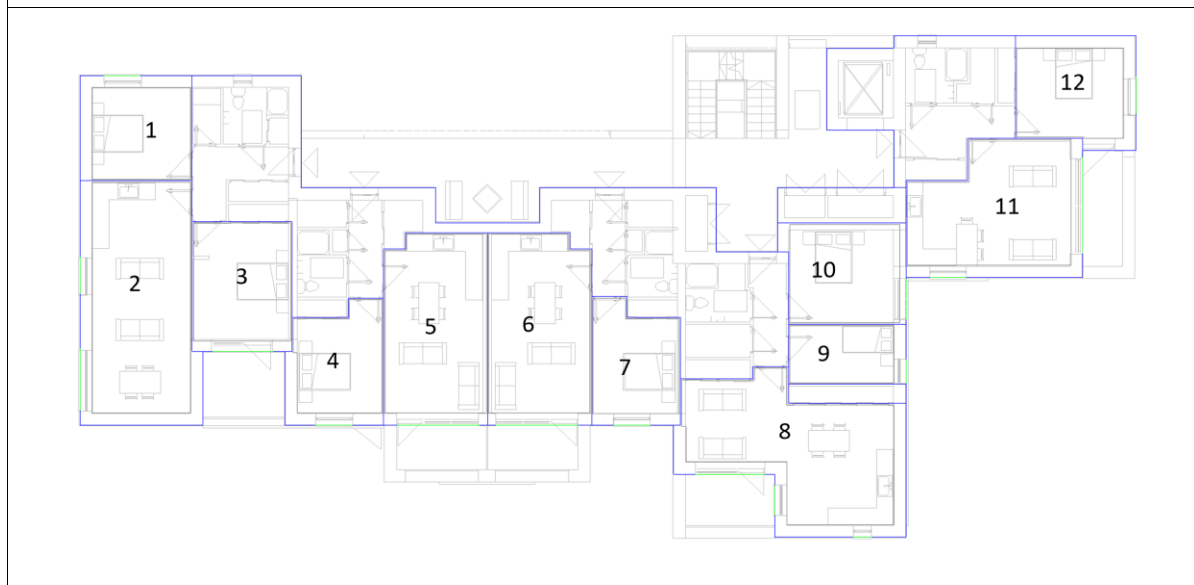


Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	44	100	x	100	✓
2	Bedroom	67	100	✓	100	✓
3	Bedroom	56	100	✓	100	✓
4	LKD	90	100	✓	100	✓
5	LKD	99	100	✓	100	✓
6	Bedroom	100	100	✓	100	✓
7	Bedroom	100	100	✓	100	✓
8	Bedroom	6	76	x	76	✓
9	LKD	88	100	✓	100	✓
10	Bedroom	100	100	✓	100	✓

12.1.4 Block 2 – L01



12.1.5 Block 2 – L02



Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	100	100	✓	100	✓
2	LKD	98	100	✓	100	✓
3	Bedroom	50	100	✓	100	✓
4	Bedroom	97	100	✓	100	✓
5	LKD	64	100	✓	100	✓
6	LKD	95	100	✓	100	✓
7	Bedroom	100	100	✓	100	✓
8	LKD	69	100	✓	100	✓
9	Bedroom	100	100	✓	100	✓
10	Bedroom	63	100	✓	100	✓
11	LKD	100	100	✓	100	✓
12	Bedroom	100	100	✓	100	✓

12.1.6 Block 3 – L01



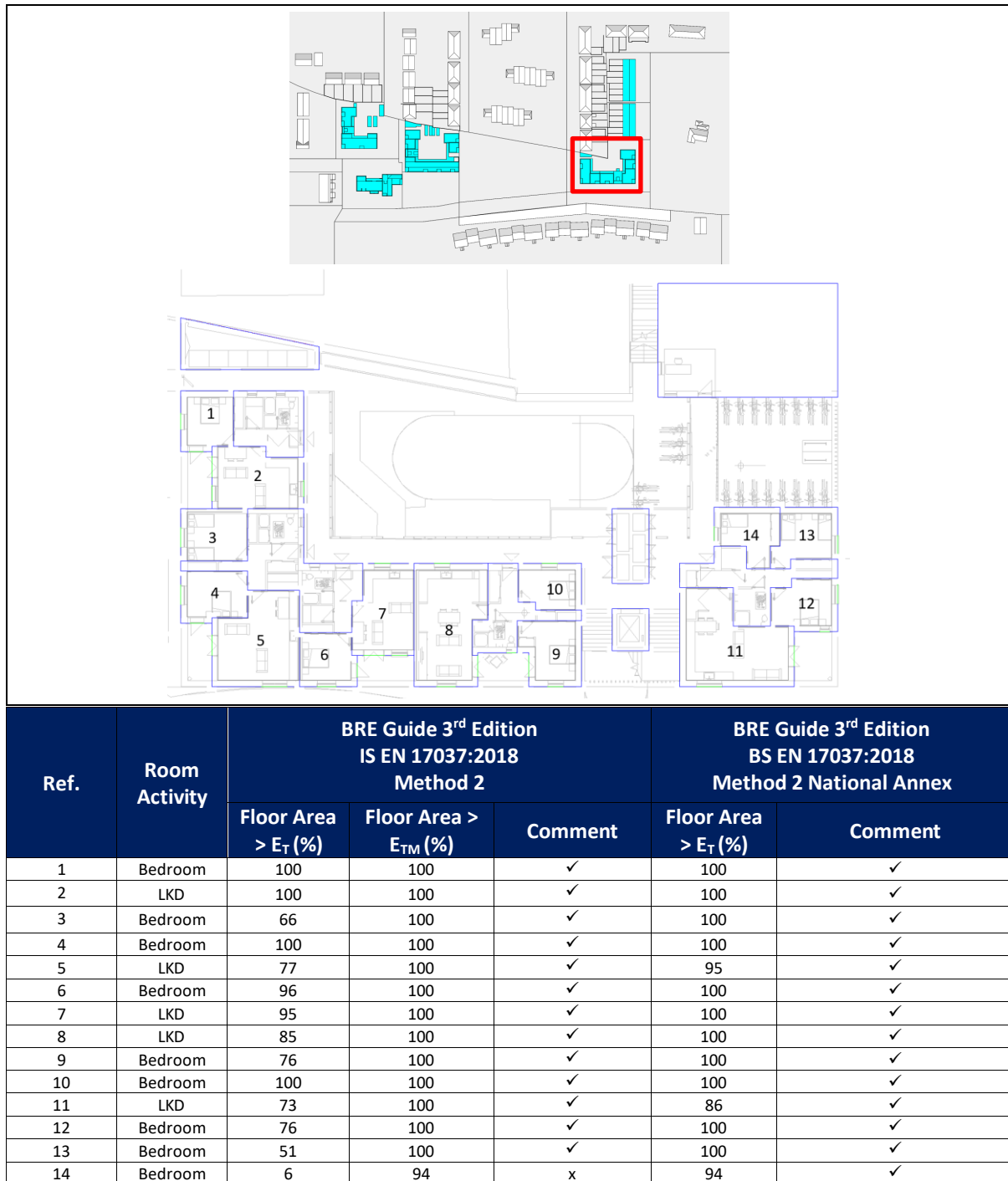
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	60	100	✓	100	✓
2	LKD	68	100	✓	100	✓
3	Bedroom	1	80	x	80	✓
4	Bedroom	84	91	x	91	✓
5	LKD	100	100	✓	100	✓
6	Bedroom	4	88	x	88	✓
7	Bedroom	100	100	✓	100	✓
8	Bedroom	100	100	✓	100	✓
9	LKD	97	100	✓	100	✓
10	Bedroom	72	100	✓	100	✓
11	LKD	59	100	✓	100	✓
12	Bedroom	94	100	✓	100	✓
13	LKD	100	100	✓	100	✓
14	Bedroom	94	100	✓	100	✓
15	Bedroom	100	100	✓	100	✓
16	LKD	34	100	x	66	✓
17	Bedroom	92	100	✓	100	✓
18	Bedroom	70	100	✓	100	✓
19	LKD	100	100	✓	100	✓
20	Bedroom	89	99	✓	99	✓
21	Bedroom	8	100	x	100	✓
22	LKD	42	79	x	57	✓
23	Bedroom	50	100	✓	100	✓

