

Chapter 12:

DAYLIGHT AND SUNLIGHT ASSESSMENT

12.0 DAYLIGHT & SUNLIGHT ASSESSMENT

12.1 Introduction

This chapter of the EIAR addresses the levels of natural light that will be available both within and around the proposed development; it should be read in conjunction with the technical which is submitted with the planning application. The technical report which is submitted with the planning application is titled “Assessment of daylight levels associated with a proposed residential development at Frascati Shopping Centre, Blackrock, Co. Dublin” and is dated 26th August 2020. In the interests of economy this report is referred to as “the supporting daylight report” within the remains of this chapter.

The assessment which has been carried out investigates two principal questions. In the first case consideration is given to the effect that the proposed development could have on the light levels available to neighbouring properties. Further to this the assessment considers the levels of daylight amenity which would be provided within the accommodation which is being proposed as part of this development.

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12.2 Study methodology

As mandated in Irish planning policy all assessments have been carried out with regard to the methods outlined in the BRE (Building Research Establishment) guide ‘*Site layout planning for daylight and sunlight - A guide to good practice*’ 2nd Edition and BS 8206-2: 2008 – ‘*Lighting for Buildings – Part 2: Code of Practice for Daylighting*’, British Standards Institute, 2008.

A total of six separate daylight studies are presented in this report.

In order to assess the degree to which neighbouring properties would be affected by this development the following three studies have been carried out:

Study A: Assessment of skylight access levels available to neighbouring accommodation: An assessment of the extent to which the proposed development could impact on the skylight access levels available to the accommodation located in neighbouring properties. Please refer to pages 10 to 16 of the supporting daylight report (report dated 26th August 2020) for a detailed description of the methodology employed in this study.

Study B: Assessment of sunlight access levels available to neighbouring accommodation: An assessment of the extent to which the proposed development could impact on the levels of sunlight access available to accommodation in neighbouring residences. Please refer to page 25 of the supporting daylight report (report dated 26th August 2020) for a detailed description of the methodology employed in this study.

Study C: Assessment of sunlight levels available to neighbouring recreation areas: An assessment of the extent to which the proposed development would impact on the levels of sunlight access available to neighbouring outdoor recreation areas. Please refer to pages 39 to 40 of the supporting daylight report (report dated 26th August 2020) for a detailed description of the methodology employed in this study.

Three additional studies have been carried out to assess the adequacy of the daylight levels which would be provided within the accommodation which is being proposed as part of this development:

Study D: Assessment of skylight amenity available within proposed accommodation: An assessment of the skylight amenity which would be provided within the accommodation which is being proposed as part of this development. Please refer to pages 46 to 47 of the supporting daylight report (report dated 26th August 2020) for a detailed description of the methodology employed in this study.

Study E: Assessment of sunlight amenity available to proposed accommodation: An assessment of the sunlight amenity which would be available to the accommodation which is being proposed as part of this development. Please refer to pages 68 to 69 of the supporting daylight report (report dated 26th August 2020) for a detailed description of the methodology employed in this study.

Study F: Assessment of sunlight amenity available within proposed outdoor recreation areas: An assessment of the degree to which the potential for good sunlighting exists within the main outdoor recreation space which is being proposed as part of this development. Please refer to page 89 of the supporting daylight report (report dated 26th August 2020) for a detailed description of the methodology employed in this study.

As recommended in the BRE guide, a quantitative approach to the assessment of daylight conditions has been adopted in this study. Numeric calculations have been carried out to predict the daylight levels which would be available at a number of test points and areas. The results of these calculations are presented in tables.

The quantitative assessment has been carried out using computational methods. Three-dimensional computer models of the existing site, the existing buildings, and the proposed development have all been generated and simulated under appropriate sky conditions in order to obtain accurate predictions.

Information relating to the proposed development and the surrounding areas has been supplied to BPG3 by Reddy Architecture and Urbanism in electronic format. The study assumes that the information provided is accurate and that no omissions have been made. The information which has been used to develop the models used in this study is detailed in Appendix E of the supporting daylight report (report dated 26th August 2020). In accordance with guidance provided in Appendix H of the BRE guide the effect which trees have on light levels has not been considered in this assessment.

