

## 18 Daylight and Sunlight

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## 18.1 Introduction

ARC Architectural Consultants Ltd has been retained by the Applicant to prepare this Sunlight and Daylight Access Analysis of the proposed development on lands at St Joseph's House, Brewery Road and properties at Leopardstown Road, Dublin 18. This Chapter assesses the impact of the proposed development on sunlight and daylight access to lands outside the application site as part of the Environmental Impact Assessment Report. Sunlight and daylight access within the application site is assessed in the document entitled *Assessment of Sunlight & Daylight Access within the Proposed Development*, which is submitted separately as part of the application.

In assessing sunlight and daylight access analysis, Irish practitioners tend to refer to the relevant PJ Littlefair's 2011 revision of the 1991 publication *Site layout planning for daylight and sunlight: a guide to good practice* for the Building Research Establishment (the BRE Guide).

Section 1.7 of the BRE Guide provides: "*The guidance here is intended for use in the UK and Republic of Ireland*". Its use in assessing impacts on sunlight and daylight access as part of the planning process is supported by national government planning policy including:

- The *Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas*, which, at Section 7.2 states: "*Planning authorities should require that daylight and shadow projection diagrams be submitted in all such proposals. The recommendations of "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" (B.R.E. 1991)<sup>1</sup> or B.S. 8206 "Lighting for Buildings, Part 2 1992: Code of Practice for Daylighting" should be followed in this regard.*"
- The *Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities*, which, at Section 6.6, states: "*Planning authorities should have regard to quantitative performance approaches to daylight provision outlined in guides like the BRE guide 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting' when undertaken by development proposers which offer the capability to satisfy minimum standards of daylight provision.*"
- The *Urban Development and Building Height Guidelines*, which, at Section 3.2, states: "*Appropriate and reasonable regard should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment's 'Site Layout Planning for Daylight and Sunlight' (2nd edition) or BS 8206-2: 2008 – 'Lighting for Buildings – Part 2: Code of Practice for Daylighting'. Where a proposal may not be able to fully meet all 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, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints 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.*"

The standards for daylight and sunlight access in buildings (and the methodologies for assessment of same) suggested in the BRE Guide have been referenced in preparing this chapter. The BS 8206-2: 2008 – '*Lighting for Buildings – Part 2: Code of Practice for Daylighting*' was withdrawn in May 2019, while BS EN 17037: *Daylight in Buildings* was adopted in the United Kingdom in May 2019. Given this, this Chapter does not refer to BS 8206-2: 2018. In the interests of clarity, it should further be noted that this Chapter does not refer to IS EN 17037: *Daylight in Buildings* or BS EN 17037: *Daylight in Buildings* as the recommendations of those documents relate to the design of new buildings. Neither IS EN 17037 nor BS EN 17037 provide any guidance on the assessment of impacts on sunlight and daylight access within existing buildings.

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<sup>1</sup> The *Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas* refer to the first edition of the BRE Guide as published in 1991. A second edition of the Guide was published in 2011.

The BRE Guide does not set out rigid standards or limits, but is preceded by the following very clear warning as to how the design advice contained therein should be used:

*“The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design.” [Emphasis added.]*

## 18.2 The Existing Receiving Environment (Baseline)

The application site on the northern side of Leopardstown Road accommodates the large detached, one to two storey complex at St Joseph's House (a protected structure). The application site also accommodates ten one, one to two and two storey, detached dwellings along Leopardstown Road as follows: 'Madona House' (single storey), 'Woodleigh' (2 storeys), 'Cloonagh' (2 storeys), 'Souk El Raab (2 storeys), 'Welbrook' (2 storeys), 'Calador' (2 storeys), 'Alhambra' (2 storeys), 'Dalwhinnie' (2 storeys), 'Annaghkeen' (2 storeys) and 'The Crossing' (single storey).

The site is bounded to the south by Leopardstown Road, the lands to the south of which are characterised by modern two storey housing estates and the two storey LauraLynn Children's Hospice. To the north, the site is bounded by the adjacent greenway pathway and then by the two storey housing estate at Leopardstown Lawn, which in turn adjoins the public park at Leopardstown Park.

To the west, the lands are adjoined by the two storey housing estates at Silver Pines and The Chase (the Almshouses at Arkle Square at The Chase being an Architectural Conservation Area). The single storey Anne Sullivan Centre is also located to the west of the application site.

The wider area to the north, east and south of the application site is characterised by large areas of low density residential housing estates, which are generally typified by one or two storey houses. The application site is located to the east of the eastern edge of the Sandyford Industrial Estate, which has been, in recent, decades developed with numerous large scale commercial and high density residential developments.

## 18.3 Characteristics of the Proposed Development

The development will consist of a new residential and mixed use scheme to include apartments, residential amenity space, a café and a childcare facility. A detailed description is now set out as follows:

The development will consist of a new residential and mixed use scheme to include apartments, residential amenity space, a café and a childcare facility. A detailed description is now set out as follows:

The proposal provides for the demolition of 10 no. properties and associated outbuildings at 'Madona House' (single storey), 'Woodleigh' (2 storeys), 'Cloonagh' (2 storeys), 'Souk El Raab (2 storeys), 'Welbrook' (2 storeys), 'Calador' (2 storeys), 'Alhambra' (2 storeys), 'Dalwhinnie' (2 storeys), 'Annaghkeen' (2 storeys) and 'The Crossing' (single storey) (combined demolition approx. 2,291.3 sq m GFA).

The new development will provide for (a) the refurbishment, separation and material change of use of Saint Joseph's House (a Protected Structure, RPS No. 1548) from residential care facility to residential use and a childcare facility; and (b) the construction of a new build element to provide for an overall total of 463 no. residential units, residential amenity space and a café.

The overall development proposal shall provide for the following:

- Block A ( 5 storeys) comprising 49 no. apartments (13 no. 1 bed units, 33 no. 2 bed units and 3 no. 3 bed units);
- Block B (4 - 7 storeys) comprising 88 no. apartments (28 no. 1 bed units, 57 no. 2 bed units and 3 no. 3 bed units);
- Block C (5 - 7 storeys) comprising 115 no. apartments (26 no. studio units, 26 no. 1 bed units and 57 no. 2 bed units and 6 no. 3 bed units);

- Block D (5 - 10 storeys) comprising 157 no. apartments (36 no. studio unit, 40 no. 1 bed units and 81 no. 2 bed units), residential amenity areas of approx. 636 sq m and a café of approx. 49 sq m;
- Block E (St. Joseph's House) (2 storeys) comprising 9 no. apartments (8 no. 2 bed units and 1 no. 3 bed units) and a childcare facility of 282 sq m with associated outdoor play areas of approx. 130 sq m;
- Block F (3 - 6 storeys) comprising 45 no. apartments (23 no. studio units, 10 no. 1 bed units; and 12 no. 2 bed units);

Each new build residential unit (in Blocks A, B, C, D and F) has an associated area of private open space in the form of a terrace/balcony. Open Space proposals for St. Joseph's House (Block E) include a mixture of private terrace/balcony areas and communal open space areas.

The extent of works proposed to Saint Joseph's House (a Protected Structure) include:

- The demolition of a single storey office, conservatory, glazed link, external store, external enclosed escape stairs with associated canopies, toilet extension and 3 no. associated outbuildings to the west of St. Joseph's House (demolition total approx. 158 sq m GFA);
- The removal of external steel gates, all external steel escape stairs, canopies, existing disabled access ramps, concrete steps, an external wall and associated roof area;
- Relocation of external granite steps and the provision of a new raised entrance terrace, concrete steps and ramp areas;
- Replacement of existing rooflights, the addition of roof lights, part new roof / new zinc roof, new external wall and roof to the east of the structure;
- The provision of new door and window openings;
- Modifications to internal layout including the removal of walls and partitions and the addition of new dividing walls.

The Residential Amenity Areas of approx. 636 sq m proposed in Block D comprise a residential club house/multi-purpose room, library/reading room, lounge area, concierge area, office area, post room, fitness club, all at ground floor level of Block D. A terrace lounge area is proposed at fifth floor level of Block D. 2 no. roof garden areas are also proposed at fifth floor level of Blocks C and D (approx. 400 sq m and 408 sq m respectively).

Open Space (approx. 9,885 sq m) is proposed in the form of (a) public open space areas (approx. 6,680 sq m) which include a public plaza/court area, a main area of public open space (including a play area and outdoor gym area) and woodland trail; and (b) all communal open space areas (approx. 3,205 sq m) which include areas adjacent to St. Joseph's House (Block E), Block D and Block F, a courtyard and play area located between Blocks A and B and roof terraces at fifth floor level of Blocks C and D. Visual amenity open space areas (approx. 1,000 sq m) are also proposed at various locations throughout the development.

Basement Level (approx. 9,445 sq m) is proposed with residential access from Blocks A, B, C, D and F. Bin Storage areas, water storage areas, and part attenuation are located at this level. 2 no. ESB Substations, 1 no. ESB Kiosk, 2 no. Switch Rooms, waste storage areas for Block E (St. Joseph's House, A Protected Structure) and bicycle storage areas are proposed at surface level.

A total of 259 no. car parking spaces (232 no. at basement level and 27 no. at surface level) are proposed. At basement level, a total of 30 no. electric vehicles and 202 no. standard parking spaces are provided for. A total of 968 no. bicycle spaces (816 no. at basement level and 152 no. at surface level), dedicated cycle lift and 10 no. motorcycle spaces (all at basement level) are also proposed.

Proposals for vehicular access comprise 1 no. existing vehicular access point via Silver Pines (an existing all movement junction onto Brewery Road) and 1 no. new vehicular access point at the general location of 'Annaghkeen' at Leopardstown Road (a new Left In / Left Out junction arrangement). The new access point along Leopardstown Road will replace 9 no. existing access points at 'Woodleigh', 'Cloonagh', 'Souk El Raab', 'Welbrook', 'Calador', 'Alhambra', 'Dalwhinnie', 'Annaghkeen' and 'The Crossing'. The internal permeability proposed will provide linkages for pedestrians and cyclists to Leopardstown Road and adjoining Greenway. Proposals also provide for the relocation of an existing bus stop along Leopardstown Road.

The associated site and infrastructural works include provision for water services; foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works including tree protection, tree removal and new tree planting; green roofs; boundary treatment; internal roads and footpaths; and electrical services.

## 18.4 Daylight Access Impact Analysis

Daylight is defined in *Site layout planning for daylight and sunlight: a guide to good practice* for the Building Research Establishment (the BRE Guide) as “combined skylight and sunlight”. For the purpose of this analysis, Section 18.4 assesses the impact of the construction of the proposed development on daylight reaching defined opens in existing buildings (e.g. windows or other openings in existing buildings, such as patio doors) when the weather is overcast.

The impact of the proposed development on rays of the sun reaching neighbouring lands is described in Section 18.5 below.

### 18.4.1 Methodology

The only Irish statutory guidance to provide advice on undertaking sunlight and daylight access impact analysis is set out in the *Advice Notes on Current Practice* prepared by the Environmental Protection Agency (2003), which accompany the *Guidelines on the Information to be Contained in Environmental Impact Statements* prepared by the Environmental Protection Agency (2002). While the EPA issued *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* in 2017, revised drafts of the accompanying *Advice Notes on Current Practice* have yet to be published.

These Advice notes state: “Climate in an Environmental Impact Statement generally refers to the local climatological conditions or “microclimate” of an area, such as local wind flow, temperature, rainfall or solar radiation patterns ... it is important to identify receptors which may be particularly sensitive to climate change.” [Emphasis added.] Having regard to the Advice Notes, ARC undertook detailed quantitative analysis of those receptors particularly sensitive to changes in the daylight environment in order to provide an empirical basis for the conclusions outlined in this chapter.

In identifying receptors particularly sensitive to changes in the daylight environment, ARC considered two factors:

- (i) *the use of receptors (i.e. buildings) surrounding the application site: Section 2.2.2 of the BRE Guide provides: “The guidelines here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices”;*
- (ii) *the location of receptors relative to the application site: as set out in section 2.2.21 of the BRE Guide “If any part of a new building or extension, measured in vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends to an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected.”*

Given this, the receptors most sensitive to changes in the daylight environment as a result of the construction of development on the application site would be windows facing towards proposed new structures at low levels of accommodation in buildings in hospice and residential use in close proximity to the site (i.e. low level rooms in existing buildings at the children’s hospice at LauraLynn House and in residential buildings at The Chase, Silver Pines, Leopardstown Lawn, Leopardstown Avenue and Leopardstown Road). Therefore, ARC identified a representative sample of rooms and windows within these buildings for detailed quantitative analysis. The sample included buildings in

closest proximity to proposed new structures. In the chosen residential buildings, a sample “lowest window” (e.g. a ground floor window) was chosen in each building for analysis, having regard to section 2.2.21 of the BRE Guide. Existing buildings were omitted from the sample where ARC could not identify a sample window facing towards the proposed development to analyse (e.g. “Graffin” on Leopardstown Road). In the case of the Laura Lynn Hospice, all ground floor windows in the existing building closest to a proposed new structure were assessed. This sample is considered to include a worst case scenario (please see Figure 18.1 below).

Section 2.2.21 of the BRE Guide suggests that:

*“If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if ...*

*the VSC measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value...*

The BRE Guide defines VSC (Vertical Sky Component) as follows: *“Ratio of that part of illuminance, at a point on a given vertical plan, that is received directly from a CIE standard overcast sky, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The VSC does not include reflected light, either from the ground or from other buildings.”*

A three dimensional digital model of the proposed development and of existing buildings in the area was constructed by ARC Consultants based on drawings and three dimensional models supplied by the Design Team. Where survey data of surrounding context was not available, assumptions were made, with reference to on-site, satellite and aerial photography and to the online planning register, where relevant, in the creation of the three dimensional model. At paragraph H1.2, the BRE Guide states: *“It is generally more difficult to calculate the effects of trees on daylight because of their irregular shapes and because some light will generally penetrate through the tree crown. Where the effect of a new building on existing buildings nearby is being analysed, it is usual to ignore the effect of existing trees.”* Given this, existing and proposed landscaping was not included in this model.

ARC assessed the Vertical Sky Component of each sample window at a point at the centre of each sample window. Having regard to the extreme variability in sky luminance over the course of any given day depending on weather conditions and the changing seasons, this daylight access analysis uses the Commission Internationale de l’Eclairage (CIE) Standard Overcast Sky Distribution model in its calculations, which is the standard sky most commonly used in daylight access analysis and the sky recommended by the BRE Guide for use in assessing Vertical Sky Component. This model assumes that sky luminance varies from horizon to zenith and is considered to correspond to an overcast day. As such, calculation of daylight levels in a room in circumstances where the sky luminance corresponds to the CIE Standard Overcast Sky Distribution could be considered to represent a worst case scenario.

The below section sets out ARC’s approach to classifying impacts on the surrounding existing buildings. However, please note that, having regard to the particular sensitivity of hospice use, ARC assessed any impact where Vertical Sky Component is reduced to less than 0.8 times its former value as potentially adverse (even in circumstances where Vertical Sky Component remains above 27%).

#### **Definition of Effects on Daylight Access**

The assessment of the impact of the proposed development on daylight access had regard to the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* prepared by the Environmental Protection Agency (Draft of 2017), and to Directive 2011/92/EU (as amended by Directive 2014/52/EU) on the assessment of the likely effects of certain public and private projects on the environment.

In assessing whether a predicted effect of the proposal on daylight access is likely to be “imperceptible”, “not significant”, “slight”, “moderate”, “significant”, “very significant” or “profound” within the meaning of the EPA’s *Guidelines on the Information to be Contained in*

Environmental Impact Assessment Reports, ARC referred to Appendix I of the BRE Guide sets out advice on environment impact assessment. It states:

- 14 *The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.*
- 15 *Where the loss of skylight or sunlight fully meets the guidelines in this book, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or a limited area of open space lose light (within the guidelines), a classification of negligible impact is more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space.*
- 16 *Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:*
  - *only a small number of windows or limited area of open space are affected*
  - *the loss of light is only marginally outside the guidelines*
  - *an affected room has other source of skylight or sunlight*
  - *the affected building or open space only has a low level requirement for skylight or sunlight*
  - *there are particular reasons why an alternative, less stringent, guidelines should be applied (see Appendix F)*
- 17 *Factors tending towards a major adverse impact include:*
  - *a large number of windows or large area of open space are affected*
  - *the loss of light is substantially outside the guidelines*
  - *all the windows in a particular property are affected*
  - *the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, eg a living room in a dwelling or a children's playground.*

Having considered the factors outlined in Appendix I of the BRE Guide, ARC's assessment classifies the impact of the proposed development on daylight and sunlight access within existing buildings or open spaces with reference to the list of definitions set out at *Table 3.3: Descriptions of Effects* contained in the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* prepared by the Environmental Protection Agency. The definitions from the EPA document are in italics, while some comment is also given below on what ARC considers these definitions might imply in the case of daylight access (e.g. having regard to Appendix I of the BRE Guide). Please note that, for the purpose of this chapter, the word "effect" is taken to have the same meaning as the word "impact".

- **Imperceptible:** *An effect capable of measurement but without significant consequences.* The definition implies that the development would cause a change in the daylight received at a location, capable of measurement, but not noticeable to the casual observer. If the development caused no change in daylight access, there could be no effect. Examples of "imperceptible" impacts on daylight access would include:
  - (a) a scenario where the proposed development is predicted to reduce the Vertical Sky Component received by a sample window, but the sample window will continue to receive the relevant recommended level of Vertical Sky Component after the construction of the proposed development; and
  - (b) a scenario where the proposed development is predicted to reduce the Vertical Sky Component to not less than 0.8 times its former value (i.e. the BRE Guide threshold for an adverse impact).
- **Not Significant:** *An effect which causes noticeable<sup>2</sup> changes in the character of the environment but without significant consequences* (the footnote "2" to the word "noticeable" is: "for the purposes

of planning consent procedures”). The definition implies that the development would cause a change in the daylight received at a location, which is capable of measurement and capable of being noticed by an observer who is taking an active interest in the extent to which the proposal might affect daylight access.

