

Chapter 14: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare

Aberfeldy Village Masterplan Environmental Statement Volume 1, Chapter 14: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare

Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare									
AUTHOR	Gordon Ingram Associates (GIA)								
SUPPORTING APPENDIX	<p>ES Volume 3: Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare:</p> <ul style="list-style-type: none"> Annex 1: Planning Policy Annex 2: Methodology and Baseline Results Annex 3: Scenario Overviews and Window Maps Annex 4: Daylight and Sunlight Results Annex 5: Overshadowing Results Annex 6: Solar Glare Results 								
KEY CONSIDERATIONS	<p>The following are the key daylight, sunlight, overshadowing and solar glare issues have been assessed within this chapter:</p> <ul style="list-style-type: none"> Alterations to daylight and sunlight at sensitive surrounding existing and future properties; Overshadowing to sensitive surrounding amenity areas; Solar glare effects at nearby sensitive locations; and The potential for light pollution at surrounding sensitive receptors. 								
CONSULTATION	<p>An EIA Scoping Report was prepared and submitted to the London Borough of Tower Hamlets (LBTH) in August 2021 to request an EIA Scoping Opinion on the proposed scope of the EIA (ES Volume 3, Appendix EIA Methodology – Annex 1). The following comments were made by LBTH in their Scoping Opinion (ES Volume 3, Appendix EIA Methodology – Annex 2) and are addressed in the ES Chapter.</p>								
	<table border="1"> <thead> <tr> <th>LBTH Scoping Opinion</th> <th>Where This is Addressed</th> </tr> </thead> <tbody> <tr> <td>LBTH notes that approximately 7,500m² GIA of non-residential uses (including restaurant, retail and office (Use Class E(a), E(b) and E(g))) will be provided. Therefore, LBTH expects that a light pollution assessment should be undertaken for the non-residential uses of the Proposed Development or justification should be provided in the ES, if it is considered that such an assessment is not required.</td> <td>As noted, in paragraph 14.109 of this chapter a light pollution assessment is not required which provides further justification for scoping out this assessment.</td> </tr> <tr> <td>The study area and individual properties assessed should be clearly stated and justified within the ES and shown on a figure for ease of understanding. 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	<p>The demolition and construction phase assessment should consider, at least qualitatively, likely effects from construction equipment, such as with cranes in situ.”</p>	<p>This is qualitatively considered in the Demolition and Construction assessment section.</p>
	<p>The Applicant is also required to provide a summary table for daylight, which includes the following: The receptor (i.e. each building); The number of windows / rooms in the receptor tested; The number of windows / rooms which meet the BRE criteria; The number of windows / rooms which do not meet the BRE criteria, split by minor, moderate and major significance, as per the criteria outlined above; The number of dwellings affected; and Commentary on minor, moderate and major sunlight and daylight losses.</p>	<p>Information about individual dwellings, such as apartment buildings, information is not always available and as such reporting by dwellings is not always a viable option. A summary table is provided in the chapter detailing the number of windows/rooms tested and affected per receptor, split by minor, moderate and major impacts. The daylight and sunlight technical results report on the specific windows and rooms which impacts occur, which are mapped on corresponding illustrations of windows/rooms to show exactly which window/room is affected. Therefore, it is possible to cross reference the daylight and sunlight impacts to individual windows/rooms. The assessment within the chapter discusses the individual impacts to windows and rooms, providing an overall conclusion to the effect to the building as a whole. This allows for a detailed breakdown and overview of the impacts occurring.</p>
	<p>LBTH agrees Daylight, Sunlight and Overshadowing – Internal, new receptors within the Proposed Development can be scoped out of the ES as an aspect chapter on the basis that a standalone report is submitted in support of the planning application and the results of this report are summarised in the Daylight, Sunlight, Overshadowing and Solar Glare aspect chapter, supported by a summary/conclusion paragraph of the daylight and sunlight levels.</p>	<p>A summary is provided at the end of this ES Chapter</p>
	<p>The overshadowing of public amenity spaces to be provided within the Proposed Development is to be assessed in the ES to ensure such spaces are suitable for the intended use. Two-hour sun contour drawings on the 21st March and transient overshadowing diagrams should be provided for all open space provided as part of the Proposed Development.</p>	<p>The following 'Internal Amenity Areas' have been assessed</p> <ul style="list-style-type: none"> Braithwaite Park (existing) Leven Road Green (existing) Highland Place (proposed)

ASSESSMENT METHODOLOGY

Defining the Baseline

- 14.1** A baseline characterisation was completed by firstly undertaking a review of the surrounding land uses, using information and data sources from the Council (Valuation Office Agency (VOA) website)¹ and Google Maps². Using professional judgement, properties, amenity areas and viewpoints in close enough proximity to the Site to be affected by the Proposed Development were identified.
- 14.2** The review of information and data was followed by a Site visit in November 2020 to confirm the accuracy of existing conditions. The conditions recorded are not considered to have changed from the day of the Site visit to the time of writing this ES chapter.
- 14.3** From the review of the surrounding context, a 3D computer model was developed for the existing surrounding properties and amenity areas as well as the existing conditions. The context model is based on photogrammetry, updated by Site visit photographs, documents available from the planning portal, real estate agency websites and land registry information.
- 14.4** As noted within the EIA Scoping Report Phases 1- 3a and 3b of the previously consented masterplan (Consented Development) are considered in the baseline.

¹ VOA website, <http://cti.voa.gov.uk/cti/refs.asp?lcn=0&EBAR=1>

² Google Maps, <https://www.google.com/maps>

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Evolution of the Baseline

- 14.5 An evolved baseline scenario, which assumes all cumulative schemes in the surrounding environment are built out in the absence of the Proposed Development being implemented, is considered in the Future Baseline Section of this ES Chapter.

Impact Assessment Methodology

Demolition and Construction

- 14.6 Owing to the evolving and changing nature of the Demolition and Construction, the assessment of potential effects of the Proposed Development on daylight, sunlight, overshadowing and solar glare to surrounding receptors has not been modelled. Instead, a qualitative assessment has been undertaken using professional judgement and experience.
- 14.7 The potential daylight, sunlight, overshadowing and solar glare effects relating to demolition and construction works would vary throughout the construction programme and gradually increase to the potential effects identified for the completed Proposed Development. It is considered that the completed Proposed Development represents the worst-case assessment in terms of likely effects on levels of daylight, sunlight, overshadowing and solar glare at sensitive receptors.

Completed Development

- 14.8 The hybrid planning application for the Proposed Development comprises Plots A, B, C, D and, E in the outline proposals and Plots H1-2, H3, F, I and J in detail proposals, as shown in drawings found in **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 3**. The completed Proposed Development as fully built out represents the worst-case scenario in terms of daylight, sunlight, overshadowing and solar glare impacts and so that is what has been assessed.
- 14.9 An Illustrative Masterplan has been developed for this application which provides an example of how the outline proposals blocks could be articulated. Whilst this is not technically assessed within the ES, the Standalone Daylight and Sunlight Impacts Upon Neighbours Report provides a daylight and sunlight assessment of the Illustrative Masterplan, which provides a contextual analysis of the levels of light which are likely to be achieved at surrounding receptors, particularly at those closest to the Proposed Development. Therefore, this ES Chapter, which assesses the worst-case scenario of the maximum parameters, should be read in conjunction with the Standalone Daylight and Sunlight Impacts Upon Neighbours Report, which provides a worked example of the level of daylight and sunlight impacts of future development within Plots A-E. However, the full design of plots A-E will be agreed through future RMAs, which will be assessed once the detailed design is known.

Outline Elements of the Completed Development

- 14.10 The maximum parameter plots represent a worst-case scenario, including a buffer zone for balconies, building maintenance units and Heating, Ventilation, and Air Conditioning systems (HVAC). Therefore, the results presented within this ES Chapter represent a worst-case scenario of the maximum envelope, which would not, in reality, be built out to these maximum extents.
- 14.11 A contextual assessment of daylight and sunlight effects to surrounding properties using the illustrative scheme, which demonstrates a potential iteration of how the Proposed Development could be brought forward is presented in the standalone Daylight and Sunlight Impacts Upon Neighbours Report which accompanies the planning application.
- 14.12 The outline elements and detailed elements (described below) have been technically assessed to report the daylight, sunlight and overshadowing effects within the ES chapter.
- 14.13 For the solar glare assessment, the maximum parameters for plots A, B, C, D and E proposed in outline have been excluded from the technical assessment. This is because if the block massing of the maximum parameters within these plots would shield views of potential reflections arising from the plots proposed in detail from surrounding viewpoints. Therefore, the technical assessment represents a reasonable worst-case scenario.
- 14.14 However, the locations which would potentially have a view of reflections from plots A-E (once designed) are identified, with a high level commentary on the likely significant effects. Subsequently, should there be potential for significant solar glare effects at detailed design stage, once the façade specifications are known, this will be technically assessed as part of RMAs.

Detailed Elements of the Completed Development

- 14.15 As described above, the detailed proposals of the Proposed Development together with the outline proposals have been assessed for the daylight, sunlight and overshadowing assessments.
- 14.16 For the solar glare assessment, Plots H1-2, H3, F, I and J proposed in detail have been technically assessed, as this represents a reasonable worst-case scenario.

Methodology

- 14.17 The following scenarios have been assessed and are reported within this chapter of the ES, and are discussed further below:
- Baseline;
 - Proposed Development; and
 - Cumulative.

Baseline

- 14.18 This scenario considers the baseline condition of the Site and surrounding context assumed for the purposes of this ES Chapter, which is considered to represent a realistic scenario at the time the Proposed Development would be implemented. Ailsa Wharf (PA/16/02692 & PA/18/03461) is under construction are included the baseline condition as fully built out. Leven Road Gasworks (PA/18/02803/A1) and Poplar Business Park (PA/11/03375) whilst also under construction are located too far from the Site to be affected and therefore have not been included within the assessment.

Proposed Development

- 14.19 The Proposed Development scenario is depicted within ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 3.
- 14.20 This scenario consists of the completed Proposed Development in the context of the surrounding environment, assessing the potential daylight, sunlight, overshadowing and solar glare effects of the Proposed Development on the surrounding receptors.
- 14.21 In ascertaining the potential daylight, sunlight and overshadowing effects, comparisons are made with the baseline scenario.
- 14.22 The assessment of solar glare is undertaken upon the detailed façades of Plots H1-2, H3, F, I and J at surrounding sensitive road viewpoints. For the purposes of the technical assessment, the outline proposals plots are not included in the modelling given that the facade detail of these plots are not yet known. This allows for a worst-case assessment for the detailed proposals Plots. A qualitative assessment is however provided on the potential for solar glare at surrounding sensitive road viewpoints from the outline proposals plots.
- 14.23 This assessment is not comparative and therefore considers the potential for reflections in absolute terms.

Supplementary Assessments

- 14.24 The assessment of the Proposed Development's maximum parameters includes a buffer zone for balconies, building maintenance units and HVAC and therefore represent a worst-case scenario. Therefore, to provide further context, the assessments are supported by supplementary analysis, which is described in further detail in the Methodology section including:
- No Balconies assessment; and
 - Consented Development Assessment.

Cumulative

- 14.25 The cumulative schemes that have been considered in the cumulative assessment scenario, owing to their proximity to the Proposed Development include:
- Former Poplar Bus Depot (PA/19/02148/A1); and
 - Islay Wharf (PA/19/01760).
- 14.26 This scenario consists of the completed Proposed Development in conjunction with the above schemes in the context of the surrounding environment, assessing the potential daylight, sunlight and overshadowing effects of the Proposed Development on the surrounding receptors.

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- 14.27** In ascertaining the potential cumulative daylight, sunlight and overshadowing effects, comparisons are made with the baseline scenario.
- 14.28** Solar glare is not assessed in a cumulative scenario, as the Proposed Development scenario is considered in absolute terms. The presence of cumulative schemes would shield views of the Proposed Development from surrounding road locations assessed.
- 14.29** Additionally, owing to the residential nature of surrounding cumulative schemes, the following three buildings have been assessed as future sensitive receptors:
- Former Poplar Bus Depot (PA/19/02148/A1);
 - Islay Wharf (PA/19/01760); and
 - 45-47 Abbott's Road (PA/19/02137/A1).

Methodology

- 14.30** The full methodology is found within ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing Light Pollution and Solar Glare – Annex 2.
- 14.31** The assessments have been undertaken in line with national, regional and local policy and guidance. The relevant documents are listed and summarised within **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 1.**

Daylight

- 14.32** The following methodologies are used to assess daylight:
- Vertical Sky Component (VSC);
 - No Sky Line (NSL) Method; and
 - Average Daylight Factor (ADF).
- 14.33** VSC is a 'spot' measure of the skylight reaching the mid-point of a window from an overcast sky. It represents the amount of visible sky that can be seen from that reference point, from over and around an obstruction in front of the window. That area of visible sky is expressed as a percentage of an unobstructed hemisphere of sky, and, therefore, represents the amount of daylight available for that particular window.
- 14.34** NSL is a measure of the distribution of diffuse daylight within a room. The NSL simply follows the division between those parts of a room that can receive some direct skylight from those that cannot. If from a point in a room on the working plane (a plane 850mm above the floor) it is possible to see some sky then that point will lie inside the NSL contour. Conversely, if no sky is visible from that point then it would lie outside the contour.
- 14.35** The ADF is considered an appropriate metric to assess proposed surrounding residential receptors. The BRE Guidelines state that this method of assessment for daylight should be applied to new developments to determine daylight availability rather than existing neighbouring buildings, unless the internal subdivision of the properties is known. The ADF gives a more detailed assessment of the daylight within a room and takes into account the highest number of factors in establishing a quantitative output. Because the internal subdivision of rooms within Ailsa Wharf Block A, D and KL and Former Poplar Bus Depot (PA/19/02148/A1), Islay Wharf (PA/19/01760) and 45-47 Abbott's Road (PA/19/02137/A1) are known, the ADF method of assessment has been used.

- 14.36** These methods of daylight assessment used for the Proposed Development assessment are described in further detail in the following section and within **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 1.**

Sunlight

- 14.37** The Annual Probable Sunlight Hours (APSH) is used to assess sunlight.
- 14.38** APSH is a measure of sunlight that a given window may expect over a year period. The Building Research Establishment (BRE) Guidelines recognises that sunlight is less important than daylight in the amenity of a room and is heavily influenced by orientation. North-facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will only receive sunlight for some of the day. The BRE Guidelines states that only windows with an orientation within 90° of south need be assessed. Therefore, in terms of sunlight, only windows facing within 90° of due south are assessed for APSH as north facing windows will not receive direct sunlight.

- 14.39** The baseline of both total APSH and Winter Probable Sunlight Hours (PSH) are assessed. The APSH and Winter PSH have different BRE Guidelines criteria (refer **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 2**). For the assessment of the Proposed Development, the total APSH and Winter PSH are reported separately, to provide a more detailed assessment reflecting the different sunlight conditions.

- 14.40** These methods of sunlight assessment used for the Proposed Development assessment are described in further detail in the following section and within **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 2.**

Overshadowing

- 14.41** The following methodologies are used to assess overshadowing:
- Transient Overshadowing (TOS); and
 - Sun Hours on Ground.
- 14.42** Both TOS and Sun Hours on Ground assessments determine the extent of overshadowing on surrounding amenity areas. TOS is initially used as a screening exercise to determine which amenity areas should be included for the purpose of the Sun Hours on Ground assessment.
- 14.43** For large amenity areas TOS is used as the main assessment given the difficulties to quantify using the Sun Hours on Ground assessment.
- 14.44** For smaller amenity areas with distinct boundaries, Sun Hours on Ground is used as the main assessment.
- 14.45** BRE Guidelines suggest that 'sun hours on ground' assessment should be undertaken on the two Equinoxes (spring Equinox on 21st March and autumn Equinox on 21st September). Using specialist software, the path of the sun has been tracked to determine where the sun would reach the ground and where it would not on these dates.
- 14.46** It is recommended that at least half of an amenity area should receive at least 2 hours of sunlight on March 21st or the area which receives two hours of direct sunlight should not be reduced to less than 0.8 times its former value (i.e. there should be no more than a 20 % reduction).
- 14.47** A sun exposure test has been undertaken on June 21st, depicting a heat map of the number of potential hours of direct sunlight received within a distinct boundary. This is presented to provide a contextual understanding of sunlight received within the sensitive amenity areas.
- 14.48** The BRE Guidelines criteria summarised in **Table 14.1** are used as guidance for the assessments. Numerical analysis and professional judgement have also been used to determine the scale and nature of the potential effects.
- 14.49** These methods of overshadowing assessment used for the Proposed Development assessment are described in further detail in the following section and within **ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 2.**
- 14.50** **Table 14.1** provides a summary of the daylight, sunlight and overshadowing criteria set out within the BRE Guidelines.

Table 14.1 Summary of BRE Guidelines Criteria

Topic	Method	BRE Guidelines Criteria
Daylight	Vertical Sky Component (VSC)	A window may be adversely affected if the VSC measured at the centre of the window is less than 27% and less than 0.8 times its former value.
	No Sky Line (NSL)	A room may be adversely affected if the daylight distribution (NSL) is reduced beyond 0.8 times its existing area.
	Average Daylight Factor (ADF)	The recommended ADF levels for dwelling are for dwellings of 2 % for kitchens, 1.5 % for living rooms and 1 % for bedrooms. No criteria are given to measure alterations in ADF levels.
Sunlight	Annual Probable Sunlight Hours (APSH)	A window may be adversely affected if a point at the centre of the window receives for the whole year, less than 25% of the APSH including at least 5% of the PSH during the winter months (21 September to 21 March) and less than 0.8 times its former sunlight hours during either period, and (for existing neighbouring

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		buildings), if there is a reduction in total APSH which is greater than 4%.
Overshadowing	Sun Hours on Ground	An area of amenity space or garden may be adversely affected if less than half (50%) of the area is prevented by buildings from receiving two hours of sunlight on the 21st March (as suggested in BRE Guidelines) and the area which can receive some sun on the 21st March is less than 0.8 times its former value.

Alternative Daylight Targets

- 14.51** It is acknowledged that the values in the BRE Guidelines are derived on the basis of a 2-3 storey suburban model, therefore the application of its guidelines in urban environments should be treated flexibly. This form of assessment does not take account of context or detailed matters such as window size, room use, room size, window number or dual-aspect rooms. This assessment also assumes that all obstructions to the sky are 100% non-reflective. It should be noted that the BRE Guidelines acknowledges this and state, in paragraph 2.2.3; *'The numerical values given here are purely advisory. Different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.'*
- 14.52** Clearly in more urban environments, if development is to meet the scale and proportion of neighbouring buildings, large factor reductions are very difficult to avoid. GIA's experience in daylight and sunlight matters in dense urban environments suggest that weight should also be given to the retained values rather than just the percentage change. GIA's experience in the field would suggest that a more realistic VSC level in a dense urban environment would be considered to be around 15%.
- 14.53** GIA's view on retained VSC levels is supported by the Greater London Authority's hearing report for the Monmouth House and Featherstone Street development (application reference: P2015/3136/FUL) where it was considered in Para 120, Page 31:
- 'For general guidance, whilst the BRE guidelines recommend a target value of 27% VSC when measured on an absolute scale, that value is derived from a low density suburban housing model. In an inner city urban environment, VSC values in excess of 20% should be considered as reasonably good, and VSC in the mid-teens should be acceptable'.

Supplementary No Balcony Assessment

- 14.54** Paragraph 2.2.11 of BRE Guidelines note that windows to surrounding properties with balconies above them typically receive less daylight because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC. Therefore, a daylight and sunlight assessment within a no balconies scenario, whereby balconies are removed from the surrounding sensitive properties demonstrates that the presence of the balcony, rather than the size of the new obstruction, is the main factor in the relative loss of light. It should be noted that the no balcony assessment is supplementary for contextual purposes and is not factored into the significance of effect.
- 14.55** The results of the No Balconies are presented in ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 3.

Consented Development Assessment

- 14.56** Paragraph F2 of BRE Guidelines notes that an extant planning permission may be used as a supplementary assessment. Since the permitted scheme only exists on paper, it would be inappropriate for it to be treated in the same way as an existing building, and set 0.8 times the values for the permitted scheme as benchmarks. Therefore, the 2012 Outline Planning Permission (OPP)³ for the Site has been assessed in order to determine the change in effects compared with the Proposed Development.
- 14.57** Drawings and the daylight and sunlight results of the Consented Development are presented in **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing and Solar Glare – Annex 3.**

Illustrative Masterplan

- 14.58** As described above, the maximum parameter outline for Plots A-E have been assessed. However, the parameters include a buffer zone for balconies, building maintenance units and HVAC and therefore represent a worst-case scenario. The Illustrative Masterplan indicates a worked example of how development within plots A-E would be articulated at RMA stage. This is not included in the ES Chapter, however, a contextual assessment is provided within the Standalone Daylight and Sunlight Impacts Upon Neighbours Report for the discussion of the impacts of the Illustrative Masterplan.

Solar Glare

- 14.59** Solar glare is particularly important at pedestrian crossings and road junctions, where glare can cause temporary blinding of drivers. Typically, elements considered to be reflective are either glazed apertures or specular metal cladding.
- 14.60** The BRE Guidelines includes the following statement in regard to the potential for reflected solar glare from a new development:
- "Glare or solar dazzle can occur when sunlight is reflected from a glazed façade. This can affect road users outside and the occupants of adjoining buildings. The problem can occur either when there are large areas of reflective glass or cladding on the façade, or when there are areas of glass or cladding which slope back so that high altitude sunlight can be reflected along the ground. Thus solar dazzle is only a long term problem for some heavily glazed (or mirror clad) buildings..."
- 14.61** Solar Glare effects can only be quantitatively assessed where the façade details of a proposed building are known. Typically, only highly glazed buildings are considered, which are visible from sensitive receptors like road junctions or railway lines. As such, the solar glare technical assessment only considers the potential effects of the detailed elements of the Proposed Development.

Solar Glare Technical Assessment

- 14.62** The potential for reflected solar glare or dazzle from glazed or reflective façades from the Proposed Development has been assessed using specialist lighting software, Radiance, showing the path of the sun for the entire year. From this, two computer generated angular images have been produced for each selected viewpoint, indicating the area which sees the reflection of the sun path at any point during the year. A modified diagram portraying a standardised extent of human vision is then overlaid onto the image.
- 14.63** The methodology for solar glare is not aimed at addressing the intensity of an instance of reflected solar glare, but rather its occurrence, duration throughout the year and the location of this occurrence in respect of an individual's line of sight. It is also to be noted that the hours presented reflect solar time and therefore do not take Daylight Saving Hours into account.
- 14.64** The outline elements of the Proposed Development are not technically assessed at this stage, as the façade details are not yet known at this stage. Therefore, potentially sensitive locations which would have a view of Plots A-E are identified within a qualitative consideration of the likely significant effects of the Outline Proposals of the Proposed Development. The detailed design of the outline elements would be fully assessed at RMA stage, when the height, massing, elevation and façade details will have been fully developed.
- 14.65** The solar glare assessments undertaken assume a worst-case scenario whereby the sun will shine every day during daylight hours which is not the case within the UK.
- 14.66** For this purpose of the solar glare assessment the glazed and metal elements of the facades of the Proposed Development is assumed to have the same properties of a mirror i.e. it is fully reflective, and all of its reflected component is specular. This therefore portrays a worst-case scenario.
- 14.67** Potentially sensitive viewpoints around the Site are selected, which have a view of the detailed plots. These viewpoints represent locations where reflected solar glare may cause adverse impacts to those travelling towards the development, such as car or train drivers. The viewpoints are generally located at the minimum stopping distance and at the driver's eye height. The focal point is where the Proposed Development is closest to the line of sight.
- 14.68** Identifying the road viewpoints based on the stopping distance is calculated as the combination of thinking and braking distances.
- 14.69** Indicative locations of potentially sensitive viewpoints for plots A-E are provided, however, these have not been technically assessed, given that the façade details for the outline element are not yet known.