12.3 The existing receiving environment (Baseline Situation)

The development proposed sits on top of an existing shopping centre and car park, the Frascati Centre, which is located to the south of Dublin city in Blackrock. The subject site is bounded to the north east by (a) Frascati Road and (b) the Lisalea apartment complex, (c) to the north west by a terrace of residences on Mount Merrion Ave, (d) to the west and south west by a number of residential properties on Frascati Park Road, and (e) to the south east by a number of residential properties on George's Avenue.

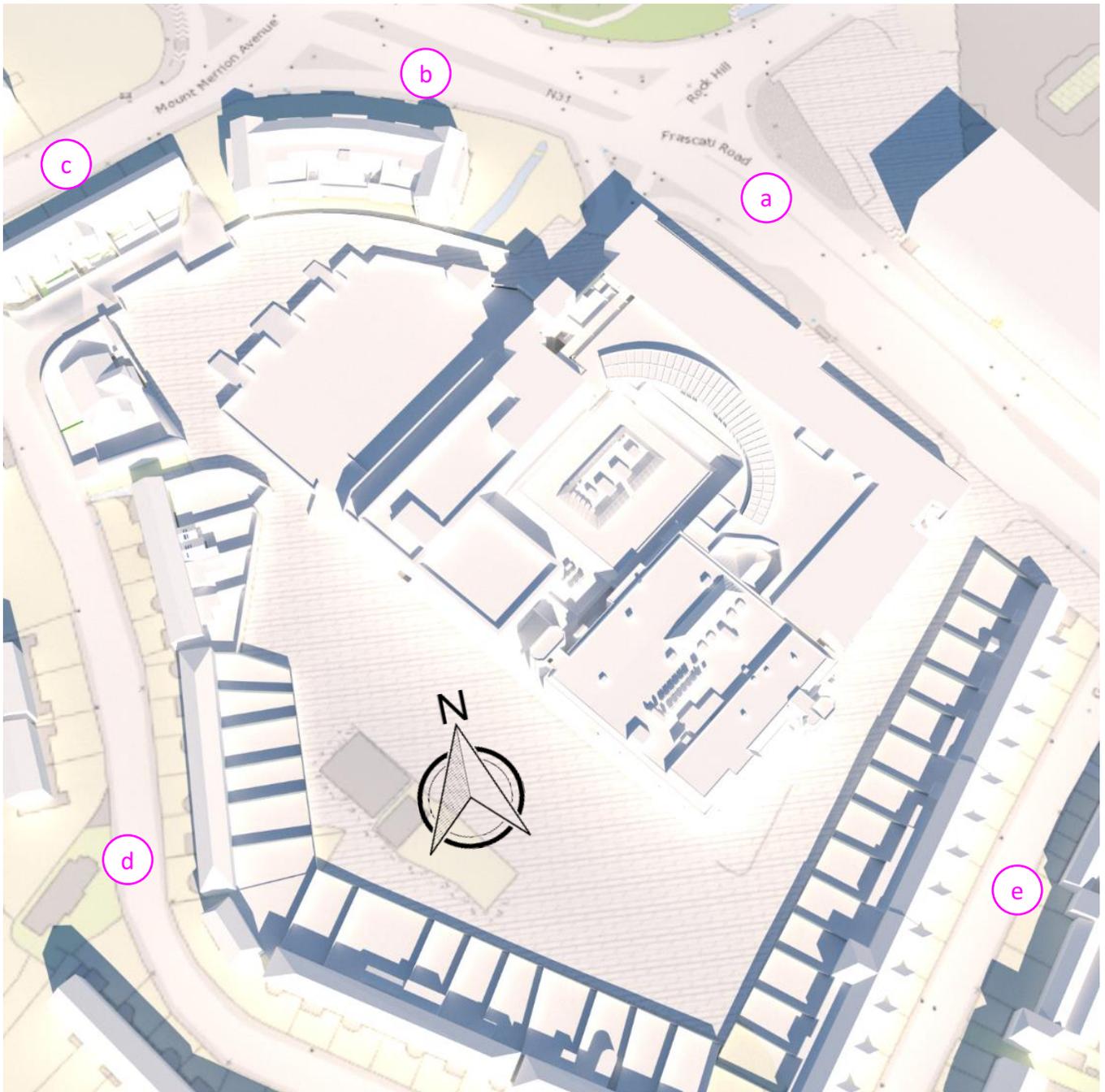


Figure 12.1: Image depicting baseline scenario

12.4 Characteristics of the proposed development

The development in question includes a total of 102 apartments which are organised into two separate phases including (a) Phase One which sits above the existing shopping centre (already permitted, with internal and external alterations proposed in this SHD application) and (b) Phase Two which sits above the existing / permitted podium car park.