- **Slight:** An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. For this definition to apply, the amount of daylight received at a location would be changed by the construction of the development to an extent that is both capable of measurement and is noticeable to a minor degree. However, the daylight environment within an existing building should remain largely unchanged. An example of a “slight” impact would be a scenario where, although the impact of the proposed development is not predicted to reduce the amount of daylight received by a sample window to less than 0.8 times its former value, the amount of light received by the sample window is predicted to fall below a key recommended level, whether that is the BRE Guide recommended target value or an alternative target value. A further example of a “slight” impact would be where, although the construction of the proposed development is predicted to reduce the amount of light received to a level below the BRE Guide threshold for an adverse impact, the predicted reduction is just outside that BRE Guide threshold (e.g. the amount of daylight received by a sample window falls to not less than 0.7 times its existing value\*). A “slight” impact could also occur where there is a more considerable reduction in daylight by a sample window within an existing building, but only a small number of windows within that property are affected to that extent.
- **Moderate:** An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. In this case, a development must bring about a change in the daylight environment within an existing building; and this change must be consistent with a pattern of change that is already occurring, is likely to occur. A moderate effect would occur where other developments were bringing about changes in daylight access of similar extent in the area. A “moderate” impact might also be considered to occur where the level of daylight received by a sample window falls below the BRE Guide recommended level and to between 0.5 and 0.7 times its existing value, subject to consideration of other factors\*.
- **Significant:** An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. The definition implies that the existence of the development would change the extent of daylight access in a manner that is not “consistent with existing and emerging baseline trends”. For example, a development resulting in a “significant” diminution of daylight access would reduce daylight to the extent that minimum standards for daylighting are not met and artificial lighting is required for part of the day. A “significant” impact could occur where the predicted reduction in daylight access is greater than what is envisaged to occur if the application site were developed in line with existing and emerging baseline trends. Subject to consideration of other factors, a “significant” impact could occur where daylight access to the sample window falls to between 0.25 and 0.5 times its former value\*.
- **Very Significant:** An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment. The definition implies that the existence of the development would change the extent of daylight access to a considerable degree and in a manner that is not “consistent with existing and emerging baseline trends”. For example, a “very significant” effect would occur where a development would result in daylight received in a room falling well below the minimum standards for daylighting and where artificial lighting would be required in that room as the principal source of lighting all the time. A “very significant” impact could occur where the predicted reduction in daylight access is considerably greater than what is envisaged to occur if the application site were developed in line with existing and emerging baseline trends. Subject to consideration of other factors, a “very significant” impact could occur where daylight access to the sample window falls to between 0.01 and 0.25 times its former value\*.
- **Profound:** An effect which obliterates sensitive characteristics. Examples of development resulting in a “profound” effect on daylight access would include facilitating daylight access to a room in an existing building where the existing room has none (e.g. as a result of the demolition of a building) or by removal of all access to daylight within an existing building.

- \* Please note that, while this section sets out indicative quantitative ranges that could apply to each type of impact, this assessment considers a range of factors (such as relevant target values, the use of the affected building, the number of rooms affected within the building, etc) in classifying impacts.

In relation to daylight access, it is conceivable that a development could result in positive effects, but this implies that a development would involve a reduction of the size or scale of built form (e.g. such as the demolition of a building, which might result in an increase in daylight access). Though that is possible, it is usually unlikely as most development involves the construction of new obstructions to daylight access.

#### 18.4.2 Potential Impact of the Proposed Development on Daylight Access

##### Construction Phase

The potential impact of the construction phase of the proposed development on daylight access is likely to be, initially, lesser than the potential impact of the completed development. As the proposed development nears completion, the potential impact of the emerging development is likely to be similar in all material respects to that of the completed development. It is noted that temporary structures and machinery (e.g. hoarding, scaffolding, cranes, etc.) have the potential to result in changes in daylight access in buildings, although any additional impacts arising from temporary structures or machinery are likely to be temporary and minor.

##### Operational Phase

Section 2.1.1 of the BRE Guide provides that *“The quantity and quality of daylight inside a room will be impaired if obstructing buildings are large in relation to their distance away”*. Generally speaking, new development is most likely to affect daylight access in existing buildings in close proximity to the application site.

##### Overview of the potential impact of the proposed development on daylight access to existing buildings outside the application site

ARC's analysis indicates a potential for the proposed development to result in “imperceptible” to “slight” to “moderate” changes in daylight access within existing buildings facing towards the application site in neighbouring residential estates at The Chase (including Sir Ivor Mall and Minstrel Court), Silver Pines (including the Anne Sullivan Centre), Leopardstown Lawns and Leopardstown Avenue. Under a worst case scenario, the potential impact of the proposed development on daylight access within existing buildings on lands to the west, north and east will be consistent with emerging trends for development in the area, particularly having regard to the scale of development previously permitted on the site and in the wider Sandyford Area.

Due to the extent of intervening distance, the construction of the proposed development has the potential to result in little or no change in daylight access within residences to the south of Leopardstown Road or to the Children's Sunshine Home. However, the potential impact of the proposed development on existing buildings at the LauraLynn House Children's Hospice is likely to range from none to “imperceptible” to “significant”<sup>2</sup>. The proposed development has the potential to result in a “significant” change in daylight access to north-facing rooms within the LauraLynn House Children's Hospice opposing the proposed Block C, the hospice use of this complex is assumed to be particularly sensitive to impacts on daylight access.

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<sup>2</sup> Having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. Please note that, having regard to the particular sensitivity of hospice use, ARC assessed any impact where Vertical Sky Component is reduced to less than 0.8 times its former value as potentially adverse (even in circumstances where Vertical Sky Component remains above 27%). This goes further than the BRE Guide which suggests that an impact on daylight access may be fall within adverse ranges when VSC falls to less than 27% and when the VSC falls to less than 0.8 times its former value.

Given that the potential for development to result in impacts on daylight access diminishes with distance, it is the finding of ARC's analysis that the proposed development will have no undue adverse impact on daylight access within buildings in the wider area surrounding the application site.

Detailed analysis of the potential impact of the proposed development on daylight access to existing buildings outside the application site

This chapter assesses the impact of the proposed development to all potential receptors surrounding the application site - these impacts are described in the overview section above. However, by way of example in order to illustrate briefly the findings outlined in the overview section, ARC conducted detailed analysis of the potential for the proposed development to result in impacts on daylight access to a representative sample of sensitive receptors (i.e. rooms) in buildings in proximity to the application site (please see Figure 18.1 below).



**Figure 18.1 - Indicative diagram showing location of sample windows (indicated with a red dot) assessed under this chapter**

As explained in Section 18.3.1 above, ARC measured daylight access to existing buildings before and after the construction of the proposed development with reference to Vertical Sky Component to identify whether the construction of the proposed development creates the potential for adverse impacts on daylight access. Section 2.2.21 of the BRE Guide suggests that: “If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building, from the centre of the lowest window, subtends an angle of more than 25° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if ...the VSC measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value...”.

The results of ARC's analysis are set out in Table 18.1 below, together with a short comment on each result.

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
Zone 01	Sir Ivor Mall, The Chase	Floor 00	27.80%	22.70%	0.82	Imperceptible to Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.82 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce Vertical Sky Component at the window from slightly above the recommended 27% Vertical Sky Component to below it.					
Zone 02	Sir Ivor Mall, The Chase	Floor 00	33.40%	24.40%	0.73	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.73 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 03	Sir Ivor Mall, The Chase	Floor 00	32.60%	25.90%	0.79	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.79 times its former value after the construction of the proposed development (i.e. just below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 04	Sir Ivor Mall, The Chase	Floor 00	34.60%	27.80%	0.80	Imperceptible to Not Significant
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.80 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). This window is likely to continue to receive more than 27% Vertical Sky Component after the construction of the BRE Guide. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, it is noted that the reduction in Vertical Sky Component is close to the BRE Guide threshold for adverse impact. Therefore, taking a conservative approach, this impact is assessed as "imperceptible" to "not significant" as, if noticeable, the changes in the character of the daylight environment are unlikely to have significant consequences.					
Zone 05	Sir Ivor Mall, The Chase	Floor 00	33.40%	29.40%	0.88	Imperceptible
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.88 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). This window is likely to continue to receive more than 27% Vertical Sky Component after the construction of the BRE Guide. The BRE Guide would suggest that the reduction in Vertical Sky Component at this window is likely to be "imperceptible".					

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
Zone 06	Sir Ivor Mall, The Chase	Floor 00	26.60%	24.40%	0.92	Imperceptible
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.92 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). The reduction in Vertical Sky Component at this window is likely to be so minor as to be imperceptible.					
Zone 07	Minstrel Court, The Chase	Floor 00	27.90%	26.10%	0.94	Imperceptible to Not Significant
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.94 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). The reduction in Vertical Sky Component at this window is likely to be so minor as to be imperceptible. However, taking a conservative approach, given that the construction of the proposed development has the potential to reduce Vertical Sky Component at this window from just above the recommended 27% Vertical Sky Component to just below it, the potential impact is assessed as "imperceptible" to "not significant".					
Zone 08	Minstrel Court, The Chase	Floor 00	23.20%	18.90%	0.81	Imperceptible to Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.81 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce Vertical Sky Component at the window further below the recommended 27% Vertical Sky Component and close to the BRE Guide threshold for adverse impact.					
Zone 09	Minstrel Court, The Chase	Floor 00	26.70%	21.70%	0.81	Imperceptible to Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.81 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce Vertical Sky Component at the window further below the recommended 27% Vertical Sky Component and close to the BRE Guide threshold for adverse impact.					
Zone 10	Minstrel Court, The Chase	Floor 00	27.00%	20.60%	0.76	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.76 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 11	Minstrel Court, The Chase	Floor 00	27.00%	20.40%	0.76	Slight

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.76 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 12	Minstrel Court, The Chase	Floor 00	27.30%	20.70%	0.76	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.76 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 13	Minstrel Court, The Chase	Floor 00	26.70%	20.40%	0.76	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.76 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 14	Minstrel Court, The Chase	Floor 00	25.30%	20.60%	0.81	Imperceptible to Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.81 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce Vertical Sky Component at the window to further below the recommended 27% Vertical Sky Component and close to the BRE Guide threshold for adverse impact.					
Zone 15	Silver Pines	Floor 00	33.30%	22.90%	0.69	Slight to Moderate
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.69 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.5-0.7 times its former value is assessed as "slight" to "moderate" in extent.					
Zone 16	Silver Pines	Floor 00	33.70%	24.10%	0.72	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.72 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
Zone 17	Silver Pines	Floor 00	33.40%	24.50%	0.73	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.73 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 18	Silver Pines	Floor 00	34.60%	24.80%	0.72	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.72 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 19	Anne Sullivan Centre	Floor 00	35.90%	28.90%	0.81	Imperceptible to Not Significant
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.81 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). This window is likely to continue to receive more than 27% Vertical Sky Component after the construction of the BRE Guide. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, it is noted that the reduction in Vertical Sky Component is close to the BRE Guide threshold for adverse impact. Therefore, taking a conservative approach, this impact is assessed as "imperceptible" to "not significant" as, if noticeable, the changes in the character of the daylight environment are unlikely to have significant consequences.					
Zone 20	Leopardstown Lawn	Floor 00	25.30%	19.70%	0.78	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.78 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 21	Leopardstown Lawn	Floor 00	25.30%	19.50%	0.77	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.77 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 22	Leopardstown Lawn	Floor 00	27.40%	20.80%	0.76	Slight

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.76 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 23	Leopardstown Lawn	Floor 00	27.50%	20.80%	0.76	Imperceptible to Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.76 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 24	Leopardstown Lawn	Floor 00	26.70%	20.80%	0.78	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.78 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 25	Leopardstown Lawn	Floor 00	25.40%	20.10%	0.79	Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.79 times its former value after the construction of the proposed development (i.e. just below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent.					
Zone 26	Leopardstown Lawn	Floor 00	23.60%	19.40%	0.82	Imperceptible to Slight
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.82 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce Vertical Sky Component at the window further below the recommended 27% Vertical Sky Component and close to the BRE Guide threshold for adverse impacts.					
Zone 27	Leopardstown Lawn	Floor 00	24.10%	20.60%	0.85	Imperceptible
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.85 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). The BRE Guide would suggest that the reduction in Vertical Sky Component at this window is likely to be "imperceptible".					

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
Zone 28	Leopardstown Lawn	Floor 00	35.30%	32.60%	0.92	Imperceptible
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.92 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). This window is likely to continue to receive more than 27% Vertical Sky Component after the construction of the BRE Guide. The BRE Guide would suggest that the reduction in Vertical Sky Component at this window is likely to be "imperceptible".					
Zone 29	Leopardstown Lawn	Floor 00	34.80%	32.50%	0.93	Imperceptible
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.93 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). This window is likely to continue to receive more than 27% Vertical Sky Component after the construction of the BRE Guide. The BRE Guide would suggest that the reduction in Vertical Sky Component at this window is likely to be "imperceptible".					
Zone 30	Leopardstown Avenue	Floor 00	36.50%	33.60%	0.92	Imperceptible
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.92 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). This window is likely to continue to receive more than 27% Vertical Sky Component after the construction of the BRE Guide. The reduction in Vertical Sky Component at this window is likely to be so minor as to be imperceptible.					
Zone 31	LauraLynn House	Floor 00	37.00%	31.40%	0.85	Imperceptible to Moderate
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.85 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). Given that the Vertical Sky Component at this window is likely to remain above the recommended 27% Vertical Sky Component and will not fall to less than 0.85 times its former value, the BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children's hospital use, a conservative approach has been taken in this Chapter and this impact is assessed as "imperceptible" to "moderate".					
Zone 32	LauraLynn House	Floor 00	35.60%	28.90%	0.81	Imperceptible to Moderate
	ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.81 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). Given that the Vertical Sky Component at this window is likely to remain above the recommended 27% Vertical Sky Component and will not fall to less than 0.85 times its former value, the BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children's hospital use, a conservative approach has been taken in this Chapter and this impact is assessed as "imperceptible" to "moderate".					
Zone 33	LauraLynn House	Floor 00	35.50%	27.60%	0.78	Imperceptible to Significant

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
			<p>Given that ARC's analysis indicates that Vertical Sky Component at this window is likely to remain above the recommended 27% Vertical Sky Component after the construction of the proposed development, the BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. The BRE Guide which suggests that an impact on daylight access may fall within adverse ranges when Vertical Sky Component falls to less than 27% <u>and</u> when the Vertical Sky Component falls to less than 0.8 times its former value. In the case of this window, given that Vertical Sky Component is likely to fall to 0.78 times its former value, the potential impact is assessed as "significant" under a worst case scenario.</p>			
Zone 34	LauraLynn House	Floor 00	35.30%	27.10%	0.77	Imperceptible to Significant
	<p>Given that ARC's analysis indicates that Vertical Sky Component at this window is likely to remain above the recommended 27% Vertical Sky Component after the construction of the proposed development, the BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. The BRE Guide which suggests that an impact on daylight access may fall within adverse ranges when Vertical Sky Component falls to less than 27% <u>and</u> when the Vertical Sky Component falls to less than 0.8 times its former value. In the case of this window, given that Vertical Sky Component is likely to fall to 0.77 times its former value, the potential impact is assessed as "significant" under a worst case scenario.</p>					
Zone 35	LauraLynn House	Floor 00	35.00%	24.80%	0.71	Slight to Significant
	<p>ARC's analysis indicates that Vertical Sky Component is likely to fall below the recommended 27% Vertical Sky Component and decrease to approximately 0.71 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. The BRE Guide which suggests that an impact on daylight access may fall within adverse ranges when Vertical Sky Component falls to less than 27% <u>and</u> when the Vertical Sky Component falls to less than 0.8 times its former value. In the case of this window, given that VSC is likely to fall to less than the recommended 27% Vertical Sky Component and to 0.71 times its former value, the potential impact is assessed as "significant" under a worst case scenario.</p>					
Zone 36	LauraLynn House	Floor 00	38.00%	27.50%	0.72	Imperceptible to Significant
	<p>Given that ARC's analysis indicates that Vertical Sky Component at this window is likely to remain above the recommended 27% Vertical Sky Component after the construction of the proposed development, the BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. The BRE Guide which suggests that an impact on daylight access may fall within adverse ranges when Vertical Sky Component falls to less than 27% <u>and</u> when the Vertical Sky Component falls to less than 0.8 times its former value. In the case of this window, given that Vertical Sky Component is likely to fall to 0.72 times its former value, the potential impact is assessed as "significant" under a worst case scenario.</p>					

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
Zone 37	LauraLynn House	Floor 01	33.20%	24.50%	0.74	Slight to Significant
	<p>ARC's analysis indicates that Vertical Sky Component is likely to fall below the recommended 27% Vertical Sky Component and decrease to approximately 0.71 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. The BRE Guide which suggests that an impact on daylight access may fall within adverse ranges when Vertical Sky Component falls to less than 27% <u>and</u> when the Vertical Sky Component falls to less than 0.8 times its former value. In the case of this window, given that Vertical Sky Component is likely to fall to less than the recommended 27% Vertical Sky Component and to 0.74 times its former value, the potential impact is assessed as "significant" under a worst case scenario.</p>					
Zone 38	LauraLynn House	Floor 01	39.40%	29.30%	0.74	Imperceptible to Significant
	<p>Given that ARC's analysis indicates that Vertical Sky Component at this window is likely to remain above the recommended 27% Vertical Sky Component after the construction of the proposed development, the BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. The BRE Guide which suggests that an impact on daylight access may fall within adverse ranges when Vertical Sky Component falls to less than 27% <u>and</u> when the Vertical Sky Component falls to less than 0.8 times its former value. In the case of this window, given that Vertical Sky Component is likely to fall to 0.74 times its former value, the potential impact is assessed as "significant" under a worst case scenario.</p>					
Zone 39	LauraLynn House	Floor 01	37.80%	26.70%	0.71	Slight to Significant
	<p>ARC's analysis indicates that Vertical Sky Component is likely to fall below the recommended 27% Vertical Sky Component and decrease to approximately 0.71 times its former value after the construction of the proposed development (i.e. below 0.8 times its former value, the BRE Guide threshold for adverse impact). As explained in more detail in Section 18.4.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in Vertical Sky Component at this window to between 0.7-0.8 times its former value is assessed as "slight" in extent. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. The BRE Guide which suggests that an impact on daylight access may fall within adverse ranges when Vertical Sky Component falls to less than 27% <u>and</u> when the Vertical Sky Component falls to less than 0.8 times its former value. In the case of this window, given that Vertical Sky Component is likely to fall to less than the recommended 27% Vertical Sky Component and to 0.71 times its former value, the potential impact is assessed as "significant" under a worst case scenario.</p>					
Zone 40	The Children's Sunshine Home	Floor 00	38.70%	35.50%	0.92	Imperceptible
	<p>ARC's analysis indicates that Vertical Sky Component is likely to decrease to approximately 0.92 times its former value after the construction of the proposed development (i.e. not below 0.8 times its former value, the BRE Guide threshold for adverse impact). This window is likely to continue to</p>					

Zone	Location	Floor	Vertical Sky Component			
			Existing	Proposed	Change (times former value)	Potential Impact
			receive more than 27% Vertical Sky Component after the construction of the BRE Guide. The reduction in Vertical Sky Component at this window is likely to be so minor as to be imperceptible.			