12.1.7 Block 3 – L02



Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	100	100	✓	100	✓
2	LKD	100	100	✓	100	✓
3	Bedroom	1	93	x	93	✓
4	Bedroom	82	88	x	88	✓
5	LKD	100	100	✓	100	✓
6	Bedroom	0	25	x	25	x
7	Bedroom	100	100	✓	100	✓
8	Bedroom	100	100	✓	100	✓
9	LKD	100	100	✓	100	✓
10	Bedroom	33	100	x	100	✓
11	LKD	100	100	✓	100	✓
12	Bedroom	100	100	✓	100	✓
13	LKD	27	100	x	80	✓
14	Bedroom	97	100	✓	100	✓
15	Bedroom	17	100	x	100	✓
16	LKD	95	100	✓	100	✓
17	Bedroom	35	99	x	55	✓
18	Bedroom	74	100	✓	100	✓
19	LKD	91	100	✓	100	✓
20	Bedroom	72	98	✓	98	✓
21	Bedroom	4	98	x	98	✓
22	LKD	61	100	✓	78	✓
23	Bedroom	100	100	✓	100	✓

12.1.8 Block 4 – L00



12.1.9 Block 4 – L01



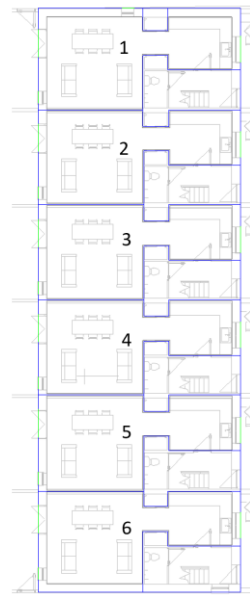
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	100	100	✓	100	✓
2	LKD	100	100	✓	100	✓
3	Bedroom	75	100	✓	100	✓
4	Bedroom	100	100	✓	100	✓
5	LKD	90	100	✓	100	✓
6	Bedroom	100	100	✓	100	✓
7	LKD	5	100	x	17	✓
8	LKD	100	100	✓	100	✓
9	Bedroom	79	100	✓	100	✓
10	Bedroom	100	100	✓	100	✓
11	LKD	75	100	✓	90	✓
12	Bedroom	78	100	✓	100	✓
13	Bedroom	51	100	✓	100	✓
14	Bedroom	2	25	x	25	x
15	LKD	100	100	✓	100	✓
16	Bedroom	92	100	✓	100	✓
17	Bedroom	14	99	x	99	✓
18	LKD	100	100	✓	100	✓
19	Bedroom	100	100	x	100	✓

12.1.10 Block 4 – L02

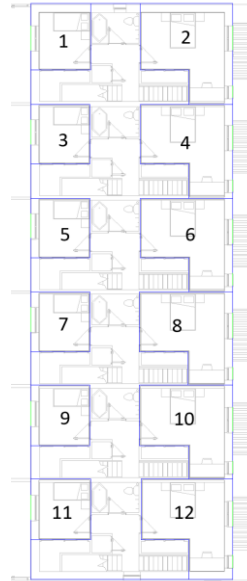


Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	100	100	✓	100	✓
2	LKD	100	100	✓	100	✓
3	LKD	100	100	✓	100	✓
4	Bedroom	96	100	✓	100	✓
5	Bedroom	84	100	✓	100	✓
6	LKD	79	100	✓	90	✓
7	Bedroom	82	100	✓	100	✓
8	Bedroom	51	100	✓	100	✓
9	Bedroom	8	67	x	67	✓
10	LKD	100	100	✓	100	✓
11	Bedroom	86	100	✓	100	✓