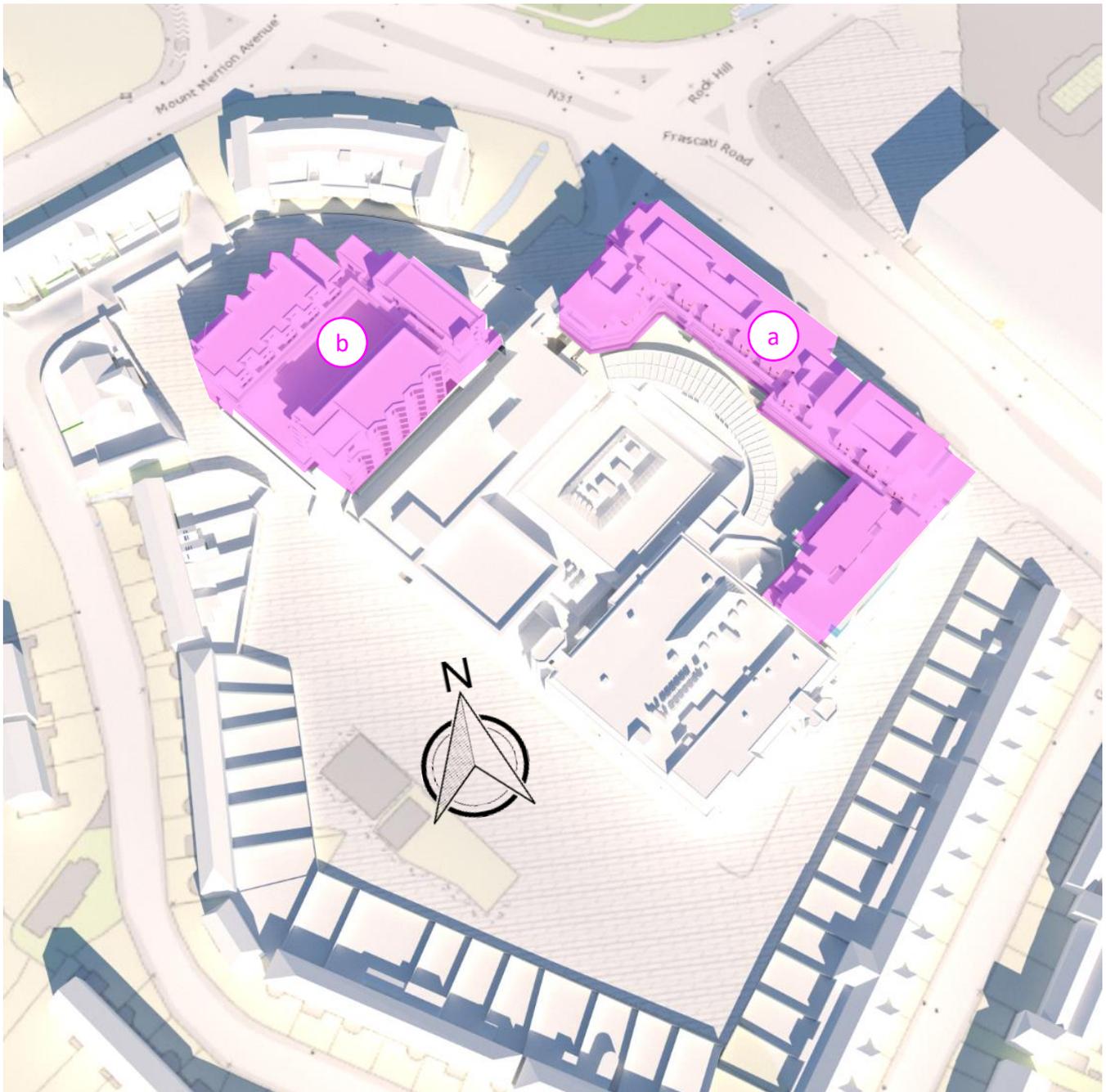


Figure 12.2: Image depicting baseline scenario with proposed development in place

12.5 Potential Impact of the proposed development

In assessing the significance of the sunlight and skylight predictions which have been obtained for this development it is important to bear a number of factors in mind. In the first instance it is clear that this development conforms to and experiences many of the typical issues which arise when developments are proposed on urban sites.

Having regard to the governments stated aims to support an increase in housing supply and to encourage sustainable development patterns, it is reasonable to propose that lands located at close proximity to urban centres must now be developed at higher densities. It is in this regard that it may not always be appropriate to pursue full compliance with the advisory targets recommended in the BRE Guide or BS 8206. While care should be taken to ensure that substantial levels of compliance with the recommendations in these guides are achieved, it is often the case that the particulars of a given site structurally impede the ability of a development to achieve full compliance at all points of assessment. In this regard it is important to weigh up the isolated

cases where full compliance with guideline targets has not been satisfied against the broader benefits which a development can provide to the compactness, vitality and viability of an emerging neighbourhood.

This assessment considers the **cumulative impact** that would be created by Phase 1 and Phase 2 of this development. The levels of skylight and sunlight predicted for the after development scenario also account for the final constructed form of the five storey office development at Enterprise House (*Ref.: D16A/0418 and ABP PL06D.247702, as amended under Reg. Ref.: D18A/0211*). The upgrade works to Blackrock Shopping Centre (Planning Reg. Ref.: D17A/0644) have not been considered as the location of this development is too far removed from sensitive receptors to have any significant effect.