\* Survey information of all structures on private lands surrounding the application site was not available. Where insufficient survey information was available and window sizes / locations could not be informed by information available from the online planning register or from aerial photography, window sizes / locations were estimated by ARC.

**Table 18.1: Potential impact of the proposed development on daylight access to sample windows\* in existing buildings in proximity to the application site**

As highlighted by the Table above, ARC’s analysis indicates a potential for the proposed development to result in “imperceptible” to “slight” to “moderate” changes in Vertical Sky Component at the sample windows assessed in the existing buildings facing towards the application site in neighbouring residential estates at The Chase (including Sir Ivor Mall and Minstrel Court), Silver Pines (including the Anne Sullivan Centre), Leopardstown Lawns and Leopardstown Avenue. Under a worst case scenario, the potential impact of the proposed development on Vertical Sky Component at the sample windows assessed in the existing buildings on lands to the west, north and east will be consistent with emerging trends for development in the area, particularly having regard to the scale of development previously permitted on the site and in the wider Sandyford Area.

Due to the extent of intervening distance, the construction of the proposed development has the potential to result in little or no change in daylight access within residences to the south of Leopardstown Road. As set out in Table 18.1, the construction of the proposed development has the potential to result in an “imperceptible” to “not significant” impact on Vertical Sky Component at the sample window in the existing building analysed at the Children’s Sunshine Home.

Having regard to the particular sensitivity of the children’s hospice use of LauraLynn House, any impact falling within a potentially adverse range was assessed as being potentially significant out of an abundance of caution. ARC assessed any impact where Vertical Sky Component is reduced to less than 0.8 times its former value as potentially adverse (even in circumstances where Vertical Sky Component remains above 27%). This goes further than the BRE Guide which suggests that an impact on daylight access may be fall within adverse ranges when VSC falls to less than 27% and when the VSC falls to less than 0.8 times its former value. Given this, Table 18.1 further indicates that the potential impact of the proposed development on Vertical Sky Component at the sample windows in the closest existing building at the LauraLynn House Children’s Hospice is likely to range from none to “imperceptible” to “significant”.

**18.4.3 Potential Cumulative Impacts**

A review of the Dun Laoghaire-Rathdown County Council online planning register did not identify any developments for which permission has been granted, which, in combination with the development now proposed, would have the potential to result in material cumulative impacts on the daylight environment surrounding the application site.

#### 18.4.4 Mitigation Measures

##### Construction Phase

The subject application proposes the development of a large zoned site in a residential area. In these circumstances, scope for mitigation measures during the construction phase, which would preserve a sustainable level of density, is limited.

##### Operational Phase

The subject application proposes the development of a large zoned site in a residential area. In these circumstances, scope for mitigation measures during the operational phase, which would preserve a sustainable level of density, is limited.

#### 18.4.5 Predicted Impacts of the Proposed Development on Daylight Access

##### Construction Phase

As no ameliorative, remedial or reductive measures are now proposed, the predicted impact of the proposed development on daylight access is likely to be as described under Section 18.4.2 above.

##### Operational Phase

As no ameliorative, remedial or reductive measures are now proposed, the predicted impact of the proposed development on daylight access is likely to be as described under Section 18.4.2 above.

#### 18.4.6 Do Nothing Scenario

Planning permission was previously granted for the demolition of the 3 no. existing residential dwellings known as 'Annaghkeen', Dalwhinnie' and 'Marian Villa' and associated outbuildings and the construction of a residential development in buildings ranging in height from two to five storeys, partly over dual access basement level, together with the material change of use of St Joseph's House from residential care facility to residential use (DLRCC Reg. Ref. D17A/0337; ABP PL 06D.249248). In a "do nothing" scenario where the development permitted under DLRCC Reg. Ref. D17A/0337; ABP PL 06D.249248 is constructed, the daylight levels within neighbouring buildings outside the application site, particularly those closest to the permitted new structures such as those at Silver Pines, Leopardstown Lawn, Leopardstown Avenue and Leopardstown Road, are likely to be reduced to some extent.

#### 18.4.7 Risks to Human Health

The Institute of Public Health in Ireland in *Health Impacts of the Built Environment: a review* (July 2006) highlights the implications of daylight access for human health as follows: "Levels of illumination, particularly the amount of daylight exposure, can impact on psychological well-being. An association has been found between depression and lack of adequate daylight. Furthermore, there may be an association between the amount of natural light in schools and pupil motivation and effective learning time."

*Site layout planning for daylight and sunlight: a guide to good practice* (the BRE Guide) does not suggest levels of daylight required to ensure human health or discuss the implications of a reduction in daylight access on human health. However, while the following documents are not relevant to the assessment of the impact of development on daylight access, the below comments on the importance of daylight to human health are considered instructive. Section 3.2: Daylight and health of the *British Standard, BS 8206-2:2008: Lighting for buildings - Part 2: Code of practice for daylighting* (the British Standard; withdrawn in May 2019) acknowledged "the role of the circadian system (which controls daily and seasonal body rhythms)" in linking functions of the body with the cycle of day and night. It went on to state that "it is important that occupants of buildings ... are given access to high levels of daylight, particularly in the mornings, to assist the entrainment of circadian rhythms." The British Standard also noted that "mood can be modified by lighting" and that exposure to daylight can

reduce symptoms in those suffering from seasonal affective disorder (SAD). European Document EN 17037: 2018 *Daylight in Buildings* (adopted in Ireland as I.S. EN 17037:2018) does not make reference to the health implications of daylight access in buildings other than stating: “*Daylight openings provide views and connection to outside and contribute to the psychological well-being of occupants*”.

#### 18.4.8 Interactions

As is always the case where a development will result in a change to the daylight environment within existing buildings, the impacts of the development on daylight access will result in interactions with climate, and population and human health.

### 18.5 Sunlight Access Impact Analysis

Sunlight is not defined in *Site layout planning for daylight and sunlight: a guide to good practice* for the Building Research Establishment (the BRE Guide). The Commission Internationale de L'Éclairage / International Commission on Illumination defines sunlight as meaning the “*part of direct solar radiation capable of causing a visual sensation*” (Source: 17-29-103, CIE S 017:2020 ILV: *International Lighting Vocabulary*, 2nd edition).

For the purpose of this analysis, Section 18.5 assesses the impact of the construction of the proposed development on the rays of the sun reaching defined opes in existing buildings (e.g. windows or other openings in existing buildings, such as patio doors) and reaching neighbouring gardens or amenity spaces.

Section 18.4 above assesses the impact of the construction of the proposed development on daylight reaching defined opes in existing building (e.g. windows or or other openings in existing buildings, such as patio doors) when the weather is overcast.

#### 18.5.1 Methodology

The only Irish statutory guidance to provide advice on undertaking sunlight and daylight access impact analysis is set out in the *Advice Notes on Current Practice* prepared by the Environmental Protection Agency (2003), which accompany the *Guidelines on the Information to be Contained in Environmental Impact Statements* prepared by the Environmental Protection Agency (2002). While the EPA issued *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* in 2017, revised drafts of the accompanying *Advice Notes on Current Practice* have yet to be published.

These Advice notes state: “*Climate in an Environmental Impact Statement generally refers to the local climatological conditions or “microclimate” of an area, such as local wind flow, temperature, rainfall or solar radiation patterns ... it is important to identify receptors which may be particularly sensitive to climate change.*” [Emphasis added.] Having regard to the Advice Notes, ARC undertook detailed quantitative analysis of those receptors particularly sensitive to changes in the sunlight environment in order to provide an empirical basis for the conclusions outlined this chapter.

In identifying receptors particularly sensitive to changes in the shadow environment, ARC considered two factors:

- (i) *the use of receptors (i.e. buildings or gardens) surrounding the application site*: buildings in residential use (and, particularly, habitable rooms within residences) and associated amenity spaces would be considered to be sensitive to changes in the shadow environment. This assessment also assumes that the children’s hospice at LauraLynn House would be sensitive to changes in the shadow environment;

- (ii) the location of receptors relative to the application site: for example, as set out in section 3.2.2 of the BRE Guide “obstruction to sunlight may become an issue if some part of a new development is situated within 90° of due south of a main windows wall of an existing building” and if “in the section drawn perpendicular to this existing window wall, the new development subtends an angle greater than 25° to the horizontal measured from the centre of the lowest window to a main living room” (Emphasis added).

Given this, the receptors most sensitive to changes in the shadow environment as a result of the construction of development on the application site would be windows facing towards the proposal at low levels of accommodation with a reasonable expectation of sunlight (i.e. facing within 90 degrees of due south, within the meaning of the BRE Guide) in buildings in residential use located to the east, west or north of new structures proposed on the application site. Therefore, ARC identified a representative sample of windows at low levels of accommodation in existing neighbouring houses in close proximity to the site (i.e. low level rooms in existing buildings at The Chase, Silver Pines (including the Anne Sullivan Centre), Leopardstown Lawn and Leopardstown Avenue). While located to the south of the proposed development, ARC also included receptors in the Children’s Sunshine Home and at the LauraLynn Children’s Hospice. The sample included buildings in closest proximity to proposed new structures. In the chosen residential buildings, a sample “lowest window” (e.g. a ground floor window) was chosen in each building for analysis, having regard to section 3.2.2 of the BRE Guide. Existing buildings were omitted from the sample where ARC could not identify a sample window facing towards the proposed development to analyse (e.g. “Graifin” on Leopardstown Road). In the case of the Laura Lynn Hospice, all ground floor windows in the existing building closest to a proposed new structure were assessed. This sample is considered to include a worst case scenario (please see Figure 18.2 below).

The BRE Guide does not outline a recommended level of sunlight access to be achieved by windows facing within 90° of due north (i.e. such as Zones 01-06 at Sir Ivor Mall and Zones 17-25 at LauraLynn House). The BRE Guide also does not describe a threshold for adverse impact on such windows. Notwithstanding this, in the interests of completeness, this chapter includes detailed quantitative analysis of the potential impact of the proposed development on sample north-facing windows at in these existing north-facing buildings with reference to the tests outlined for windows facing within 90° of due south. The results of ARC’s analysis are set out in Table 18.2 below.

Section 3.2.1 of the *Site layout planning for daylight and sunlight: a guide to good practice* (the BRE Guide) provides as follows in relation to the assessment of the impact of development on sunlight access to existing buildings.

*“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, or less than 5% of annual probable sunlight hours between 21 September and 21 March and*
- *receives less than 0.8 times its former sunlight hours during either period and*
- *has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.”*

Section 3.3 of the BRE Guide sets out design advice and recommendations for site layout planning to ensure good sunlight access to amenity spaces and to minimise the impact of new development on existing amenity spaces. The Guide suggests 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 sunlight on 21 March.

A three dimensional digital model of the proposed development and of existing buildings in the area was constructed by ARC Consultants based on drawings and three dimensional models supplied by the Design Team. Where survey data of surrounding context was not available, assumptions were

made, with reference to on-site, satellite and aerial photography and to the online planning register, where relevant, in the creation of the three dimensional model.

Section 3.3.9 of the BRE Guide provides that the “question of whether trees or fences should be included in the calculation depends upon the type of shade they produce. Normally trees and shrubs need not be included, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building (this applies especially to deciduous trees).” Given this, existing and proposed landscaping was not included in the assessment model.

Using the digital model, shadows were cast by ARC at several times of the day at the summer and winter solstices, and at the equinox. An equinox occurs twice a year: the March or vernal equinox (typically in or around the 20th to 21st March) and the September or autumnal equinox (typically in or around the 21st to 23rd September). For the purposes of this analysis and with reference to the BRE Guide, shadows were cast at several times of the day on 21st March.

The results are presented in shadow study diagrams associated with this report. Two images have been prepared for each time period on each representative date as follows:

- Receiving Environment: this image shows the shadows cast by the existing buildings only. Existing buildings surrounding the application site are shown in light grey, while existing buildings on the application site are shown in orange. The shadows cast are shown in a dark grey tone.
- Proposed Development: this image shows the shadows cast by the existing buildings together with the shadows cast by the proposed development. The existing buildings surrounding the site are shown in light grey, while the proposed development on the application site is shown in blue. The shadows cast are shown in a dark grey tone.

In order to calculate sunlight access to rooms, ARC referenced the methodology outlined in Appendix A: Indicators to calculate access to skylight, sunlight and solar radiation of the BRE Guide. Using proprietary sunlight and daylight access analysis software, ARC analysed a sunpath diagram overlaid with a shading mask corresponding to the existing or proposed shadow environment (as appropriate) and the sunlight probability diagram for a latitude of 53° N (i.e. Dublin) for a reference point (i.e. the centre point) of each sample study window. The sunlight availability indicator has 100 spots on it. Each of these represents 1% of annual probable sunlight hours (APSH). The percentage of APSH at the reference point is found by counting up all the unobstructed spots.

In order to calculate sunlight access to rear gardens, ARC used proprietary sunlight analysis software to calculate the proportion of sample gardens in sunlight at regular intervals on 21<sup>st</sup> March in circumstances where the existing environment remains unchanged, in circumstances where the proposed development is constructed.

#### **Definition of Effects on Sunlight Access**

The assessment of the impact of the proposed development on sunlight access had regard to the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* prepared by the Environmental Protection Agency (Draft of 2017), and to Directive 2011/92/EU (as amended by Directive 2014/52/EU) on the assessment of the likely effects of certain public and private projects on the environment.

In assessing whether a predicted effect of the proposal on sunlight access is likely to be “imperceptible”, “not significant”, “slight”, “moderate”, “significant”, “very significant” or “profound” within the meaning of the EPA’s *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*, ARC referred to Appendix I of the BRE Guide sets out advice on environment impact assessment. It states:

- 14 *The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.*

- 15 Where the loss of skylight or sunlight fully meets the guidelines in this book, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or a limited area of open space lose light (within the guidelines), a classification of negligible impact is more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space.
- 16 Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:
  - only a small number of windows or limited area of open space are affected
  - the loss of light is only marginally outside the guidelines
  - an affected room has other source of skylight or sunlight
  - the affected building or open space only has a low level requirement for skylight or sunlight
  - there are particular reasons why an alternative, less stringent, guidelines should be applied (see Appendix F).
- 17 Factors tending towards a major adverse impact include:
  - a large number of windows or large area of open space are affected
  - the loss of light is substantially outside the guidelines
  - all the windows in a particular property are affected
  - the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, eg a living room in a dwelling or a children's playground.

Having considered the factors outlined in Appendix I of the BRE Guide, ARC's assessment classifies the impact of the proposed development on daylight and sunlight access within existing buildings or open spaces with reference to the list of definitions set out at Table 3.3: Descriptions of Effects contained in the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports prepared by the Environmental Protection Agency. The definitions from the EPA document are in italics, while some comment is also given below on what ARC considers these definitions might imply in the case of daylight access (e.g. having regard to Appendix I of the BRE Guide). Please note that, for the purpose of this chapter, the word "effect" is taken to have the same meaning as the word "impact".

- **Imperceptible:** *An effect capable of measurement but without significant consequences.* The definition implies that the development would cause a change in the sunlight received at a location, capable of measurement, but not noticeable to the casual observer. If the development caused no change in sunlight access, there could be no effect. Examples of "imperceptible" impacts on sunlight access would include:
  - (a) a scenario where the proposed development is predicted to reduce the amount of sunlight received by a sample window, but the sample window will continue to receive the relevant recommended level of Annual Probable Sunlight Hours after the construction of the proposed development; and
  - (b) a scenario where the proposed development is predicted to reduce the Annual Probable Sunlight Hours received by a sample window to not less than 0.8 times its existing value (i.e. the BRE Guide threshold for an adverse impact). Similarly, where sunlight access to a sample garden is reduced, the impact of proposed development could be considered to be "imperceptible" or "not significant" where the sample garden continues to receive at least two hours of sunlight over half its area on 21st March, and, where the area of the garden capable of receiving sunlight on 21st March does not drop to less than 0.8 times its existing level after the construction of the proposed development.
- **Not Significant:** *An effect which causes noticeable<sup>2</sup> changes in the character of the environment but without significant consequences* (the footnote "2" to the word "noticeable" is: "for the purposes

of planning consent procedures”). The definition implies that the development would cause a change in the sunlight received at a location, which is capable of measurement and capable of being noticed by an observer who is taking an active interest in the extent to which the proposal might affect sunlight access.