Assumptions and Limitations

- 14.70** No assumptions are made in relation to construction as no technical assessments are undertaken in relation to construction. It is however assumed that the Completed Development is the worst-case scenario for daylight, sunlight and overshadowing and therefore, the construction phase is not quantitatively assessed within this ES chapter.

- 14.71 For the existing surrounding sensitive receptors where layout information was not available, assumptions have been made as to the use and internal configuration of the rooms (from external observations) behind the fenestration observed. In such cases a standard 4.3m (14ft) room depth has been assumed, unless the building form dictated otherwise. This is common practice where access to buildings for surveying is unavailable. Obtaining these room layouts enables precise evaluation of the diffuse levels of daylight within each of the rooms via the No Sky Line (NSL).
- 14.72 Floor levels have been assumed for surrounding properties where access has not been obtained. With the working plane located 850mm above the finished floor level, this has the potential to affect the assessment of NSL.
- 14.73 For solar glare, although great care has been taken in identifying typical viewpoints, this does not guarantee that there are no additional sensitive locations where reflected solar glare could present a particular risk. For practical reasons, the area of the assessment has been limited to the area surrounding the Proposed Development. This area extends to a radius of approximately 500m around the Site in all directions. At greater distances, the likelihood of solar reflections causing significant glare is reduced as the time that buildings will reflect is reduced and the area of façade visible constitutes a reduced angle and so reduces the possibility of the whole sun disk being reflected. This approach to solar glare assessment within EIA has been adopted using professional judgement and by reference to Commission Internationale L'Eclairage (CIE) Collection on Glare 2002.
- 14.74 In addition, the methodology for solar glare is not aimed at addressing the intensity of an instance of reflected solar glare, but rather its occurrence, duration throughout the year, and the location of this occurrence in respect of an individual's line of sight. It must also be noted that the hours presented reflect solar time and therefore do not take Daylight Saving Hours into account. This approach to solar glare assessment within EIA has been adopted using professional judgement and by reference to CIE Collection on Glare 2002.
- 14.75 Whilst noted in BRE Guidelines that solar reflections from a new development can affect occupants of adjoining buildings, this has not been assessed within this ES chapter. Reflections to occupants at the surrounding buildings is not considered to present the same level of risk as to road users.

Methodology for Defining Effects

Receptors and Receptor Sensitivity

- 14.76 In terms of sensitivity, existing surrounding residential properties (i.e. receptors) are considered highly sensitive to daylight and sunlight levels, and specifically habitable rooms within the properties such as living rooms, kitchens and bedrooms, in accordance with BRE Guidelines. All existing residential receptors assessed within this ES chapter are considered highly sensitive due to the expectation of natural light and are given equal weighting, and therefore each individual residential receptor is treated as highly sensitive.
- 14.77 It should be noted that the BRE Guidelines paragraph 2.2.8 consider bedrooms to be less important in relation to daylight distribution, given that the primary use of the room is for sleeping and they therefore have a lower requirement for daylight. The BRE Guidelines also consider bedrooms to be less important with regards to sunlight, although it is stated that care should be taken not to block too much sun.
- 14.78 Commercial spaces such as offices and retail areas are not considered sensitive receptors and are therefore not assessed as industry standard and recommended by BRE Guidelines (Section 2.2). However, BRE Guidelines suggest that buildings such as schools and religious buildings may be considered as having a requirement for daylight. Therefore, as requested by LBTH, schools and religious buildings have been assessed, which are also considered highly sensitive.
- 14.79 For TOS and Sun on Ground, all public areas of open space such as parks and squares and neighbouring communal amenity areas and private gardens are considered highly sensitive.

Magnitude of Impact

- 14.80 The key terminology used to describe the magnitude of impacts are as follows and is determined with reference to the BRE Guidelines criteria presented within **Table 14.1**:
 - High;
 - Medium;
 - Low; and
 - No impact.

Defining the Effect

- 14.81 The effects are defined by reference to BRE Guidelines, which outline the methodology by which an adverse effect may be considered to occur. However, as noted in national regional and local policy, as well as in BRE Guidelines, an appropriate degree of flexibility should be applied to the criteria presented below.

Daylight

- 14.82 For daylight, the BRE Guidelines outline the approach within the accompanying appendix, in terms of assigning criteria to assess the effects:

“Adverse impacts occur when there is a significant decrease in the amount of skylight [...] reaching an existing building where it is required [...]. The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.”

“Where the loss of skylight [...] fully meets the guidelines, 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 [...] lose light (within the guidelines), a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines and a larger number of windows [...] are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for daylight [...] in the affected building [...].”

“Where the loss of skylight [...] 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 [...] are affected;
- The loss of light is only marginally outside the guidelines;
- An affected room has other sources of skylight [...]; and/or

- 14.83 The affected building [...] has a low level of requirement for skylight [...].”

- 14.84 The classification of major adverse impacts is documented within Paragraph 7 of BRE Guidelines:

“Factors tending towards a major adverse impact include:

- a large number of windows [...] are affected;
- the loss of light is substantially outside the guidelines;
- all the windows in a particular property are affected; and
- the affected indoor [...] spaces have a particular strong requirement for skylight [...], e.g. a living room in a dwelling [...].”

- 14.85 The numerical criteria for determining the category of effect for Vertical Sky Component (VSC) and No-Sky Line (NSL) is based on percentage alterations, as seen in **Table 14.2**.

Table 14.2 Percentage Alterations from the Baseline (VSC and NSL)

Scale of Effect	Daylight Criteria
Negligible	0-19.9% alteration
Minor	20-29.9% alteration
Moderate	30-39.9% alteration
Major	≥ 40% alteration

- 14.86 Where BRE Guidelines criteria are met and there is an alteration below 20%, the effects will be considered negligible. Additionally, if the retained VSC levels are ≥27% and the NSL levels are >80%, the effects are considered negligible, regardless of the alteration.

- 14.87 When assigning significance per property however, consideration has been given to the proportion of rooms / windows affected, as well as the percentage alterations, absolute changes, existing levels, retained levels and any other relevant factors, such as orientation, balconies, overhangs or design features. As such, the criteria are not applied mechanistically.

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Sunlight

14.88 For sunlight, the BRE Guidelines outline the approach of assigning criteria to assess the effects:

“Adverse impacts occur when there is a significant decrease in the amount of [...] sunlight reaching an existing building where it is required [...]. The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.”

“Where the loss of skylight [...] fully meets the guidelines, 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 [...] lose light (within the guidelines), a classification of negligible impact is more appropriate. Where the loss of light is only just within the guidelines and a larger number of windows or open space are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for [...] sunlight in the affected building [...].”

“Where the loss of [...] 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 [...] are affected;
- The loss of light is only marginally outside the guidelines;
- An affected room has other sources of [...] sunlight; and/or
- The affected building [...] only has a low level of requirement for [...] sunlight.”

“Factors tending towards a major adverse impact include:

- a large number of windows [...] are affected;
- the loss of light is substantially outside the guidelines;
- all the windows in a particular property are affected; and
- the affected indoor [...] spaces have a particular strong requirement for skylight [...], e.g. a living room in a dwelling [...].”

14.89 With regard to BRE Guidelines criteria, the initial numerical criteria for determining the scale of effect is based on percentage alterations from the baseline, as seen in **Table 14.3**. Using the BRE criteria, professional judgement has then been used to determine the extent of sunlight effects.

Table 14.3 Percentage Alterations from the Baseline (Annual and Winter PSH)

Scale of Effect	Daylight Criteria
Negligible	0-19.9% alteration
Minor	20-29.9% alteration
Moderate	30-39.9% alteration
Major	≥ 40% alteration

14.90 If the retained total APSH levels are ≥ 25% with at least 5% of this occurring in the winter months, the effects are considered negligible in line with BRE Guidelines, regardless of the alteration.

Overshadowing

Transient Overshadowing

14.91 BRE Guidelines does not include criteria for the scale and nature of effects and subsequent significance of TOS other than to identify the different times of the day and year when shadow would be cast over a surrounding area.

14.92 The assessment of potential effects as a result of TOS is therefore based on professional judgement, taking into consideration the conditions of the existing Site and surrounding area, and comparing these conditions against the resultant impact of the Proposed Development.

Sun Hours on Ground

14.93 It is suggested in BRE Guidelines that for an area to appear adequately sunlit throughout the year, at least half (50%) of any assessment area should see direct sunlight for at least two hours on the 21st March. If, as a result of new development, an existing assessment area will not meet BRE Guidelines criteria and the area which can receive two hours of direct sunlight on 21st March is reduced to less than 0.8 times its former area, then the loss of sunlight is likely to be noticeable.

14.94 Where the results show compliance with BRE Guidelines criteria, the occupants are unlikely to experience any noticeable change to their sunlight amenity levels. For the purposes of this assessment, such an effect would be considered negligible and not significant. Should the relevant criteria not be achieved, a judgement has to be made as to the scale and nature of effects and their resultant significance based on the level of loss, retained sunlight levels and the relevant baseline scenario.

14.95 **Table 14.4** sets out the numerical criteria adopted in relation to the sun on ground assessment. All effects greater than minor adverse are considered significant.

Table 14.4 Percentage Alterations from the Baseline (Sun hours on ground)

Scale of Effect	Numerical Criteria on 21 st March
Negligible	Over 50% of the amenity area will receive 2 hours of sunlight or less than 20% alteration in area which receives 2 hours of direct sunlight.
Minor	20-29.9% reduction or increase in the area which receives 2 hours of direct sunlight (and below 50% retained area).
Moderate	30-39.9% reduction or increase in the area which receives 2 hours of direct sunlight (and below 50% retained area).
Major	≥ 40% reduction or increase in the area which receives 2 hours of direct sunlight (and below 50% retained area).

Solar Glare

14.96 There are no quantitative criteria within BRE Guidelines or elsewhere regarding acceptable levels of solar glare.

14.97 For the purposes of this Hybrid Planning Application, a solar glare assessment has been undertaken upon the detailed components of the Proposed Development. For the purposes of the technical assessment, the outline plots are not included in the modelling given that the facade detail of these plots are not yet known. This allows for a worst-case assessment for the detailed plots. A qualitative assessment, is however provided on the potential for solar glare at surrounding sensitive road viewpoints from the outline plots.

14.98 For the outline element of the Proposed Development, at reserved matters approval stage should the detailed design for plots A-E be considered likely to generate significant effects in terms of solar glare, further assessment will be undertaken to determine the scale of effects.

14.99 Solar Glare is not a comparative assessment; the fact it may occur in the baseline does not necessarily justify its occurrence as a result of a Proposed Development. Therefore, the assessment considers the effect of the Proposed Development in absolute terms and not against a baseline condition.

14.100 Professional judgement has therefore been applied to assign the significance of solar glare arising from the Proposed Development and to determine the criteria for assessing the scale and nature of solar glare effects.

14.101 Multiple viewpoints are chosen for each of the traffic lanes or signals affected from a location. If for example, one location has multiple lanes or traffic signals, multiple viewpoints will be assessed from this single location to ensure that all effects are fully understood.

14.102 Whilst multiple viewpoints may be identified, professional judgement has been used to determine the effect at the location, rather than the individual perspectives at a signal traffic junction. Factors that could influence the nature, scale and resultant significance of effect may include:

- Sunlight availability probability;
- Area of façade off which reflections are visible;
- Period of time when reflections are visible;
- Angle at which reflections are visible from line of sight;

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- Views of the development being obscured for example by trees; and/or
 - The time of day at which the solar reflection will occur, for example during peak traffic times.
- 14.103** The factors in will be used to ascertain the scale of effect for each view and the factors listed above will then be taken into consideration to determine the overall significance for the designated viewpoint.
- 14.104** It is considered that no effect would occur at a viewpoint when the Proposed Development is either not visible, or the Proposed Development is visible, but no solar reflections occur.
- 14.105** **Table 14.5** sets out the numerical criteria adopted in relation to solar glare assessment. All effects greater than minor adverse are considered significant.

Table 14.5 Percentage Alterations from the Baseline (Solar Glare)

Scale of Effect	Numerical Criteria on 21 st March
Negligible	No reflections are visible or if visible all occur at angles greater than 30° from the driver's line of sight and so, as stated by the Commission Internationale de l'éclairage (CIE), will be of "little significance".
Minor	Solar reflections are visible within 30° to 10° or between 10° to 5° of the driver's line of sight for a short period of time
Moderate	Solar reflections are visible within 10° and 5° of the driver's line of sight occurring for a long period of time.
Major	Solar reflections are visible within 5° of a driver's line of sight.

Categorising Likely Significant Effects

- 14.106** BRE Guidelines does not advise on significance of an effect. Where an effect is determined as in excess of the recommended criteria it is considered significant. As such, the following criteria is applied:
- **'Moderate'** or **'Major'** effects are deemed to be **'significant'**; and
 - **'Minor'** or **'Negligible'** effects are considered **'not significant'**.
- 14.107** Appendix I paragraph 19 of BRE Guidelines notes that an adverse impact on one property cannot be balanced against negligible or beneficial impacts on another and in these instances, it is more appropriate to quote a range of impacts. As such, where appropriate and there is a range in the magnitude of impacts to windows / rooms at a particular building, the overall effect may be expressed as a range.
- 14.108** The nature of the effects may be either **adverse** (negative or detrimental) or **beneficial** (advantageous or positive) and are identified as such. Throughout demolition and construction, effects are considered **'temporary'**, **'local'**, and **'direct'**. Effects, once the Proposed Development is complete and operation are considered **'permanent'**, **'local'** and **'direct'**.

Light Pollution

- 14.109** Light pollution is defined as any light emitting from artificial sources into spaces where it is unwanted, such as spillage of light from office or commercial buildings onto residential accommodation, where this would cause nuisance to the occupants.
- 14.110** The elements of the Proposed Development which are detailed comprise primarily residential uses which are not considered to be a source of light intrusion and therefore do not require assessment. The commercial uses proposed are not considered likely to results in any significant light intrusion effects, owing to the relative distance from sensitive uses and are therefore not assessed.
- 14.111** As a mixed-use scheme, there is the potential for the proposed residential elements to be located within 20m of commercial buildings and thus considered future sensitive receptors in terms of light pollution. However, the non-residential uses of Proposed Development comprising commercial uses are currently proposed in outline and as such no light pollution assessment can be undertaken at this time. An assessment of the light pollution effects relies on the detailed design of the scheme, for both the commercial buildings that would emit the artificial lighting and the apertures of the proposed residential buildings. Owing to the application for the Proposed Development being partly in outline, the façade materials, including glazing, as well as the lighting design, internal layouts and room uses are not yet known for the outline element. As such, a full detailed analysis of light pollution cannot be undertaken at this stage in respect of the outline element. Any emerging lighting strategy will be designed with respect to the ILP Guidance Notes and will ensure that any significant

effects are mitigated as part of the detailed design development and assessed if necessary as required at RMA stage.

RECEPTORS AND RECEPTOR SENSITIVITY

Existing

Daylight and Sunlight

- 14.112** In terms of sensitivity, existing surrounding residential properties (i.e. receptors) are considered highly sensitive to daylight and sunlight levels, and specifically habitable rooms within the properties such as living rooms, kitchens and bedrooms, in accordance with the BRE Guidelines. All existing residential receptors assessed within this ES chapter are considered highly sensitive due to the expectation of natural light and are given equal weighting, and therefore each individual residential receptor is not assigned a level of sensitivity as per general EIA methodology i.e. high, medium, low or very low.
- 14.113** It should be noted that the BRE Guidelines paragraph 2.2.2 consider bedrooms to be less important in relation to daylight distribution, given that the primary use of the room is for sleeping and they therefore have a lower requirement for daylight. However, the BRE Guidelines state that care should be taken not to block too much sun.
- 14.114** Section 2.2 of the BRE Guidelines state that commercial spaces such as offices and retail areas are not considered sensitive receptors and are therefore not assessed as industry standard.
- 14.115** However, the BRE Guidelines may be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight. As such, two educational buildings and a religious building have been considered within the assessments.
- 14.116** In addition, owing to the emerging context, there are consents for future residential accommodation, which have the potential to be affected by the Proposed Development and are therefore considered with this ES Chapter. The future sensitive buildings are listed in **Table 14.6** and in **Figure 14.1**.
- 14.117** Therefore, the following 42 surrounding buildings considered sensitive to daylight and sunlight are listed below in **Table 14.6** and **Figures 14.1** and **Figure 14.2**.
- 14.118** As per the Scoping Opinion, Bromley Hall School has been included as an additional sensitive receptor. However, it was possible to determine, that Poplar Baptist Church and receptors on Brion Place would not be affected beyond BRE Guidelines as the angle from continuous obstructions of the Proposed Development, was less than 25° at the lowest window of these buildings and therefore not likely to be significantly affected (BRE Guidelines 2.2.5). As such these buildings have been scoped out.
- 14.119** In addition, the consented Former Poplar Bus Depot (PA/19/02148/A1), Islay Wharf (PA/19/01760) and 45-47 Abbott's Road (PA/19/02137/A1) have been assessed as future sensitive receptors in the Assessment of the Future Environment section.
- 14.120** It is noted that the Scoping Opinion requests that Leven Road Gas Works (PA/18/02803) is considered, however, it was possible to determine using the 25 ° guide, suggested by BRE, that this building would not be impacted and it is therefore scoped out. This is evidenced by the negligible effects occurring to the furthest window at Leven Road Phase 3, which sits closer to the Proposed Development (see discussion of impacts to Leven Road Phase 3 at **paragraph 14.369**).

Table 14.6 Daylight and Sunlight Sensitive Receptors

Address	Description
Existing Sensitive Daylight and Sunlight Receptors	
1. Carradale House	Residential
2. Balfron Tower	Residential
3. Culloden Primary School	Educational
4. Aberfeldy Estate Phase 3 - Block J	Residential
5. Aberfeldy Estate Phase 3 - Block G	Residential
6. Aberfeldy Estate Phase 2 - Block D	Residential
7. Aberfeldy Estate Phase 1 - Block A	Residential

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Address	Description
8. Aberfeldy Estate Phase 1 - Block C	Residential
9. 49-67 Abbott Road	Residential
10. 9-15 Wooster Gardens	Residential
11. 2-12 Lansbury Gardens	Residential
12. 1-7 Wooster Gardens	Residential
13. Loren Apartments (Aberfeldy Tavern)	Residential
14. Sherman House	Residential
15. St. Nicholas Church	Religious
16. 177-195 Abbott Road	Residential
17. 134-144 Leven Road	Residential
18. 128-132 Leven Road	Residential
19. 199-225 Abbott Road	Residential
20. 110-126 Leven Road	Residential
21. Devons Wharf	Residential
22. Leven Road Phase 3	Residential
23. Atelier Court	Residential
24. Bromley Hall School	Educational
25. Ailsa Wharf - Block A	Residential
26. Ailsa Wharf - Block D	Residential
27. Ailsa Wharf - Blocks K-L	Residential
28. 1-14 & 16-46 Dewberry St	Residential
29. 4, 6-14, 1-15, 17-33 & 35-41 Joshua St	Residential
30. 1-9, 2-10, 9-15, 12-20, 17-25 Mills Grove	Residential
31. 118-132, 134-146, 148-154 St Leonards Rd	Residential
Future Sensitive Daylight and Sunlight Receptors	
32. Former Bus Depot	Residential
33. Islay Wharf	Residential
34. 45-47 Abbott Road	Residential

Figure 14.1 Existing Daylight and Sunlight Receptors



Figure 14.2 Future Daylight and Sunlight Receptors



Ref	Address	Description
	House, Aberfeldy Street	
49-50	Dee Street	Rear Gardens
51-64	Wooster Gardens and Landbury Gardens	Rear Gardens
65-78	Bromley Hall	Private Amenity
N/A	Culloden Primary School Playground	Educational Playground
N/A	The River Thames Tidal Tributaries SINC (Bow Creek / River Lea)	Sensitive Ecological Area
Internal Overshadowing Receptors		
79	Allotments	Proposed Amenity within the Site
80	Highland Place	Proposed Amenity within the Site
81	Level Road Green	Existing amenity within the Site
82	Braithwaite Park	Existing amenity within the Site
83	The Square	Proposed Amenity within the Site
84	Culloden Green	Proposed Amenity within the Site

Overshadowing

14.121 For Transient Overshadowing, all public areas of open space such as parks and squares and neighbouring communal amenity areas and private gardens are considered highly sensitive. The sensitive amenity areas are listed below in **Table 14.7** and shown in **Figure 14.3** and **Figure 14.4**.

Table 14.7 Overshadowing Sensitive Receptors

Ref	Address	Description
External Overshadowing Receptors		
1-43	Abbotts Road and Leven Road	Rear garden
44	Aberfeldy Millennium Green	Public Amenity
45-46	2 St Nicholas Church	Private Amenity
47-48	54 Sherman	Private Amenity

Figure 14.3 External Overshadowing Receptors



Figure 14.4 Internal Overshadowing Receptors



Solar Glare

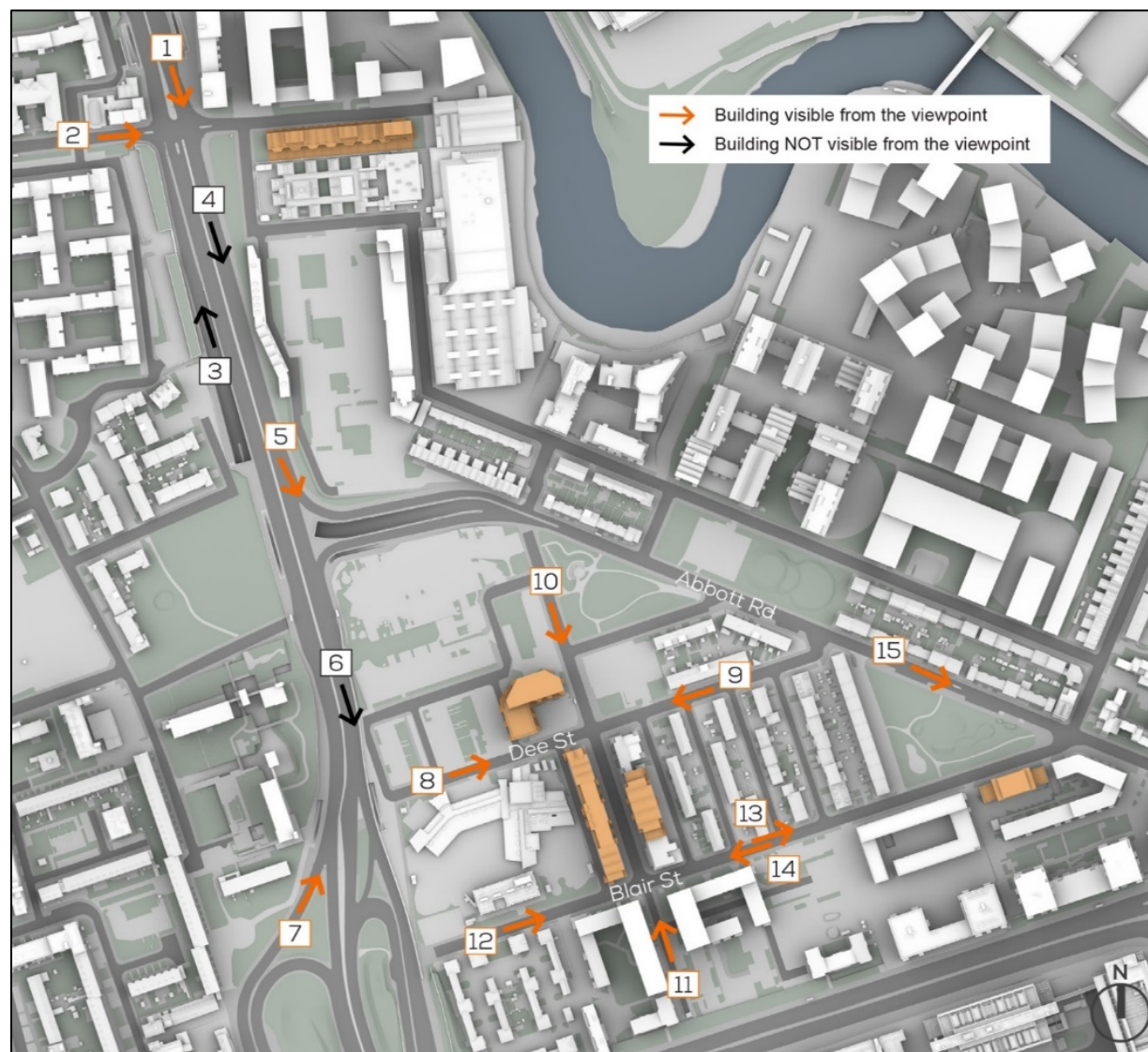
14.122 For Solar Glare, all road viewpoints with the potential to be affected by the detailed elements of the Proposed Development identified are considered to be of high sensitivity. The sensitive viewpoints considered relevant for assessment are listed below in **Table 14.8** and shown in **Figure 14.5**.