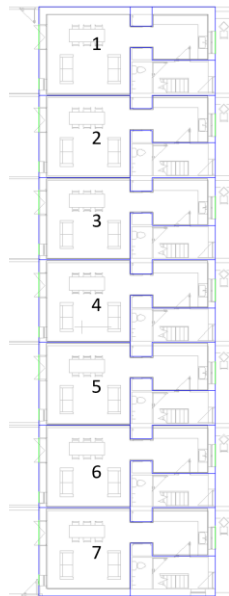
12.1.11 Block 5 (Houses) – L00

						
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	LKD	82	100	✓	100	✓
2	LKD	73	100	✓	100	✓
3	LKD	71	100	✓	100	✓
4	LKD	79	100	✓	100	✓
5	LKD	94	100	✓	100	✓
6	LKD	100	100	✓	100	✓

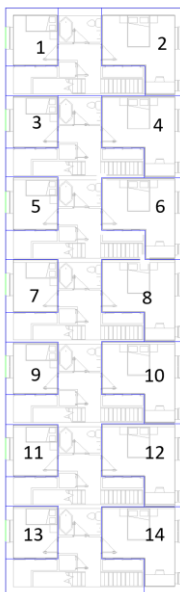
12.1.12 Block 5 (Houses) – L01

						
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	63	100	✓	100	✓
2	Bedroom	100	100	✓	100	✓
3	Bedroom	69	100	✓	100	✓
4	Bedroom	100	100	✓	100	✓
5	Bedroom	64	100	✓	100	✓
6	Bedroom	100	100	✓	100	✓
7	Bedroom	60	100	✓	100	✓
8	Bedroom	100	100	✓	100	✓
9	Bedroom	64	100	✓	100	✓
10	Bedroom	100	100	✓	100	✓
11	Bedroom	65	100	✓	100	✓
12	Bedroom	100	100	✓	100	✓

12.1.13 Block 6 (Houses) – L00

						
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	LKD	100	100	✓	100	✓
2	LKD	94	100	✓	100	✓
3	LKD	74	100	✓	100	✓
4	LKD	58	100	✓	99	✓
5	LKD	59	100	✓	100	✓
6	LKD	78	100	✓	100	✓
7	LKD	86	100	✓	100	✓

12.1.14 Block 6 (Houses) – L01

						
Ref.	Room Activity	BRE Guide 3 rd Edition IS EN 17037:2018 Method 2			BRE Guide 3 rd Edition BS EN 17037:2018 Method 2 National Annex	
		Floor Area > E _T (%)	Floor Area > E _{TM} (%)	Comment	Floor Area > E _T (%)	Comment
1	Bedroom	100	100	✓	100	✓
2	Bedroom	66	100	✓	100	✓
3	Bedroom	73	100	✓	100	✓
4	Bedroom	100	100	✓	100	✓
5	Bedroom	68	100	✓	100	✓
6	Bedroom	100	100	✓	100	✓
7	Bedroom	70	100	✓	100	✓
8	Bedroom	100	100	✓	100	✓
9	Bedroom	70	100	✓	100	✓
10	Bedroom	100	100	✓	100	✓
11	Bedroom	66	100	✓	100	✓
12	Bedroom	100	100	✓	100	✓
13	Bedroom	67	100	✓	100	✓
14	Bedroom	100	100	✓	100	✓