- **Slight:** An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. For this definition to apply, the amount of sunlight received at a location would be changed by shadows cast by the development to an extent that is both capable of measurement and is noticeable to a minor degree. However, the shadow environment of the surrounding environment should remain largely unchanged. An example of a “slight” impact would be a scenario where, although the impact of the proposed development is not predicted to reduce the amount of sunlight received by a sample window or garden to less than 0.8 times its former value, the amount of light received by the sample window or garden is predicted to fall below a key recommended level, whether that is the BRE Guide recommended target value or an alternative target value. A further example of a “slight” impact would be where, although the construction of the proposed development is predicted to reduce the amount of light received to a level below the BRE Guide threshold for an adverse impact, the predicted reduction is just outside that BRE Guide threshold (e.g. the amount of sunlight received by a sample window or garden falls to not less than 0.7 times its existing value\*). A “slight” impact could also occur where there is a more considerable reduction in sunlight by a sample window within an existing building, but only a small number of windows within that property are affected to that extent.
- **Moderate:** An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. In this case, a development must bring about a change in the shadow environment of the area; and this change must be consistent with a pattern of change that is already occurring, is likely to occur. A moderate effect would occur where other developments were bringing about changes in sunlight access of similar extent in the area. A “moderate” impact might also be considered to occur where the level of sunlight access to a sample window or garden falls below the BRE Guide recommended level and to between 0.5 and 0.7 times its existing value, subject to consideration of other factors\*.
- **Significant:** An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. The definition implies that the existence of the development would change the extent of sunlight access in a manner that is not “consistent with existing and emerging baseline trends”. For example, a development resulting in a “significant” diminution of sunlight access would overshadow a location to the extent that there is a significant change in the amount of direct sunlight received at that location. A “significant” impact could occur where the predicted reduction in sunlight access is greater than what is envisaged to occur if the application site were developed in line with existing and emerging baseline trends. Subject to consideration of other factors, a “significant” impact could occur where sunlight access to the sample window or garden falls to between 0.25 and 0.5 times its former value\*.
- **Very Significant:** An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment. For example, a “very significant” reduction in sunlight access would occur where the development overshadows a location for most of the time that the location would have been in sunlight prior to the construction of the development and where overshadowing of that magnitude is not “consistent with existing and emerging baseline trends”. A “very significant” impact could occur where the predicted reduction in sunlight access is considerably greater than what is envisaged to occur if the application site were developed in line with existing and emerging baseline trends. Subject to consideration of other factors, a “very significant” impact could occur where sunlight access to the sample window or garden falls to between 0.01 and 0.25 times its former value\*.
- **Profound:** An effect which obliterates sensitive characteristics. Examples of development resulting in a “profound” effect on sunlight access would include facilitating sunlight access at a location where that location has previously had none (e.g. facilitating sunlight access as a result of the demolition of a building) or by removal of all access to sunlight at a location.

\* Please note that, while this section sets out indicative quantitative ranges that could apply to each type of impact, this assessment considers a range of factors (such as relevant target values, the use of the affected building, the number of rooms affected within the building, etc) in classifying impacts.

In relation to sunlight access, it is conceivable that there could be positive impacts, but this implies that a development would involve a reduction of the size or scale of built form (e.g. such as the demolition of a building, which might result in an increase in sunlight access). Though that is possible, it is usually unlikely as most development involves the construction of new obstructions to sunlight access.

The range of possible impacts listed above deal largely with the extent of impact; and the extent of the impact of a development is usually proportional to the extent to which that development is large in scale and/or height and its proximity to the location. This proportionality may be modified by the extent to which the development is seen as culturally or socially acceptable, and on the interaction between the proposed development, the character of the existing shadow environment and the land use pattern of the receiving environment.

## 18.5.2 Potential Impact of the Proposed Development on Sunlight Access

### Construction Phase

The potential impact of the construction phase of the proposed development on sunlight access is likely to be, initially, lesser than the potential effect of the completed development. As the proposed development nears completion, the potential impact of the emerging development is likely to be similar in all material respects to that of the completed development. It is noted that temporary structures and machinery (e.g. hoarding, scaffolding, cranes, etc.) have the potential to result in changes in sunlight access in buildings and to open spaces, although any additional impacts arising from temporary structures or machinery are likely to be temporary and minor.

### Operational Phase

The statistics of Met Eireann, the Irish Meteorological Service, indicate that the sunniest months in Ireland are May and June. During December, Dublin receives a mean daily duration of 1.7 hours of sunlight out of a potential 7.4 hours sunlight each day (i.e., only 22% of potential sunlight hours). This can be compared with a mean daily duration of 6.4 hours of sunlight out of a potential 16.7 hours each day received by Dublin during June (i.e., 38% of potential sunlight hours). Therefore, impacts caused by overshadowing are generally most noticeable during the summer months and least noticeable during the winter months. Due to the low angle of the sun in mid winter, the shadow environment in all urban and suburban areas is generally dense throughout winter.

In assessing the impact of a development on sunlight access, the comments of PJ Littlefair in *Site layout planning for daylight and sunlight: a guide to good practice* (the BRE Guide) should be taken into consideration. The BRE Guide states that “it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing of a space is to be expected.”

### Overview of the potential impact of shadows cast by the proposed development outside the application site

During the mornings and early afternoons of the spring, summer and autumn months, shadows cast by the proposed development will extend west and north to The Chase (including Sir Ivor Mall and Minstrel Court) and to Silver Pines (including the Anne Sullivan Centre) resulting in an “imperceptible” to “moderate” impact in sunlight access to a small number of rooms facing towards the application site and rear gardens bounding the application site, with the rear gardens of Nos. 24 and 25 Silver Pines likely to experience potentially “moderate” to “significant” additional overshadowing for a considerable part of the day during the spring and autumn months.

To the north and east, the proposed development is likely to result in “slight” to “moderate” overshadowing of sections of the adjoining greenway route at various times throughout the day over the course of the year. Notwithstanding shadows cast by the proposed development, the section of greenway route between Brewery Road and Leopardstown Road is likely to remain capable of achieving the level of sunlight recommended by the BRE Guide for amenity spaces to appear adequately sunlit throughout the year.

ARC's analysis shows that the construction of the proposed development will result in some additional overshadowing of lands to the east of the site during the afternoons and evenings throughout the year. The impact of additional overshadowing will range from "imperceptible" to "moderate" overshadowing of closest rear gardens and houses at Leopardstown Lawn and Leopardstown Avenue during the afternoons and evenings throughout the year.

While the potential of new development to result in material additional overshadowing of lands to the south is low, it is noted that the proposed development is likely to result in additional overshadowing of north-facing windows at the LauraLynn House Children's Hospice facing towards Leopardstown Road during the late evenings of the summer months. As a hospice is a use, which could be considered particularly sensitive to changes in the sunlight environment, the impact of the proposed development on sunlight access to the LauraLynn Children's Hospice is assessed as none to "moderate" to "significant" under a worst case scenario.

For a time around mid winter, shadows cast by the proposal are predicted to extend as far as the public park at Leopardstown Park, although this additional overshadowing is not predicted to interfere with the capacity of the public park to achieve the amount of sunlight recommended by the BRE Guide for amenity space. As the shadow environment at this time of year is dense, the impact of this additional overshadowing on Leopardstown Park is predicted to range from "imperceptible" to "slight".

Detailed analysis of the potential impact of shadows cast by the proposed development on existing buildings outside the application site

This chapter assesses the impact of the proposed development to all potential receptors surrounding the application site - sunlight impacts are described in the section above. However, by way of example in order to illustrate briefly the findings outlined in the overview section, ARC conducted detailed analysis of the potential for the proposed development to result in impacts on sunlight access to a representative sample of sensitive receptors (i.e. windows) in buildings in proximity to the application site (please see Figure 18.2 below).



Figure 18.2 - Indicative diagram showing location of sample windows (indicated with red dot) and gardens (indicated in green) assessed under this chapter.

As set out in Section 18.5.1, ARC had regard to the BRE Guide, which provides as follows in relation to the assessment of the impact of development on sunlight access to existing buildings: *“If the available sunlight hours are both less than the amount above [25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21 September and 21 March] and less than 0.8 times their former value, either over the whole year or just in the winter months (21 September to 21 March), then the occupants of the existing building will notice the loss of sunlight; if the overall annual loss is greater than 4% of APSH, the room may appear colder and less cheerful and pleasant.”* This excerpt from the BRE Guide suggests that where the construction of a new development has the potential to reduce sunlight access values below the recommended annual level, to less than 0.8 times the former level of sunlight access or by more than 4% APSH during the relevant periods, the potential impact of that proposed development will not be noticed.

The results of ARC’s analysis are outlined in Table 18.2 below.

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
Zone 01	Floor 00	21%	18%	3%	17%	14%	3%	Imperceptible to Not Significant
	This window faces within 90 degrees of due north. ARC’s analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours; the sunlight level at this window will not fall below 0.8 times its former value). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “not significant” as, given the low levels of sunlight access received by the window, it is possible that the reduction in sunlight access may be noticeable to an observer taking an active interest in the extent to which the proposal might affect sunlight access.							
Zone 02	Floor 00	15%	13%	2%	13%	11%	2%	Imperceptible to Not Significant
	This window faces within 90 degrees of due north. ARC’s analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours; the sunlight level at this window will not fall below 0.8 times its former value). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “not significant” as, given the low levels of sunlight access received by the window, it is possible that the reduction in sunlight access may be noticeable to an observer taking an active interest in the extent to which the proposal might affect sunlight access.							
Zone 03	Floor 00	10%	10%	0%	8%	8%	0%	Imperceptible to Slight
	This window faces within 90 degrees of due north. ARC’s analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “slight” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.796 times its former value.							

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
Zone 04	Floor 00	17%	15%	2%	13%	11%	2%	Imperceptible to Slight
	<p>This window faces within 90 degrees of due north. ARC's analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce the level of sunlight received by the window over the course of the year to 0.76 times its former value.</p>							
Zone 05	Floor 00	17%	16%	1%	13%	12%	1%	Imperceptible to Slight
	<p>This window faces within 90 degrees of due north. ARC's analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce the level of sunlight received by the window over the course of the year to 0.76 times its former value.</p>							
Zone 06	Floor 00	18%	17%	1%	14%	13%	1%	Imperceptible to Slight
	<p>This window faces within 90 degrees of due north. ARC's analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours). While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce the level of sunlight received by the window over the course of the year to 0.78 times its former value.</p>							
Zone 07	Floor 00	61%	40%	21%	58%	37%	21%	Imperceptible
	<p>ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a minor reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. The BRE Guide would suggest that an impact of this extent is not likely to be noticeable.</p>							
Zone 08	Floor 00	52%	46%	6%	41%	38%	3%	Slight to Moderate
	<p>ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window. While this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours, shadows cast by the proposed development are likely to reduce sunlight access to this window to 3% Annual Probable Sunlight Hours or below the 5% Annual Probable Sunlight Hours recommended by the BRE Guide for the winter period. As will be evident from the results of analysis of other sample windows at Minstrel Court, this window receives a lower level of sunlight access during the winter period than other ground floor rear windows at Minstrel Court due to the extent of construction that has taken place in the rear garden of this house. Given this, given that the Annual Probable Sunlight Hours received by this window over the course of the year will drop to 0.79 times their former value and given that the window will continue to receive a level of sunshine very considerably in excess of the recommendation of 25% Annual Probable</p>							

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
		Sunlight Hours, the impact of the proposed development on sunlight access to this window is assessed as “slight” to “moderate”.						
Zone 09	Floor 00	66%	46%	20%	56%	39%	17%	Imperceptible
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. The BRE Guide would suggest that an impact of this extent is not likely to be noticeable.						
Zone 10	Floor 00	69%	46%	23%	56%	39%	17%	Imperceptible to Slight
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. The BRE Guide would suggest that an impact of this extent is not likely to be noticeable. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “slight” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.74 times its former value.						
Zone 11	Floor 00	67%	45%	22%	55%	40%	15%	Imperceptible to Moderate
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.68 times its former value.						
Zone 12	Floor 00	66%	44%	22%	55%	39%	16%	Imperceptible to Slight
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “slight” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.73 times its former value.						
Zone 13	Floor 00	66%	44%	22%	55%	40%	15%	Imperceptible to Moderate
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.68 times its former value.						

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
Zone 14	Floor 00	63%	42%	21%	56%	41%	15%	Imperceptible to Slight
	<p>ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "slight" as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.71 times its former value.</p>							
Zone 15	Floor 00	69%	47%	22%	43%	38%	5%	Slight to Moderate
	<p>ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window. While this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours, shadows cast by the proposed development are likely to reduce sunlight access to this window to 4.9% Annual Probable Sunlight Hours or just below the 5% Annual Probable Sunlight Hours recommended by the BRE Guide for the winter period. As explained in more detail in Section 18.5.1 above, Appendix I: Environmental Impact Assessment of the BRE Guide provides that where "the loss of light is only marginally outside the guidelines", this would tend to suggest a minor impact. Given this and given that the window will continue to receive a level of sunshine very considerably in excess of the recommendation of 25% Annual Probable Sunlight Hours, the impact of the proposed development on sunlight access to this window is assessed as "slight" to "moderate".</p>							
Zone 16	Floor 00	72%	49%	23%	45%	40%	5%	Slight to Moderate
	<p>ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window. While this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours, shadows cast by the proposed development are likely to reduce sunlight access to this window to 4.9% Annual Probable Sunlight Hours or just below the 5% Annual Probable Sunlight Hours recommended by the BRE Guide for the winter period. As explained in more detail in Section 18.5.1 above, Appendix I: Environmental Impact Assessment of the BRE Guide provides that where "the loss of light is only marginally outside the guidelines", this would tend to suggest a minor impact. Given this and given that the window will continue to receive a level of sunshine very considerably in excess of the recommendation of 25% Annual Probable Sunlight Hours, the impact of the proposed development on sunlight access to this window is assessed as "slight" to "moderate".</p>							
Zone 17	Floor 00	69%	47%	22%	52%	40%	12%	Imperceptible to Moderate
	<p>ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as "imperceptible" to "moderate" as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.55 times its former value.</p>							
Zone 18	Floor 00	68%	47%	21%	51%	39%	12%	Imperceptible to Moderate
	<p>ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in</p>							

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
		excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.57 times its former value.						
Zone 19	Floor 00	78%	55%	24%	64%	51%	13%	Imperceptible to Moderate
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.54 times its former value.						
Zone 20	Floor 00	79%	55%	25%	68%	54%	14%	Imperceptible to Moderate
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.56 times its former value.						
Zone 21	Floor 00	81%	56%	25%	71%	55%	16%	Imperceptible to Moderate
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.64 times its former value.						
Zone 22	Floor 00	77%	52%	25%	65%	51%	14%	Imperceptible to Moderate
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.56 times its former value.						
Zone 23	Floor 00	79%	56%	24%	69%	55%	14%	Imperceptible to Moderate
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in						

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
		<p>excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.58 times its former value.</p>						
Zone 24	Floor 00	85%	59%	26%	73%	56%	17%	Imperceptible to Moderate
	<p>ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.65 times its former value.</p>							
Zone 25	Floor 00	84%	60%	25%	73%	57%	16%	Imperceptible to Moderate
	<p>ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “moderate” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.64 times its former value.</p>							
Zone 26	Floor 00	85%	59%	26%	76%	57%	19%	Imperceptible to Slight
	<p>ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “slight” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.73 times its former value.</p>							
Zone 27	Floor 00	85%	59%	26%	76%	56%	20%	Imperceptible to Slight
	<p>ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. While the BRE Guide would suggest that an impact of this extent is not likely to be noticeable, taking a conservative approach, this impact is assessed as “imperceptible” to “slight” as the construction of the proposal is likely to reduce the level of sunlight received by the window during the winter period to 0.77 times its former value.</p>							
Zone 28	Floor 00	83%	59%	24%	78%	58%	20%	Imperceptible to Not Significant
	<p>As this window will continue to receive more than 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed</p>							

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
		development, the BRE Guide would suggest that the impact of the proposal is not likely to be noticeable. If noticeable, shadows cast by the proposed development are not likely to result in “significant consequences” for the character of the sunlight environment. This impact is assessed as “imperceptible” to “not significant”.						
Zone 29	Floor 00	82%	59%	23%	77%	57%	20%	Imperceptible to Not Significant
		As this window will continue to receive more than 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development, the BRE Guide would suggest that the impact of the proposal is not likely to be noticeable. If noticeable, shadows cast by the proposed development are not likely to result in “significant consequences” for the character of the sunlight environment. This impact is assessed as “imperceptible” to “not significant”.						
Zone 30	Floor 00	67%	48%	19%	64%	46%	18%	Imperceptible
		ARC’s analysis indicates that, while shadows cast by the proposed development are likely to result in a minor reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. The BRE Guide would suggest that an impact of this extent is not likely to be noticeable.						
Zone 31	Floor 00	16%	16%	0%	10%	10%	0%	Moderate to Significant
		This window faces within 90 degrees of due north. However, shadows cast by the proposed development will result in all three criteria set out in the BRE Guide for adverse impacts on sunlight access to windows facing within 90 degrees of due south being met. The construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.62 times its former value. As explained in more detail in Section 18.5.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in sunlight access to this window would be assessed as “moderate” in extent. Having regard to the particular sensitivity of the children’s hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Therefore, the potential impact of the proposed development on sunlight access to this window is assessed as “moderate” to “significant”.						
Zone 32	Floor 00	16%	16%	0%	10%	10%	0%	Moderate to Significant
		This window faces within 90 degrees of due north. However, shadows cast by the proposed development will result in all three criteria set out in the BRE Guide for adverse impacts on sunlight access to windows facing within 90 degrees of due south being met. The construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.62 times its former value. As explained in more detail in Section 18.5.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in sunlight access to this window would be assessed as “moderate” in extent. Having regard to the particular sensitivity of the children’s hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Therefore, the potential impact of the proposed development on sunlight access to this window is assessed as “moderate” to “significant”.						
Zone 33	Floor 00	16%	16%	0%	10%	10%	0%	Moderate to Significant
		This window faces within 90 degrees of due north. However, shadows cast by the proposed development will result in all three criteria set out in the BRE Guide for adverse impacts on sunlight access to windows facing within 90 degrees of due south being met. The construction of the proposal is						