14.123 At RMA stage, it is likely that additional viewpoints along roads surrounding the Site would have a view of the detailed design of plots A-E (currently proposed in outline). Once the detailed design emerges, the road locations will be reviewed to determine the viewpoints which are sensitive to solar reflections from future development within these plots. In particular viewpoints 1-7 (along the A12) will be technically assessed at RMA stage. Additionally, any introduced road junctions will be technically assessed in relation to potential solar glare effects at RMA. For the purposes of this ES Chapter, these locations are considered qualitatively.

Table 14.8 Solar Glare Sensitive Receptors

Viewpoint	Description
1 – Southbound along A12	Road viewpoint
2 – Eastbound along Zetland Street	Road viewpoint
3 – Northbound along A12	Road viewpoint
4 – Southbound along A12	Road viewpoint
5 – Southbound along A12	Road viewpoint
6 – Southbound along A12	Road viewpoint
7 – Northeast-bound along A12	Road viewpoint
8 – Eastbound along Dee Street	Road viewpoint
9 – Westbound along Dee Street	Road viewpoint
10 – Southbound along Aberfeldy Street	Road viewpoint
11 – Northbound along Aberfeldy Street	Road viewpoint
12 – Eastbound along Blair Street	Road viewpoint
13 – Eastbound along Blair Street	Road viewpoint
14 – Westbound along Blair Street	Road viewpoint

Figure 14.5 Solar Glare Receptors



BASELINE CONDITIONS

- 14.124** The full daylight and sunlight baseline assessment results are presented in ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 2.
- 14.125** Within the 42 existing buildings considered as sensitive receptors, a total of 2,699 windows serving 1,470 habitable rooms were assessed to determine the existing daylight levels. Each of the buildings were also considered sensitive to sunlight, within which 1,352 windows serving 1,352 windows were assessed to determine the existing sunlight levels.
- 14.126** For daylight in the baseline condition, a total of 1,197 of the 2,699 (44.3%) windows would meet the BRE Guidelines criteria for VSC and 1,257 of the 1,470 rooms (85.5%) would meet the BRE Guidelines criteria for NSL and are therefore considered to experience a **Negligible (Not Significant)** effect.
- 14.127** For sunlight in the baseline condition, 975 of the 1352 total windows (72.1%) would meet the BRE Guidelines criteria for APSH and therefore be considered to experience a **Negligible (Not Significant)** effect.
- 14.128** The full overshadowing baseline assessment results are presented in **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 5**. Of the 78 individual amenity areas assessed, 31 would not meet the BRE Guidelines criteria of achieving at least two hours of sun on at least 50% of their total area.
- 14.129** Solar glare is not assessed in the baseline condition as the assessment considers the reflections occurring from the façades of the Proposed Development in isolation.

POTENTIAL EFFECTS

Demolition and Construction

- 14.130** The magnitude of impact and resultant potential effect in relation to the daylight, sunlight, overshadowing and solar glare on the surrounding receptors would vary throughout the demolition and construction phase, depending on the level of obstruction caused.
- 14.131** During the construction phase, a number of tall temporary structures are likely to be present on-Site. In some cases, scaffolding, cranes and hoarding would marginally increase the size of the Proposed Development's maximum massing, however this would be temporary and is unlikely to result in additional noticeable effects due to the scale of these structures and their transient nature.
- 14.132** The construction of the new buildings on the Site would have a gradual effect upon the levels of daylight, sunlight and overshadowing as the massing of the Proposed Development increases over time. It is therefore considered that the completed Proposed Development represents the worst-case assessment in terms of likely resultant effects. The effects during the demolition and construction works would almost certainly be less than that of the Proposed Development, given that the extent of permanent massing would increase throughout the construction programme, until the Proposed Development is complete.
- 14.133** Sensitive buildings within the Site boundary would experience short to medium term, temporary effects as a result of earlier phases being constructed. However, the Application proposes the redevelopment of these buildings and as such a technical daylight and sunlight assessment has not been undertaken for the earlier phases of the Proposed Development however an internal sunlight and daylight assessment, of the Proposed Development once completed has been undertaken and submitted alongside the planning application to determine the level of sunlight and daylight in all the various buildings. Phase, and this represents the worst case and as a result no Phase A assessment has been undertaken.
- 14.134** The effect in terms of solar glare would range from being negligible effects during demolition, gradually increasing as construction works progress and the façades of the Proposed Development are installed. Therefore, the effects as set out in the assessment of the Completed Development scenario below represents the worst-case scenario.
- 14.135** Therefore, the effects have the potential to be adverse on surrounding receptors. It is considered that the effects would be temporary and not be any worse than those presented by the completed Proposed Development without mitigation.
- 14.136** Therefore, reference should be made to the assessments of the completed Proposed Development in relation to potential daylight, sunlight, overshadowing and solar glare effects which are discussed in the sections below.

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Completed Development

- 14.137** The full daylight assessment for the Completed Development can be found within **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 4** and is summarised in below in **Table 14.9**.
- 14.138** Additionally, analysis of the No Balcony and Consented Development assessments has been provided as discussion. Cross references to the Standalone Daylight and Sunlight Impacts Report, where the Illustrative Masterplan is considered, has also been provided, for those properties affected by the outline blocks.
- 14.139** A total of 42 buildings have been assessed for daylight and all windows and rooms assessed within three of these would meet BRE's criteria for both VSC and NSL. The three buildings (highlighted in blue in **Table 14.9**)

experience little to no impact (less than 20% alteration) or retain values in line with BRE Guidelines criteria and are therefore considered to experience a **Negligible** effect:

- 134-144 Leven Road;
- 49-67 Abbott Road; and
- Aberfeldy Estate Phase One Block A.

14.140 The results of the 39 remaining buildings are discussed in further detail below.

Table 14.9 Daylight Assessment of the Proposed Development at Surrounding Sensitive Receptors (VSC and NSL)

Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE criteria	Below BRE Guidelines criteria				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines criteria			
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
110-126 Leven Road	95	42	21	24	8	53	36	36	0	0	0	0
128-132 Leven Road	35	25	10	0	0	10	24	22	2	0	0	2
134-144 Leven Road	56	56	0	0	0	0	24	24	0	0	0	0
177-195 Abbott Road	85	54	15	12	4	31	48	43	2	2	1	5
199-225 Abbott Road	179	100	3	12	64	79	90	88	0	2	0	2
49-67 Abbott Road	70	70	0	0	0	0	41	41	0	0	0	0
Aberfeldy Estate Phase One Block A	57	57	0	0	0	0	45	45	0	0	0	0
Aberfeldy Estate Phase One Block C	98	51	13	5	29	47	61	46	8	4	3	15
Aberfeldy Estate Phase Three Block G	47	36	3	2	6	11	25	24	1	0	0	1
Aberfeldy Estate Phase Three Block J	111	74	11	10	16	37	56	56	0	0	0	0
Aberfeldy Estate Phase Two Block D	57	35	14	4	4	22	35	34	0	1	0	1
Ailsa Wharf Block A	45	39	5	1	0	6	21	21	0	0	0	0
Ailsa Wharf Block D	228	164	31	14	19	64	88	86	1	1	0	2
Ailsa Wharf Blocks K L	62	58	1	3	0	4	27	27	0	0	0	0
Atelier Court	117	14	3	5	95	103	97	26	11	9	51	71
Balfron Tower	62	48	6	0	8	14	54	53	0	1	0	1
Bromley Hall	100	89	5	1	5	11	31	31	0	0	0	0
Carradale House	77	37	10	22	8	40	44	44	0	0	0	0
Culloden Primary School	90	33	5	21	31	57	21	18	0	0	3	3
Dewberry Street 16-46	72	42	24	6	0	30	44	44	0	0	0	0
Dewberry Street 2-14	44	42	0	1	1	2	25	25	0	0	0	0
Devons Wharf	169	104	52	5	8	65	91	86	1	2	2	5
Joshua Street 1-15	77	62	3	6	6	15	31	31	0	0	0	0
Joshua Street 17-33	55	48	2	4	1	7	36	36	0	0	0	0
Joshua Street 35-41	30	21	5	3	1	9	17	17	0	0	0	0
Joshua Street 4	4	3	1	0	0	1	2	2	0	0	0	0
Joshua Street 6-14	27	24	1	2	0	3	17	17	0	0	0	0
Lansbury Gardens 2-12	43	25	0	1	17	18	18	7	1	0	10	11
Leven Road Phase Three	73	26	4	2	41	47	62	28	2	3	29	34

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Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE criteria	Below BRE Guidelines criteria				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines criteria			
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
Loren Appartments	26	4	0	3	19	22	18	4	2	1	11	14
Mills Grove 1-9	25	24	0	1	0	1	17	15	1	0	1	2
Mills Grove 12-20	25	20	4	0	1	5	15	15	0	0	0	0
Mills Grove 17-25	27	18	9	0	0	9	15	15	0	0	0	0
Mills Grove 2-10	25	24	1	0	0	1	15	15	0	0	0	0
Mills Grove 9-15	22	15	6	0	1	7	12	11	0	1	0	1
St Leonards Road 118-132	40	29	10	0	1	11	23	23	0	0	0	0
St Leonards Road 134-146	43	31	12	0	0	12	28	28	0	0	0	0
St Leonards Road 148-154	20	18	2	0	0	2	10	10	0	0	0	0
Sherman House	69	29	1	2	37	40	43	23	3	1	16	20
St.Nicholas Church	59	36	10	0	13	23	31	31	0	0	0	0
Wooster Gardens 1-7	33	31	2	0	0	2	16	13	1	2	0	3
Wooster Gardens 9-15	20	18	2	0	0	2	16	16	0	0	0	0
Totals	2699	1776	307	172	444	923	1470	1277	36	30	127	193

110-126 Leven Road

- 14.141 These terraced houses are located east of the Site, with two storeys at each property considered for assessment. The rear of these nine properties face towards the Proposed Development.
- 14.142 A total of 95 windows serving 36 rooms were assessed for daylight within these buildings. Of these 36 rooms, three would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.143 For VSC, 42 of the 95 (44.2%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.144 Of the 53 affected windows, 21 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 24 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining eight windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.145 A total of 21 of the affected windows serve bedrooms on the second storey, which may be considered less sensitive to daylight alterations. Each of the bedroom windows would retain 12-23.9% VSC.
- 14.146 A further 16 affected windows serve ground floor kitchens. Four kitchen windows serving 110-116 Leven Road would see moderate to major impacts in VSC, owing to their view of the tower, retaining levels of VSC between 10.9-14.7%. It should be noted that these windows are set back from the rear building line and thereby inherently obstructed. However, these four windows serving kitchens are supplemented by a second window, which would also see impacted but would retain 18.7-22.1% VSC. The remaining eight kitchen windows, which serve four kitchens, retain between 15.5-23.9% VSC.
- 14.147 The final 16 affected windows serve ground floor living rooms or assumed living-kitchen-diners (LKDs). These windows see minor to moderate impacts and would retain levels of VSC ranging from 17.1-24%. Additionally, each of the living rooms or assumed LKDs are served by at least one other window located on the front elevation, which is not significantly impacted by the Proposed Development, retaining levels of VSC in excess of 24%.
- 14.148 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.149 Overall, VSC impacts can be seen to occur to 53 windows at the rear of these terraced buildings, comprising primarily bedrooms, as well as kitchens and LKDs. With the exception of three bedrooms, which would retain low-teen levels of VSC, the bedrooms are considered to retain good levels of light. Bedrooms may be considered less sensitive to daylight alterations. The levels of VSC retained at the eight impacted kitchens may be considered acceptable when taking account of the retained levels of VSC at both windows per kitchen. Of the affected living rooms / LKD windows, the retained levels of VSC may be considered acceptable and furthermore, each of the rooms is served by a mitigating window at the front of the property. No NSL impacts beyond BRE's criteria would occur and therefore the effect to these properties is considered **Moderate Adverse (Significant)**.

128-132 Leven Road

- 14.150 These terraced houses are located east of the Site, with two storeys at each property considered for assessment. The rear of these three properties face towards the Proposed Development.
- 14.151 A total of 35 windows serving 24 rooms were assessed for daylight within these buildings. Of these 24 rooms, 13 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.152 For VSC, 25 of the 35 (71.4%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.153 Of the 10 affected windows, all would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.
- 14.154 These windows comprise one living room window, which retains 23.5% VSC and nine bedroom windows, which retain above 22.6-26.9% VSC. The living room impacted is served by a further four windows which are not affected.
- 14.155 For NSL, 22 of the 24 (91.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.156 Of the two affected rooms, both would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect. Both rooms are bedrooms, which may be considered less sensitive to daylight alterations and would retain 72.2-75.8% VSC.

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14.157 Overall, owing to the retained levels of daylight, the effect is considered **Negligible to Minor Adverse (Not Significant)**.

177-195 Abbott Road

14.158 These terraced houses are located east of the Site, with two to three storeys at each property considered for assessment. The front of these ten properties face towards the Proposed Development.

14.159 A total of 85 windows serving 48 rooms were assessed for daylight within these buildings. Of these 48 rooms, 22 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.160 For VSC, 54 of the 85 (63.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.161 Of the 31 affected windows, 15 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 12 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining four windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.

14.162 A total of 21 of the affected windows are bedrooms located on the second storey. Bedrooms may be considered less sensitive to daylight alterations, however, would retain 15.9-23.4% VSC.

14.163 A further three affected windows serve ground floor kitchens. Of these kitchen windows, at 195 Abbott Road, which is closest to the Proposed Development and would therefore see a major adverse impact would retain 17.5% VSC. The two other kitchen windows would see minor adverse impacts, retaining 21.8-23.1% VSC.

14.164 The remaining six windows affected serve living rooms located at ground level. One of the windows retains 15.5% VSC and is located on the north west facing flank wall. This living room is served by further two front facing windows unaffected by the Proposed Development. The remaining five affected living room windows are located to the rear at ground level. These windows retain 18-26.7% VSC, serving living rooms which also have two additional front facing windows not affected by the Proposed Development.

14.165 For NSL, 43 of the 48 (89.6%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.166 Of the five affected rooms, two would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining room would experience an alteration in excess of 40% which is considered a Major Adverse effect.

14.167 Three bedrooms, which are located beneath overhanging eaves exacerbating the scale of impact by cutting out a view of the top of the sky, would experience reductions. However, bedrooms may be considered less sensitive to changes in daylight distribution. The kitchen at 195 Abbott Road discussed above would see a moderate adverse reduction although would retain 57.9% NSL. The final affected room is a living room, which experiences an alteration only marginally beyond BRE Guidelines recommendations and is not affected in relation to VSC.

14.168 Overall, VSC impacts can be seen to occur to 31 windows at the front of these terraced buildings, comprising primarily bedrooms, as well as kitchens and LKDs. All the bedrooms affected levels of VSC ranging from mid-teens to above 20% VSC, however, may be considered less sensitive to daylight alterations. Three kitchen windows are impacted, of which two would retain VSC levels above 20%. One kitchen, which is closest to the Proposed Development would see significant impacts in both VSC and NSL, however, retains 17.5% VSC and 57.9% NSL. Each of the impacted living room windows retain levels of VSC above 15%, with each of the affected living rooms being served by a mitigating window at the rear of the property. Therefore, the effect is considered **Minor to Moderate Adverse (Significant)**.

199-225 Abbott Road

14.169 These terraced houses are located east of the Site, with two storeys at each property considered for assessment. The front of these 16 properties face towards the Proposed Development.

14.170 A total of 179 windows serving 90 rooms were assessed for daylight within this building. Of these 90 rooms, 57 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.171 For VSC, 100 of the 179 (55.9%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.172 Of the 79 affected windows, three would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 12 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 64 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.

14.173 All but one of the 79 affected windows serve rooms understood to be bedrooms, which may be considered less sensitive to daylight alterations. These windows are located on both the ground level, served by bay windows and the first storey, served by windows which are located beneath overhanging architectural features which inherently obstruct daylight availability. The remaining window, which serves an LKD, is located on the north western flank wall of 225 Abbott Road, therefore directly facing the Proposed Development at close proximity. However, this living room is served by a second window at the rear of the property, which is unaffected, seeing 23.5% VSC. This room is therefore considered to remain well daylight overall.

14.174 For NSL, 88 of the 90 (97.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.175 Of the two affected rooms, both would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect. Both rooms are bedrooms, which retain 59-61% NSL.

14.176 Overall, the majority of affected rooms are bedrooms, which are obstructed in the baseline condition or are served by bay windows. Whilst significant impacts occur, it should be noted that bedrooms may be considered less sensitive to daylight alterations. The impacted living room would remain well daylight overall, despite seeing a reduction in VSC. Only two NSL impacts beyond BRE's criteria would occur to bedrooms, which retain good levels of daylight distribution. Therefore, the effect is considered **Moderate to Major Adverse (Significant)**.

14.177 The impacts to this building are discussed in further detail within the Standalone Daylight and Sunlight Impacts Upon Neighbours Report, providing further contextual considerations and highlighting how acceptable levels of daylight could be preserved upon the implementation of the Illustrative Masterplan.

Aberfeldy Estate Phase One Block C

14.178 Five storeys at this apartment block located south east of the Site are considered for assessment. It has an irregular form such that front facing and flank elevations of the eastern portion and the rear elevation of the southern portion face towards the Proposed Development. The apartments are defined by recessed balconies.

14.179 A total of 98 windows serving 61 rooms were assessed for daylight within this building. Of these 61 rooms, 15 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.180 For VSC, 51 of the 98 (52%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.181 Of the 47 affected windows, 13 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and five would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 29 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.

14.182 A total of 20 affected window serve bedrooms, which may be considered less sensitive to daylight alterations. Four of these windows are situated beneath recessed balconies and therefore receive very low levels of VSC (below 2.5%) in the baseline condition. Therefore, the percentage alteration is disproportionate to what the occupant would perceive. The remaining 16 bedroom windows would retain 10-20.7% VSC. Bedrooms may be considered less sensitive to daylight alterations.

14.183 A further five kitchen windows are affected. Two of these, serving one kitchen, are located on the west facing flank wall overlooking the Proposed Development, each retaining 9.9-11.9% VSC. The remaining three kitchen windows are inset into the corner of the 2nd, 4th and fifth storey of the courtyard block, retaining 11.4, 16.5 and 20.5% VSC respectively.

14.184 The remaining affected 20 LKDs and one living room window are located on the ground to 4th to storey. The majority (15) of these windows are located beneath recesses and are therefore inherently obstructed as shown by their low baseline values ranging from 0.1-6.7% VSC. Therefore, the moderate to major alterations are disproportionate to what the occupants would be likely to perceive. The remaining five windows LKD / living room windows, which are flush to the wall would retain 7.6-12.7% VSC. However, these five windows are located on the ground level, which can expect to receive lower levels of light. All five windows serve three LKDs and a living room which has another window not affected by the Proposed Development, which either see good levels of VSC or is served by a balcony.

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- 14.185** For NSL, 46 of the 61 (75.4%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.186** Of the 15 affected rooms, eight would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and four would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining three rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.187** A total of six bedrooms are affected, however, these may be considered less sensitive to daylight distribution. The remaining nine rooms are LKDs of which eight are situated beneath recessed balconies and therefore inherently limited in terms of sky visibility, as shown by their comparatively low baseline levels of NSL. These rooms would retain 14.9-53% NSL. One LKD not situated beneath a recess would continue to receive 65% NSL.
- 14.188** Overall, VSC impacts can be seen to occur to 47 windows at this apartment block, comprising primarily bedrooms, as well as kitchens and LKDs. Four bedrooms are located beneath recessed and therefore inherently obstructed, with the remaining bedrooms retaining VSC values in the teens. However, bedrooms may be considered less sensitive to daylight alterations. Two windows of a kitchen directly overlooking the Proposed Development is significantly impacted. A ground floor kitchen window, which is inherently restricted in its availability of daylight would be impacted, with a further two retaining good levels of VSC. Of the impacted LKDs, the majority are situated beneath recessed balconies and therefore would not notice the relative alteration in daylight. Five LKD windows which are flush with the wall would be impacted, although these LKDs have mitigating windows. The NSL alterations are not considered significant. Therefore, the effect is considered **Minor to Moderate Adverse (Significant)**.

Aberfeldy Estate Phase Three Block G

- 14.189** Four storeys of this apartment block, located south east of the Site, are considered for assessment. The north and west facing elevations of the overlook the Proposed Development. The façades are defined by recessed balconies.
- 14.190** A total of 47 windows serving 25 rooms were assessed for daylight within this building. Of these 25 rooms, 14 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.191** For VSC, 36 of the 47 (76.6%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.192** Of the 11 affected windows, three would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining six windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.193** A total of four affected windows serve bedrooms, which have low baseline levels of VSC (78-8.9%) owing to their location beneath recessed balconies. The remaining seven windows serve LKD windows also beneath recessed balconies, which have low baseline levels of VSC (2.9-5.4%). Therefore, the alterations are disproportionate to the absolute loss of VSC to these windows, which would be only 0.6-2.8%. However, all four bedrooms and each of the LKDs affected are served by one or two mitigating windows which are not affected by the Proposed Development.
- 14.194** For NSL, 24 of the 25 (96%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.195** The affected room would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect.
- 14.196** This room is an LKD on the first storey, which experiences an alteration only marginally beyond BRE Guidelines criteria, which may therefore not be noticeable.
- 14.197** Overall, the impacts occur only to windows located beneath recessed balconies. Each of the bedrooms and LKDs affected are served by mitigating windows which are not affected by the Proposed Development. Therefore, whilst the above factors should be noted, given the significant alterations to the windows and rooms assessed at this building, the effect is considered **Minor (Not Significant)**.
- 14.198** The impacts of the Proposed Development are no worse than those which would occur as a result of the Consented Masterplan.

Aberfeldy Estate Phase Three Block J

- 14.199** Five storeys this apartment block, located south of the Site, are considered for assessment. Windows and rooms on the north facing elevations overlook the Proposed Development. The façades are defined by banks of recessed balconies.
- 14.200** A total of 111 windows serving 56 rooms were assessed for daylight within this building. Of these 56 rooms, 22 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.201** For VSC, 74 of the 111 (66.7%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.202** Of the 37 affected windows, 11 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 10 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 16 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.203** A total of 17 affected windows serve bedrooms. Two of these are on the ground floor and retain 25-26% VSC. The remaining 15 bedrooms windows are located beneath recessed balconies, thereby seeing lower levels of VSC in the baseline condition (13-14%) and exacerbating the reduction. These windows would retain 3.5.9% VSC, however, bedrooms may be considered less sensitive to daylight alterations.
- 14.204** The final 20 windows affected serve LKDs. Seven of these windows are flush to the wall, seeing minor to moderate impacts but would retain 23-26% VSC and are therefore considered to remain well daylit. The remaining 13 LKD windows are situated beneath recessed balconies and therefore have lower levels of VSC in the baseline condition with VSC levels of 6-7%. However, each of these LKDs are served by a second window which is not perceptibly affected by the Proposed Development and therefore each of the LKDs seeing reduction would remain well daylit overall.
- 14.205** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.206** Overall, each of the LKDs seeing impacts in VSC would remain well daylit by virtue of a secondary window, and only bedrooms, which are considered less sensitive to daylight alterations, served by one window situated beneath a recessed balcony are perceptibly affected, the effect is considered **Minor to Moderate Adverse (Significant)**.
- 14.207** The impacts of the Proposed Development are no worse than those which would occur as a result of the Consented Masterplan.