12.2 Compensatory Measures Table

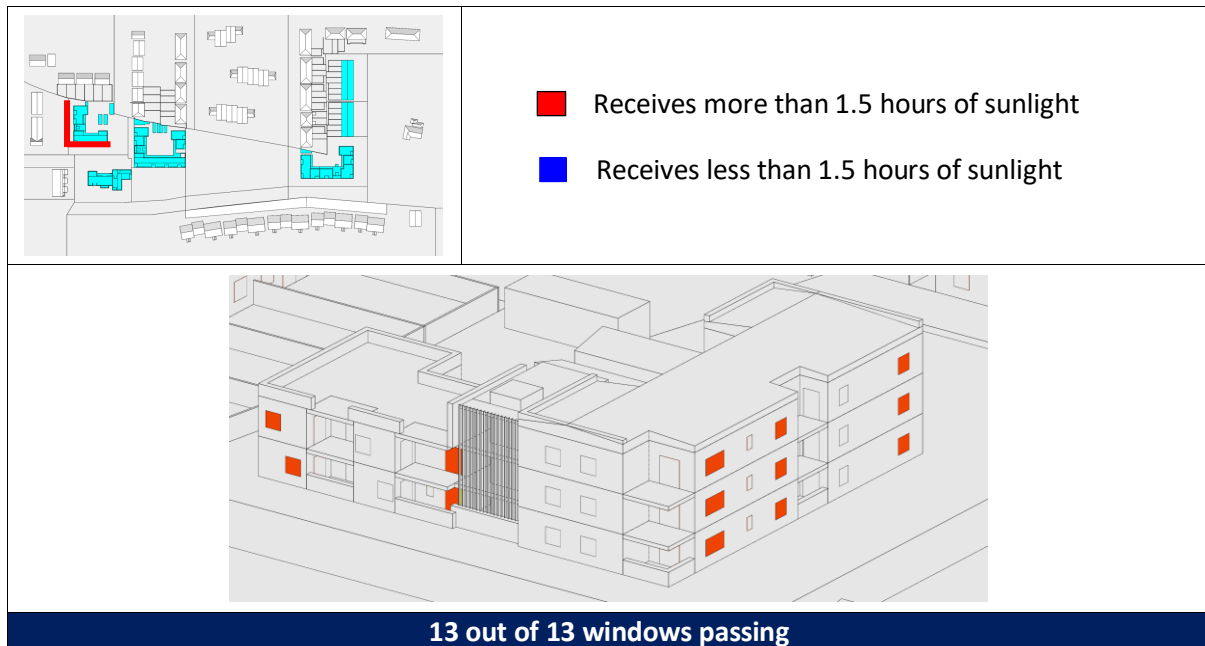
Unit	IES Ref	Unit GIA (m²)	Compensatory Measures					
			Unit floor area > minimum standard	Unit floor area ≥ 10% minimum standard	Private amenity area ≥ minimum standard	Unit has direct access to amenity space	Unit overlooks public or communal open space	Floor to ceiling height in excess of 2.4m
Apartment – Block 1 - Level 00								
L00: B1-01_Bedroom 01	3	76.10	✓		✓	✓	✓	✓
L00: B1-03_Bedroom 03	6	101.04	✓	✓	✓	✓	✓	✓
Apartment – Block 1 - Level 01								
L01: B1-01_Bedroom 01	3	76.10	✓		✓	✓	✓	✓
L01: B1-03_Bedroom 03	6	101.04	✓	✓	✓	✓	✓	✓
L01: B1-05_Bedroom 01	13	76.06	✓		✓	✓	✓	✓
Apartment – Block 1 - Level 02								
L02: B1-01_Bedroom 03	1	101.04	✓	✓	✓	✓	✓	✓
L02: B1-03_Bedroom 01	8	76.06	✓		✓	✓	✓	✓
Apartment – Block 3 - Level 01								
L01: B3-01_Bedroom 01	3	76.10	✓		✓	✓	✓	✓
L01: B3-02_Bedroom 01	4	52.85	✓	✓	✓	✓	✓	✓
L01: B3-03_Bedroom 03	6	101.04	✓	✓	✓	✓	✓	✓
L01: B3-06_LKD	16	76.90	✓		✓	✓	✓	✓
L01: B3-08_Bedroom 01	21	76.06	✓		✓	✓	✓	✓
L01: B3-08_LKD	22	76.06	✓		✓	✓	✓	✓
Apartment – Block 3 - Level 02								
L02: B3-01_Bedroom 01	3	76.10	✓		✓	✓	✓	✓
L02: B3-02_Bedroom 01	4	52.85	✓	✓	✓	✓	✓	✓
L02: B3-03_Bedroom 03	6	101.04	✓	✓	✓	✓	✓	✓
L02: B3-04_Bedroom 02	10	77.12	✓		✓	✓	✓	✓
L02: B3-05_LKD	13	77.12	✓		✓	✓	✓	✓
L02: B3-05_Bedroom 02	15	77.12	✓		✓	✓	✓	✓
L02: B3-06_LKD	17	76.90	✓		✓	✓	✓	✓
L02: B3-08_Bedroom 01	21	76.06	✓		✓	✓	✓	✓
Apartment – Block 4 - Level 00								
L00: B4-05_Bedroom 03	14	101.02	✓	✓	✓	✓	✓	✓
Apartment – Block 4 - Level 01								
L01: B4-03_LKD	7	52.90	✓	✓	✓	✓	✓	✓
L01: B4-05_Bedroom 03	14	101.01	✓	✓	✓	✓	✓	✓
L01: B4-07_Bedroom 01	17	52.07	✓	✓	✓	✓	✓	✓
Apartment – Block 4 - Level 02								
L02: B4-03_Bedroom 03	9	101.06	✓	✓	✓	✓	✓	✓

13 Appendix B – Sunlight Exposure Results

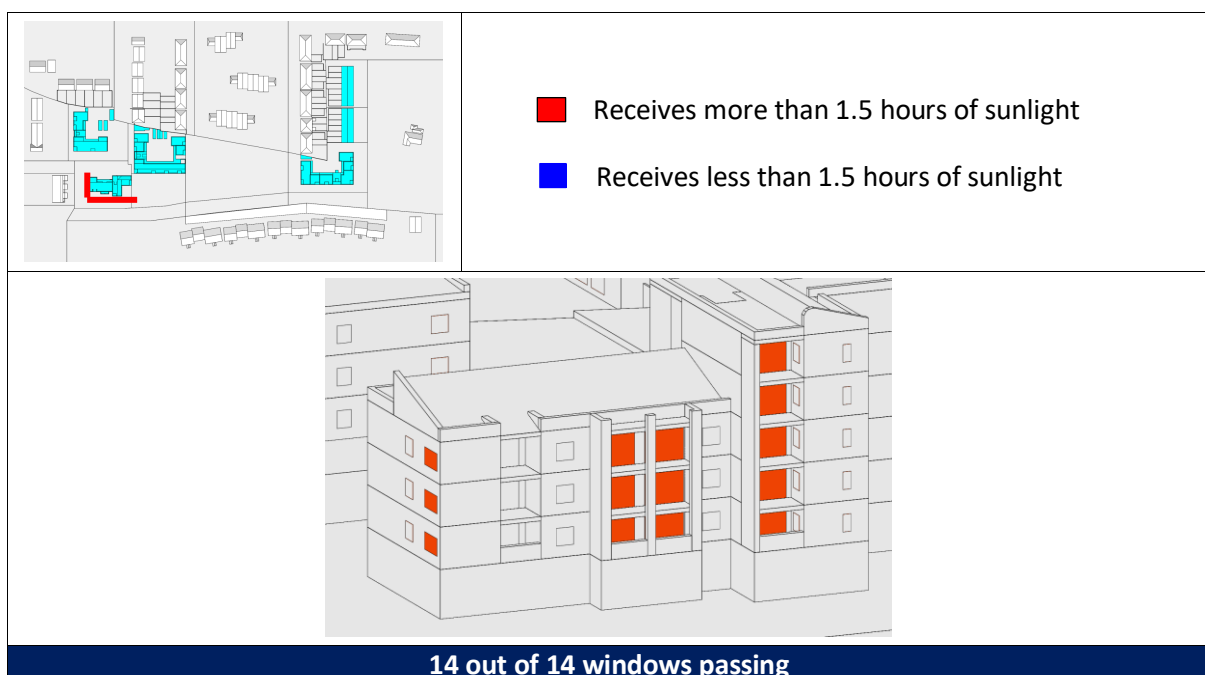
13.1 Sunlight Exposure Results

The IS EN 17037-2018+A1-2021 (BRE Guide 3rd Edition) sunlight exposure results tabulated in Section 8.2 for the proposed development are visually represented in the following images. The windows highlighted in “red” achieve the minimum 1.5 hours of recommended sunlight on March 21st, while the windows highlighted in “blue” do not achieve the recommended value.