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
		likely to reduce the level of sunlight received by the window during the summer period to 0.62 times its former value. As explained in more detail in Section 18.5.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in sunlight access to this window would be assessed as “moderate” in extent. Having regard to the particular sensitivity of the children’s hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Therefore, the potential impact of the proposed development on sunlight access to this window is assessed as “moderate” to “significant”.						
Zone 34	Floor 00	9%	9%	0%	5%	5%	0%	Imperceptible to Significant
	This window faces within 90 degrees of due north. ARC’s analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours). The BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children’s hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Given this and given that the construction of the proposal is likely to reduce the level of sunlight received by the window over the course of the year to 0.56 times its former value, the potential impact of the proposed development on sunlight access to this window is assessed as “imperceptible” to “significant”.							
Zone 35	Floor 00	13%	13%	0%	8%	8%	0%	Moderate to Significant
	This window faces within 90 degrees of due north. However, shadows cast by the proposed development will result in all three criteria set out in the BRE Guide for adverse impacts on sunlight access to windows facing within 90 degrees of due south being met. The construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.61 times its former value. As explained in more detail in Section 18.5.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in sunlight access to this window would be assessed as “moderate” in extent. Having regard to the particular sensitivity of the children’s hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Therefore, the potential impact of the proposed development on sunlight access to this window is assessed as “moderate” to “significant”.							
Zone 36	Floor 00	13%	13%	0%	8%	8%	0%	Moderate to Significant
	This window faces within 90 degrees of due north. However, shadows cast by the proposed development will result in all three criteria set out in the BRE Guide for adverse impacts on sunlight access to windows facing within 90 degrees of due south being met. The construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.61 times its former value. As explained in more detail in Section 18.5.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in sunlight access to this window would be assessed as “moderate” in extent. Having regard to the particular sensitivity of the children’s hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Therefore, the potential impact of the proposed development on sunlight access to this window is assessed as “moderate” to “significant”.							
Zone 37	Floor 01	13%	13%	0%	9%	9%	0%	Imperceptible to Significant
	This window faces within 90 degrees of due north. ARC’s analysis indicates that the reduction in sunlight access to this window likely to occur as a result of the construction of the proposed development will							

Zone	Floor	Annual Probable Sunlight Hours						Potential Impact
		Existing			Proposed			
		Annual	Summer*	Winter*	Annual	Summer*	Winter*	
		not fall within adverse ranges suggested by the BRE Guide for assessment of windows facing within 90 degrees of due south (e.g. the overall annual loss will not be greater than 4% Annual Probable Sunlight Hours). The BRE Guide would suggest that an impact of this extent is not likely to be noticeable. However, having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Given this and given that the construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.69 times its former value, the potential impact of the proposed development on sunlight access to this window is assessed as "imperceptible" to "significant".						
Zone 38	Floor 01	13%	13%	0%	8%	8%	0%	Moderate to Significant
		This window faces within 90 degrees of due north. However, shadows cast by the proposed development will result in all three criteria set out in the BRE Guide for adverse impacts on sunlight access to windows facing within 90 degrees of due south being met. The construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.61 times its former value. As explained in more detail in Section 18.5.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in sunlight access to this window would be assessed as "moderate" in extent. Having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Therefore, the potential impact of the proposed development on sunlight access to this window is assessed as "moderate" to "significant".						
Zone 39	Floor 01	13%	13%	0%	8%	8%	0%	Moderate to Significant
		This window faces within 90 degrees of due north. However, shadows cast by the proposed development will result in all three criteria set out in the BRE Guide for adverse impacts on sunlight access to windows facing within 90 degrees of due south being met. The construction of the proposal is likely to reduce the level of sunlight received by the window during the summer period to 0.61 times its former value. As explained in more detail in Section 18.5.1 above, having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide, the likely reduction in sunlight access to this window would be assessed as "moderate" in extent. Having regard to the particular sensitivity of the children's hospice use of LauraLynn House, any impact falling within a potentially adverse range is assessed as being potentially significant out of an abundance of caution. Therefore, the potential impact of the proposed development on sunlight access to this window is assessed as "moderate" to "significant".						
Zone 40	Floor 00	58%	41%	17%	54%	37%	17%	Imperceptible
		ARC's analysis indicates that, while shadows cast by the proposed development are likely to result in a minor reduction in sunlight access to this window, this window will continue to receive a level of sunlight in excess of the BRE recommendation of 25% Annual Probable Sunlight Hours (including 5% Annual Probable Sunlight Hours during the winter period) after the construction of the proposed development. The BRE Guide would suggest that an impact of this extent is not likely to be noticeable.						

\* For the purposes of this calculation, summer is taken to mean the period between March and September, and winter is considered to be the period between September and March.

\*\* Survey information of all structures on private lands surrounding the application site was not available. Where insufficient survey information was available and window sizes / locations could not be informed by information available from the online planning register or from aerial photography, window sizes / locations were estimated by ARC.

**Table 18.2: Potential impact of the proposed development on sunlight access to sample windows\*\* in existing buildings in proximity to the application site**

As highlighted in the table above, ARC's analysis indicates that shadows cast by the proposed development have the potential to result in "imperceptible" to "moderate" impacts on sunlight access to the sample studied windows in residential buildings at The Chase (including Sir Ivor Mall and Minstrel Court), Silver Pines (including the Anne Sullivan Centre), Leopardstown Lawn, Leopardstown Avenue and Leopardstown Road.

The potential of new development to result in material additional overshadowing of lands to the south is low. ARC's analysis indicated that the construction of the proposed development was likely to result in an "imperceptible" impact on sunlight access to the sample window studied at the Sunshine Children's Home

However, it is noted that the proposed development is likely to result in additional overshadowing of north-facing windows at the LauraLynn House Children's Hospice facing towards Leopardstown Road during the late evenings of the summer months. As a hospice is a use, which could be considered particularly sensitive to changes in the sunlight environment, the impact of the proposed development on sunlight access to the LauraLynn Children's Hospice is assessed as none to "moderate" to "significant" under a worst case scenario.

Detailed analysis of the potential impact of shadows cast by the proposed development on gardens / amenity areas outside the application site

Insofar as amenity spaces / gardens are concerned, the BRE Guide provides that "It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable." [Emphasis added.] This suggests that where a garden or amenity area can receive two hours of sun over half its area on 21 March notwithstanding the construction of a proposed development, loss of sunlight as a result of additional overshadowing is not likely to be noticed.

This analysis assesses the impact of the proposed development to all potential receptors surrounding the application site - these impacts are described above in the section above. However, by way of example in order to illustrate briefly the findings outlined in the overview section, ARC conducted detailed analysis of the potential for the proposed development to result in impacts on sunlight access to a representative sample of sensitive receptors (i.e. gardens) in proximity to the application site (please see Figure 18.2 above).

ARC identified a representative sample of amenity spaces associated with existing neighbouring houses in close proximity to the site (i.e. at The Chase, Silver Pines (including the Anne Sullivan Centre), Leopardstown Lawn and Leopardstown Avenue). The sample included gardens in closest proximity to proposed new structures. Gardens were omitted from the sample where there was sufficient data within the sample to allow a reasonable inference to be made about the likely impact on that existing garden (e.g. where the impact on an existing garden closest to a new structure was included in the sample, more distant gardens could be excluded from the sample, etc).

The BRE Guide recommends analysing sunlight access to gardens on 21st March. Having regard to the azimuth of the sun over the course of that day (e.g. 88° at sunrise; 272° at sunset), it was not considered possible for the proposed development to result in material overshadowing of lands to the south of Leopardstown Road on 21st March. Given this, no gardens or amenity areas to the south of Leopardstown Road have been analysed in this section.

Table 18.3 sets out the likely proportion of these gardens in sunlight before and after the construction of the proposed development throughout the day on 21st March.

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
Zone 01	08:00	54%	64%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
Sir Ivor Mall, The Chase Rear Garden	09:00	92%	94%
	10:00	95%	95%
	11:00	94%	94%
	12:00	81%	81%
	13:00	78%	78%
	14:00	69%	69%
	15:00	55%	55%
	16:00	34%	34%
	17:00	2%	2%
	18:00	0%	0%
<p><b>Potential “imperceptible” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that, due to the demolition of existing structures on the site, the construction of the proposed development is likely to result in a minor increase in sunlight access to this garden (121 sq m) during the early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.</p>			
Zone 02 Sir Ivor Mall, The Chase Rear Garden	08:00	0%	16%
	09:00	57%	57%
	10:00	62%	62%
	11:00	72%	72%
	12:00	76%	76%
	13:00	78%	78%
	14:00	50%	50%
	15:00	6%	6%
	16:00	0%	0%
	17:00	0%	0%
18:00	0%	0%	
<p><b>Potential “imperceptible” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that, due to the demolition of existing structures on the site, the construction of the proposed development is likely to result in a minor increase in sunlight access to this garden (30 sq m) during the early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.</p>			
Zone 03 Sir Ivor Mall, The Chase	08:00	4%	10%
	09:00	48%	48%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
Rear Garden	10:00	56%	56%
	11:00	60%	60%
	12:00	58%	58%
	13:00	49%	49%
	14:00	17%	17%
	15:00	0%	0%
	16:00	0%	0%
	17:00	0%	0%
	18:00	0%	0%
<p><b>Potential “imperceptible” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that, due to the demolition of existing structures on the site, the construction of the proposed development is likely to result in a minor increase in sunlight access to this garden (30 sq m) during the early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.</p>			
Zone 04 Sir Ivor Mall, The Chase Rear Garden	08:00	7%	10%
	09:00	45%	45%
	10:00	55%	55%
	11:00	67%	67%
	12:00	62%	62%
	13:00	52%	52%
	14:00	17%	17%
	15:00	0%	0%
	16:00	0%	0%
	17:00	0%	0%
18:00	0%	0%	
<p><b>Potential “imperceptible” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that, due to the demolition of existing structures on the site, the construction of the proposed development is likely to result in a minor increase in sunlight access to this garden (31 sq m) during the early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.</p>			
Zone 05 Sir Ivor Mall, The Chase Rear Garden	08:00	13%	7%
	09:00	54%	54%
	10:00	60%	60%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	11:00	70%	70%
	12:00	64%	64%
	13:00	52%	52%
	14:00	18%	18%
	15:00	0%	0%
	16:00	0%	0%
	17:00	0%	0%
	18:00	0%	0%
<p><b>Potential “imperceptible” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that the construction of the proposed development is likely to result in a minor reduction in sunlight access to this garden (30 sq m) during the early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.</p>			
Zone 06 Sir Ivor Mall, The Chase Rear Garden	08:00	4%	0%
	09:00	36%	36%
	10:00	52%	52%
	11:00	67%	67%
	12:00	68%	68%
	13:00	55%	55%
	14:00	17%	17%
	15:00	5%	5%
	16:00	24%	24%
	17:00	2%	2%
	18:00	0%	0%
<p><b>Potential “imperceptible” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that the construction of the proposed development is likely to result in a minor reduction in sunlight access to this garden (22 sq m) during the early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.</p>			
Zone 07 Minstrel Court, The Chase Rear Garden	08:00	16%	0%
	09:00	54%	35%
	10:00	65%	65%
	11:00	70%	70%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	12:00	73%	73%
	13:00	74%	74%
	14:00	72%	72%
	15:00	65%	65%
	16:00	43%	43%
	17:00	0%	0%
	18:00	0%	0%
	<p><b>Potential “imperceptible” to “not significant” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (23 sq m) during early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.</p>		
Zone 08 Minstrel Court, The Chase Rear Garden	08:00	18%	0%
	09:00	63%	0%
	10:00	60%	14%
	11:00	42%	42%
	12:00	29%	29%
	13:00	4%	4%
	14:00	0%	0%
	15:00	0%	0%
	16:00	0%	0%
	17:00	0%	0%
	18:00	0%	0%
<p><b>Potential “moderate” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (11 sq m) during early morning of 21st March. This garden is small and heavily overshadowed due to the extent of construction that has taken place in the rear garden of the house. ARC’s analysis indicates that the proportion of the garden capable of receiving two hours of sunlight on 21<sup>st</sup> March will drop from 42% (between 9.00 am and 11.00 am) to 21% (between 10.30 am and 12.30 pm), a drop to 0.50 times its former value. Having regard to factors outlined in Appendix I: Environmental Impact Assessment of the BRE Guide and to the likely reduction in sunlight access to this garden to between 0.5-0.7 times its former value on 21<sup>st</sup> March, this impact is assessed as “moderate” in extent.</p>			
Zone 09 Minstrel Court, The Chase Rear Garden	08:00	25%	0%
	09:00	62%	0%
	10:00	69%	3%
	11:00	78%	75%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	12:00	78%	78%
	13:00	79%	79%
	14:00	82%	82%
	15:00	77%	77%
	16:00	47%	47%
	17:00	0%	0%
	18:00	0%	0%
<p><b>Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. ARC’s analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (23 sq m) during the morning of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.</p>			
Zone 10 Minstrel Court, The Chase Rear Garden	08:00	4%	0%
	09:00	45%	0%
	10:00	58%	0%
	11:00	63%	60%
	12:00	72%	72%
	13:00	71%	71%
	14:00	72%	72%
	15:00	61%	61%
	16:00	45%	45%
	17:00	0%	0%
18:00	0%	0%	
<p><b>Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. ARC’s analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (20 sq m) during the morning of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.</p>			
Zone 11 Minstrel Court, The Chase Rear Garden	08:00	0%	0%
	09:00	34%	0%
	10:00	50%	0%
	11:00	54%	52%
	12:00	63%	63%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	13:00	63%	63%
	14:00	60%	60%
	15:00	50%	50%
	16:00	21%	21%
	17:00	0%	0%
	18:00	0%	0%
<b>Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.</b>			
ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (18 sq m) during the morning of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.			
Zone 12 Minstrel Court, The Chase Rear Garden	08:00	0%	0%
	09:00	21%	0%
	10:00	35%	0%
	11:00	50%	48%
	12:00	58%	58%
	13:00	65%	65%
	14:00	59%	59%
	15:00	49%	49%
	16:00	26%	26%
	17:00	0%	0%
	18:00	0%	0%
<b>Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.</b>			
ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (18 sq m) during the morning of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.			
Zone 13 Minstrel Court, The Chase Rear Garden	08:00	0%	0%
	09:00	40%	0%
	10:00	52%	0%
	11:00	59%	59%
	12:00	66%	66%
	13:00	66%	66%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	14:00	64%	64%
	15:00	58%	58%
	16:00	34%	34%
	17:00	0%	0%
	18:00	0%	0%

**Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.**

ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. ARC’s analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (16 sq m) during the morning of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.

Zone 14 Minstrel Court, The Chase Rear Garden	08:00	6%	0%
	09:00	85%	64%
	10:00	83%	52%
	11:00	58%	58%
	12:00	47%	47%
	13:00	43%	43%
	14:00	39%	39%
	15:00	33%	33%
	16:00	20%	20%
	17:00	0%	0%
	18:00	0%	0%

**Potential “imperceptible” to “not significant” impact on 21<sup>st</sup> March.**

ARC’s analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (71 sq m) during early morning of 21st March, although this change is likely to be so minor that it will not be noticeable. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. The potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible”.

Zone 15 Silver Pines Rear Garden	08:00	25%	0%
	09:00	68%	0%
	10:00	77%	42%
	11:00	82%	82%
	12:00	85%	76%
	13:00	83%	47%
	14:00	75%	4%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	15:00	65%	0%
	16:00	59%	15%
	17:00	29%	21%
	18:00	0%	0%
<p><b>Potential “imperceptible” to “moderate” to “significant” impact.</b>                      Shadows cast by the proposed development are likely to result in a considerable change in sunlight access to this garden (57 sq m) during the mornings and afternoons of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide (i.e. this garden will continue to receive sunlight over 67% of its area between 10.30 am and 12.30 pm on 21<sup>st</sup> March). On 21<sup>st</sup> March, shadows cast by the proposed development are likely to result in a considerable reduction in sunlight access during the morning and for most of the afternoon, when sunlight tends to be most valued. Given this, notwithstanding that the potential impact of the proposal does not fall within the range for adverse impacts set out in the BRE Guide, some may consider additional overshadowing of this garden to fall within a “moderate” to “significant” range. Therefore, taking a conservative approach, the potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible” to “moderate” to “significant”.</p>			
Zone 16 Silver Pines Rear Garden	08:00	52%	0%
	09:00	99%	0%
	10:00	100%	0%
	11:00	94%	94%
	12:00	87%	87%
	13:00	82%	82%
	14:00	71%	43%
	15:00	62%	0%
	16:00	53%	17%
	17:00	9%	9%
	18:00	0%	0%
<p><b>Potential “imperceptible” to “moderate” to “significant” impact.</b>                      Shadows cast by the proposed development are likely to result in a considerable change in sunlight access to this garden (41 sq m) during the mornings and afternoons of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide (i.e. this garden will continue to receive sunlight over 82% of its area between 11.00 am and 1.00 pm on 21<sup>st</sup> March). On 21<sup>st</sup> March, shadows cast by the proposed development are likely to result in a considerable reduction in sunlight access during the morning and for most of the afternoon, when sunlight tends to be most valued. Given this, notwithstanding that the potential impact of the proposal does not fall within the range for adverse impacts set out in the BRE Guide, some may consider additional overshadowing of this garden to fall within a “moderate” to “significant” range. Therefore, taking a conservative approach, the potential impact of the proposed development on sunlight access to this garden on 21<sup>st</sup> March is assessed as “imperceptible” to “moderate” to “significant”.</p>			
Zone 17 Silver Pines Rear Garden	08:00	34%	0%
	09:00	73%	0%
	10:00	78%	0%
	11:00	75%	37%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	12:00	77%	77%
	13:00	72%	72%
	14:00	64%	64%
	15:00	56%	42%
	16:00	48%	13%
	17:00	6%	6%
	18:00	0%	0%
<p><b>Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that the construction of the proposed development is likely to result in a considerable reduction in sunlight access to this garden (50 sq m) during the morning and afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.</p>			
Zone 18 Silver Pines Rear Garden	08:00	44%	0%
	09:00	78%	0%
	10:00	81%	0%
	11:00	85%	7%
	12:00	84%	84%
	13:00	81%	81%
	14:00	80%	80%
	15:00	72%	72%
	16:00	60%	56%
	17:00	8%	8%
<p><b>Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.</b>                      ARC’s analysis indicates that the construction of the proposed development is likely to result in a considerable reduction in sunlight access to this garden (70 sq m) during the morning and a minor reduction in the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting the extent of reduction in sunlight access during the morning of 21<sup>st</sup> March, this impact is assessed as “imperceptible” to “moderate”.</p>			
Zone 19 Anne Sullivan Centre Open Space	08:00	48%	9%
	09:00	69%	6%
	10:00	76%	4%
	11:00	73%	8%
	12:00	77%	68%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	13:00	81%	79%
	14:00	88%	88%
	15:00	94%	94%
	16:00	82%	82%
	17:00	43%	43%
	18:00	0%	0%

**Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.**

ARC’s analysis indicates that the construction of the proposed development is likely to result in a considerable reduction in sunlight access to this garden (312 sq m) during the morning of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting the extent of reduction in sunlight access during the morning of 21<sup>st</sup> March, this impact is assessed as “imperceptible” to “moderate”.