Aberfeldy Estate Phase Two Block D

- 14.208** Five storeys of this apartment block, located south of the Site, are considered for assessment. Windows and rooms on the north and east facing elevations overlook the Proposed Development. The façades are defined by banks of recessed balconies.
- 14.209** A total of 57 windows serving 35 rooms were assessed for daylight within this building. Of these 35 rooms, 15 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.210** For VSC, 35 of the 57 (61.4%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.211** Of the 22 affected windows, 14 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and four would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining four windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.212** A total of nine affected windows serve bedrooms, which may be considered less sensitive to daylight alterations. However, seven of these would retain 13.7-26% VSC, with the remaining two bedroom windows located beneath a recessed balcony, experiencing a reduction only marginally above BRE Guidelines criteria and is therefore unlikely to be noticeable with an absolute loss of 1.2% VSC occurring.
- 14.213** A further 12 affected windows serve LKDs, of which three would experience minor impacts only marginally beyond BRE Guidelines criteria, retaining 19-24% VSC. A further six LKD windows are located beneath recessed balconies which exacerbate the reduction, owing to the low baseline levels of VSC between 1.9-6.7%. A remaining three LKD windows are located beneath cantilevered balconies, seeing minor to moderate impacts. All windows beneath balconies serve LKDs which have one or two more windows which are not affected by the Proposed Development and remain well daylit overall.

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- 14.214** The remaining window serves a single aspect studio, which would see a major adverse impact to the site facing window which is located beneath a balcony.
- 14.215** For NSL, 34 of the 35 (97.1%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.216** The affected room would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect. This room is a bedroom which retains 61.3% NSL and is therefore not considered to be significantly affected.
- 14.217** Overall, given that the bedrooms affected, which can be considered less sensitive to daylight alterations, would retain levels of daylight which may be considered acceptable or experience a very small absolute loss of VSC and each of the LKDs seeing VSC alterations remain well daylight overall owing to mitigating windows, the effect is considered **Minor to Moderate Adverse (Significant)**.
- 14.218** When considering the impacts of the Proposed Development and retained levels of daylight within a no balconies scenario, it can be seen that whilst reductions would still occur, the lower retained levels are a result of balconies.

Ailsa Wharf Block A

- 14.219** This apartment block is located north east of the Site and is currently under construction. Windows and rooms on the south and west facing elevations of the lowest three residential floors looking towards the Proposed Development are considered. The façades are defined by banks of recessed balconies.
- 14.220** A total of 45 windows serving 21 rooms were assessed for daylight within this building. Of these 21 rooms, 15 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.221** For VSC, 39 of the 45 (86.7%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.222** Of the six affected windows, five would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 14.223** All six LKD windows are located beneath recessed balconies as shown by the low baseline levels ranging from 5.1-6.3% VSC. Although these LKD windows experience minor to moderate impacts, each of the LKDs are served by three further windows not affected by the Proposed Development and retain very good levels of daylight overall.
- 14.224** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.225** Due to this building being under construction, there are no residents there to experience a reduction and the assessment of Average Daylight Factor (ADF) in the rooms considered above has also been undertaken to gauge what the alterations and retained internal levels of daylight would be upon implementation of the Proposed Development.
- 14.226** Of the 21 rooms assessed for ADF, 14 would experience no ADF alterations, six would see a marginal reduction by 0.1% ADF and one would see a marginal reduction of 0.2% ADF. These alterations would not change materially the levels of light within these rooms.
- 14.227** Overall, the six windows seeing impacts are located beneath recessed balconies and serve LKDs which see only marginal nonmaterial alterations in ADF. Therefore, the effect is considered **Negligible (Not Significant)**.

Ailsa Wharf Block D

- 14.228** This apartment block is located north of the Site. Windows and rooms on the south, east and west elevations of the lowest six residential floors overlooking the Proposed Development are considered. The north facing windows are also assessed, as there are dual aspect rooms with windows spanning the breadth of the building with north and south facing windows. The façades are defined by banks of recessed balconies
- 14.229** A total of 228 windows serving 88 rooms were assessed for daylight within this building. Of these 88 rooms, 49 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.230** For VSC, 164 of the 228 (71.9%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

- 14.231** Of the 64 affected windows, 31 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 14 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 19 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.232** Of the affected windows, 45 serve bedrooms, which may be considered less sensitive to daylight alterations. Sixteen of these bedroom windows retain VSC levels above 15%. The remaining bedrooms windows are situated beneath balconies and therefore see lower levels of VSC.
- 14.233** Of the 19 LKD windows affected, seven retain VSC levels between 17-26%. The remaining 12 LKD windows retain levels of VSC ranging from 5-10%, however, these living rooms are served by one or two further windows which are not affected by the Proposed Development, seeing good levels of VSC overall.
- 14.234** The final window seeing VSC impacts serves a studio, retaining 24.7% VSC and is therefore not considered to be significantly affected.
- 14.235** For NSL, 86 of the 88 (97.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.236** Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 14.237** Both rooms are bedrooms retaining 68-71% NSL and are therefore not considered to be significant affected.
- 14.238** Due to this building being under construction, there are no residents there currently to experience a reduction and the assessment of Average Daylight Factor (ADF) in the rooms considered above has also been undertaken to gauge what the alterations and retained internal levels of daylight would be upon implementation of the Proposed Development.
- 14.239** Of the 88 rooms assessed for ADF, 16 would experience no ADF alterations, 13 would see marginal reductions by 0.1-0.2% ADF and 59 would see reductions ranging from 0.3% to 1.2% ADF. When looking at the retained ADF levels, all rooms meeting or exceeding BRE's recommendation for ADF in the baseline scenario would still retain levels of internal daylight above guidelines in the Proposed Development scenario. The only bedroom below recommendation in the baseline scenario would see no changes upon implementation of the Proposed Development, whilst the five L/K/Ds below recommendation in the baseline scenario would see negligible or minor alterations of 0.2% to 0.4% ADF and will all retain in excess of 1.2% ADF.
- 14.240** Overall, the majority of impacts occur to bedrooms which retain levels of ADF above recommendation. Whilst LKD windows would see impacts, the vast majority of them retain levels of ADF above recommendation, with only five of them falling short of recommendation in the baseline scenario seeing negligible to minor alterations whilst retaining ADF levels above 1.2% ADF. As such, the effect is considered **Minor Adverse (Not Significant)**.

Ailsa Wharf Blocks K L

- 14.241** This apartment block is located north of the Site. Windows and rooms on the north and west elevations of the lowest four residential floors overlooking the Proposed Development are considered. These façades are defined by banks of recessed balconies.
- 14.242** A total of 62 windows serving 27 rooms were assessed for daylight within this building. Of these 27 rooms, 25 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.243** For VSC, 58 of the 62 (93.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.244** Of the four affected windows, one would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst three would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 14.245** Three of the affected windows serve a ground floor LKD, situated beneath a recessed balcony. This LKD is served by a fourth window not affected by the Proposed Development. The fourth affected window serves a first storey LKD, seeing a moderate adverse impact and is served by three additional windows not significantly impacted.
- 14.246** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

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- 14.247 Due to this building being under construction, there are no residents currently there to experience a reduction and as a result the assessment also considers the Average Daylight Factor (ADF) (to gauge what the alterations and retained internal levels of daylight would be upon implementation of the Proposed Development).
- 14.248 Of the 27 rooms assessed for ADF, 15 would experience no ADF alterations, 8 would see marginal reductions by 0.1-0.2% ADF and four would see reductions ranging from 0.3% to 0.4% ADF. When looking at the retained ADF levels, with the exception of one LKD, all rooms meeting or exceeding BRE's recommendation for ADF in the baseline scenario would still retain levels of internal daylight above guidelines in the Proposed Development scenario. One LKD meeting recommendation in the baseline scenario would see a reduction of 0.4% ADF and retain 1.6% ADF, which is below recommendation although above the recommended ADF level for a living room (without a kitchen, which is 1.5% ADF). Five of the six bedrooms below recommendation in the baseline scenario would see no changes upon implementation of the Proposed Development, with the remaining one seeing a negligible reduction of 0.1% ADF. The five L/K/Ds below recommendation in the baseline scenario would not see any ADF alterations.
- 14.249 Overall, the effect on this building is considered **Negligible (Not Significant)**.
- Atelier Court*
- 14.250 This block is located east of the Site. The west facing elevation, which reaches seven storeys at the northern portion and three storeys across the southern portion, is defined by recessed balconies. Windows and rooms on the west elevations overlooking the Proposed Development are considered for assessment. Windows on the north facing façade are also considered, as these serve rooms seeing alterations as a result of the Proposed Development. It should be noted that this building overlooks low rise existing massing in the baseline condition, receiving uncharacteristically high levels of daylight. Significant reductions can be expected to occur as a result of massing coming forward.
- 14.251 A total of 117 windows serving 97 rooms were assessed for daylight within this building. Of these 97 rooms, 10 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.252 For VSC, 14 of the 117 (12%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.253 Of the 103 affected windows, three would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and five would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 95 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.254 Approximately half (55) of the windows affected serve bedrooms, which may be considered less sensitive to daylight alteration. These windows retain 3.2-25% VSC, with the lower levels of retain light occurring to bedrooms windows situated beneath recessed balconies.
- 14.255 A further seven windows affected serve kitchens. Six of these would retain VSC levels between 16.4-23.8% VSC, which may be considered adequate. The remaining kitchen window would achieve 10.8% VSC with the Proposed Development in situ, however, is located on the ground level.
- 14.256 The remaining 41 windows affected serve living rooms or LKDs. Seven of these rooms would retain levels of VSC in the mid-teens, with the final 34 windows retaining lower levels of light owing to their location beneath recessed balconies.
- 14.257 For NSL, 26 of the 97 (26.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.258 Of the 71 affected rooms, 11 would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and nine would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 51 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.259 Overall, significant reductions can be seen to occur, however, this can be anticipated when a building overlooks a low rise existing massing, where the Proposed Development steps forward making efficient use of the Site. The majority of impacted windows are located beneath recessed balconies, exacerbating the reductions. However, owing to the magnitude of impacts, the overall effect to this building is considered **Major Adverse (Significant)**.
- 14.260 When considering the impacts of the Proposed Development and retained levels of daylight within a no balconies scenario, it can be seen that whilst reductions would still occur, the lower retained levels are a result

of balconies. In the no balconies scenario, the windows from the first storey and above would retain 13-24% VSC, with only the ground floor retaining 10-12% VSC.

- 14.261 The Standalone Daylight and Sunlight Impacts Upon Neighbours Report discusses the no balconies approach in relation to Illustrative Masterplan, concluding that only one kitchen, one LKD, one living room and three bedrooms all located on the ground level would achieve excess of 13-14% VSC, with all other windows on the Site facing elevation retaining >15% VSC.

Balfron Tower

- 14.262 Five storeys of this apartment block located north of the Site are relevant for assessment. Windows and rooms on the north and west elevations overlooking the Proposed Development are considered. These façades are defined by banks of recessed balconies. The upper storeys (approximately 10) are not considered within the assessment, as it is evident that they not affected by the Proposed Development.
- 14.263 A total of 62 windows serving 54 rooms were assessed for daylight within this building. Of these 54 rooms, 40 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.264 For VSC, 48 of the 62 (77.4%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.265 Of the 14 affected windows, six would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst eight would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 14.266 Six of the affected windows serve bedrooms, which may be considered less sensitive to daylight alterations. These windows retain 20-22% VSC and therefore not considered to be significantly affected.
- 14.267 Two kitchen windows are affected; however, these are located beneath overhangs resulting in very low baseline levels of 0.2% and 0.4% VSC. Therefore, the major adverse percentage alterations would not result in a noticeable change to these rooms and are therefore not considered to be significantly affected.
- 14.268 The remaining six affected windows serve LKDs however, these are located beneath overhangs resulting in very low baseline levels from 0.1-0.4% VSC. Therefore, the major adverse percentage alterations would not result in a noticeable change to these rooms and are therefore not considered to be significantly affected. Each of the these LKDs are served by one or two mitigating windows which see good levels of VSC.
- 14.269 For NSL, 53 of the 54 (98.1%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.270 The affected room would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect. This room is a kitchen situated beneath a deep overhang exacerbating the reductions, however, would retain 47% NSL.
- 14.271 Overall, the bedrooms and kitchens are not considered to be significantly affected. Despite the percentage reductions, owing to the low baseline levels resulting in disproportionate percentage alterations and the presence of mitigating windows, the LKDs are also not considered to be significantly affected. Therefore, the effect is considered **Negligible to Minor Adverse (Not Significant)**. The upper storeys have not been assessed given that it is evident that these windows are not impacted by the Proposed Development.

Bromley Hall

- 14.272 This educational building is located to the north of the Proposed Development. All windows and rooms are assessed at this building
- 14.273 A total of 100 windows serving 31 rooms were assessed for daylight within this building. Of these 31 rooms, 25 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.274 For VSC, 89 of the 100 (89%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.275 Of the 11 affected windows, five would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining five windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.276 A staff room would be impacted, however, would retain 17% VSC and is served by further windows which are not impacted and is therefore not considered to see significant reduction in daylight. The remaining impacted windows serve four classrooms. Two of these would retain 21-22% VSC at the impacted windows and are

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serve by additional mitigating windows which are not affected by the Proposed Development. The remaining impacted windows serve two classrooms served by skylights and therefore would remain well daylight overall.

14.277 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.278 Owing to the retained levels of VSC and mitigating windows, the effect to this educational building is considered **Negligible to Minor Adverse (Not Significant)**.

Carradale House

14.279 Ten storeys of this residential building, which is located west of the Site with the west elevation facing towards the Proposed Development, are considered for assessment. Windows and rooms on the western and southern façade are considered for assessment. The southern façade is defined by recessed balconies.

14.280 A total of 77 windows serving 44 rooms were assessed for daylight within this building. Of these 44 rooms, 19 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.281 For VSC, 37 of the 77 (48.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.282 Of the 40 affected windows, 10 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 22 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining eight windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.

14.283 A total of 32 bedroom windows see VSC impacts, however, may be considered less sensitive to daylight alterations. Each of these retain 17-26% VSC and are therefore not considered to be significantly affected.

14.284 The remaining eight windows affected are east facing kitchen windows, each situated beneath recessed balconies on the southern façade. Despite seeing minor to major reduction, the absolute change in VSC would be only 1.9-3.5% which may not be noticeable. Furthermore, each of these kitchens has a mitigating south facing window retaining VSC levels in excess of BRE Guidelines recommendation and are therefore well daylight overall.

14.285 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.286 Overall, the bedrooms seeing reductions are not considered to be significantly impacted owing to the retained levels of VSC and the eight kitchen windows impacted are located beneath recessed balconies which have well daylight mitigating windows. Therefore, the effect is considered **Minor Adverse (Not Significant)**.

Culloden Primary School

14.287 This educational building is located south of the Site, with offices, staff and teacher rooms, the main hall, nursery and reception rooms facing towards the Proposed Development

14.288 A total of 90 windows serving 21 rooms were assessed for daylight within this building.

14.289 For VSC, 33 of the 90 (36.7%) windows assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.290 Of the 57 affected windows, five would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst 21 would experience an alteration between 30-39.9% which is considered a Moderate Adverse effect. The remaining 31 experience alterations greater than 40% which is considered a Major Adverse Effect.

14.291 Whilst significant reductions occur, the sensitivity of the room uses may be considered lower. Furthermore, a total of 16 affected windows would retain above 15% VSC.

14.292 For NSL, 18 of the 21 (85.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.293 Of the three affected rooms, all would experience an alteration in NSL greater than 40% which is considered a Major Adverse effect.

14.294 Each of the affected rooms have low levels of existing sky visibility and therefore the alteration may not be noticeable.

14.295 Overall, taking into considered the room uses which are of lower sensitivity, the effect is considered **Minor to Moderate Adverse (Significant)**.

14.296 It should be noted that the impacts of the Proposed Development are similar to those which would occur as a result of the Consented Masterplan, with isolated instances of additional impacts.

Dewberry Street 16-46

14.297 This apartment block is located west of the Site, with three storeys considered relevant for assessment. It was not possible to obtain layouts for this building and therefore room uses have been assumed. The south east elevation overlooking the Site is defined by set back banks of windows in the centre façade. Windows facing south west, north east and north west have also been assessed, which serve rooms impacted by the Proposed Development.

14.298 A total of 72 windows serving 44 rooms were assessed for daylight within this building. Of these 44 rooms, 21 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.299 For VSC, 42 of the 72 (58.3%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.300 Of the 30 affected windows, 24 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst six would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.

14.301 A total of 11 assumed bedroom windows see VSC impacts, however, may be considered less sensitive to daylight alterations. Each of these retain 18-24% VSC and are therefore not considered to be significantly affected.

14.302 A further 15 impacted windows serve assumed living rooms. Seven of these retain 25-27% VSC and are therefore not considered to be significantly affected. The remaining 13 LKD windows are located on the setback elevations, thereby inherently obstructed by the design of the building itself. It should be noted that each of the LKDs are served by mitigating windows not affected by the Proposed Development and are therefore well daylight overall.

14.303 The remaining four windows serve rooms of unknown use, retaining 18.7-22% VSC and are therefore not considered to be significantly affected.

14.304 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.305 Overall, no significant daylight alterations are considered to occur to the bedrooms and rooms of unknown use and each of the impacted living room windows are already obstructed, with the rooms receiving good levels of daylight by virtue of mitigating windows. The effect is therefore considered **Minor Adverse (Not Significant)**.

Dewberry Street 2-14

14.306 This apartment block is located west of the Site behind 16-46 Dewberry Street, with two storeys considered relevant for assessment. It was not possible to obtain layouts for this building and therefore room uses have been assumed. Windows and rooms on the south west east and north west elevations also been assessed.

14.307 A total of 44 windows serving 25 rooms were assessed for daylight within this building. Of these 25 rooms, 24 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.308 For VSC, 42 of the 44 (95.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.309 Of the two affected windows, one would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst one would experience an alteration in excess of 40% which is considered a Major Adverse effect.

14.310 Both windows serve an LKD, with baseline VSC levels of 2.4-3.4%. Despite the magnitude of impact, the absolute alteration equates to 1-1.3% VSC, which is unlikely to be noticeable. This LKD is served by a third window which is not affected and retains very good levels of VSC,

14.311 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.312 Overall, owing to the small number of impacts, with the occupants of the affected room unlikely to notice the change owing to the good retained levels of daylight, the effect is considered **Negligible (Not Significant)**.

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Devons Wharf

- 14.313** This residential apartment building is located east of the Site, with four storeys considered for assessment. Windows on the north west and south west elevations overlooking the Proposed Development are considered for assessment. Additionally, windows on the north east and south eastern elevations are considered, as they serve rooms with the potential to be impacted by the Proposed Development. The façade is defined by balconies and inset portions of the elevations.
- 14.314** A total of 169 windows serving 91 rooms were assessed for daylight within this building. Of these 91 rooms, 49 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.315** For VSC, 104 of the 169 (61.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.316** Of the 65 affected windows, 52 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and five would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining eight windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.317** A total of 20 impacted windows serve bedrooms which are considered less sensitive to daylight alterations. Half of these bedroom windows would retain VSC levels in the mid teen range and are therefore not considered to be significantly impacted. The remaining 10 bedroom windows are located beneath balconies and are therefore inherently obstructed, retaining levels of VSC below 10%. Three of these have very low baseline levels of VSC (below 0.5% VSC) and therefore the absolute alteration, equating to 0.1-0.4% VSC, is unlikely to be noticeable by the occupants.
- 14.318** Of the 45 affected LKD windows, primarily minor adverse impacts would occur, with isolated instances of moderate to major impacts occurring, which are located beneath balconies and therefore inherently obstructed. A total of 26 affected LKDs windows would retain 15-20% VSC. The final 18 windows retaining lower levels of VSC retained (5-15%) occur on the lowest storeys. These windows are inherently obstructed owing to their being set back from the building line, beneath overhangs (for those at ground level) or beneath balconies. However, it should be noted that these windows serve LKDs which receive daylight through a mitigating window (which sees at least 15% VSC) and therefore may be considered to remain adequately daylit overall.
- 14.319** For NSL, 86 of the 91 (94.5%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.320** Of the five affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining two rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.321** One bedroom is impacted, which may be considered less sensitive to daylight alterations. Five LKDs would see alterations in daylight distribution, retaining sky visibility in 55-70% of the room.
- 14.322** Overall, the majority of bedrooms would retain mid-teen levels of VSC, or the reduction would not be noticeable owing to low baseline levels of daylight and minimal absolute reductions. A portion of bedrooms would experience noticeable changes, however, may be considered less sensitive to changes in daylight. A number of LKDs would be affected, with the majority retaining good levels of daylight. Those LKDs with windows falling short, are obstructed in the baseline condition, however, receive daylight which may be considered adequate through mitigating windows. Therefore, owing to the significant impacts, the overall effect is considered **Minor to Moderate (Significant)**.
- 14.323** When considering the impacts of the Proposed Development and retained levels of daylight within a no balconies scenario, the number of reductions beyond BRE Guidelines significantly lowers, with only seven windows seeing alteration in VSC. Therefore, the reductions can be attributed to the presence of balconies in the majority of instances.

Joshua Street 1-15

- 14.324** These eight two-storey residential terraced houses are located west of the Site. Windows and rooms on the front and rear (north and south facing) and east facing flank was are considered for assessment. Each house is fronted by a vestibule, with the first storey windows sitting beneath overhanging eaves. It was not possible to obtain layouts for this building, which have therefore been assumed.
- 14.325** A total of 77 windows serving 31 rooms were assessed for daylight within this building. Of these 31 rooms, 16 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

- 14.326** For VSC, 62 of the 77 (80.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.327** Of the 15 affected windows, three would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and six would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining six windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.328** A total of seven assumed bedrooms on the first storey would be impacted, retaining levels of VSC from 5-13%, however, bedrooms may be considered less sensitive to daylight alterations.
- 14.329** The remaining six windows serve assumed living rooms or LKDs, each located at ground level. These are all the narrow east facing windows of a bay window, where the main south facing window is unaffected by the Proposed Development and continue to receive very good levels of daylight overall.
- 14.330** Two rooms of unknown use are impacted, however, retain 19% VSC.
- 14.331** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.332** Overall, approximately half of the impacts would occur to assumed bedrooms which are less sensitive to daylight alteration. The remaining LKDs or living rooms affected are served by mitigating windows therefore continue to receive good levels of daylight overall. As such, the effect is considered **Minor Adverse (Not Significant)**.

Joshua Street 17-33

- 14.333** These nine two-storey residential terraced houses are located west of the Site. Windows and rooms on the front and rear (north and south facing) and east facing flank was are considered for assessment. Each house is fronted by a vestibule, with the first storey windows sitting beneath overhanging eaves. It was not possible to obtain layouts for this building, which have therefore been assumed.
- 14.334** A total of 55 windows serving 36 rooms were assessed for daylight within this building. Of these 36 rooms, 30 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.335** For VSC, 48 of the 55 (87.3%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.336** Of the seven affected windows, two would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and four would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining window would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.337** Two assumed bedroom windows on the first storey are impacted, which would retain 19% VSC. Bedrooms may be considered less sensitive to daylight alterations. Two assumed living rooms are affected, served by a window retaining 16% and two windows retaining 11 and 18% VSC respectively. Each LKD is served by additional windows which receive very good levels of daylight.
- 14.338** Two rooms of unknown use are impacted, however, retain 21% VSC.
- 14.339** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.340** Overall, the two assumed bedrooms which are less sensitive to daylight alteration are not considered to be significantly impacted owing to their retained levels of daylight. The affected living rooms affected are served by mitigating windows therefore continue to receive good levels of daylight overall. As such, the effect is considered **Negligible to Minor Adverse (Not Significant)**.