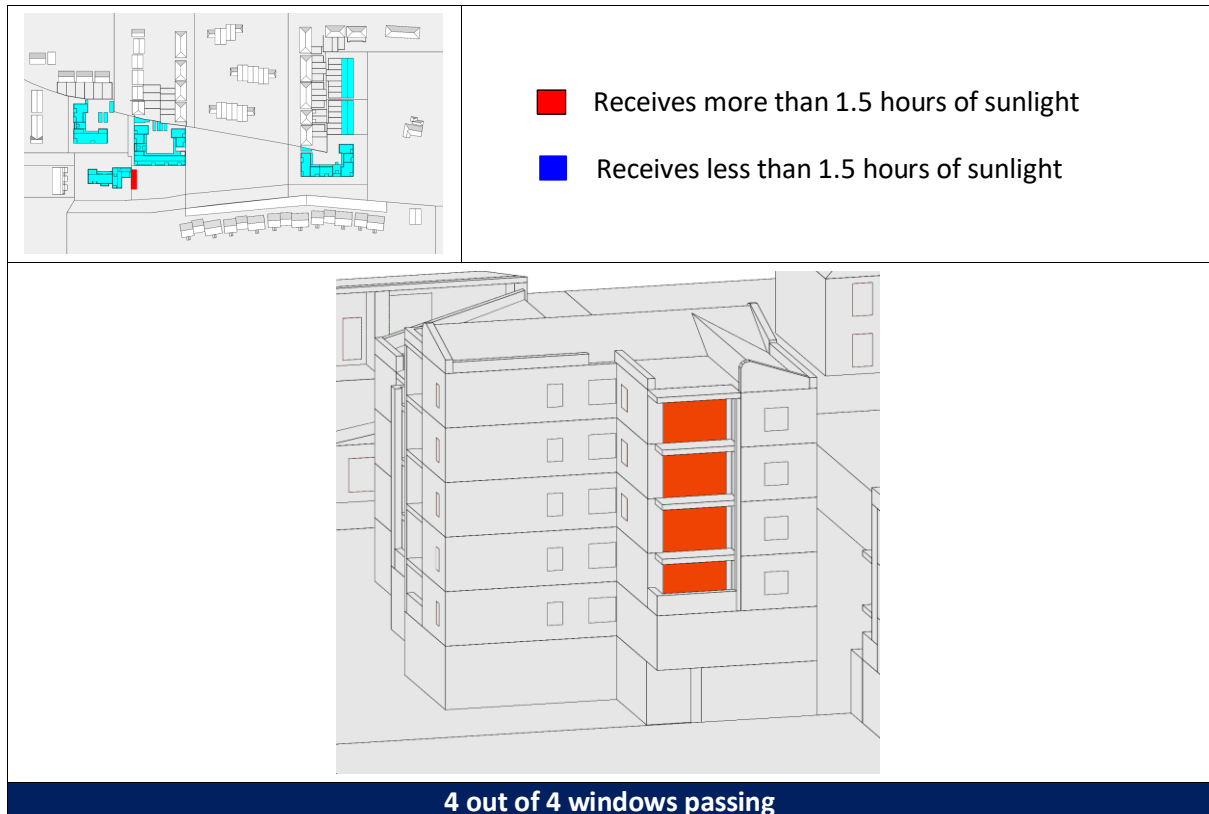
13.1.1 View 01 – Block 1



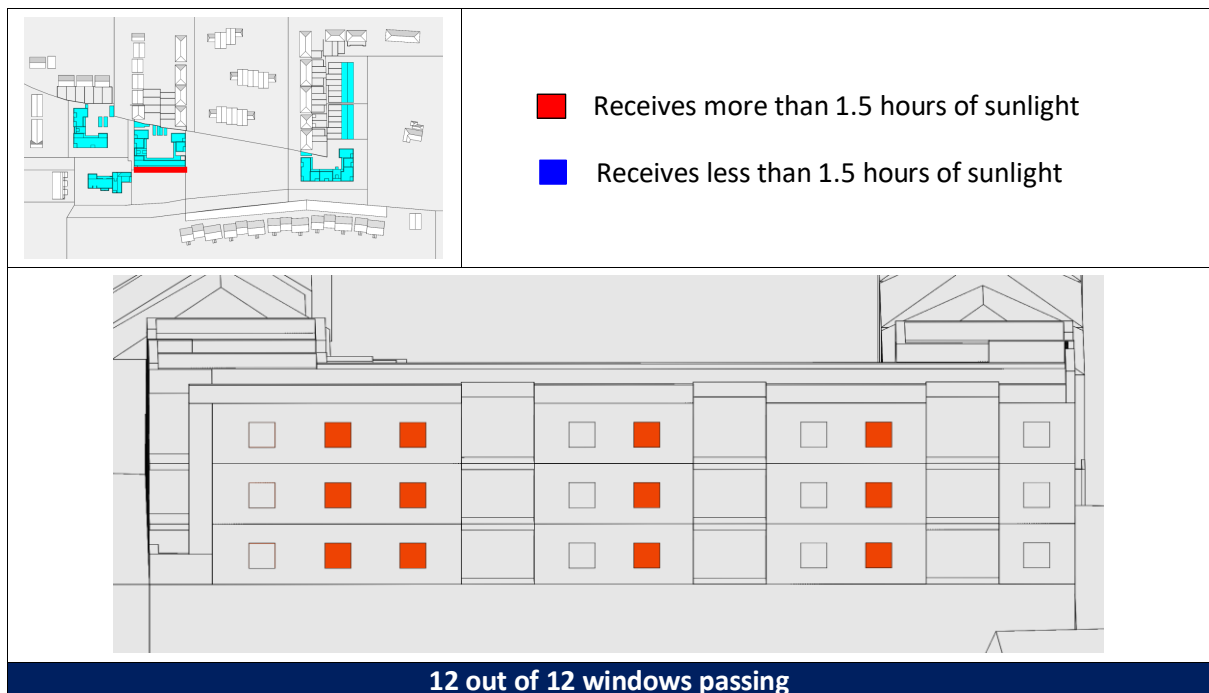
13.1.2 View 02 – Block 2



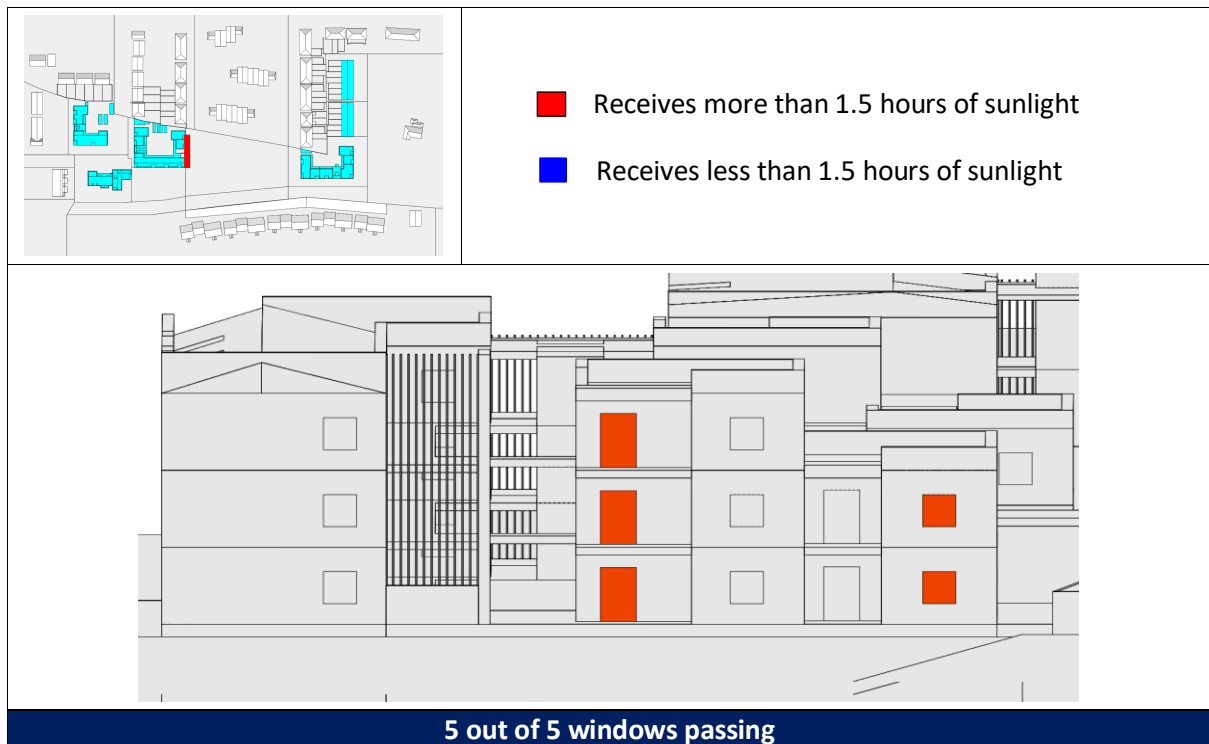
13.1.3 View 03 – Block 2



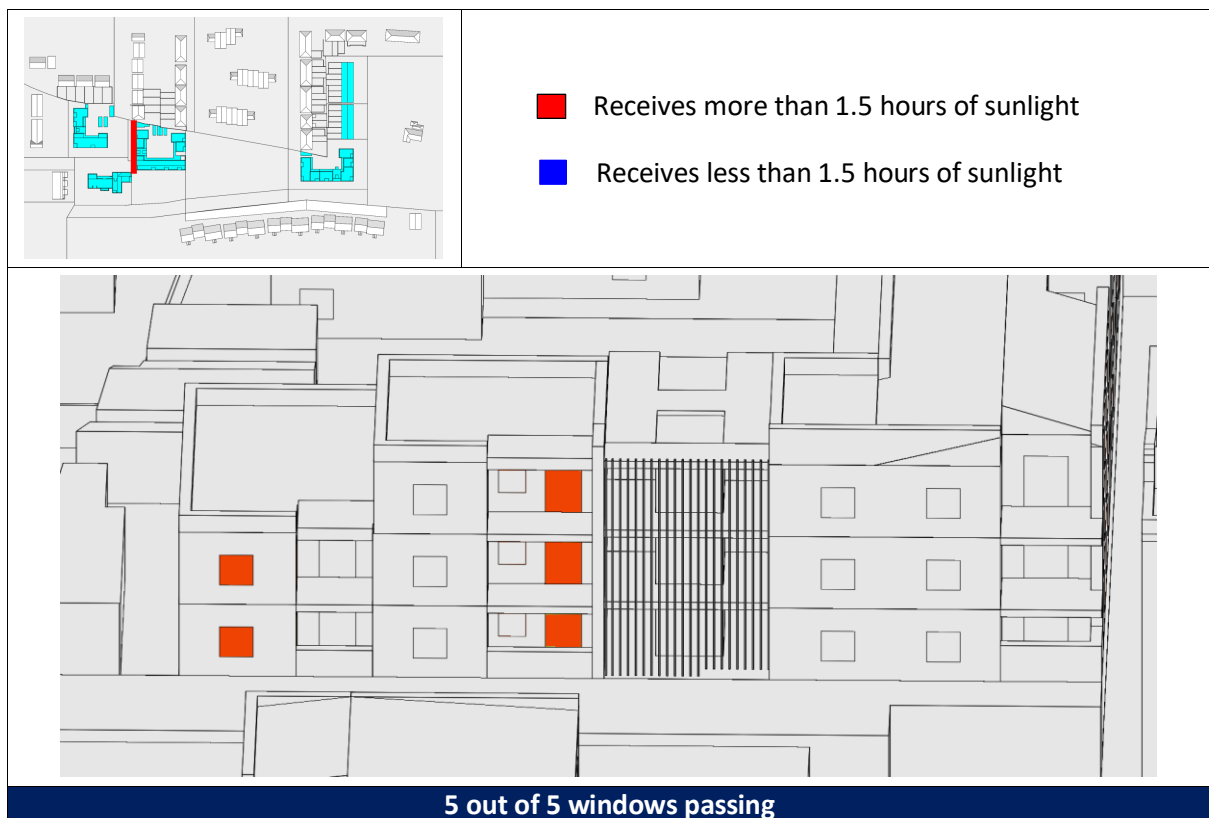
13.1.4 View 04 – Block 3



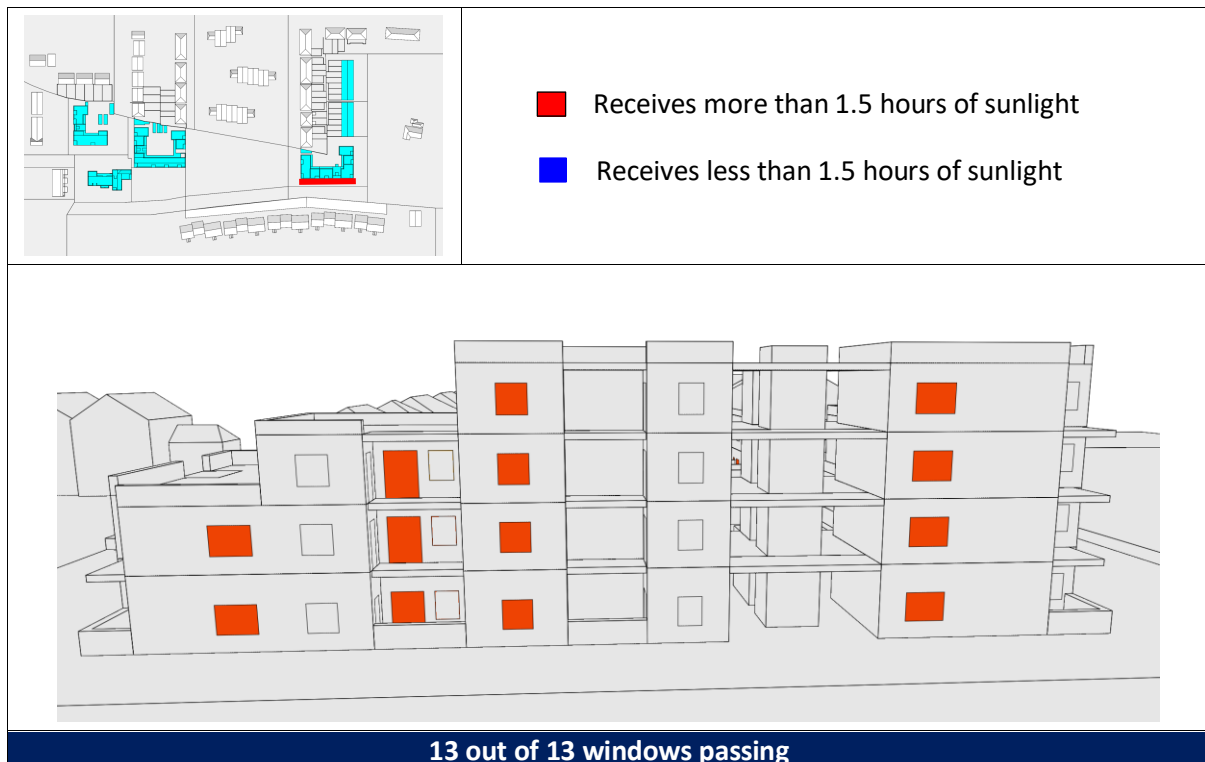
13.1.5 View 05 – Block 3



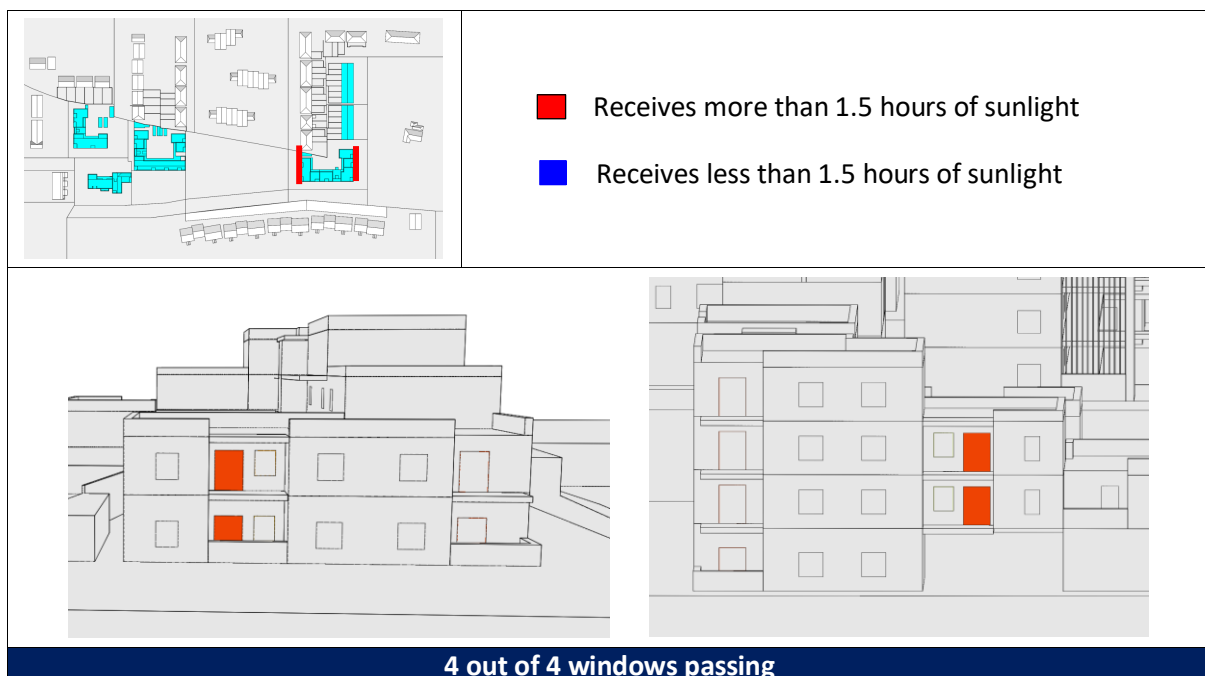
13.1.6 View 06 – Block 3



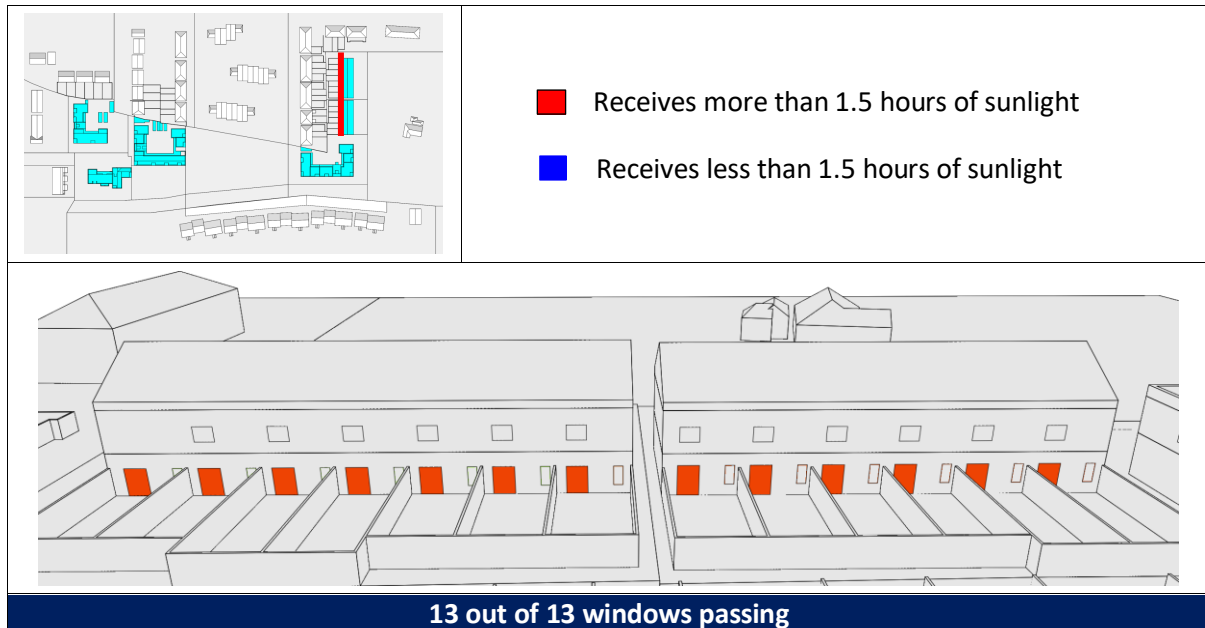
13.1.7 View 07 – Block 4



13.1.8 View 08 – Block 4



13.1.9 View 09 – Blocks 5 & 6 (Houses)