The impact that the proposed development would have on baseline conditions has been assessed with regard to three separate studies including Study A, Study B and Study C. The results of these studies indicate that the minimum levels of skylight and sunlight access recommended in relevant guidelines would be satisfied in most cases.

Study A assessed the impact that the proposed development would have on the levels of skylight access which would be available to neighbouring accommodation. The results of this assessment indicate that skylight access levels, with the proposed development in place, would comply with advisory targets in the majority of cases. Where it has not been possible to demonstrate full compliance with advisory minimums for skylight access it has been possible to determine that the impacts in question would still fall within tolerable bounds. The results of this study are elaborated on pages 17 to 24 of the supporting report.

Study B assessed the impact that the proposed development would have on the levels of sunlight available to neighbouring accommodation. The results of this assessment indicate that substantial levels of compliance with advisory minimums would be achieved. In the small number of cases where it has not been possible to demonstrate full compliance with advisory minimums the magnitude of the departures registering is found to be modest. The results of this study are elaborated on pages 25 to 38 of the supporting report.

Study C assessed the impact that the proposed development would have on the levels of sunlight available to a number of neighbouring recreation areas. In this case full compliance with BRE guidelines has been demonstrated in all cases. It follows that no significant loss of sunlight amenity can be reasonably anticipated for any of the gardens located in the immediate neighbourhood of the proposed development. The results of this study are elaborated on pages 41 to 45 of the supporting report.

The adequacy of daylight levels within the proposed development has been assessed with regard to an additional three studies including Study D, Study E and Study F. The results of these studies indicate that acceptable levels of daylight amenity would be provided within this development.