Joshua Street 35-41

- 14.341** These four two-storey (plus roof extension) residential terraced houses are located west of the Site. Windows and rooms on the front and rear (north and south facing) and east facing flank was are considered for assessment. Each house is fronted by a vestibule, with the first storey windows sitting beneath overhanging eaves. It was not possible to obtain layouts for this building, which have therefore been assumed.
- 14.342** A total of 30 windows serving 17 rooms were assessed for daylight within this building. Of these 17 rooms, nine would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

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- 14.343** For VSC, 21 of the 30 (70%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.344** Of the nine affected windows, five would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and three would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining window would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.345** Four assumed bedroom windows on the first storey are impacted, which would retain 7-14% VSC. Bedrooms may be considered less sensitive to daylight alterations. The remaining five affected windows serve four assumed living rooms. Three of these retain 22% VSC and are therefore not considered to be significantly impacted. The remaining two retain 9-18% VSC, serving a living room served by two additional windows and remains well daylighted overall.
- 14.346** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.347** Overall, the four assumed bedrooms would experience impacts, however, may be considered less sensitive to daylight alteration. The affected living rooms affected are served by mitigating windows therefore continue to receive good levels of daylight overall. As such, the effect is considered **Minor Adverse (Not Significant)**.
Joshua Street 4
- 14.348** This two-storey residential terraced house is located west of the Site. Windows and rooms on the front, east facing flank has been considered for assessment. This house is fronted by a vestibule, with the first storey windows sitting beneath overhanging eaves. It was not possible to obtain layouts for this building, which have therefore been assumed.
- 14.349** A total of four windows serving two rooms were assessed for daylight within this building. Of these two rooms, one would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.350** For VSC, three of the four (75%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.351** The affected window would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect. This window serves a bedroom retaining 15% VSC and is therefore not considered to be significantly impacted.
- 14.352** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.353** Overall, the only impact occurs to an assumed bedroom window, which may be considered less sensitive to daylight alteration, however, retains 15% VSC. As such, the effect is considered **Negligible (Not Significant)**.
Joshua Street 6-14
- 14.354** These four two-storey residential terraced houses are located west of the Site. Windows and rooms on the front and rear (north and south facing) and east facing flank was are considered for assessment. Each house is fronted by a vestibule, with the first storey windows sitting beneath overhanging eaves. It was not possible to obtain layouts for this building, which have therefore been assumed.
- 14.355** A total of 27 windows serving 17 rooms were assessed for daylight within this building. Of these 17 rooms, 14 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.356** For VSC, 24 of the 27 (88.9%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.357** Of the three affected windows, one would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 14.358** Two of the windows affected serve bedrooms, retaining 12.4% VSC, which is a similar level of VSC occurring at the neighbouring bedrooms windows, which are not affected by the Proposed Development. The remaining effect occurs to a narrow east facing pane of an assumed living room bay window, where the main south facing window is unaffected and the rooms retains good levels of daylight overall.
- 14.359** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.360** Overall, two assumed bedroom window would see reductions, however, may be considered less sensitive to daylight alterations. One assumed living room would see a reduction at the east facing pane, however, is not considered to be significantly affected overall. As such, the effect is considered **Negligible to Minor Adverse (Not Significant)**.
Lansbury Gardens 2-12
- 14.361** This row of six two-storey terraced houses is located east of the Site. The front, west (Site) facing and rear east facing windows have been considered, as there are rooms with windows spanning the breadth of these properties.
- 14.362** A total of 43 windows serving 18 rooms were assessed for daylight within this building.
- 14.363** For VSC, 25 of the 43 (58.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.364** Of the 18 affected windows, one would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst 17 would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.365** A total of 12 affected windows serve bedrooms, which may be considered less sensitive to daylight alterations, however, retain 13-18% VSC. The remaining six windows serve living rooms, each retaining 11-14% VSC. However, each of these LKDs is served by multiple mitigating windows and thereby retains good daylight levels overall.
- 14.366** For NSL, seven of the 18 (38.9%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.367** Of the 11 affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst 10 would experience an alteration greater than 40% which is considered a Major Adverse Effect. These are all bedrooms situated underneath overhanging eaves, thereby inherently limited visibility of the sky.
- 14.368** Overall, the majority of impacts occur to bedrooms, which may be considered less sensitive to daylight alterations. Whilst impacts to LKD windows would occur, given that each of the LKDs is served by multiple mitigating windows, the reductions may not be noticeable overall. As such, the effect is considered **Moderate to Major Adverse (Significant)**.
- 14.369** The impacts of the Proposed Development are no worse than those which would occur as a result of the Consented Masterplan.
Leven Road Phase Three
- 14.370** Five storeys of this residential apartment block located east of the Site are considered for assessment. Windows and rooms on the west and south west elevations are considered for assessment. The building is an irregular form with the west facing elevations defined by inset façades and overhangs on the first and second storey. The south west facing façade is defined by balconies. It should be noted that this building overlooks low rise existing massing in the baseline condition, receiving uncharacteristically high levels of daylight. Significant reductions can therefore be expected to occur as a result of massing coming forward.
- 14.371** A total of 73 windows serving 62 rooms were assessed for daylight within this building. Of these 62 rooms, 18 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.372** For VSC, 26 of the 73 (35.6%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.373** Of the 47 affected windows, four would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 41 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.374** A total of 30 bedroom window would be affected, which may be considered less sensitive to daylight alterations. These windows receive uncharacteristically high levels of VSC in the baseline condition, particularly those on the upper storeys, and therefore changes of moderate to major significance can be anticipated. Approximately half of the bedroom windows would continue to receive VSC levels in the mid teen range. Those retaining lower levels of VSC are located on the lowest storeys and are already obstructed by the form of this building itself.

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- 14.375** One kitchen window is affected, which is located at ground level on the inset façade. This window sees a minor adverse impact, retaining 11.5% VSC.
- 14.376** The remaining 16 windows serve living rooms and one LKD. Five of these windows on the upper storeys would retain levels of VSC in the mid teen range, with one window achieving 21% VSC. The remaining 11 living rooms / LKD windows. These are all situated beneath overhangs or balconies, which inherently obstruct daylight availability.
- 14.377** For NSL, 28 of the 62 (45.2%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.378** Of the 34 affected rooms, two would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and three would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 29 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.379** A total of 25 bedrooms and nine living rooms / LKD would be affected. The living rooms / LKD affected are all situated beneath overhangs or balconies on the ground to second storey, which inherently limit visibility of the sky.
- 14.380** Overall, the majority of daylight impacts occur to bedrooms, which may be considered less important in relation to daylight alterations. Whilst living rooms and an LKD would be affected, those on the upper storeys retain levels of VSC in the mid-teen range and experience on NSL impacts. Those on the lower storeys which are impacted are located beneath balconies or overhangs which inherently limit daylight availability. Therefore, the effect is considered **Major Adverse (Significant)**.
- 14.381** When considering the impacts of the Proposed Development and retained levels of daylight within a no balconies scenario, whilst reductions would still occur, the lower retained levels can primarily be attributed to the presence of balconies. This is discussed in further detail within the Standalone Daylight and Sunlight Impacts Upon Neighbours Report, where the Illustrative Masterplan is assessed using the no balconies approach. The Report concludes that in the no balconies configuration, the majority of windows serving living areas or bedrooms would retain VSC levels in excess of 13% from the ground floor up.
- Loren Apartments*
- 14.382** Three storeys of this residential apartment located south east of the Site are considered for assessment. Windows and rooms on the west and southern façade are assessed for impacts.
- 14.383** A total of 26 windows serving 18 rooms were assessed for daylight within this building.
- 14.384** For VSC, four of the 26 (15.4%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.385** Of the 22 affected windows, three would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect whilst 19 would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.386** Half of the windows affected serve bedrooms, which may be considered less sensitive to daylight alterations. These retain VSC values ranging from 10.3-19.7% VSC.
- 14.387** The remaining 11 windows serve seven LKDs, which retain levels of VSC ranging from 7.1-17.3%. With the exception of two ground floor and one first storey single aspect LKDs which retain 7, 8 and 13% VSC the remaining four LKDs each have additional windows which are either unaffected by the Proposed Development or retain at least 15% VSC and therefore may be considered to remain adequately daylight.
- 14.388** For NSL, four of the 18 (22.2%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.389** Of the 14 affected rooms, two would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 11 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.390** Nine bedrooms would be affected, however, may be considered less important in relation to daylight distribution. Of the remaining five LKDs affected, three are the single aspect LKDs on the ground and first storey. The final two, located on the second and third storey would retain 54-56% NSL.
- 14.391** Overall, the majority of impacts occur to bedrooms, which may be considered less sensitive to daylight alterations. Three LKDs on the ground and first storey would experience reductions in daylight, however, this is partially a result of their design as single aspect, deep recessed rooms. The LKDs on the upper storeys retain levels VSC and NSL which may be considered adequate. Therefore, the effect is considered **Moderate to Major Adverse (Significant)**.
- 14.392** The impacts of the Proposed Development are no worse than those which would occur as a result of the Consented Masterplan.
- Mills Grove 1-9*
- 14.393** These five two-storey terraced houses are located west of the Site. The front of these buildings is defined by vestibules, partially obstructed the ground floor windows in the baseline condition. The rear of these building has also been considered, as there are rooms which span the breadth of these properties and are therefore assessed. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.
- 14.394** A total of 25 windows serving 17 rooms were assessed for daylight within this building. Of these 17 rooms, 14 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.395** For VSC, 24 of the 25 (96%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.396** This LKD window has a very low baseline level of VSC (4.8%) and would therefore experience a marginal absolute loss of only 1.7% VSC, which is unlikely to be noticeable. This LKD is served by a second window to the rear of the building which remains very well daylight and is unaffected by the Proposed Development.
- 14.397** The affected window would experience an alteration in VSC between 30-39.9% which is considered a Moderate Adverse effect.
- 14.398** For NSL, 15 of the 17 (88.2%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.399** Of the two affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 14.400** Both rooms are of unknown use. Of the rooms has a very low baseline level of NSL (11.4%) and therefore the absolute loss may not be noticeable, despite the significant reduction. The second room experiencing an alteration only marginally beyond BRE Guidelines criteria retaining 59% and is therefore not considered to be significantly affected.
- 14.401** Overall, owing to the impacts occurring to windows/rooms with very low baseline levels of daylight, where the alteration is unlikely to be noticeable, or impacts only marginally beyond BRE Guidelines occurring, the effect is considered **Negligible to Minor Adverse (Not Significant)**.
- Mills Grove 12-20*
- 14.402** These five two-storey terraced houses are located west of the Site. The front of these buildings is defined by vestibules, partially obstructed the ground floor windows in the baseline condition. The rear of these building has also been considered, as there are rooms which span the breadth of these properties and are therefore assessed. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.
- 14.403** A total of 25 windows serving 15 rooms were assessed for daylight within this building. Of these 15 rooms, 10 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.404** For VSC, 20 of the 25 (80%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.405** Of the five affected windows, four would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 14.406** Four of the windows serve assumed bedroom which retain 17-19% VSC and may be considered less sensitive to daylight alterations and are therefore not considered to be significantly affected.
- 14.407** One LKD window is affected, which has a very low baseline level of VSC (3.6%) and would therefore experience a marginal absolute loss of only 1.7% VSC, which is unlikely to be noticeable. This LKD is served by a second

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window to the rear of the building which remains very well daylit and is unaffected by the Proposed Development.

14.408 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.409 Overall, owing to the majority of impacts occurring to bedrooms, which are not considered to be significantly affected, with one LKD impacted where the alteration is unlikely to be noticeable, the effect is considered **Negligible to Minor Adverse (Not Significant)**.

Mills Grove 17-25

14.410 These five two-storey terraced houses are located west of the Site. The rear of these buildings, facing towards the Site are considered for assessment, as well as the front, as there are rooms which span the breadth of these properties and are therefore relevant. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.

14.411 A total of 27 windows serving 15 rooms were assessed for daylight within this building. Of these 15 rooms, six would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.412 For VSC, 18 of the 27 (66.7%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.413 Of the nine affected windows, all would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.

14.414 Five of the windows serve assumed bedroom which retain 18-20% VSC and may be considered less sensitive to daylight alterations and are therefore not considered to be significantly affected. Both LKDs are served by at least one additional window not affected by the Proposed Development and would remain well daylit overall.

14.415 Two windows serving rooms of unknown use would see reductions, however each retain 15-17% VSC.

14.416 Two living room windows would be impacted, however, retain 22-23% VSC, experiencing alterations only marginally beyond BRE Guidelines criteria and are therefore not considered to be significantly affected.

14.417 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.418 Overall, the majority of impacts occur to bedrooms, which are not considered to be significantly affected. Two LKD windows experience a reduction in VSC however, retain good levels of daylight. Two rooms of unknown use would also see reductions, however, retain levels of daylight which may be considered adequate. The effect is therefore considered **Negligible to Minor Adverse (Not Significant)**.

Mills Grove 2-10

14.419 These five two-storey terraced houses are located west of the Site. The rear of these buildings, facing towards the Site are considered for assessment, as well as the front, as there are rooms which span the breadth of these properties and are therefore relevant. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.

14.420 A total of 25 windows serving 15 rooms were assessed for daylight within this building. Of these 15 rooms, 14 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.421 For VSC, 24 of the 25 (96%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.422 The affected window would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.

14.423 This LKD window has a very low baseline level of VSC (4.2%) and would therefore experience a marginal absolute loss of only 1.2% VSC, which is unlikely to be noticeable. This LKD is served by a second window to the rear of the building which remains very well daylit and is unaffected by the Proposed Development.

14.424 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.425 Overall, owing to the impacts occurring to one LKD windows with very low baseline levels of daylight, where the alteration is unlikely to be noticeable, and the room remains well daylit by virtue of a mitigating window, the effect is considered **Negligible (Not Significant)**.

Mills Grove 9-15

14.426 These five two-storey terraced houses are located west of the Site. The rear of these buildings, facing towards the Site are considered for assessment, as well as the front, as there are rooms which span the breadth of these properties and are therefore relevant. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.

14.427 A total of 22 windows serving 12 rooms were assessed for daylight within this building. Of these 12 rooms, five would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.428 For VSC, 15 of the 22 (68.2%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.429 Of the seven affected windows, six would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration greater than 40% which is considered a Major Adverse Effect.

14.430 Four of the windows serve assumed bedroom which retain 21% VSC and may be considered less sensitive to daylight alterations and are therefore not considered to be significantly affected.

14.431 One LKD window has a very low baseline level of VSC (3.3%) and would therefore experience a marginal absolute loss of only 0.9% VSC, which is unlikely to be noticeable. This LKD is served by a second window to the rear of the building which remains very well daylit and is unaffected by the Proposed Development.

14.432 The final two window serve rooms of unknown. The first retains 21% VSC and the second has a very low baseline level of VSC (3.3%) and therefore is unlikely to notice the absolute change of 1.5% VSC.

14.433 For NSL, 11 of the 12 (91.7%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.434 The affected room would experience an alteration in NSL between 30-39.9% which is considered a Moderate Adverse effect. This room is single aspect and of unknown use.

14.435 Overall, the majority of impacts occur to bedrooms, which are not considered to be significantly affected. One LKD windows experience a reduction in VSC however, retains good levels of daylight by virtue of a second window to the front of the property. Two rooms of unknown use would also see reductions however, the alterations are not considered to be noticeable. The effect is therefore considered **Negligible to Minor Adverse (Not Significant)**.

St Leonards Road 118-132

14.436 This two storey apartment block (plus roof extension) is located to the west of the Site. The building has an irregular form, with overhanging eaves across the second storey. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.

14.437 A total of 40 windows serving 23 rooms were assessed for daylight within this building. Of these 23 rooms, 12 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.438 For VSC, 29 of the 40 (72.5%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.439 Of the 11 affected windows, 10 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration greater than 40% which is considered a Major Adverse Effect.

14.440 Nine of the affected windows are located on the second storey and are assumed bedrooms. These windows are obstructed by overhanging eaves, which exacerbate the reductions. However, bedrooms may be considered less sensitive to daylight alterations and retain 19-20% VSC (only window retains 13% VSC), so are therefore not considered to be significantly affected.

14.441 One assumed living room window is impacted however, this room is served by multiple other windows which are not affected and see good levels of daylight, remaining well daylit overall.

14.442 One window serving a room of unknown use is impacted however, retains 19% VSC and is therefore not considered to be significantly affected.

14.443 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

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- 14.444** Overall, the majority of impacts occur to bedrooms, which are not considered to be significantly affected. One LKD would experience a reduction in VSC however, retains good levels of daylight by virtue of mitigating windows. Rooms of unknown use would also see reductions however, the alterations are not considered to be noticeable. The effect is therefore considered **Negligible to Minor Adverse (Not Significant)**.
- St Leonards Road 134-146*
- 14.445** This two storey apartment block (plus roof extension) is located to the west of the Site. The rear of this building is assessed and has overhanging eaves across the second storey. Windows to the front of this building have also been considered as there are impacted rooms which span the breadth of the building. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.
- 14.446** A total of 43 windows serving 28 rooms were assessed for daylight within this building. Of these 28 rooms, 16 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.447** For VSC, 31 of the 43 (72.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.448** Of the 12 affected windows, all would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.
- 14.449** All 12 affected windows are located on the second storey and are assumed bedrooms. These windows are obstructed by overhanging eaves, which exacerbate the reductions. However, bedrooms may be considered less sensitive to daylight alterations and retain 18-19% VSC (only window retains 10% VSC), so are therefore not considered to be significantly affected.
- 14.450** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.451** Overall, all impacts occur to bedrooms, which are not considered to be significantly affected and so effect is therefore considered **Negligible to Minor Adverse (Not Significant)**.
- St Leonards Road 148-154*
- 14.452** This two storey apartment block (plus roof extension) is located to the west of the Site. The rear of this building is assessed and has overhanging eaves across the second storey. Windows to the front of this building have also been considered as there are impacted rooms which span the breadth of the building. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.
- 14.453** A total of 20 windows serving 10 rooms were assessed for daylight within this building. Of these 10 rooms, eight would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.454** For VSC, 18 of the 20 (90%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.455** Of the two affected windows, both would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.
- 14.456** Both affected windows are located on the second storey and are assumed bedrooms. These windows are obstructed by overhanging eaves, which exacerbate the reductions. However, bedrooms may be considered less sensitive to daylight alterations and retain 16% VSC, so are therefore not considered to be significantly affected.
- 14.457** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.458** Overall, only two bedrooms would be impacted, however, may be considered less sensitive to daylight alterations and would retain mid-teen levels of VSC.
- 14.459** Overall, only two bedrooms windows are impacted, which are not considered to be significantly affected owing to their retained levels and so effect is therefore considered **Negligible to Minor Adverse (Not Significant)**.
- Sherman House*
- 14.460** Four storeys of this residential apartment block located south east of the Site have been considered. Windows and rooms on all four elevations have been considered for assessment.
- 14.461** A total of 69 windows serving 43 rooms were assessed for daylight within this building. Of these 43 rooms, 11 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.462** For VSC, 29 of the 69 (42%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.463** Of the 40 affected windows, one would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 37 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.464** A total of 16 bedroom windows are affected, which would retain VSC levels from 8-15%. Three windows serving two kitchens at ground level would be impacted, retain 12.2% VSC and 5.4-8.4% VSC respectively. A further three kitchen windows are affected. Two of these windows (retaining 5.4 and 8.4% VSC) serve one kitchen and the third serves a second kitchen retaining 12.2% VSC.
- 14.465** The final 21 windows serve living rooms and LKDs, of which twelve would retain 12-20% VSC. Of the remaining six windows, which retain below 12% VSC, all but one serve rooms with multiple aspects and therefore may be considered to remain adequately daylight. The remaining window is a single aspect living room located on the ground floor.
- 14.466** For NSL, 23 of the 43 (53.5%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.467** Of the 20 affected rooms, three would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 16 rooms would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.468** The NSL impacts occur primarily to bedrooms, with the exception of the kitchen and living room discussed above, which inherently would be expected to have less visibility of the sky owing to their ground floor location.
- 14.469** Overall, the majority of impacts occur to bedrooms, which may be considered less sensitive to daylight alterations. Whilst LKD windows would be impacted, these rooms are served by mitigating windows. One ground floor LKD and two kitchens would see a reduction in daylight. The effect is therefore considered **Moderate to Major (Significant)**.
- 14.470** The impacts of the Proposed Development are no worse than those which would occur as a result of the Consented Masterplan.
- St. Nicholas Church*
- 14.471** This religious building is located east of the Site. All four elevations have been considered for assessment.
- 14.472** A total of 59 windows serving 31 rooms were assessed for daylight within this building. Of these 31 rooms, 23 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.473** For VSC, 36 of the 59 (61%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.474** Of the 23 affected windows, 10 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect whilst 13 would experience an alteration greater than 40% which is considered a Major Adverse Effect.
- 14.475** Twelve of the impacted windows serve an ancillary space, whereby the windows either have very low baseline levels of VSC and therefore would not experience a noticeable reduction (0.81% VSC) or retain 16-18% VSC and are therefore considered to remain adequately daylight.
- 14.476** A further six windows serve two worship areas, which would retain 9.5-18.6% VSC and both rooms are served by additional rooms which are not affected by the Proposed Development and remain well daylight overall.
- 14.477** One window serving a room of unknown use would be affected, however, retains 20% VSC.
- 14.478** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.
- 14.479** Overall, owing to mitigating windows, the worship areas of this religious building are not considered to experience a noticeable change in daylight amenity and would remain well daylight. The ancillary space would experience a change in daylight quality, however, may not be considered to be as sensitive to alterations in daylight. Therefore, the effect is considered **Minor to Moderate Adverse (Significant)**.

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14.480 The impacts of the Proposed Development are no worse than those which would occur as a result of the Consented Masterplan.

Wooster Gardens 1-7

14.481 These four two-storey terraced houses are located east of the Site. The rear faces the Proposed Development, however, the front facing windows have also been considered as there are rooms which span the breadth of the building.

14.482 A total of 33 windows serving 16 rooms were assessed for daylight within this building. Of these 16 rooms, 11 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.483 For VSC, 31 of the 33 (93.9%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.484 Of the two affected windows, both would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect. Both windows serve bedrooms retaining 23% VSC and are therefore considered to be significantly affected.

14.485 For NSL, 13 of the 16 (81.3%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.486 Of the three affected rooms, one would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst two would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.

14.487 All three rooms are kitchens on the ground floor, which retain 76, 43 and 39% NSL respectively. These kitchens would retain VSC levels of 19-20% and therefore may be considered to remain adequately daylight.

14.488 Overall, two bedrooms experiencing changes are not considered to be significantly affected and three ground floor kitchens would see reductions in NSL, however, achieve good VSC levels and as such may be considered to remain adequacy daylight. The effect is therefore considered **Negligible to Minor Adverse (Not Significant)**.

Wooster Gardens 9-15

14.489 These four two-storey terraced houses are located east of the Site. The rear faces the Proposed Development, however, the front facing windows have also been considered as there are rooms which span the breadth of the building.

14.490 A total of 20 windows serving 16 rooms were assessed for daylight within this building. Of these 16 rooms, 14 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.

14.491 For VSC, 18 of the 20 (90%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.

14.492 Of the two affected windows, both would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect. Both windows serve bedrooms retaining 25% VSC and are therefore considered to be significantly affected.