Zone 20 Leopardstown Lawn Rear Garden	08:00	44%	44%
	09:00	67%	67%
	10:00	65%	65%
	11:00	74%	74%
	12:00	82%	82%
	13:00	85%	79%
	14:00	83%	11%
	15:00	76%	23%
	16:00	65%	64%
	17:00	48%	0%
18:00	0%	0%	

**Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.**

ARC’s analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (155 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC’s analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.

Zone 21 Leopardstown Lawn Rear Garden	08:00	33%	33%
	09:00	66%	66%
	10:00	71%	71%
	11:00	77%	77%
	12:00	82%	82%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	13:00	85%	78%
	14:00	88%	9%
	15:00	85%	48%
	16:00	74%	74%
	17:00	58%	0%
	18:00	0%	0%
<b>Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.</b> ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (125 sq m) during the morning of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.			
Zone 22 Leopardstown Lawn Rear Garden	08:00	35%	35%
	09:00	67%	67%
	10:00	71%	71%
	11:00	73%	73%
	12:00	82%	82%
	13:00	81%	81%
	14:00	75%	51%
	15:00	59%	0%
	16:00	41%	6%
	17:00	10%	0%
	18:00	0%	0%
<b>Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.</b> ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (79 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.			
Zone 23 Leopardstown Lawn Rear Garden	08:00	52%	52%
	09:00	76%	76%
	10:00	77%	77%
	11:00	81%	81%
	12:00	90%	82%
	13:00	93%	78%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	14:00	87%	87%
	15:00	81%	41%
	16:00	71%	0%
	17:00	51%	17%
	18:00	0%	0%
<b>Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.</b> ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (131 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.			
Zone 23 Leopardstown Lawn Rear Garden	08:00	50%	50%
	09:00	74%	74%
	10:00	75%	75%
	11:00	81%	81%
	12:00	84%	83%
	13:00	88%	60%
	14:00	80%	35%
	15:00	71%	71%
	16:00	64%	12%
	17:00	26%	0%
	18:00	0%	0%
<b>Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.</b> ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (116 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.			
Zone 25 Leopardstown Lawn Rear Garden	08:00	7%	7%
	09:00	38%	38%
	10:00	55%	55%
	11:00	73%	74%
	12:00	89%	89%
	13:00	92%	92%
	14:00	92%	92%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	15:00	83%	83%
	16:00	69%	69%
	17:00	35%	0%
	18:00	0%	0%

**Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.**

ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (109 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.

Zone 26 Leopardstown Lawn Rear Garden	08:00	42%	42%
	09:00	74%	74%
	10:00	81%	81%
	11:00	90%	90%
	12:00	100%	100%
	13:00	100%	100%
	14:00	100%	92%
	15:00	96%	0%
	16:00	90%	19%
	17:00	56%	0%
	18:00	0%	0%

**Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.**

ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (104 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.

Zone 27 Leopardstown Lawn Rear Garden	08:00	44%	44%
	09:00	74%	74%
	10:00	84%	84%
	11:00	87%	87%
	12:00	95%	95%
	13:00	95%	95%
	14:00	88%	88%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	15:00	82%	55%
	16:00	76%	0%
	17:00	46%	0%
	18:00	0%	0%

**Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.**

ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (182 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.

Zone 28 Leopardstown Lawn Rear Garden	08:00	54%	54%
	09:00	79%	79%
	10:00	89%	89%
	11:00	93%	93%
	12:00	95%	95%
	13:00	95%	95%
	14:00	91%	91%
	15:00	87%	86%
	16:00	76%	18%
	17:00	50%	0%
	18:00	0%	0%

**Potential “imperceptible” to “moderate” impact on 21<sup>st</sup> March.**

ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (182 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. However, taking a conservative approach and noting that the amenity value of afternoon sunshine tends to be valued, this impact is assessed as “imperceptible” to “moderate”.

Zone 29 Leopardstown Lawn Rear Garden	08:00	16%	16%
	09:00	62%	62%
	10:00	77%	77%
	11:00	83%	83%
	12:00	94%	94%
	13:00	94%	94%
	14:00	94%	94%

Zone	21st March Time	Percentage area in sunlight	
		Existing	Proposed
	15:00	90%	90%
	16:00	82%	79%
	17:00	55%	0%
	18:00	0%	0%

**Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.**

ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (151 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.

Zone 30 Leopardstown Avenue Rear Garden	08:00	33%	33%
	09:00	76%	76%
	10:00	80%	80%
	11:00	86%	86%
	12:00	93%	93%
	13:00	94%	88%
	14:00	88%	74%
	15:00	82%	82%
	16:00	68%	48%
	17:00	40%	0%
	18:00	0%	0%

**Potential “imperceptible” to “slight” impact on 21<sup>st</sup> March.**

ARC's analysis indicates that the construction of the proposed development is likely to result in a reduction in sunlight access to this garden (102 sq m) during the afternoon of 21st March, although this does not fall within the range of noticeable or adverse impacts described at Section 3.3.17 the BRE Guide. ARC's analysis indicates that at least half of the garden will continue to receive at least two hours of sunlight on 21st March after the construction of the proposed development. If noticeable, shadows cast by the proposed development are not likely to affect the sensitivities of the sunlight environment. This impact is assessed as “imperceptible” to “slight”.

*Table 18.3 - Potential impact of the proposed development on sunlight access to sample neighbouring gardens*

### 18.5.3 Potential Cumulative Impacts

A review of the Dun Laoghaire-Rathdown County Council online planning register did not identify any developments for which permission has been granted, which, in combination with the development now proposed, would have the potential to result in material cumulative impacts on the sunlight environment surrounding the application site.

### 18.5.4 Mitigation Measures

#### Construction Phase

The subject application proposes the development of a large zoned site in a residential area. In these circumstances, scope for mitigation measures during the construction phase, which would preserve a sustainable level of density, is limited.

#### Operational Phase

The subject application proposes the development of a large zoned site in a residential area. In these circumstances, scope for mitigation measures during the operational phase, which would preserve a sustainable level of density, is limited.

### **18.5.5 Predicted Impacts of the Proposed Development on Sunlight Access**

#### Construction Phase

As no ameliorative, remedial or reductive measures are now proposed, the predicted impact of the proposed development on sunlight access is likely to be as described under Section 18.5.2 above.

#### Operational Phase

As no ameliorative, remedial or reductive measures are now proposed, the predicted impact of the proposed development on sunlight access is likely to be as described under Section 18.5.2 above.

### **18.5.6 Do Nothing Scenario**

Planning permission was previously granted for the demolition of the 3 no. existing residential dwellings known as 'Annaghkeen', Dalwhinnie' and 'Marian Villa' and associated outbuildings and the construction of a residential development in buildings ranging in height from two to five storeys, partly over dual access basement level, together with the material change of use of St Joseph's House from residential care facility to residential use (DLRCC Reg. Ref. D17A/0337; ABP PL 06D.249248). In a "do nothing" scenario where the development permitted under DLRCC Reg. Ref. D17A/0337; ABP PL 06D.249248 is constructed, the levels of sunshine received by neighbouring lands outside the application site, particularly those closest to the permitted new structures such as those at Silver Pines, Leopardstown Lawn, Leopardstown Avenue and Leopardstown Road, are likely to be reduced to some extent.

### **18.5.7 Risks to Human Health**

The Building Research Establishment's *Site layout planning for daylight and sunlight: a guide to good practice* (the BRE Guide) states: "People like sunlight. In surveys around 90% said they appreciated having sunlight in their homes. The sun is seen as providing light and warmth, making rooms look bright and cheerful and also having a therapeutic health giving effect."

Whereas the BRE Guide point out that sunlight access has implications for human health and recommends minimum levels for sunlight access, the BRE Guide does not suggest levels of sunlight required to ensure human health or discuss the implications of a reduction in sunlight access on human health.

### **18.5.8 Interactions**

As is always the case where a development will result in a change to the sunlight environment of an area, the impacts of the development on sunlight access will result in interactions with climate, cultural heritage, population and human health, and landscape.

## **18.6 Monitoring**

Monitoring of avoidance, remedial and mitigation measures is not relevant to the assessment of impacts on daylight and sunlight access in the case of the subject application.

## 18.7 Reinstatement

Reinstatement is not relevant to the assessment of impacts of the proposed development on daylight and sunlight access in the case of the subject application. It is intended that the proposed development will be permanent.

## 18.8 Difficulties Encountered

It was considered neither possible nor practical for the Design Team to gain unfettered access to every parcel of private property within the study area surrounding the application site in order to carry out measured building survey. Therefore, while ARC has confidence that the three dimensional model used in the assessment of the impact of the proposal on daylight access achieves a high degree of accuracy, it should be noted that some level of assumption was necessary in completing the model.

It was considered neither possible nor practical to carry out detailed quantitative analysis of the potential impact of the construction phase of the proposed development as insufficient detail was available regarding what structures or objects related to the construction (e.g. hoarding, machinery, etc) capable of resulting in an obstruction of sunlight or daylight access would be on the site or exactly where those structures or objects would be on the site. Even if this information was available, any such detailed quantitative analysis would represent only a snapshot in time.

As noted above, in assessing sunlight and daylight access, Irish practitioners tend to refer to PJ Littlefair's *Site layout planning for daylight and sunlight: a guide to good practice* for the Building Research Establishment (the BRE Guide). However, it is noted that the BRE Guide does not set out rigid standards or limits and is preceded by the following very clear warning as to how the design advice contained therein should be used: *"The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design."* [Emphasis added.]

## 18.9 References

- British Standards Institution (2008) *BS8206: Part 2: 2008 Lighting for Buildings: Part 2 – Code of Practice for Daylight*. Milton Keynes, BSI.
- B.S. EN 17037:2018: *Daylight in Buildings*.
- Council Directive 14/52/EU (amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment) (Official Journal No. L 124/1, 25.4.2014)
- Environmental Protection Agency. 2002. *Guidelines on the Information to be Contained in Environmental Impact Statements*. Wexford: Environmental Protection Agency.
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- I.S. EN 17037:2018: *Daylight in Buildings*.
- Littlefair, PJ. 1991. *Site Layout Planning for Daylight and Sunlight: A Good Practice Guide*. Watford: Building Research Establishment.
- Littlefair, PJ. 2011. *Site Layout Planning for Daylight and Sunlight: A Good Practice Guide*. Watford: Building Research Establishment.

## Appendix 18.1 Daylight and Sunlight Access within the Proposal



SUNLIGHT AND DAYLIGHT ACCESS ANALYSIS  
OF  
THE PROPOSED RESIDENTIAL DEVELOPMENT  
ON  
ST. JOSEPH'S HOUSE AND ADJOINING PROPERTIES, BREWERY ROAD AND LEOPARDSTOWN ROAD, DUBLIN 18



**ARC** Architectural  
Consultants Limited  
30 Dalkey Park, Dalkey  
County Dublin  
T: 01 235 0525 e: [info@arc.ie](mailto:info@arc.ie)

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AUGUST 2021

DATE : MARCH 21ST - EQUINOX  
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SUNSET : 6.40 PM

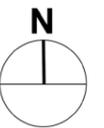
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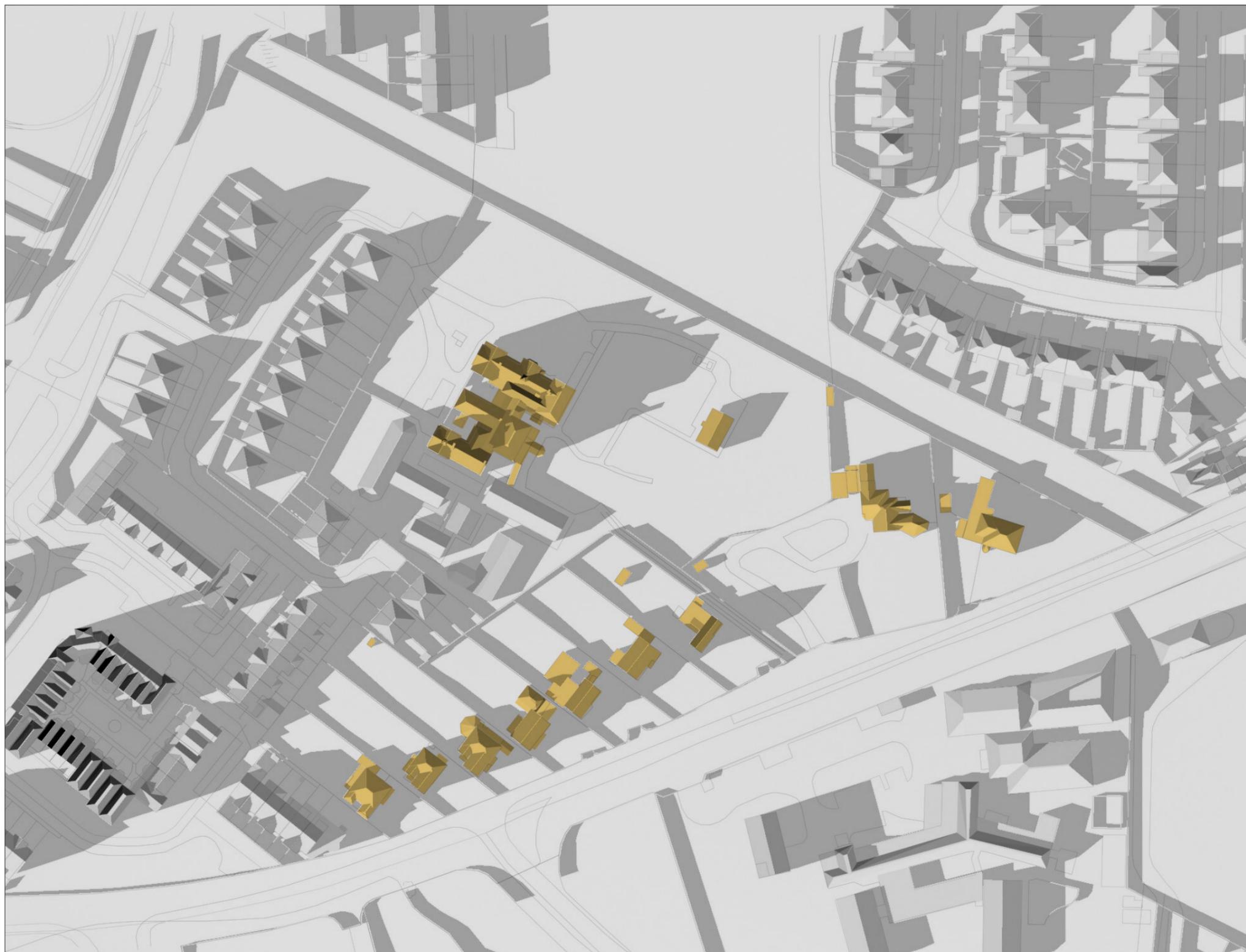
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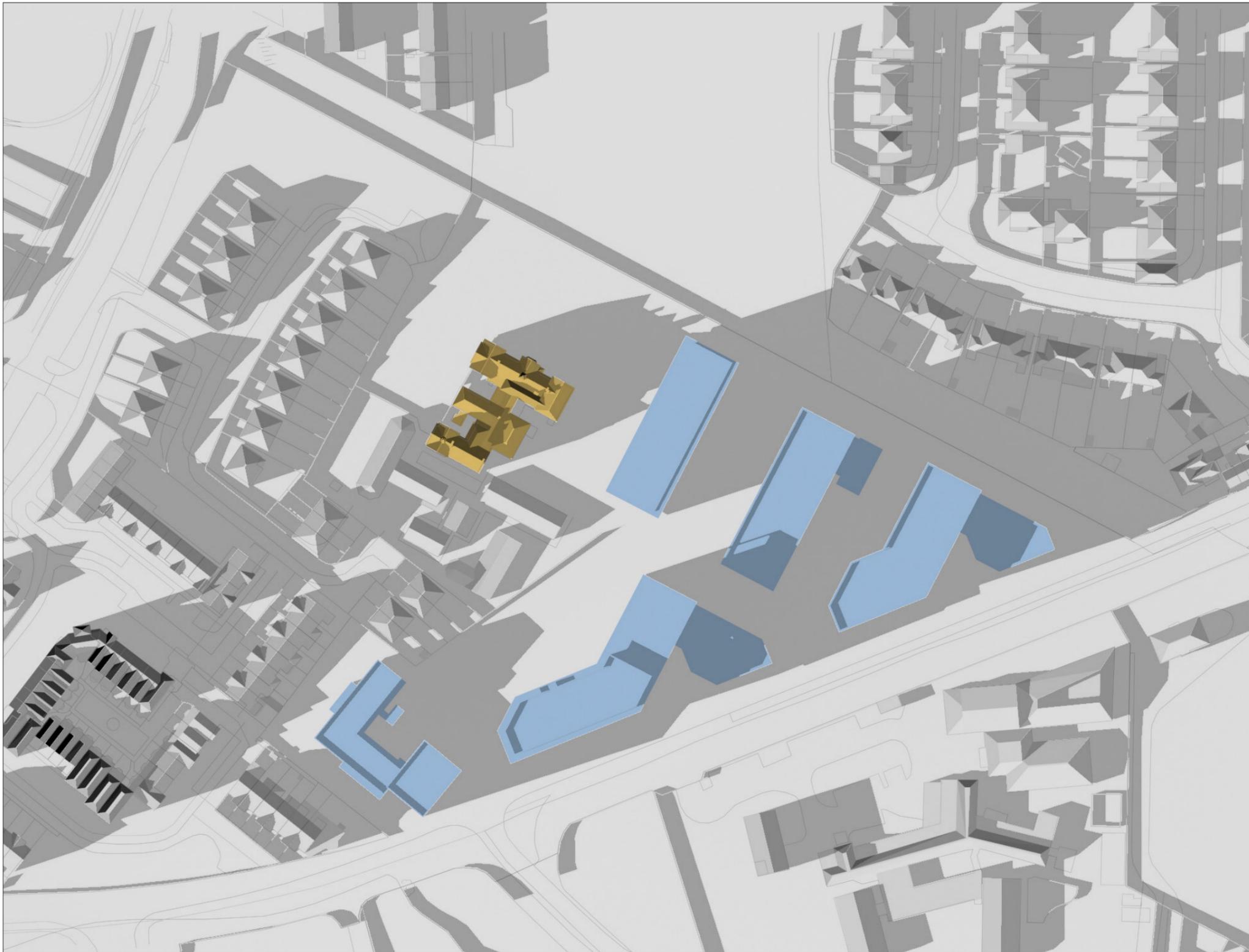