Study D assessed the level of skylight amenity which the accommodation proposed within this development would be capable of receiving. The results of this study demonstrate that advisory minimums would be satisfied in most cases (a compliance rate of 93% is predicted). Having regard to this finding it is reasonable to conclude that the potential for acceptable levels of internal skylight amenity would be provided within this development. The results of this study are elaborated on pages 48 to 67 of the supporting report.

Study E assessed the levels of sunlight amenity which would be available to the accommodation which is being proposed as part of this development. The results of this study indicate that acceptable levels of sunlight access would be provided within the development and that this is particularly true when the aggregate contribution of unique sunlight hours, registering on all of the windows in each unit, is accounted for. While lower levels of sunlight access are identified within Phase 1 by comparison to Phase 2, it is also clear that the views over Dublin Bay which are available from Phase 1 accommodation represent a compensating factor. The results of this study are elaborated on pages 70 to 88 of the supporting report.

Study F assessed the levels of sunlight amenity which would be available to the principal outdoor recreation spaces which are being proposed as part of this development. The result of this study demonstrates that full compliance with guideline recommendations would be achieved in all cases; it follows that good levels of outdoor sunlight amenity can be anticipated. The results of this study are elaborated on pages 89 to 91 of the supporting report.

When assessed in the round, and in relation to the other factors which contribute to the proper planning and sustainable development of this area, it is possible to conclude that acceptable levels of daylight amenity would

be provided within this development and that acceptable levels of daylight would remain available to neighbouring properties.

12.6 'Do Nothing' Impact

In the 'Do Nothing' scenario no change in skylight or sunlight access levels are expected to register to neighbouring properties.

12.7 Avoidance, remedial & mitigation measures

The development as now proposed has benefited from an iterative design process and early stage inputs relating to daylight levels. More specifically the design as now proposed includes a number of features which would have been incorporated during the design process to address daylight concerns which were identified in early stage assessments. These features include setbacks at upper levels in locations where the development extends close to a common boundary with neighbouring residents.

The resulting design is considered to strike an appropriate balance between the need to safeguard the levels of daylight available to neighbouring properties and wider planning objectives including the delivery of new housing and urban consolidation.

No further mitigation measures are deemed necessary.

12.8 Predicted impacts of the proposed development

On the basis that no mitigation measures are proposed the predicted impacts will be the same as the potential impacts identified in Section 12.5.

12.9 Monitoring

Where impacts to neighbouring properties is concerned the development assessed can be regarded as a fixed obstruction to light which is unlikely to change over time. On this basis the monitoring of daylight levels to neighbouring properties is not necessary.

Where daylight adequacy within the proposed development is concerned the building owner should ensure that windows are cleaned on a routine basis.

12.10 Reinstatement

As the development proposed represents a permanent structure a consideration of reinstatement is not warranted.

12.11 Interactions

The pursuit of natural light is only one of a number of factors which has informed the design of this development. Where access to good levels of daylight relates to the size and form of the proposed development this also interacts with the number of units which can be accommodated on the site. Where access to good levels of daylight relates to the design of window systems and internal room layouts this also interacts with room sizes, floor to ceiling heights, overheating risk and energy consumption.

12.12 Difficulties Encountered in Compiling

The models which have been assessed in this study have been generated with principal regard to drawing information which has been provided by Reddy Architecture and Urbanism. As would be customary the drawing information provided by the design team represents the proposed development in great detail and neighbouring properties in outline form. While this information has been sufficient to define the outline position, height and shape of neighbouring properties it has not been sufficient to define the geometry of some of the internal rooms which needed to be assessed. In these circumstances the geometry for rooms in neighbouring properties has been defined with reference to the most recent planning drawings obtainable from the planning

authority, which is standard practice. It is assumed that the rooms in neighbouring properties remain substantially similar to the layouts depicted in these planning drawings.

12.13 References

- *Building Research Establishment, 2011. Site layout planning for daylight and sunlight: a guide to good practice. Garston.*
- *British Standards Institute, 2008. BS 8206-2:2008. Lighting for buildings. Code of practice for daylighting.*