14.493 For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect.

14.494 Overall, two bedrooms experiencing changes in VSC are not considered to be significantly affected and therefore considered **Negligible to Minor Adverse (Not Significant)**.

Sunlight

14.495 The full sunlight assessment for the Completed Development can be found within ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 4 is summarised in below in Table 14.10.

14.496 Of the 42 existing buildings assessed, the 24 buildings highlighted in blue in **Table 14.10** experience little to no impact (less than 20% alteration) or retain values in line with BRE Guidelines criteria and are therefore considered to experience a **Negligible effect (Not Significant)**. These are:

- 128-132 Leven Road;
- 134-144 Leven Road;
- 49-67 Abbott Road;

- Aberfeldy Estate Phase One Block A;
- Aberfeldy Estate Phase Three Block G;
- Aberfeldy Estate Phase Three Block G;
- Aberfeldy Estate Phase Three Block J;
- Aberfeldy Estate Phase Two Block D;
- Balfron Tower;
- Carradale House;
- Culloden Primary School;
- Dewberry Street 16-46;
- Joshua Street 1-15;
- Joshua Street 17-33;
- Joshua Street 4;
- Joshua Street 6-14;
- Mills Grove 1-9;
- Mills Grove 12-20;
- Mills Grove 17-25;
- Mills Grove 9-15;
- St Leonards Road 118-132;
- St Leonards Road 134-146;
- St Leonards Road 148-154 Wooster Gardens 1-7; and
- Wooster Gardens 9-15.

14.497 The results of the remaining 18 buildings are discussed in more detail below.

Table 14.10 Sunlight Assessment of the Proposed Development at Surrounding Sensitive Receptors (APSH)

Address	Total No. Windows	No. Windows that meet BRE criteria	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
110-126 Leven Road	59	52	0	0	5	0	0	4
128-132 Leven Road	25	25	0	0	0	0	0	0
134-144 Leven Road	32	32	0	0	0	0	0	0
177-195 Abbott Road	42	41	0	0	1	0	0	1
199-225 Abbott Road	94	74	0	0	16	0	0	20
49-67 Abbott Road	37	37	0	0	0	0	0	0
Aberfeldy Estate Phase One Block A	12	12	0	0	0	0	0	0

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Address	Total No. Windows	No. Windows that meet BRE criteria	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
Aberfeldy Estate Phase One Block C	43	35	1	1	6	0	0	2
Aberfeldy Estate Phase Three Block G	22	22	0	0	0	0	0	0
Aberfeldy Estate Phase Three Block J	27	27	0	0	0	0	0	0
Aberfeldy Estate Phase Two Block D	4	4	0	0	0	0	0	0
Ailsa Wharf Block A	42	40	1	1	0	0	0	1
Ailsa Wharf Block D	147	127	2	6	12	0	0	4
Ailsa Wharf Blocks K L	25	22	1	2	0	0	0	0
Atelier Court	110	7	0	0	101	0	0	102
Balfron Tower	8	8	0	0	0	0	0	0
Bromley Hall	34	25	0	0	3	0	0	9
Carradale House	22	22	0	0	0	0	0	0
Culloden Primary School	43	43	0	0	0	0	0	0
Dewberry Street 16-46	48	48	0	0	0	0	0	0
Dewberry Street 2-14	37	36	0	0	0	0	1	0
Devons Wharf	69	55	6	6	2	0	0	4
Joshua Street 1-15	26	26	0	0	0	0	0	0
Joshua Street 17-33	33	33	0	0	0	0	0	0
Joshua Street 35-41	19	18	0	1	0	0	0	1
Joshua Street 4	1	1	0	0	0	0	0	0
Joshua Street 6-14	20	20	0	0	0	0	0	0
Lansbury Gardens 2-12	22	5	0	1	16	0	0	7
Leven Road Phase Three	44	10	0	1	33	0	0	27
Loren Apartments	26	5	0	3	16	1	3	13
Mills Grove 1-9	11	11	0	0	0	0	0	0
Mills Grove 12-20	8	8	0	0	0	0	0	0
Mills Grove 17-25	8	8	0	0	0	0	0	0
Mills Grove 2-10	9	8	0	0	1	0	0	1
Mills Grove 9-15	6	6	0	0	0	0	0	0
St Leonards Road 118-132	9	9	0	0	0	0	0	0
St Leonards Road 134-146	7	7	0	0	0	0	0	0
St Leonards Road 148-154	4	4	0	0	0	0	0	0
Sherman House	35	3	0	0	31	0	0	30
St.Nicholas Church	37	31	0	0	6	0	0	0
Wooster Gardens 1-7	29	29	0	0	0	0	0	0
Wooster Gardens 9-15	16	16	0	0	0	0	0	0
Totals	1352	1008	11	22	249	1	4	226

110-126 Leven Road

- 14.498 These terraced houses are located east of the Site, with two storeys at each property considered for assessment. The rear of these nine properties face towards the Proposed Development.
- 14.499 A total of 59 windows were assessed for sunlight within this building of which 52 (88.1%) would meet the BRE's criteria for both Annual and Winter PSH.
- 14.500 For Annual PSH, 54 of the 199 windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.501 All five windows affected annually would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.502 For Winter PSH, 55 of the 59 windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect. The remaining four see losses greater than 40% which is considered a Major Adverse effect.
- 14.503 All windows impacted would retain APSH levels above 18% APSH and therefore may be considered to remain adequately sunlit.
- 14.504 Overall, owing to the retained levels of APSH, the effect is considered **Minor Adverse (Not Significant)**.

177-195 Abbott Road

- 14.505 These terraced houses are located east of the Site, with two to three storeys at each property considered for assessment. The front of these ten properties face towards the Proposed Development.
- 14.506 A total of 42 windows were assessed for sunlight within this building of which 41 (97.6%) would meet the BRE's criteria for both Annual and Winter PSH and is therefore considered to experience a Negligible effect.
- 14.507 The window affected annually would experience an alteration in excess of 40% in both APSH and WPSH which is considered a Major Adverse effect.
- 14.508 This window is located on the ground floor of the north west facing flank wall and therefore only just within 90 degrees of due south. This window would retain 13% APSH.
- 14.509 Overall, owing the high level of BRE Guidelines compliance and only one living room window affected which would have a low expectation for sunlight, the effect is considered **Negligible to Minor Adverse (Not Significant)**.

199-225 Abbott Road

- 14.510 These terraced houses are located east of the Site, with two storeys at each property considered for assessment. The front of these 16 properties face towards the Proposed Development.
- 14.511 A total of 94 windows were assessed for sunlight within this building of which 74 (78.8%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.512 A total of 16 window would be affected annually, of which each would experience an alteration in excess of 40% in APSH, which is considered a Major Adverse effect. A total of 20 windows would be affected in winter, of which each would experience an alteration in excess of 40% in WPSH which is considered a Major Adverse effect.
- 14.513 Each of the affected windows serve bedrooms, which may be considered less important in relation to sunlight alterations. These windows would retain 11-25% APSH.
- 14.514 Overall, although major adverse impacts would occur given that only bedrooms are affected, which mostly retain good levels of sunlight, the effect is considered **Minor to Moderate Adverse (Significant)**.
- 14.515 The impacts to this building are discussed in further detail within the Standalone Daylight and Sunlight Impacts Upon Neighbours Report, providing further contextual considerations.

Aberfeldy Estate Phase One Block C

- 14.516 These terraced houses are located east of the Site, with two storeys at each property considered for assessment. The front of these 16 properties face towards the Proposed Development.
- 14.517 A total of 43 windows were assessed for sunlight within this building of which 35 (81.4%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

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14.518 A total of eight window would be affected annually, of which one would experience an alteration between 20-29.9%, which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect. The remaining six would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.

14.519 A total of two windows would be affected in winter, of which each would experience an alteration in excess of 40% in WPSH which is considered a Major Adverse effect. Both windows serve bedrooms.

14.520 Overall, half of the rooms affected annually are bedrooms are affected, and significant reductions would occur to both kitchens and living rooms, and therefore, the effect is considered **Moderate to Major Adverse (Significant)**.

Ailsa Wharf Block A

14.521 This apartment block is located north east of the Site and is currently under construction. Windows and rooms on the south and west facing elevations of the lowest three residential floors looking towards the Proposed Development are considered. The façades are defined by banks of recessed balconies.

14.522 A total of 42 windows were assessed for sunlight within this building of which 40 (95.2%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.523 A total of two windows would be affected annually, of which one would experience an alteration between 20-29.9%, which is considered a Minor Adverse effect and one would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect.

14.524 One of these windows would be affected in winter, which would experience an alteration in excess of 40% in WPSH which is considered a Major Adverse effect.

14.525 One of the affected rooms is a bedroom, which can be considered less important in relation to sunlight considerations and is served by a second window not affected by the Proposed Developemnt. An LKD window is also affected, however, is served by additional windows which remain very well sunlit.

14.526 Overall, the bedroom and LKD seeing changes in sunlight are considered to be significantly impacted and therefore the effect is considered **Negligible to Minor Adverse (Not Significant)**.

Ailsa Wharf Block D

14.527 This apartment block is located north of the Site. Windows and rooms on the south, east and west elevations of the lowest six residential floors overlooking the Proposed Development are considered. The north facing windows are also assessed, as there are dual aspect rooms with windows spanning the breadth of the building with north and south facing windows. The façades are defined by banks of recessed balconies.

14.528 A total of 147 windows were assessed for sunlight within this building of which 127 (86.4%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.529 A total of 20 window would be affected annually, of which two would experience an alteration between 20-29.9%, which is considered a Minor Adverse effect and six would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect. The remaining 12 would experience an alteration in excess of 40% in WPSH which is considered a Major Adverse effect.

14.530 Four windows of these would be affected in winter, which would experience an alteration in excess of 40% in WPSH which is considered a Major Adverse effect.

14.531 A total of 16 affected windows serve bedroom, which may be considered less important in relation to sunlight considerations. The remaining four windows serving LKDs are also affected, however, they are served by additional windows which remain very well sunlit.

14.532 Overall, primarily bedrooms are affected, with any LKD seeing changes in sunlight remaining well sunlit by virtue of mitigating windows. Therefore, the effect is considered **Negligible to Minor Adverse (Not Significant)**.

Ailsa Wharf Blocks K L

14.533 This apartment block is located north of the Site. Windows and rooms on the north and west elevations of the lowest four residential floors overlooking the Proposed Development are considered. These façades are defined by banks of recessed balconies.

14.534 A total of 25 windows were assessed for sunlight within this building of which 22 (86.4%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.535 A total of three window would be affected annually, of which one would experience an alteration between 20-29.9%, which is considered a Minor Adverse effect and two would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect. No impacts would occur during winter.

14.536 All three windows affected serve a ground floor LKD, however, retain 13, 16 and 21% APSH respectively.

14.537 Overall, only one LKD would see changes in sunlight, however, would retain levels of APSH which may be considered adequate. Therefore, the effect is considered **Minor Adverse (Not Significant)**.

Atelier Court

14.538 This block is located east of the Site. The west facing elevation, which reaches seven storeys at the northern portion and three storeys across the southern portion, is defined by recessed balconies. Windows and rooms on the west elevations overlooking the Proposed Development are considered for assessment. Windows on the north facing façade are also considered, as these serve rooms seeing alterations as a result of the Proposed Development. It should be noted that this building overlooks low rise existing massing in the baseline condition, receiving uncharacteristically high levels of daylight. Significant reductions can be expected to occur as a result of massing coming forward.

14.539 A total of 110 windows were assessed for sunlight within this building of which seven (6.4%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.540 A total of 101 windows would be affected annually, which would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect. A total of 103 windows would be affected in winter and would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.

14.541 The affected windows would retain 1-18% APSH. It should be noted that each of the windows affected is situated beneath a balcony, which inherently limits sunlight availability.

14.542 Overall, the effect is considered **Major Adverse (Significant)**.

14.543 The impacts to this building are discussed in further detail within the Standalone Daylight and Sunlight Impacts Upon Neighbours Report, providing further contextual considerations.

Bromley Hall

14.544 This educational building is located to the north of the Proposed Development. All windows and rooms are assessed at this building.

14.545 A total of 34 windows were assessed for sunlight within this building of which 25 (73.5%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.546 A total of three window would be affected annually, which would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect. A total of nine windows would be affected in winter and would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.

14.547 Each of the affected windows would retain levels of sunlight which may be considered adequate (16-19% APSH) or are served remain well sunlight throughout the year, by virtue of mitigating windows and skylights.

14.548 Therefore, the effect is considered **Minor Adverse (Not Significant)**.

Dewberry Street 2-14

14.549 This apartment block is located west of the Site behind 16-46 Dewberry Street, with two storeys considered relevant for assessment. It was not possible to obtain layouts for this building and therefore room uses have been assumed. Windows and rooms on the south west east and north west elevations also been assessed.

14.550 A total of 37 windows were assessed for sunlight within this building of which 36 (97.5%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.551 No windows would be affected annually and one window would be affected in winter, experiencing alterations from 30-39.9% in WPSH, which is considered a Moderate Adverse effect. This window serves a room on unknown use and would retain 4% WPSH, which is only marginally below the BRE Guidelines recommendation.

14.552 Therefore, the effect is considered **Negligible Adverse (Not Significant)**.

Devons Wharf

14.553 This residential apartment building is located east of the Site, with four storeys considered for assessment. Windows on the north west and south west elevations overlooking the Proposed Development are considered for assessment. Additionally, windows on the north east and south eastern elevations are considered, as they

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serve rooms with the potential to be impacted by the Proposed Development. The façade is defined by balconies and inset portions of the elevations.

- 14.554** A total of 69 windows were assessed for sunlight within this building of which 55 (79.9%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.555** A total of 14 window would be affected annually, of which six would experience an alteration between 20-29.9%, which is considered a Minor Adverse effect and six would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect. The remaining two would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.
- 14.556** A total of four windows would be affected in winter and would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.
- 14.557** Two bedrooms windows would retain 10-11% APSH, however, may be considered less important in relation to sunlight considerations. A further window retaining 12% serves an LKD, which has two further windows which are well sunlit. The remaining nine windows retain 23-24% APSH and are therefore not considered to be significantly affected.
- 14.558** Overall, the effect is considered **Minor Adverse (Not Significant)**.

Joshua Street 35-41

- 14.559** These four two-storey (plus roof extension) residential terraced houses are located west of the Site. Windows and rooms on the front and rear (north and south facing) and east facing flank are considered for assessment. Each house is fronted by a vestibule, with the first storey windows sitting beneath overhanging eaves. It was not possible to obtain layouts for this building, which have therefore been assumed.
- 14.560** A total of 19 windows were assessed for sunlight within this building of which 18 (79.9%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.561** A total of one window would be affected annually and would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect. This window would be affected in winter and would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.
- 14.562** Two bedrooms windows would retain 10-11% APSH, however, may be considered less important in relation to sunlight considerations. A further window retaining 12% serves an LKD, which has two further windows which are well sunlit. The remaining nine windows retain 23-24% APSH and are therefore not considered to be significantly affected.
- 14.563** This window, serving an LKD, would retain 18% APSH and does not meet the BRE criteria for WPSH in the baseline condition. The LKD is served by two further windows which remain very well sunlit.
- 14.564** Overall, the effect is considered Negligible to Minor Adverse (Not Significant).

Lansbury Gardens 2-12

- 14.565** This row of six two-storey terraced houses is located east of the Site. The front, west (Site) facing and rear east facing windows have been considered, as there are rooms with windows spanning the breadth of these properties.
- 14.566** A total of 22 windows were assessed for sunlight within this building of which 5 (22.7%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.567** A total of 17 windows would be affected annually, of which one would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect and 16 would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect. Seven of these windows would be affected in winter and would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.
- 14.568** Eleven of the affected windows serve bedrooms retaining 17-23% APSH, however, may be considered less important in relation to sunlight considerations.
- 14.569** The remaining six windows serve living rooms at ground level, retaining 10-22% APSH. These windows are already shaded by the vestibules in the baseline condition. One of these affected living rooms has additional windows within 90 degrees of due south which remain well sunlit.
- 14.570** Overall, the effect is considered **Moderate Adverse (Significant)**.

Leven Road Phase Three

- 14.571** Five storeys of this residential apartment block located east of the Site are considered for assessment. Windows and rooms on the west and south west elevations are considered for assessment. The building is an irregular form with the west facing elevations defined by inset façades and overhangs on the first and second storey. The south west facing façade is defined by balconies. It should be noted that this building overlooks low rise existing massing in the baseline condition, receiving uncharacteristically high levels of daylight. Significant reductions can therefore be expected to occur as a result of massing coming forward.
- 14.572** A total of 44 windows were assessed for sunlight within this building of which 10 (22.7%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.573** A total of 34 windows would be affected annually, of which one would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect and 33 would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect. Twenty seven of these windows would be affected in winter and would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.
- 14.574** Twenty one of the affected windows serve bedrooms, experiencing significant impacts, however, may be considered less important in relation to sunlight considerations.
- 14.575** The remaining 13 windows serve single aspect living rooms, which are significantly affected. These windows are already shaded in the baseline condition.
- 14.576** It should be noted that most of these windows face due west and therefore are only just within 90 degrees of due south and would receive evening sun only. Reductions of this magnitude can be expected, given the low rise existing massing and the Proposed Development stepping forward, as well as the presence of balconies which inherently shade these windows.
- 14.577** Overall, the effect is considered Moderate to **Major Adverse (Significant)**.
- 14.578** The impacts to this building are discussed in further detail within the Standalone Daylight and Sunlight Impacts Upon Neighbours Report, providing further contextual considerations.

Loren Apartments

- 14.579** Three storeys of this residential apartment is located south east of the Site are considered for assessment. Windows and rooms on the west and southern façade are assessed for impacts.
- 14.580** A total of 26 windows were assessed for sunlight within this building of which 5 (19.2%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.581** A total of 19 windows would be affected annually, of which three would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect and 16 would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect. Seventeen windows would be affected in winter, with one experiencing an alteration between 20-29.9% which is considered a Minor Adverse effect and three would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect. The remaining 13 would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect.
- 14.582** Ten of the affected windows serve bedrooms which may be considered less important in relation to sunlight considerations.
- 14.583** The remaining nine windows serve three single aspect living rooms, which would retain 3, 12 and 20% APSH and three LKDs which multiple aspects which remain well sunlit.
- 14.584** Overall, the effect is considered Moderate to **Major Adverse (Significant)**.

Mills Grove 2-10

- 14.585** These five two-storey terraced houses are located west of the Site. The rear of these buildings, facing towards the Site are considered for assessment, as well as the front, as there are rooms which span the breadth of these properties and are therefore relevant. It was not possible to obtain layouts for these buildings and therefore room uses have been assumed.
- 14.586** A total of nine windows were assessed for sunlight within this building of which eight (88.9%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.587** A total of one window would be affected and would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect in both APSH and WPSH.

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14.588 This window serves a ground floor LKD which is shaded in the baseline condition and served by two further windows which remain very well sunlit.

14.589 Overall, the effect is considered **Minor Adverse (Not Significant)**.

Sherman House

14.590 Four storeys of this residential apartment block located south east of the Site have been considered. Windows and rooms on all four elevations have been considered for assessment.

14.591 A total of 35 windows were assessed for sunlight within this building of which 3 (8.6%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.592 A total of 31 windows would be affected annually which would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect. Thirty of these windows would also be affected in winter experiencing alterations in excess of 40% in APSH, which is considered a Major Adverse effect.

14.593 Half of the affected windows serve bedrooms which may be considered less important in relation to sunlight considerations.

14.594 The remaining windows serve LKDs, living room and kitchens which would retain 13-24% APSH which is considered to be a good level of sunlight, with the exception of two LKD windows which would retain 4-6% APSH.

14.595 Overall, the effect is considered **Moderate Adverse (Significant)**.

St. Nicholas Church

14.596 This religious building is located east of the Site. All four elevations have been considered for assessment.

14.597 A total of 37 windows were assessed for sunlight within this building of which 31 (83.9%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

14.598 A total of six windows would be affected annually which would experience alterations in excess of 40% in APSH, which is considered a Major Adverse effect. Each of the impacts would occur to the ancillary space within this building.

14.599 Overall, the effect is considered **Minor to Moderate Adverse (Significant)**.

Overshadowing

14.600 The potential overshadowing impacts of the Proposed Development on surrounding amenity areas have been assessed against the Baseline Scenario. Additionally, in line with the Scoping Opinion, existing and proposed amenity areas within the Site have been considered. Existing amenity areas within the Site have been assessed by reference to Transient Overshadowing and the BRE two hour contour plots provided for all internal amenity areas.

14.601 The full overshadowing assessment for the Proposed Development can be found within **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 5** and is summarised below.

Transient Overshadowing

14.602 Existing amenity areas have been considered by reference to Transient Overshadowing.

21st March

14.603 On this day, shadows are cast from the Proposed Development from 08:00 GMT in a north westerly direction. At 08:00 GMT the Proposed Development casts shadows across the A12 onto Jolly's Green, a small portion of the rear gardens of the properties along Joshua St, Mills Grove and Brion Place. These shadows clear by 10:00 GMT leaving these spaces unaffected for the rest of the day. At 08:00 GMT, Braithwaite Park is partially overshadowed by the Proposed Development, which reduces in size through morning, the moving towards the south eastern corner and clearing by 15:00 GMT. From 8:00 GMT additional shadows are also cast onto a portion of the eastern courtyard of Culloden Primary School and the westernmost open spaces of Bromley Hall School. The additional shadows on the eastern courtyard of Culloden Primary School clears by 11:00 AM and leave this space unaffected for the rest of the day. The additional overshadowing on the westernmost open spaces of Bromley Hall clears at 1:00 PM GMT, as the shadows move throughout the day and, from 11:00 AM GMT until 5:00 PM GMT these are cast onto the central and easternmost open spaces of the School. From 11:00 AM to 5:00 PM GMT additional shadows are cast on the ground floor private open spaces of Sherman

House. From 1:00 PM to 5:00 PM GMT small strips of transient additional shadows are cast on a few rear gardens of the properties at 177-225 Abbott Road and 110-144 Leven Road. From 1:00 PM to 5:00 PM GMT additional shadows are cast on the Aberfeldy Millennium Green. From 2:00 PM to 3:00 PM GMT additional shadows are cast on the rear gardens of 9-15 Wooster Gardens. Leven Road Green would be overshadowed for a short period from 16:00 GMT until the end of the day. Small strips of additional shadows reach the Bow Creek / River Lea from 3:00 PM to 5:00 PM.

14.604 The significance of effects is provided in the subsequent 'Sun Hours on Ground' section.

14.605 Owing to the minimal impact to Culloden Primary School Playground, Bow Creek / River Lea shown in the transient overshadowing plots, the effect is considered **Negligible (Not Significant)**.

21st June

14.606 On this day, shadows are cast from the Proposed Development from 06:00 BST in a south westerly direction. From 06:00 BST to 10:00 BST the Proposed Development casts shadows across the A12 onto Jolly's Green, a small portion of the rear gardens of the properties along Joshua St and Mills Grove, and the communal open spaces of Carradale House and Balfron Tower. These spaces remain unaffected for the rest of the day. The western courtyard of Culloden Primary School sees additional shadowing from 6:00 BST to 8:00 AM BST, whilst the eastern courtyard sees additional shadowing from 7:00AM to 10:00 AM, which clears completely by 12:00 AM BST. Braithwaite Park would be overshadowed in the south east corner from 11:00 BST until 14:00 BST. From 12:00 AM to 15:00 BST additional shadows are cast onto the southernmost open spaces of Bromley Hall School. From 15:00 to 20:00 GMT strips of transient additional shadows are cast on the gardens of the properties at 177-225 Abbott Road and 110-144 Leven Road. From 15:00 PM to 20:00 PM GMT additional shadows are cast on the green space adjacent St Nicholas Church. Leven Road Green begins to become overshadowed from the Proposed Development at 19:00 BST, which is cast in shadow for the remainder of the day. From 19:00 to 20:00 BST small strips of additional shadows are cast on the rear gardens of 9-15 and 1-7 Wooster Gardens. No additional shadows reach the Bow Creek / River Lea on this day of the year.