INTERNAL MEMO

Wednesday 27th March 2024

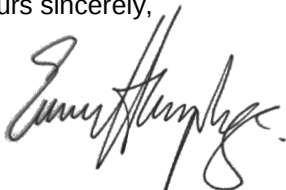
To: **John Doody**
Executive Planner, Planning Department

Re: **Part 8 Planning Submission – Ballyburke Proposed Neighbourhood Centre
and Social Housing Scheme – Site Notices Inspections for record**

The below is a summary of the inspections carried out on the public site notices erected for the part 8 planning application referenced above during the public inspection/observations period of **Thursday 18th January 2024 to Friday 1st March 2024** with accompanying images of same.

- Site notices erected 18/01/2024. Refer accompanying images,
- Site notices inspected 22/01/2024, one notice missing and replaced. Refer accompanying images,
- Site notices inspected 26/01/2024, all notices in place. Refer accompanying images,
- Site notices inspected 01/02/2024, one notice missing and replaced. Refer accompanying images,
- Site notices inspected 12/02/2024, all notices in place. Refer accompanying images,
- Site notices inspected 19/02/2024, all notices in place. Refer accompanying images,
- Site notices inspected 26/02/2024, two notices missing and replaced. Refer accompanying images.
- Site notices removed following 01/02/2024 after public inspection/observation period having ended.

Yours sincerely,



Emmet Humphreys
Senior Executive Architect
Infrastructure Development & Planning
Galway City Council

Site notices erected 18/01/2024



Site notices inspected 22/01/2024



Site notices inspected 26/01/2024



Site notices inspected 01/02/2024



Site notices inspected 12/02/2024



Site notices inspected 19/02/2024



Site notices inspected 26/02/2024