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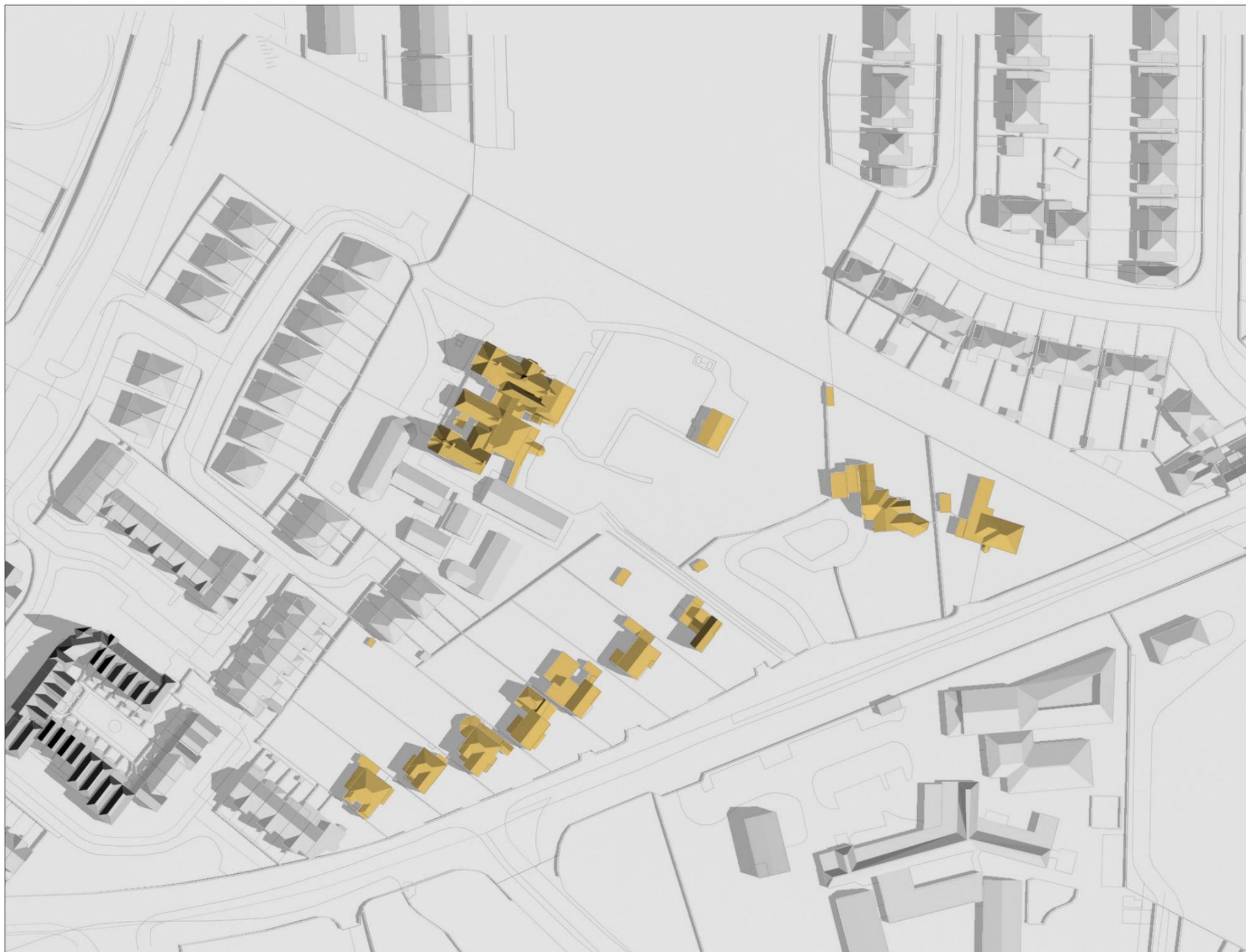
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DATE : JUNE 21ST - SUMMER SOLSTICE  
SUNRISE : 4.56 AM  
SUNSET : 9.57 PM

TIME :  
9.00 AM



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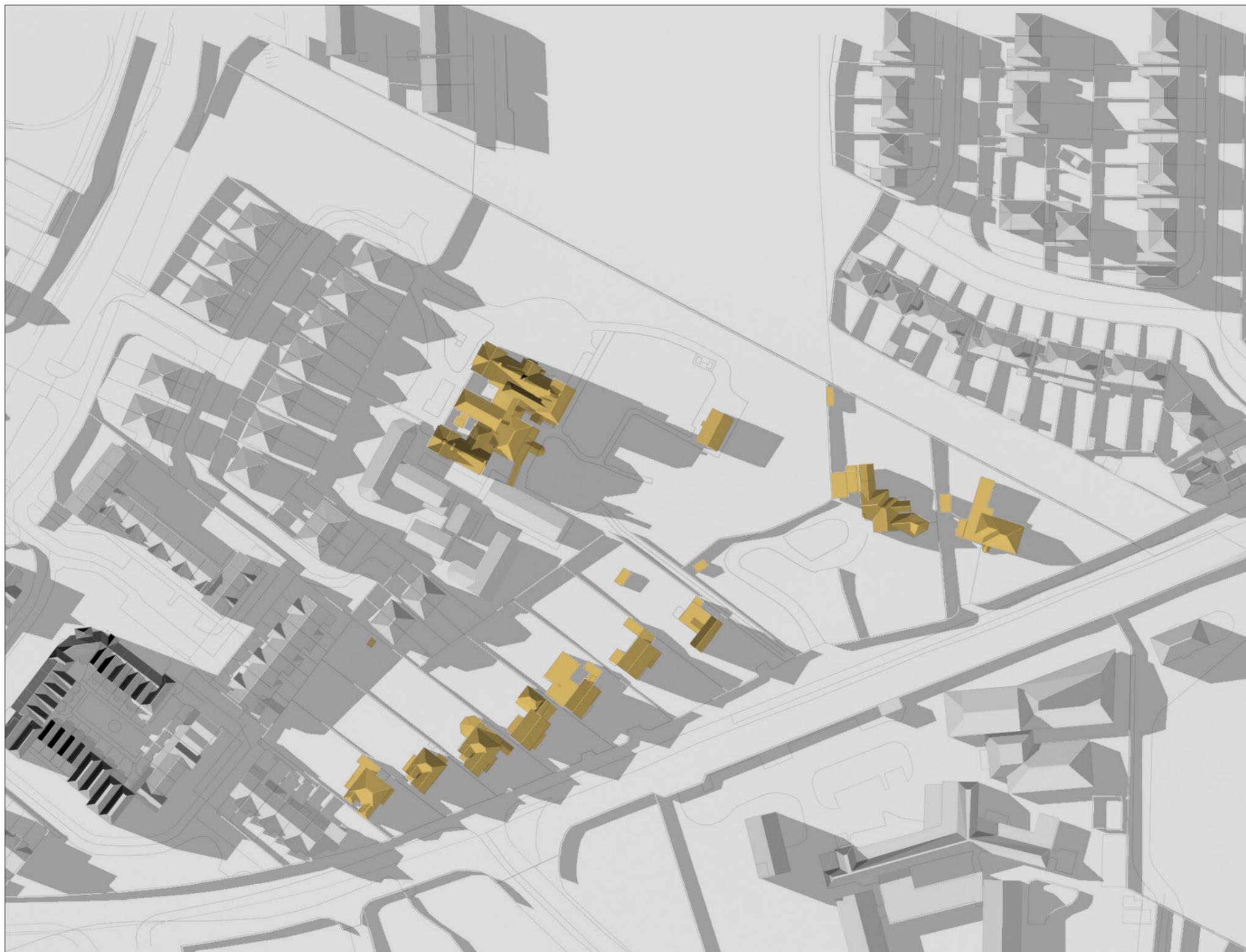
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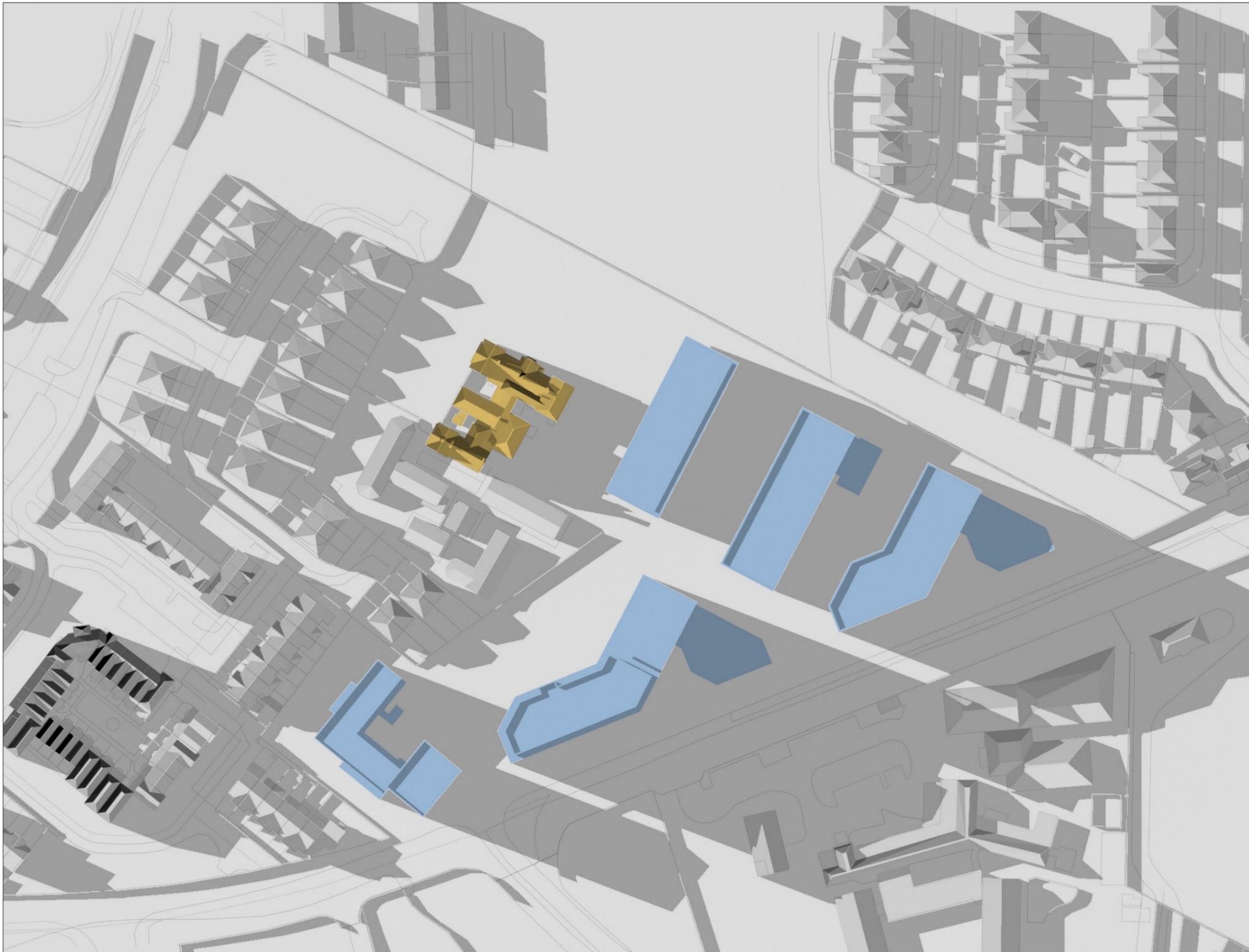


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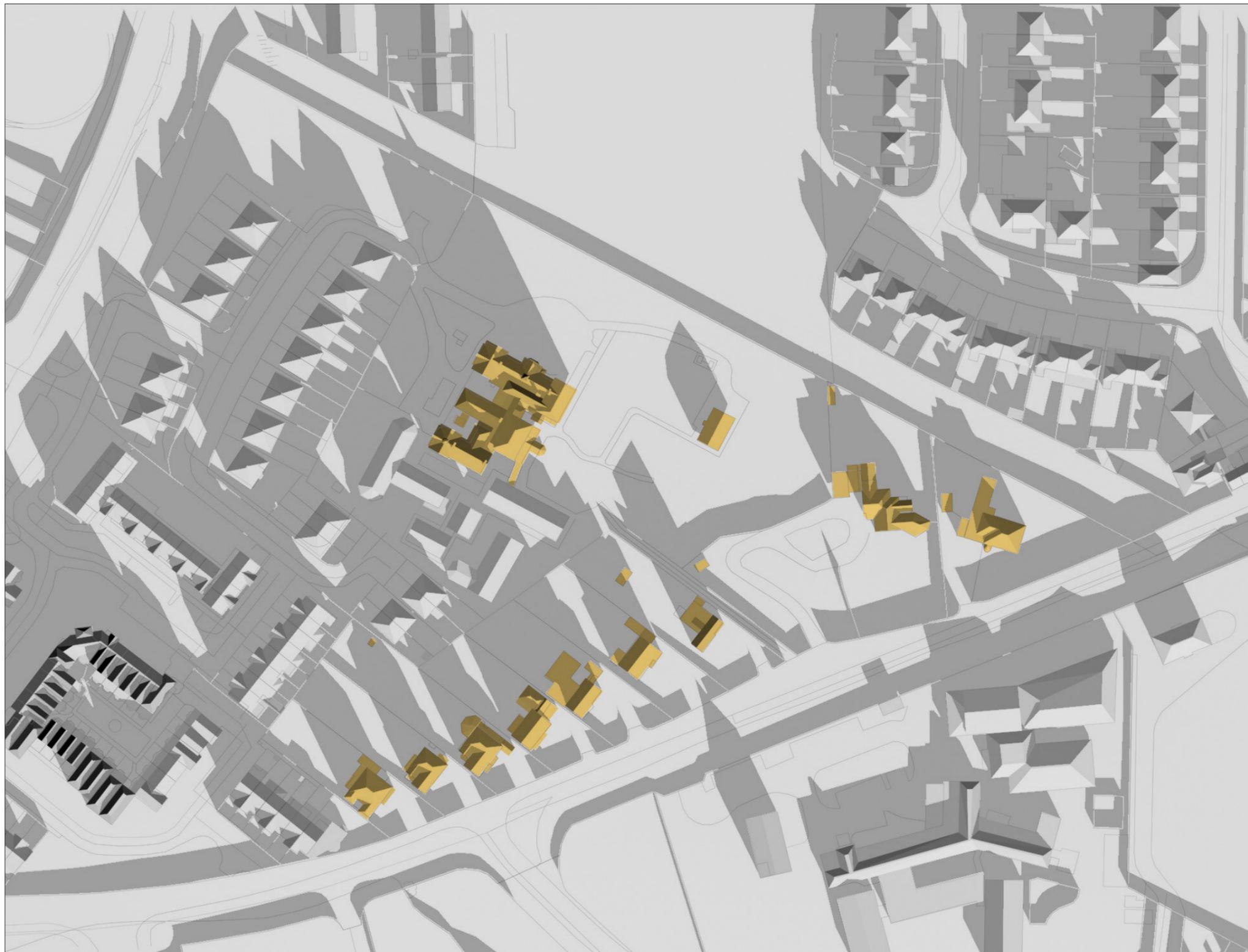
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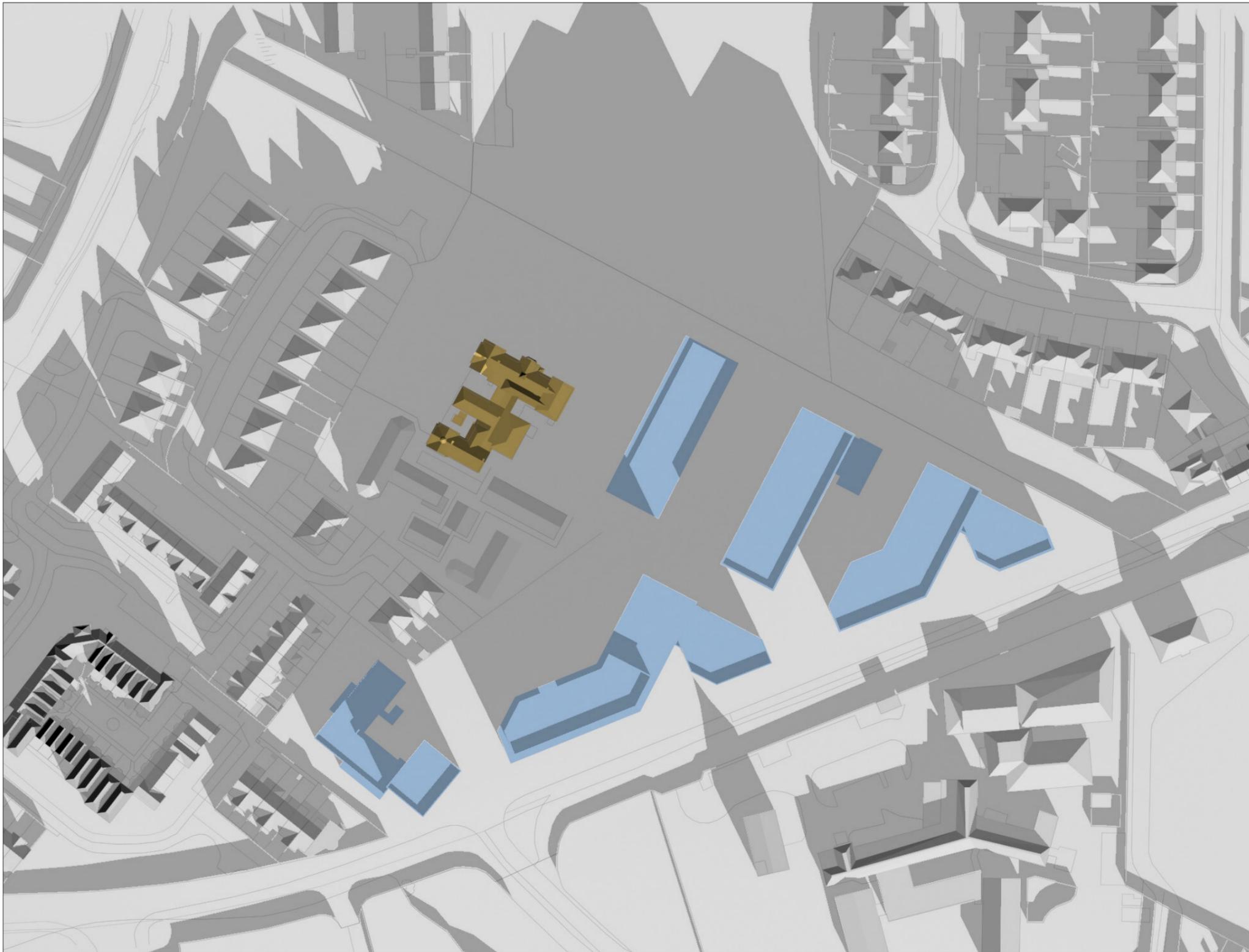