21st December

14.607 On this day, shadows are cast from the Proposed Development from 09:00 GMT in a north westerly direction. At 09:00 GMT the Proposed Development casts a small strip of additional shadow onto Jolly's Green, which clears by 10 AM GMT. From 10:00 AM to 12:00 AM additional shadows are cast on a few open spaces of Bromley Hall School. From 12:00 AM to 3:00 PM GMT additional shadows are cast on the Aberfeldy Millennium Green, the green space adjacent St Nicholas Church and the rear gardens of 9-15 Wooster Gardens. Leven Road Green would see very small periods of overshadowing at 14:00 GMT and 15:00 GMT. Small strips of additional shadows reach the Bow Creek / River Lea from 1:00 PM to 3:00 PM GMT.

Sun Hours on Ground

14.608 A detailed Sun Hours on Ground assessment has been carried out for the most affected open spaces to understand the scale and nature of the impacts.

14.609 It was not considered necessary to assess Culloden Primary School Playground using sun hours on ground as the transient overshadowing assessment showed a negligible effect and very high levels of sunlight hours retained at this amenity area, in excess of the two hours on March 21st recommended by BRE Guidelines.

14.610 Of the amenity areas assessment, those listed below would experience **Negligible (Not Significant)** effects upon the implementation of the Proposed Development. As described in the Transient Overshadowing assessment these areas would either retain at 2 hours on sun on at least 50% of their total area or not experience a reduction in the total amount of sunlight by more than 0.8 as a result of the Proposed Development as per BRE Guidelines recommendations. These areas are:

- Rear gardens of properties at 110-144 Leven road (even numbers, 18 properties in total);
- Rear gardens of properties at 177-195 Abbott road (odd numbers, 10 properties in total);
- 199, 203, 207, 211, 215, 219, 223 Abbott Road;
- Aberfeldy Millennium Green;
- St Nicholas Church;
- 1, 3, 5, 7, 11, 13, 15 Wooster Gardens;
- 2, 4, 6, 8, 10, 12 Lansbury Gardens; and

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- 8 out of 14 open spaces at Bromley Hall School, identified in appendix as areas n. 65, 66, 67, 68, 69, 70, 71 and 73.
- 14.611** Additionally, the existing and proposed open spaces within the Site boundary for the Proposed Development are considered to meet and exceed BRE compliance levels and retain good levels of sunlight in the summer months as demonstrated in the sun exposure diagrams:
- Allotments;
 - Highland Place;
 - Leven Road Green;
 - Braithwaite Park;
 - The Square; and
 - Culloden Green.
- 14.612** The open spaces listed below would experience relative reductions or retained levels of sunlight below BRE's recommendation and are analysed further:
- Rear gardens of the properties at 197, 201, 205, 209, 213, 217, 221 and 225 Abbott Road;
 - Private terraces at 3 and 4 Dee Street;
 - Rear garden at 9 Wooster Gardens; and
 - 6 out of 14 open spaces at Bromley Hall School, identified in appendix as areas n. 72, 74, 75, 76, 77 and 78.
- 14.613** The rear gardens of the properties at 197, 201, 205, 209, 213, 217, 221 and 225 Abbott Road all have baseline levels of overshadowing far below BRE's recommendation, ranging from 3% to 18.1%. Upon implementation of the Proposed Development they would see small absolute reductions ranging from 2.1% to 10%, which result in disproportionately high relative reductions ranging from 29% to 100%. The sun exposure diagrams in March and June demonstrate that these areas would effectively retain levels of light that are almost identical to those of the baseline. Therefore, in consideration of the small absolute reductions and the levels of light available in the baseline scenario and retained in the Proposed Development scenario, the effects on these rear gardens is considered **Minor Adverse (Not Significant)**.
- 14.614** The Private terraces at 3 and 4 Dee Street see levels of overshadowing above recommendation in the baseline scenario, which are reduced to 0% in the Proposed Development scenario, resulting in a 100% relative loss. The sun exposure diagrams in March and June demonstrate that these areas would retain circa 1 hour of sunlight at the equinox and 3 at the summer solstice. Overall, it is considered that these open spaces would experience major adverse effects (significant). When assessed in the consented scenario, these open spaces would also see **Major Adverse (Significant)** effects, with reductions ranging from 77% to 99% and retained values of 13.1% and 0.9% respectively. The sun exposure diagrams for the consented scenario show levels of sunlight retained at the equinox and summer solstice very similar to those of the Proposed Development. These areas would therefore have similar effects to those of the 2012 OPP.
- 14.615** The rear garden at 9 Wooster Gardens has a baseline levels of overshadowing below BRE's recommendation (25.4%), and would see an absolute reduction of 16.6%, generating a relative reduction of 65%. The sun exposure diagrams however demonstrate that the levels of sunlight in the baseline and Proposed Development scenario are very similar, and the high percentage reduction is given by a portion of this open space that sees just marginally below the two hours recommended by BRE in the Proposed Development scenario, where in the baseline conditions this portion sees just marginally above the two hours threshold. It is considered therefore that, despite a 65% relative reduction, this area would have a **Minor Adverse (Not Significant)** effect. When assessed in the consented scenario, this open space would see an absolute reduction of 11.3% resulting in a relative loss of 44%. The Proposed Development would result in similar effects to those of the 2012 OPP.
- 14.616** The 6 open spaces of Bromley Hall School seeing reductions beyond BRE's recommendation have baseline levels of overshadowing above recommendation. Upon implementation of the Proposed Development, one would see a reduction of 28%, which is considered a minor adverse effect, one would see a reduction of 31% which is considered a moderate adverse effect, and four would see reductions beyond 40% ranging from 46% to 100% which is considered a major adverse effect. Overall, in consideration of the 8 open spaces of this building seeing negligible effects, and the adverse effects above, it is considered that Bromley Hall School would see a **Minor to Moderate (Significant)** effect upon implementation of the Proposed Development.
- ### Solar Glare
- 14.617** The full solar glare assessment is provided in ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 6, with the sensitive locations assessed shown in Figure 14.5.
- 14.618** The technical assessment has been undertaken from 15 nearby locations which are considered sensitive in terms of solar glare (noted by the reference viewpoint 1, viewpoint 2 etc.). The technical assessment considers the potential occurrence, proximity and duration of solar reflections from the Plots H1-2, H3, F, I and J of the Proposed Development.
- 14.619** Plots H1-2, H3, F, I and J are not visible from three out of all 15 viewpoints assessed (namely viewpoints 3, 4 and 6). As such there is no potential for any solar glare effects from these locations.
- 14.620** Of the remaining 12 viewpoints assessed, eight would see negligible effects due to the distance from the centre of the field of view, the broken-up nature of the small glazing elements of the facades, and the limited amount of time any small reflection would be visible. Therefore, viewpoints n. 1, 2, 7, 10, 11, 13, 14 and 15 would have **Negligible (Not Significant)** effects.
- 14.621** The remaining four viewpoints are discussed in detail below.
- ### Viewpoint 5
- 14.622** At this location, one viewpoint is assessed. Potential reflections are visible between 10° and 20° at 5:00 PM GMT to 7:00 PM GMT from mid-March to mid-April and mid-August to mid-September. The reflections occur on a portion of the façade with large solid non-reflective elements and broken-up glazing, which would limit the extents of any potential reflections. As such, the effect for this viewpoint is considered **Minor Adverse (Not Significant)**.
- ### Viewpoint 8
- 14.623** At this location, one viewpoint is assessed. Potential reflections are visible between 10° and 30° at different times of the year: from 5:00 PM GMT to 6:00 PM GMT from mid-March to mid-May and mid-July to mid-September, and from 3:00 PM to 5:00 PM from mid-January to mid-March and from mid-September to mid-November. The reflections occur on a portion of the façade with large solid non-reflective elements and broken-up glazing, which would limit the extents of any potential reflections. As such, the effect for this viewpoint is considered **Minor Adverse (Not Significant)**.
- ### Viewpoint 9
- 14.624** At this location, one viewpoint is assessed. Potential reflections are visible between 10° and 30° at 5:00 AM GMT to 7:00 AM GMT from mid-April to mid-August. The reflections occur on a portion of the façade with large solid non-reflective elements and broken-up glazing, which would limit the extents of any potential reflections. As such, the effect for this viewpoint is considered **Minor Adverse (Not Significant)**.
- ### Viewpoint 12
- 14.625** At this location, one viewpoint is assessed. Potential reflections are visible between 5° and 25° at 4:00 PM GMT to 6:00 PM GMT from mid-February to mid-April from mid-August to mid-October. The reflections occur on a portion of the façade with large solid non-reflective elements and broken-up glazing, which would limit the extents of any potential reflections. As such, the effect for this viewpoint is considered **Minor Adverse (Not Significant)**.
- ### Qualitative Consideration of Solar Glare from Plots A-E
- 14.626** It is considered that there is the potential for significant solar glare effects arising from the future detailed design of Plots A-E, which are currently proposed in outline. The outline proposals for Plots A-E are for residential, commercial uses and new means of access. The residential uses are likely to be comprised of brickwork and punched windows, and therefore unlikely to result in significant reflections, whilst the commercial uses propose workspaces and retail provision, which may comprise large areas of glazing and therefore would potentially cause significant reflections. The Proposed Development would introduce new means of access with the introduction of new junctions along the A12.
- 14.627** A technical assessment cannot be undertaken at this stage for the new buildings; however, qualitative consideration has been given to existing viewpoints with the potential to be affected in relation to solar glare from buildings within Plots A-E.

- 14.628 The most sensitive viewpoints are those along the A12, these are considered most sensitive given the speed of travelling vehicles and proximity to potentially reflective façades of future development within Plots A-E.
- 14.629 Viewpoints 1, 4, 5 and 6 travelling south along the A12 would have a view of buildings within Plots A-E, which would potentially be within 10° of a road user's line of sight. Depending on the final uses, orientation and materiality of the future detailed design, the effects at these viewpoints would range from **Negligible (Not Significant)** to **Major Adverse (Significant)**. Should significant effects be considered likely, additional viewpoints travelling south along A12 will be assessed and mitigating design strategies will be implemented to reduce the effects to not significant.
- 14.630 Viewpoints 3 and 7, travelling north along the A12 would also have view of buildings within Plots A-E, which would potentially be within 10° of a road user's line of sight. Depending on the final uses, orientation and materiality of the future detailed design, the effects at these viewpoints would range from **Negligible (Not Significant)** to **Major Adverse (Significant)**. Should significant effects be considered likely, additional viewpoints travelling north along A12 will be assessed and mitigating design strategies will be implemented to reduce the effects to not significant.
- 14.631 Therefore, given the potential for effects outlined in paragraph 14.629 and paragraph 14.630 relating to these viewpoints located along the A12 will be further assessed at RMA stage, once the final uses orientation and materiality is known.
- 14.632 The location of any introduced junctions, merging from Plots A-E and the A12, are yet to be determined. However, owing to the sensitivity of these locations, these will be assessed at RMA stage. Furthermore, any additional viewpoints along surrounding roads and junctions sensitive to solar glare from future buildings within Plots A-E will be assessed once the detail design comes forwards.

Internal Daylight and Sunlight Amenity Summary

- 14.633 The full Daylight and Sunlight Amenity within the Site Report is submitted alongside the Application, which is summarised below.
- 14.634 The purpose of the Daylight and Sunlight Amenity within the Site is to ascertain whether the proposed detailed proposals design for Phase A Blocks F, H, I and J within the Proposed Development will provide residential accommodation considered acceptable in terms of daylight, sunlight and overshadowing. In addition, this document presents the results of the overshadowing within all proposed spaces of the Outline Proposals, assessed via the Illustrative Masterplan.
- 14.635 Overall, 689 (78.1%) out of all 882 habitable rooms meet or exceed the BRE recommendation for daylight quantum (ADF) and 685 (77.7%) achieve the recommended level for sky visibility (NSL). All rooms have been designed in accordance with BRE's RDC, where applicable. It is worth noting that many rooms far exceed BRE's minimum recommendations providing excellent daylight spaces. If marginal shortfalls are considered in the figure above for ADF, a total of 785 (89.0%) of 882 habitable rooms will offer good daylight levels given the urban location.
- 14.636 In terms of sunlight, 109 (73.6%) out of 148 living areas suitable for assessment meet or exceed the recommended levels for APSH, and 117 (79.1%) exceed the suggested levels of WPSH. The occurrence of sunlight levels lower than recommendation in a few units is typical of an urban environment, especially for rooms on the lowest floors which are provided with balconies.
- 14.637 With regard to overshadowing within Phase A, all but one of the proposed communal spaces far exceed the recommendation by BRE, providing excellent sunlight amenity. The only area falling short of recommendation is the northern rooftop terrace of Block H3, which however sees good levels of sunlit throughout all summer months and can still be considered well sunlit. In addition, Braithwaite Park and Leven Road Green also far exceed BRE's recommendation and will be well sunlit throughout the year.
- 14.638 All outdoor spaces within the Outline Proposals have also been tested. The ground floor public realm would see very good levels of sunlight, exceeding BRE's recommendation and being well sunlit throughout the year. The four proposed courtyards would fall short of recommendation on 21st March. The vast majority of these areas would see in excess of three hours of sunlight in June. Three of the four courtyard blocks are provided with rooftop amenity spaces, all of which far exceed recommendation and will be excellently sunlit throughout the year.

MITIGATION, MONITORING AND RESIDUAL EFFECTS

Demolition and Construction Mitigation

- 14.639 No technical analysis of the likely significant effects on the surrounding properties and amenity spaces during the demolition and construction phases were carried out. However, general comments on the likely effects are discussed below. These are based on professional judgement and are set out as follows.
- 14.640 The effects during demolition and construction would gradually increase and vary until they reach the effects reported in the Proposed Development scenario. Therefore, once complete and operational, the Proposed Development scenario would represent the worst-case scenario for daylight, sunlight, overshadowing and solar glare.
- 14.641 Given that any effects during the demolition and construction are not anticipated to be worse than when the buildings are complete and operational, no mitigation measures are required.

Completed Development Mitigation

- 14.642 Owing to the hybrid nature of this Application, those elements proposed and assessed in outline represent a worst case scenario, extruding the extents of the maximum parameters, including buffer space for balconies, rooftop maintenance areas and HVAC systems. Therefore, once the detailed design of these blocks comes forward at RMA stage, the proposed massing is likely to be smaller than the maximum parameter envelope assessed within this ES Chapter. The illustrative masterplan, submitted alongside this Application provides an example of how the Proposed Development could be articulated, including measures which would aid in the mitigation of significant daylight and sunlight effects. These measures include:
 - Stepping back from the maximum parameter envelope;
 - Introduction of gaps between blocks;
 - Rooftop setbacks;
 - Chamfered edges; and
 - Rooftop elements reducing in size.
- 14.643 In relation to solar glare, viewpoints from which the facades of the detailed elements of the Proposed Development have been assessed. No significant effects have been identified and therefore the mitigation is embedded within the design.
- 14.644 For Plots A-E, during the detailed design stage, sensitive viewpoints along the A12 and wider surroundings, as well as any introduced viewpoints will be reviewed to mitigate significant solar glare effects as far as is practically viable. Any future RMAs for the detailed design of Plots A-E will be accompanied with technical solar glare assessments.

Residual Effects

- 14.645 All of the residual effects resulting from the Proposed Development, are presented in **Table 14.11**, identifying whether the effect is significant or not.

Table 14.11 Residual Effects

Receptor	Description of the Residual Effect	Scale and Nature	Significant / Not Significant	Geo	D I	P T	St Mt Lt
Demolition and Construction							
Refer 'Impact Assessment Methodology – Demolition and Construction' – It is considered that the completed Proposed Development represents the worst-case assessment in terms of likely daylight, sunlight, overshadowing and solar glare. Refer Residual Effects for the Completed Development (see below).							

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Completed Development								
134-144 Leven Road Ailsa Wharf Block A Ailsa Wharf Blocks K L Dewberry Street 2-14 Joshua Street 4 Mills Grove 2-10 49-67 Abbott Road Aberfeldy Estate Phase One Block A	Daylight	Negligible	Not Significant	L	D	P	Lt	
128-132 Leven Road Mills Grove 1-9 Mills Grove 12-20 Mills Grove 17-25 Mills Grove 9-15 St Leonards Road 118-132 St Leonards Road 134-146 Wooster Gardens 1-7 Wooster Gardens 9-15 Balfron Tower Bromley Hall Joshua Street 6-14 Joshua Street 17-33 St Leonards Road 148-154		Negligible to Minor Adverse	Not Significant	L	D	P	Lt	
Ailsa Wharf Block D Carradale House Dewberry Street 16-46 Devons Wharf Joshua Street 1-15 Joshua Street 35-41 Aberfeldy Estate Phase Three Block G		Minor Adverse	Not Significant	L	D	P	Lt	
177-195 Abbott Road Aberfeldy Estate Phase One Block C Aberfeldy Estate Phase Three Block J Aberfeldy Estate Phase Two Block D St. Nicholas Church Culloden Primary School		Minor to Moderate Adverse	Significant	L	D	P	Lt	
110-126 Leven Road		Moderate Adverse	Significant	L	D	P	Lt	
199-225 Abbott Road Lansbury Gardens 2-12 Loren Apartments Sherman House		Moderate to Major Adverse	Significant	L	D	P	Lt	
Atelier Court Leven Road Phase Three		Major Adverse	Significant	L	D	P	Lt	
49-67 Abbott Road Aberfeldy Estate Phase One Block A Aberfeldy Estate Phase Three Block G Aberfeldy Estate Phase Three Block J Aberfeldy Estate Phase Two Block D		Sunlight	Negligible	Not Significant	L	D	P	Lt

Balfron Tower Carradale House Culloden Primary School Dewberry Street 16-46 Dewberry Street 2-14 Joshua Street 1-15 Joshua Street 17-33 Joshua Street 4 Joshua Street 6-14 Mills Grove 1-9 Mills Grove 12-20 Mills Grove 17-25 Mills Grove 9-15 St Leonards Road 118-132 St Leonards Road 134-146 St Leonards Road 148-154 Wooster Gardens 1-7 Wooster Gardens 9-15														
128-132 Leven Road 177-195 Abbott Road Ailsa Wharf Block A Ailsa Wharf Blocks K L Joshua Street 35-41								Negligible to Minor Adverse	Not Significant	L	D	P	Lt	
Ailsa Wharf Block D 110-126 Leven Road Bromley Hall Devon's Wharf Mills Grove 2-10								Minor Adverse	Not Significant	L	D	P	Lt	
Aberfeldy Estate Phase One Block C St. Nicholas Church								Minor to Moderate Adverse	Significant	L	D	P	Lt	
Lansbury Gardens 2-12 Sherman House								Moderate Adverse	Significant	L	D	P	Lt	
Leven Road Phase Three Loren Apartments 199-225 Abbott Road								Moderate to Major Adverse	Significant	L	D	P	Lt	
Atelier Court								Major Adverse	Significant	L	D	P	Lt	
Rear gardens of properties at 110-144 Leven road (even numbers, 18 properties in total) Rear gardens of properties at 177-195 Abbott road (odd numbers, 10 properties in total) 199, 203, 207, 211, 215, 219, 223 Abbott Road Aberfeldy Millennium Green St Nicholas Church 1, 3, 5, 7, 11, 13, 15 Wooster Gardens 2, 4, 6, 8, 10, 12 Lansbury Gardens 8 out of 14 open spaces at Bromley Hall School, identified in appendix as areas n. 65, 66, 67, 68, 69, 70, 71 and 73 Bow Creek / River Lea								Overshadowing	Negligible	Not Significant	L	D	P	Lt

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Culloden Primary School							
Rear gardens of the properties at 197, 201, 205, 209, 213, 217, 221 and 225 Abbott Road		Minor Adverse	Not Significant	L	D	P	Lt
Rear garden at 9 Wooster Gardens		Minor Adverse	Not Significant	L	D	P	Lt
6 out of 14 open spaces at Bromley Hall School, identified in appendix as areas n. 72, 74, 75, 76, 77 and 78		Minor to Moderate Adverse	Significant	L	D	P	Lt
Private terraces at 3 and 4 Dee Street		Major Adverse	Significant	L	D	P	Lt
Viewpoints 1-14	Solar Glare	Negligible to Minor Adverse	Not Significant	L	D	P	Lt
Notes: Residual Effect - Scale = Negligible / Minor / Moderate / Major - Nature = Beneficial or Adverse Geo (Geographic Extent) = Local (L), Borough (B), Regional (R), National (N) D = Direct / I = Indirect P = Permanent / T = Temporary St = Short Term / Mt = Medium Term / Lt = Long Term N/A = not applicable / not assessed							

ASSESSMENT OF THE FUTURE ENVIRONMENT

Evolution of the Baseline Scenario

14.646 The conditions in an evolved baseline scenario would be similar to those presented in the existing baseline conditions of this ES Chapter, with the potential for cumulative schemes to lower the baseline levels of light received at surrounding sensitive receptors.

14.647 A future baseline scenario has also been assessed, to consider the effects of the Proposed Development upon residential cumulative schemes, which would be future sensitive receptors. These include 45-47 Abbott Road, Islay Wharf and Former Poplar Bus Depot. The future baseline results of these buildings is presented in **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 2.**

Cumulative Effects Assessment

14.648 This section of the chapter assesses the potential effects of the Proposed Development in combination with the potential effects of other cumulative schemes within the surrounding area, as listed within **ES Volume 1, Chapter 2: EIA Methodology.** From this list, the following cumulative schemes has been included within the assessment due to its close proximity the Site:

- Former Poplar Bus Depot (PA/19/02148/A1); and
- Islay Wharf (PA/19/01760).

14.649 All other cumulative schemes are considered too far from the Proposed Development to cause cumulative effects for this discipline.

Demolition and Construction

14.650 There is no change in the effects during demolition and construction as reported in the Proposed Development Effects scenario. Therefore, refer to the previous section.

Completed Development

14.651 The full daylight assessment for the Cumulative Scenario can be found within **ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing and Solar Glare – Annex 4** and is summarised in **Table 14.12.**

Daylight

14.652 The full cumulative daylight results are presented within ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing and Solar Glare – Annex 5.

14.653 Of the 42 existing and under construction buildings assessed, the following 26 shown in blue in **Table 14.12** will experience no alteration greater from the effects reported in the Proposed Development Scenario and therefore please refer to the previous section.

14.654 Commentary on the remaining 16 buildings is provided below.

Table 14.12 Cumulative Daylight Assessment of the Proposed Development at Surrounding Sensitive Receptors (VSC and NSL)

Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE criteria	Below BRE Guidelines criteria				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines criteria			
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
110-126 Leven Road	95	8	32	42	13	87	36	36	0	0	0	0
128-132 Leven Road	35	24	11	0	0	11	24	22	2	0	0	2
134-144 Leven Road	56	56	0	0	0	0	24	24	0	0	0	0
177-195 Abbott Road	85	54	15	12	4	31	48	43	2	2	1	5
199-225 Abbott Road	179	97	6	12	64	82	90	87	1	2	0	3
49-67 Abbott Road	70	70	0	0	0	0	41	41	0	0	0	0
Aberfeldy Estate Phase One Block A	57	57	0	0	0	0	45	45	0	0	0	0
Aberfeldy Estate Phase One Block C	98	51	13	5	29	47	61	46	8	4	3	15
Aberfeldy Estate Phase Three Block G	47	36	3	2	6	11	25	24	1	0	0	1
Aberfeldy Estate Phase Three Block J	111	74	11	10	16	37	56	56	0	0	0	0
Aberfeldy Estate Phase Two Block D	57	35	14	4	4	22	35	34	0	1	0	1

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Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE criteria	Below BRE Guidelines criteria				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines criteria			
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
Ailsa Wharf Block A	45	21	0	1	23	24	21	12	0	0	9	9
Ailsa Wharf Block D	228	93	20	28	87	135	88	81	6	1	0	7
Ailsa Wharf Blocks K L	62	48	9	4	1	14	27	20	6	1	0	7
Atelier Court	117	12	5	5	95	105	97	26	11	9	51	71
Balfon Tower	62	48	6	0	8	14	54	53	0	1	0	1
Bromley Hall	100	73	10	11	6	27	31	28	2	0	1	3
Carradale House	77	37	10	22	8	40	44	44	0	0	0	0
Culloden Primary School	90	33	5	21	31	57	21	18	0	0	3	3
Dewberry Street 16-46	72	39	27	6	0	33	44	44	0	0	0	0
Dewberry Street 2-14	44	42	0	1	1	2	25	25	0	0	0	0
Devons Wharf	169	40	32	18	79	129	91	64	9	6	12	27
Joshua Street 1-15	77	62	3	6	6	15	31	31	0	0	0	0
Joshua Street 17-33	55	48	2	4	1	7	36	36	0	0	0	0
Joshua Street 35-41	30	21	5	3	1	9	17	17	0	0	0	0
Joshua Street 4	4	3	1	0	0	1	2	2	0	0	0	0
Joshua Street 6-14	27	24	1	2	0	3	17	17	0	0	0	0
Lansbury Gardens 2-12	43	25	0	1	17	18	18	7	1	0	10	11
Leven Road Phase Three	73	8	9	8	48	65	62	21	5	5	31	41
Loren Apartments	26	4	0	3	19	22	18	4	2	1	11	14
Mills Grove 1-9	25	24	0	1	0	1	17	15	1	0	1	2
Mills Grove 12-20	25	20	4	0	1	5	15	15	0	0	0	0
Mills Grove 17-25	27	18	9	0	0	9	15	15	0	0	0	0
Mills Grove 2-10	25	24	1	0	0	1	15	15	0	0	0	0
Mills Grove 9-15	22	15	6	0	1	7	12	11	0	1	0	1
St Leonards Road 118-132	40	28	11	0	1	12	23	23	0	0	0	0
St Leonards Road 134-146	43	31	12	0	0	12	28	28	0	0	0	0
St Leonards Road 148-154	20	17	3	0	0	3	10	10	0	0	0	0
Sherman House	69	29	1	2	37	40	43	23	3	1	16	20
St.Nicholas Church	59	36	5	5	13	23	31	31	0	0	0	0
Wooster Gardens 1-7	33	31	2	0	0	2	16	13	1	2	0	3
Wooster Gardens 9-15	20	18	2	0	0	2	16	16	0	0	0	0
Totals	2699	1534	306	239	620	1165	1470	1223	61	37	149	247

- **110-126 Leven Road** – a total of 24 additional windows would experience impacts ranging from Minor to Major Adverse for VSC, however, no additional NSL impacts would occur. Therefore, the effect is considered to increase to **Moderate to Major Adverse (Significant)** as a result of cumulative schemes coming forward.
- **128-132 Leven Road** – only one additional window would experience a Minor Adverse impact and therefore the overall effect does not change from **Negligible (Not Significant)**.
- **177-195 Abbott Road** – three additional windows would experience a Minor Adverse VSC impact and therefore the overall effect does not change from **Minor to Moderate Adverse (Significant)**.
- **199-225 Abbott Road** – a total of three additional windows would experience a Minor Adverse VSC impact and one additional room would experience a NSL impact and therefore the overall effect does not change from **Minor to Moderate Adverse (Significant)**.

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- **Ailsa Wharf Block A** – a total of 23 additional windows would experience impacts ranging from Minor to Major Adverse for VSC and nine additional Major Adverse NSL impacts would occur. Therefore, the effect is considered **Moderate to Major Adverse (Significant)**, which is increased as a result of cumulative schemes coming forward.
- **Ailsa Wharf Block D** – a total of 71 additional windows would experience of Minor to Major Adverse significance for VSC and five additional Minor Adverse NSL impacts would occur. Therefore, the effect is considered to increase to **Moderate to Major Adverse (Significant)**. The effect was considered **Minor Adverse (Not Significant)** as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **Ailsa Wharf Blocks K L** – a total of 10 additional windows would experience of Major Adverse significance for VSC and seven additional Minor to Moderate Adverse NSL impacts would occur. Therefore, the effect is considered to increase to **Minor to Moderate Adverse (Significant)**. The effect was considered **Minor (Not Significant)** as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **Atelier Court** – two additional windows would see Minor Adverse VSC impacts and therefore the overall effect does not change from **Major Adverse (Significant)**.
- **Bromley Hall** – a total of 16 addition windows would see VSC impacts ranging from Minor to Major Adverse and three additional rooms would see Minor or Major Adverse NSL impacts. Therefore, the effect is considered to increase to **Moderate Adverse (Significant)**. The effect was considered **Minor Adverse (Not Significant)** as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **Culloden Primary School** - a total of 57 additional windows would see VSC impacts ranging from Minor to Major Adverse and three additional rooms would see Major Adverse NSL impacts. Therefore, the effect is considered to increase to **Moderate to Major Adverse (Significant)**. The effect was considered **Negligible (Not Significant)** as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **Dewberry Street 16-46** - three additional windows would see Minor Adverse VSC impacts and therefore the overall effect does not change from **Minor Adverse (Not Significant)**.
- **Devon's Wharf** - a total of 64 additional windows would see VSC impacts ranging from Minor to Major Adverse and 22 additional rooms would see Minor to Major Adverse NSL impacts. Therefore, the effect is considered to increase to **Moderate to Major Adverse (Significant)**. The effect was considered **Minor Adverse (Not Significant)** as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **Leven Road Phase Three** – a total of 18 additional windows would see VSC impacts ranging from Minor to Major Adverse and seven additional rooms would see Minor to Major Adverse NSL impacts. Therefore, the effect is considered to increase to **Major Adverse (Significant)**. The effect was considered **Moderate to Major Adverse (Significant)** as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **St Leonard's Road 118-132** – only one additional window would experience a Minor Adverse impact and therefore the overall effect does not change from **Negligible to Minor Adverse (Not Significant)**.
- **St Leonard's Road 148-154** – only one additional window would experience a Minor Adverse impact and therefore the overall effect does not change from **Negligible (Not Significant)**.
- **St. Nicholas Church** – only one additional window would experience a Moderate Adverse impact and therefore the overall effect does not change from **Minor to Moderate Adverse (Not Significant)**.

Sunlight

14.655 The full cumulative sunlight results are presented within ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 5.

14.656 Of the 42 existing and under construction buildings assessed, the following 37 shown in blue in **Table 14.13** and will experience no alteration greater than the effects reported in the Proposed Development Scenario and therefore please refer to the previous section.

14.657 Commentary on the remaining five buildings is provided below.

Table 14.13 Cumulative Sunlight Assessment of the Proposed Development at Surrounding Sensitive Receptors (APSH and WPSH)

Address	Total No. Windows	No. Windows that meet BRE criteria	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
110-126 Leven Road	59	52	0	0	5	0	0	4
128-132 Leven Road	25	25	0	0	0	0	0	0
134-144 Leven Road	32	32	0	0	0	0	0	0
177-195 Abbott Road	42	41	0	0	1	0	0	1
199-225 Abbott Road	94	74	0	0	16	0	0	20
49-67 Abbott Road	37	37	0	0	0	0	0	0
Aberfeldy Estate Phase One Block A	12	12	0	0	0	0	0	0
Aberfeldy Estate Phase One Block C	43	35	1	1	6	0	0	2
Aberfeldy Estate Phase Three Block G	22	22	0	0	0	0	0	0
Aberfeldy Estate Phase Three Block J	27	27	0	0	0	0	0	0
Aberfeldy Estate Phase Two Block D	4	4	0	0	0	0	0	0
Ailsa Wharf Block A	42	21	1	0	20	0	0	14
Ailsa Wharf Block D	147	111	1	3	32	0	0	16
Ailsa Wharf Blocks K L	25	22	0	2	1	0	0	0
Atelier Court	110	7	0	0	101	0	0	102
Balfron Tower	8	8	0	0	0	0	0	0
Bromley Hall	34	23	0	0	5	0	0	11
Carradale House	22	22	0	0	0	0	0	0
Culloden Primary School	43	43	0	0	0	0	0	0
Dewberry Street 16-46	48	48	0	0	0	0	0	0
Dewberry Street 2-14	37	36	0	0	0	0	1	0
Devons Wharf	69	48	8	11	2	0	4	7
Joshua Street 1-15	26	26	0	0	0	0	0	0
Joshua Street 17-33	33	33	0	0	0	0	0	0
Joshua Street 35-41	19	18	0	1	0	0	0	1
Joshua Street 4	1	1	0	0	0	0	0	0
Joshua Street 6-14	20	20	0	0	0	0	0	0
Lansbury Gardens 2-12	22	5	0	1	16	0	0	7
Leven Road Phase Three	44	10	0	1	33	0	0	27
Loren Apartments	26	5	0	3	16	1	3	13
Mills Grove 1-9	11	11	0	0	0	0	0	0
Mills Grove 12-20	8	8	0	0	0	0	0	0

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Address	Total No. Windows	No. Windows that meet BRE criteria	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
Mills Grove 17-25	8	8	0	0	0	0	0	0
Mills Grove 2-10	9	8	0	0	1	0	0	1
Mills Grove 9-15	6	6	0	0	0	0	0	0
St Leonards Road 118-132	9	9	0	0	0	0	0	0
St Leonards Road 134-146	7	7	0	0	0	0	0	0
St Leonards Road 148-154	4	4	0	0	0	0	0	0
Sherman House	35	3	0	0	31	0	0	30
St.Nicholas Church	37	31	0	0	6	0	0	0
Wooster Gardens 1-7	29	29	0	0	0	0	0	0
Wooster Gardens 9-15	16	16	0	0	0	0	0	0
Totals	1352	1008	11	23	292	1	8	256

- **Ailsa Wharf Block A** – a total of 19 additional windows would experience Major Adverse APSH impacts and 13 additional windows would experience Major Adverse WPSH impacts as a result of cumulative schemes coming forward. Therefore, the effect is considered to increase to Moderate to Major Adverse (Significant). The effect was considered Minor Adverse (Not Significant) as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **Ailsa Wharf Block D** – a total of 16 additional windows would experience Moderate to Major Adverse APSH impacts and 12 additional windows would experience Major Adverse WPSH impacts as a result of cumulative schemes coming forward. Therefore, the effect is considered to increase to **Moderate to Major Adverse (Significant)**. The effect was considered **Minor Adverse (Not Significant)** as a result of the Proposed Development and therefore the additional effects occur as a result of cumulative schemes.
- **Ailsa Wharf Blocks K L** – no additional windows would be impacted for APSH in the cumulative scenario however, the effect would increase from Moderate to Major Adverse for the three windows experiencing changes in sunlight, which is unlikely to be noticeable. Therefore, the effect is considered to remain **Negligible to Minor Adverse (Not Significant)**.
- **Bromley Hall** - a total of two additional windows would experience Major Adverse APSH and WPSH impacts as a result of cumulative schemes coming forward. Therefore, the effect is considered to remain **Minor Adverse (Not Significant)**.
- **Devons Wharf** – a total of 11 additional windows would experience Minor to Major Adverse APSH impacts and seven additional windows WPSH impacts as a result of cumulative schemes coming forward. Therefore, the effect is considered to remain **Minor Adverse (Not Significant)**.

Overshadowing

- 14.658** The potential overshadowing impacts of the Proposed Development in the cumulative scenario on surrounding amenity areas have been assessed against the Baseline Scenario. The full overshadowing assessment for the Cumulative scenario can be found within **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 5** and is summarised below.
- 14.659** The emerging consented schemes are located to the north-east of the Proposed Development and, as such, they have only potential to affect a limited number of receptors to the north of the Proposed Development.

Transient Overshadowing

21st March

14.660 On this day, additional shadows are cast from the cumulative schemes from 08:00 to 12:00 AM GMT upon Bromley Hall School. From 12:00 AM to 5:00 PM GMT strips of additional shadows are cast onto Bow Creek / River Lea by the cumulative schemes. All other receptors discussed in the Proposed Development scenario remain unaffected in the cumulative scenario.

14.661 The significance of effects is provided in the subsequent 'Sun Hours on Ground' section.

21st June

14.662 On this day, additional shadows are cast from the cumulative schemes for one hour from 06:00 to 7:00 AM BST upon a small portion of the rear gardens of the properties along Joshua St and Mills Grove. These spaces remain unaffected for the rest of the day. From 7:00 AM to 12:AM BST additional shadows are cast by the cumulative schemes onto the easternmost open spaces of Bromley Hall School. From 2:00 PM to 8:00 PM BST strips of additional shadows are cast onto the Bow Creek / River Lea by the cumulative schemes. All other receptors discussed in the Proposed Development scenario remain unaffected in the cumulative scenario.

21st December

14.663 On this day, additional shadows are cast from the cumulative schemes onto the Bow Creek / River Lea from 11:00 AM to 3:00 PM GMT. All other receptors discussed in the Proposed Development scenario remain unaffected in the cumulative scenario.

Sun Hours on Ground

14.664 A detailed Sun Hours on Ground assessment has been carried out for the most affected open spaces to understand the scale and nature of the impacts.

14.665 With the exception of Bromley Hall School, in the cumulative scenario there are no additional cumulative effects to all other receptors assessed and reported on in the Proposed Development scenario section.

14.666 For Bromley Hall school, in the cumulative scenario seven open spaces would remain BRE compliant. The 6 open spaces affected in the Proposed Development scenario would still be affected, one of which would have a reduction of 34% which is considered a moderate adverse effect whilst the other five would all see reductions ranging from 46% to 100% which is considered a major adverse effect. There is one open space that would meet BRE's recommendation in the Proposed Development scenario that would fall short of recommendation in the cumulative scenario, seeing a 46% reduction and therefore having a major adverse effect. Overall, in consideration of the 7 open spaces of this building seeing negligible effects, and the adverse effects above, it is considered that Bromley Hall School would see a **Moderate (Significant)** effect upon implementation of the Proposed Development and therefore increased from the Proposed Development scenario in isolation.

Impacts to Sensitive Cumulative Scheme (Future Receptors)

14.667 This section of the ES chapter assesses the potential effects of the Proposed Development onto cumulative schemes which are future sensitive receptors to daylight and sunlight. A total of three sensitive consented buildings have been considered:

- Former Bus Depot;
- Islay Wharf; and
- 45-47 Abbott Road.

Daylight

14.668 The full daylight results are presented for the impacts of the Proposed Development future sensitive receptors is provided in **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing and Solar Glare – Annex 4** and summarised below in **Table 14.14**.

14.669 For 45-47 Abbott Road, all 44 windows serving 23 rooms were assessed for daylight within this building. They would meet BRE's criteria for both VSC and NSL and as such experience a **Negligible (Not Significant)** effect.

14.670 The remaining two buildings are discussed in further detail below.

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Table 14.14 Daylight Assessment of the Proposed Development at Future Sensitive Receptors (VSC, NSL and ADF)

Address	VSC						NSL						ADF		
	Total No. of Windows	No. Windows that meet BRE criteria	Below BRE Guidelines criteria				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines criteria				Total	Pass	Compliance (%)
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			
Former Bus Depot	470	357	32	49	32	113	271	265	5	1	0	6	271	236	87.1
Islay Wharf	42	37	5	0	0	5	18	18	0	0	0	0	18	17	94.4
45-47 Abbott Road	44	44	0	0	0	0	23	23	0	0	0	0	23	22	95.7
Total	556	438	37	49	32	118	312	306	5	1	0	6	312	275	88.1

Islay Wharf

- 14.671** A total of 42 windows serving 18 rooms on the lowest residential floors were assessed for daylight within this building. Of these 18 rooms, 15 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.672** For VSC, 37 of the 42 (88.1%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.673** Of the five affected windows, all would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect.
- 14.674** For NSL, all rooms assessed would meet BRE's criteria and so are considered to experience a Negligible effect. Due to this building being consented, there are no residents there to experience a reduction and the assessment of Average Daylight Factor (ADF) in the rooms considered above has also been undertaken to gauge what the alterations and retained internal levels of daylight would be upon implementation of the Proposed Development.
- 14.675** Of the 18 rooms assessed for ADF, four would experience no ADF alterations, eight would see marginal reductions of 0.1% ADF and six would see reductions ranging from 0.5% to 0.7% ADF. When looking at the retained ADF levels, all rooms would retain ADF levels in line with or above BRE's recommendation.
- 14.676** Overall, the effect on this building is considered **Negligible (Not Significant)**.

Former Poplar Bus Depot

- 14.677** A total of 470 windows serving 271 rooms were assessed for daylight within this building. Of these 271 rooms, 179 would meet BRE's criteria for both VSC and NSL and as such experience a Negligible effect.
- 14.678** For VSC, 357 of the 470 (76%) windows assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.679** Of the 113 affected windows, 32 would experience an alteration in VSC between 20-29.9% which is considered a Minor Adverse effect and 49 would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect. The remaining 32 windows would experience an alteration in excess of 40% which is considered a Major Adverse effect.
- 14.680** The affected windows serve a total of 78 rooms, 65 of which are bedrooms which may be considered less sensitive to daylight alterations, one is a kitchen, 4 are LKDs and 8 are living rooms.
- 14.681** For NSL, 265 of the 271 (97.8%) rooms assessed would meet BRE's criteria and are therefore considered to experience a Negligible effect.
- 14.682** Of the six affected rooms, five would experience an alteration in NSL between 20-29.9% which is considered a Minor Adverse effect whilst one would experience an alteration between 30-39.9% which is considered a Moderate Adverse Effect.
- 14.683** Due to this building being consented, there are no residents there to experience a reduction and the assessment of Average Daylight Factor (ADF) in the rooms considered above has also been undertaken to

gauge what the alterations and retained internal levels of daylight would be upon implementation of the Proposed Development.

- 14.684** Of the 271 rooms assessed for ADF, 225 rooms would meet BRE's recommendation in the baseline scenario whilst 212 would meet BRE's recommendation in the Proposed Development scenario. Of the 13 rooms meeting guidelines in the baseline scenario seeing retained ADF levels below recommendation in the Proposed Development scenario, four are bedrooms, one is kitchen, three are living rooms and five are LDKS. 10 of these rooms would see marginal reductions of 0.1%-0.2% ADF, whilst three would see a small ADF reduction of 0.3%.
- 14.685** Of the 46 rooms not meeting BRE's recommendation in the baseline scenario, 24 would experience no ADF alterations, 17 would see marginal reductions of 0.1%-0.2% ADF and five would see small reductions ranging from 0.3% to 0.4% ADF.
- 14.686** Overall, the vast majority of rooms within this building will see small alterations in their levels of light whilst retaining internal ADF levels above BRE's recommendation. Less than half of the few rooms not meeting recommendation in the baseline scenario would see only marginal or small ADF reductions. Therefore, overall the effect upon this building is considered **Minor Adverse (Not Significant)**.

Sunlight

- 14.687** The full sunlight results are presented for the impacts of the Proposed Development future sensitive receptors is provided in Appendix **ES Volume 3, Appendix Daylight, Sunlight, Overshadowing, Light Pollution and Solar Glare – Annex 4** and summarised below in **Table 14.15**.

Table 14.15 Sunlight Assessment of the Proposed Development at Future Sensitive Receptors (APSH and WPSH)

Address	Total No. Windows	No. Windows that meet BRE criteria	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
Former Bus Depot	367	263	5	7	66	0	0	94
Islay Wharf	30	24	2	3	1	0	0	3
45-47 Abbott Road	23	22	0	0	0	0	0	1
Total	420	309	7	10	67	0	0	98

Islay Wharf

- 14.688** A total of 30 windows were assessed for sunlight within this building of which 24 (80%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.

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- 14.689** A total of six windows would be affected annually, of which two would experience an alteration between 20-29.9% which is considered a Minor Adverse effect, three would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect and one would experience an alteration greater than 40% which is considered a major adverse effect. These windows all serve dual aspect LKDs which have at least another window receiving sunlight levels far above recommendation and that is not affected by the Proposed Development.
- 14.690** Three of the six windows above would also be affected in winter, which would experience an alteration in excess of 40% in WPSH which is considered a Major Adverse effect.
- 14.691** Overall, considering the small number of shortfall and the presence of mitigating unaffected and well sunlit windows in the rooms seeing reductions, the effect on this property is considered **Negligible (Not Significant)**.
Former Poplar Bus Depot
- 14.692** A total of 367 windows were assessed for sunlight within this building of which 263 (71.7%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.693** A total of 78 windows would be affected annually, of which five would experience an alteration between 20-29.9% which is considered a Minor Adverse effect, seven would experience an alteration between 30-39.9%, which is considered a Moderate Adverse effect and 66 would experience an alteration greater than 40% which is considered a major adverse effect. Despite the moderate to major adverse effects, the vast majority of windows retains levels of APSH in excess of 15%, which is considered appropriate in this area of regeneration.
- 14.694** A total of 94 windows would also be affected in winter, which would experience an alteration in excess of 40% in WPSH which is considered a Major Adverse effect.
- 14.695** Overall, considering the small number of shortfall, the presence of mitigating unaffected and well sunlit windows in the rooms seeing reductions, and the retained levels of sunlight, the effect on this property is considered **Minor to Moderate (Significant)**.
45-47 Abbott Road
- 14.696** A total of 23 windows were assessed for sunlight within this building, of which 22 (95.7%) would meet the BRE's criteria for both Annual and Winter PSH and are therefore considered to experience a Negligible effect.
- 14.697** Only one window serving a bedroom would see a 55.6% reduction in WPSH whilst remaining above recommendation for APSH.
- 14.698** Overall, considering the only shortfall for a bedroom which is less sensitive in relation to sunlight, the effect on this property is considered **Negligible (Not Significant)**.

LIKELY SIGNIFICANT EFFECTS

- 14.699** For daylight and sunlight, a total of 42 buildings are assessed. For daylight, a total of 29 buildings would experience Negligible to Minor Adverse effects, which are not considered significant. A further six would experience effects ranging from Minor to Moderate Adverse, which may result in a perceptible alteration in daylight conditions. The remaining seven, 110-126 Leven Road, 199-225 Abbott Road, Lansbury Gardens 2-12, Loren Apartments, Sherman House, Atelier Court, Leven Road Phase Three and would experience significant Moderate to Major daylight effects. In terms of sunlight, the majority, 33 sensitive buildings, would not be significantly affected and would experience effects ranging from Negligible to Minor Adverse. A further two would experience effects ranging from Minor to Moderate Adverse, which may result in a perceptible alteration in sunlight conditions. The remaining six, Atelier Court, Lansbury Gardens 2-12, 199-225 Abbott Road, Leven Road Phase Three, Loren Apartments and Sherman House would experience significant Moderate to Major sunlight effects.
- 14.700** Whilst significant effects have been identified, the Standalone Daylight and Sunlight Impacts Upon Neighbours Report provides further consideration of the Illustrative Masterplan, outlining that acceptable levels of natural light are retained for the most affected buildings upon testing of an articulated massing.
- 14.701** For overshadowing, six of 14 of the open spaces at Bromley Hall School and private terraces at 3 and 4 Dee Street would experience significant effects.
- 14.702** No significant solar glare effects are identified at the 14 viewpoints assessed.
- 14.703** Additional cumulative overall effect is identified for eight sensitive buildings in relation to daylight and two in relation to sunlight.

14.704 For overshadowing, only Bromley Hall School would experience additional cumulative effects.

14.705 No significant daylight effects have been identified to future sensitive receptors in relation to daylight. For sunlight, only Former Poplar Bus Depot would experience a Minor to Moderate Adverse effect.