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AUGUST 2021

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SUNRISE : 8.38 AM  
SUNSET : 4.08 PM

TIME :  
10.30 AM





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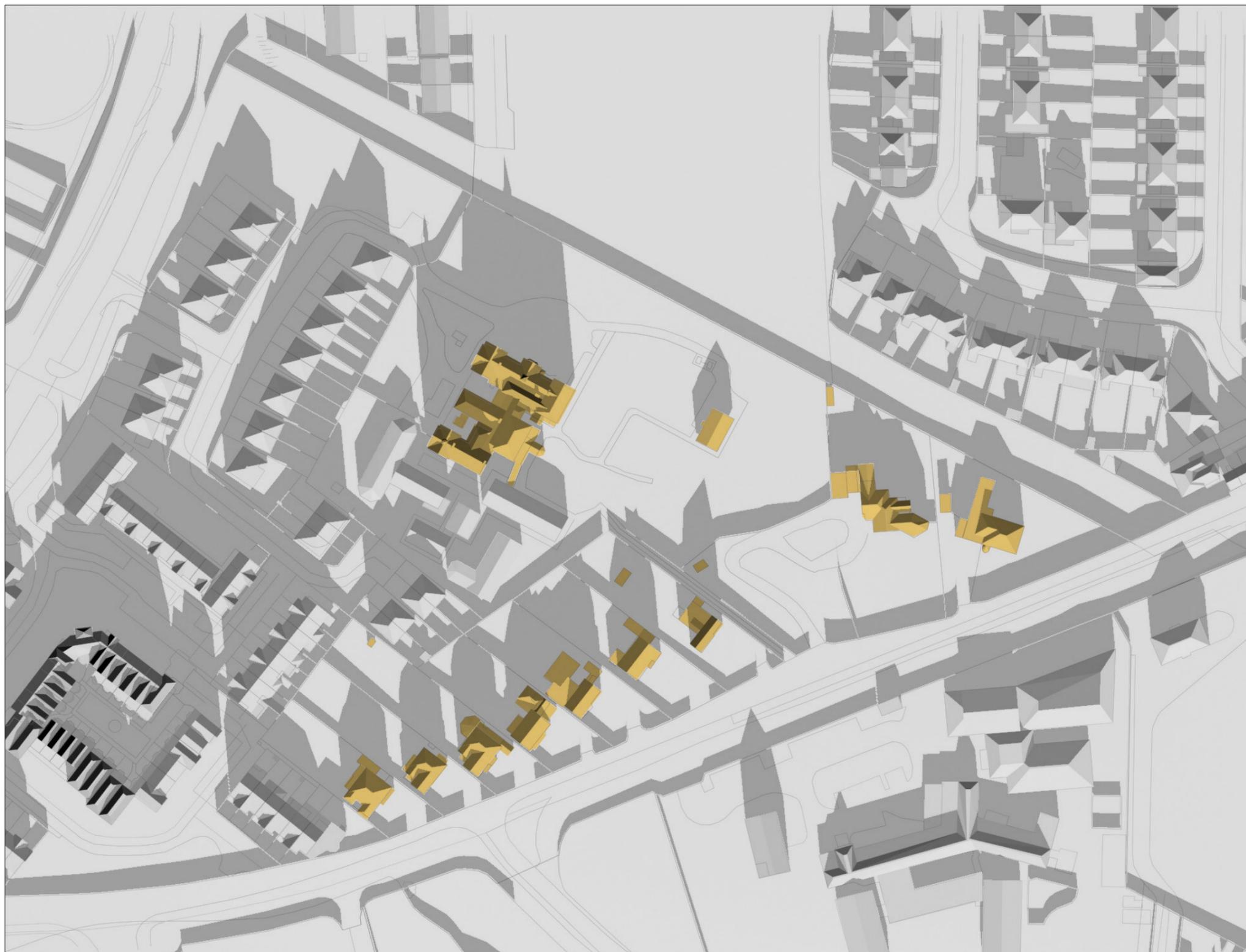
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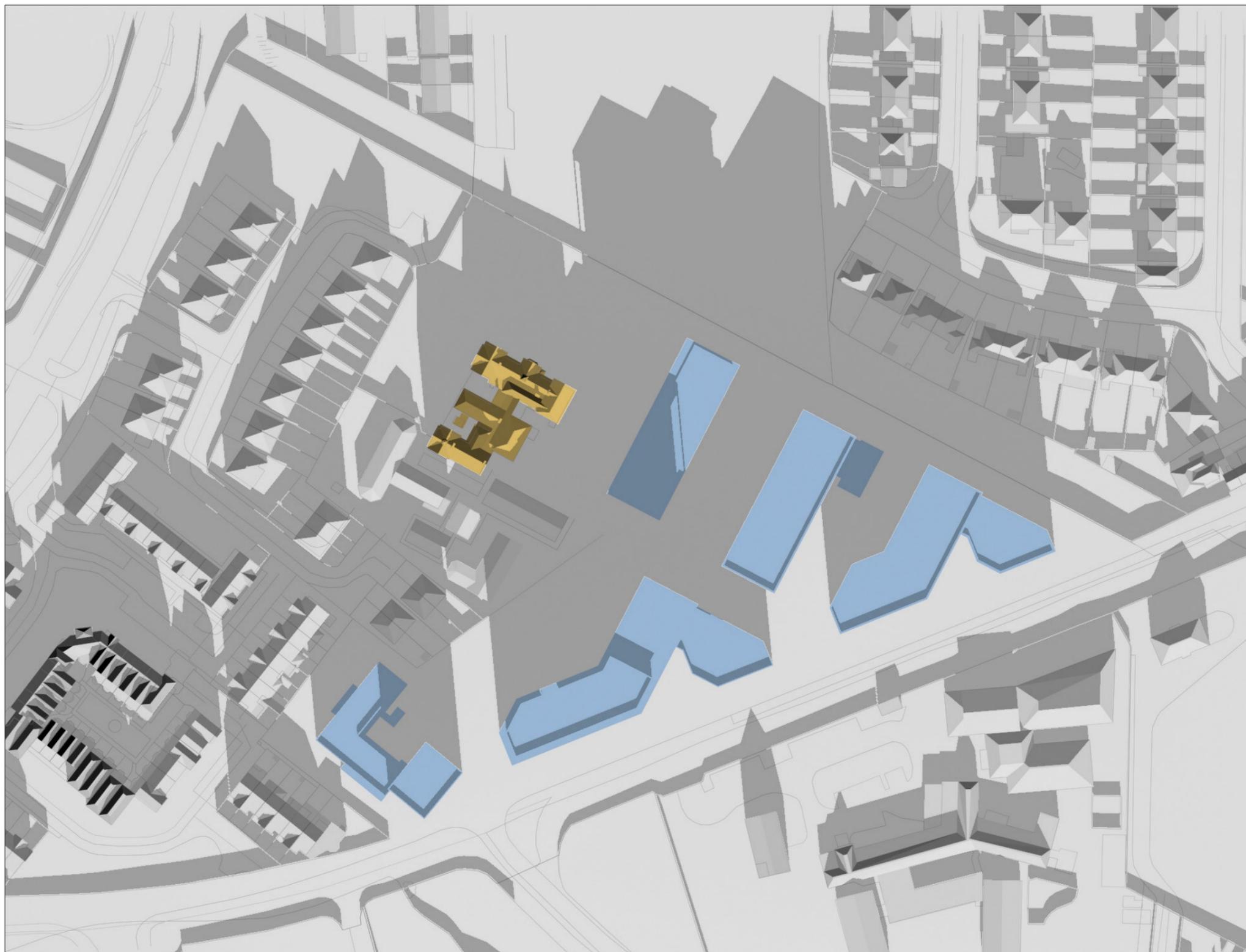
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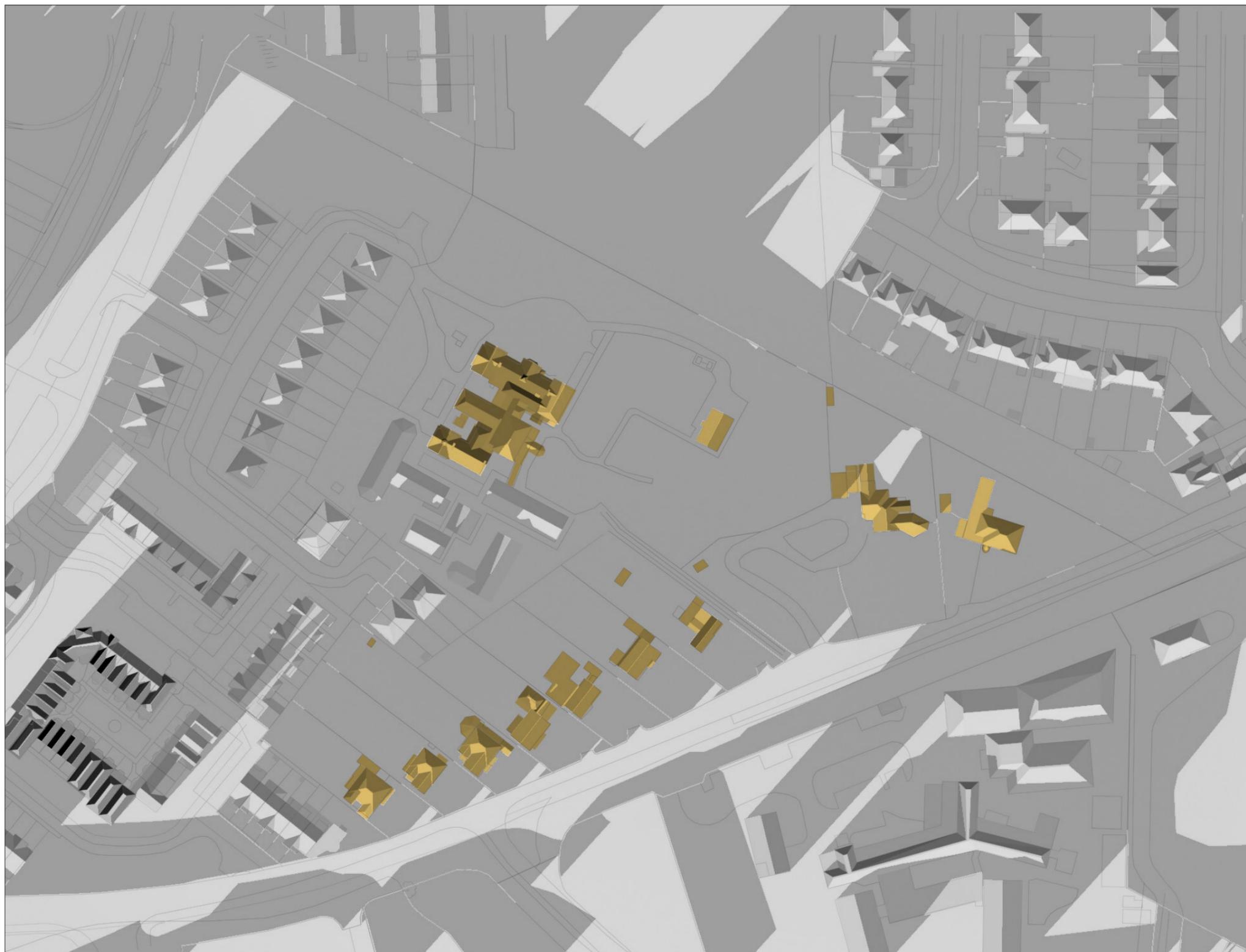
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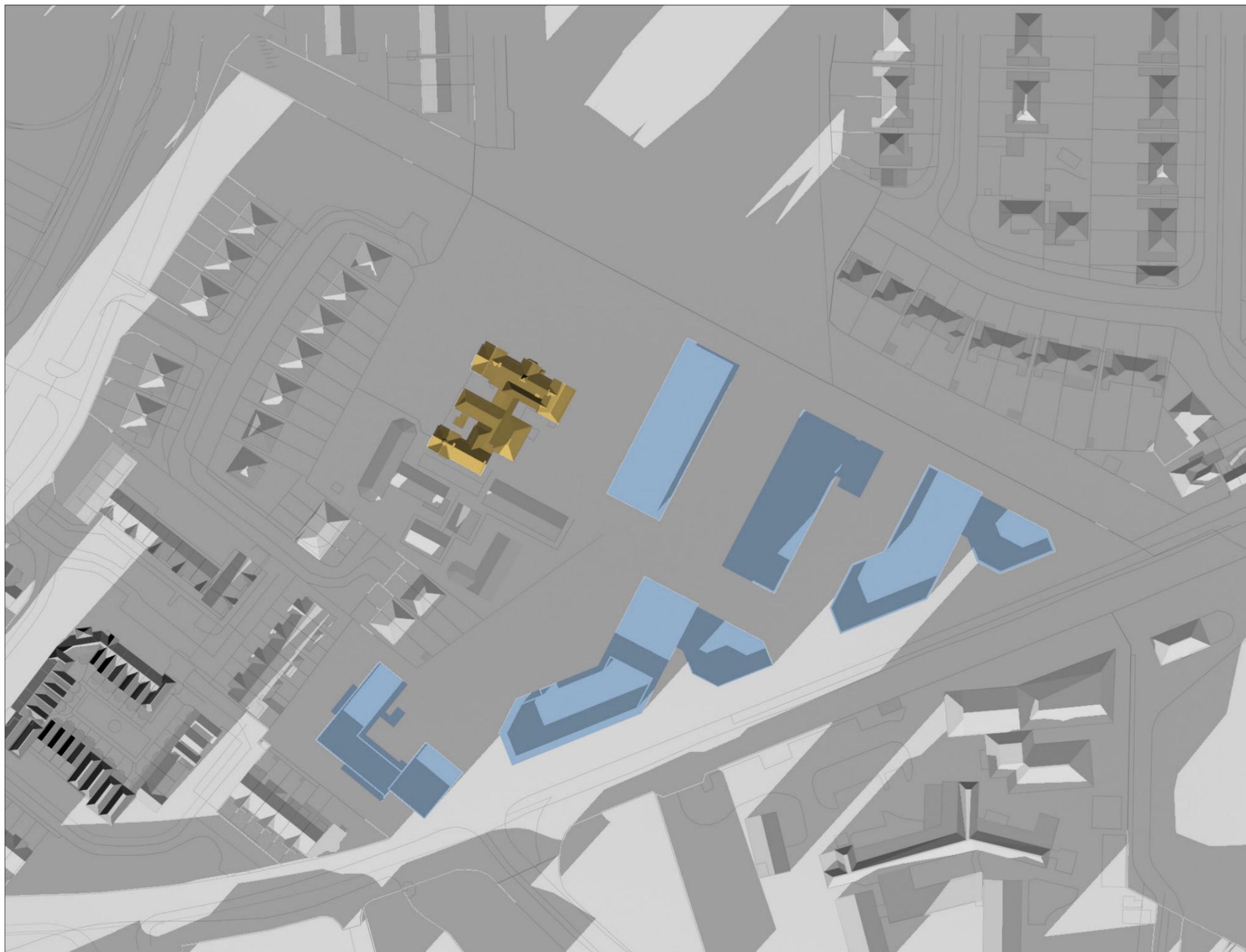
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