10 DAYLIGHT, SUNLIGHT & OVERSHADOWING

10.1 INTRODUCTION

10.1.1 Company

Anstey Horne

10.1.2 Author

10.1.2.1 Lance Harris – MRICS

Lance Harris is a Director at Anstey Horne with over 30 years of experience in daylight, sunlight and overshadowing, advising local authorities, design teams, developers and adjoining owners. Lance has extensive experience in Central London development and works on all building types and uses across the country, such as residential development, hotel, commercial, industrial projects.

10.1.2.2 Simon Holmes - BA (Hons) MEng (Hons)

Simon Holmes is an Associate Director at Anstey Horne and is well versed in daylight and sunlight matters on a broad range of projects from large scale masterplans to smaller scale developments. Simon has experience advising a range of clients including large scale residential developers, London borough councils and commercial developers.

10.1.2.3 Gracie Irvine – BSc (Hons)

Gracie Irvine is a Senior Surveyor at Anstey Horne who has experience advising on daylight and sunlight for a range of development schemes.

10.1.3 Chapter Purpose

This chapter of the ES assesses the likely significant effects of the proposed development on the environment in terms of daylight, sunlight and overshadowing.

The chapter and its supporting appendices describe the planning policy context, the assessment methodology; the baseline conditions at the application site and surroundings; the likely significant effects; the mitigation measures required to prevent, reduce or offset any significant adverse effects; the likely residual effects after these measures have been employed; and the cumulative effects. The objectives of the chapter are to:

- Assess the impact of the proposed development on the access to daylight of surrounding properties;
- Assess the impact of the proposed development on the access to sunlight of surrounding properties; and
- Assess the impact of the proposed development on the access to sunlight of surrounding open spaces.

10.1.4 Chapter Updates for Revised December 2020 Submission

Due to the relevance and scale of the proposed development amendments, a full new technical assessment (a 'Level 3' update) has been undertaken in accordance with the methodology outlined in Chapter 2 and is reported within this chapter.

10.1.4.1 Building Height and Development Plot Parameter Changes

The maximum building height and footprint parameters that informed the original March 2020 ES assessments were very closely aligned with the proposed illustrative scheme built form. As a result, the parameters were restrictive, allowing minimal flexibility for subsequent design development.

For the December 2020 revised ES, new maximum building height and development plot parameter plans have been prepared that allow greater flexibility for future design development. Rather than closely aligning with the form of individual buildings, the parameters now define broader development zones or 'development plots' in which built form could come forward. This is a more typical approach to the setting of parameters for an outline planning application.

While the revised December 2020 building heights and floorspace quanta across the site have generally either reduced or remained consistent with the March 2020 scheme, due to this change in the approach to setting parameters, the scale of the development assessed in this revised ES chapter is larger in some instances, as the maximum plot extent and maximum plot heights are tested, thus resulting in the reporting of a worst-case scenario. It is unlikely that future development will take up the whole of the development plots to the maximum envelope of height and extent of the plot, as shown on the illustrative masterplan in the Design & Access Statement Addendum. This approach has resulted in the reporting of impacts of a greater magnitude than were reported in the March 2020 ES chapter, in some instances.

10.1.5 Figures

- Figure 10.1 – Site Plan in the existing condition

10.1.6 Appendices

- Appendix 10.1 – Proposed Development v Baseline Scenario:
  - 10.1.1 Site Plan & 3D Model
  - 10.1.2 Daylight Distribution Contours
  - 10.1.3 VSC Results
  - 10.1.4 DD Results
  - 10.1.5 APSH Results
- Appendix 10.2 - Proposed Development versus Future Baseline Scenario:
  - 10.2.1 Site Plan & 3D Model
  - 10.2.2 Daylight Distribution Contours
  - 10.2.3 VSC Results
  - 10.2.4 DD Results
  - 10.2.5 APSH Results
  - 10.2.6 ADF Results (Future receptors)
  - 10.2.7 APSH Results (Future receptors)
- Appendix 10.3 - Cumulative versus Baseline Scenario:
  - 10.3.1 Site Plan & 3D Model
  - 10.3.2 Daylight Distribution Contours
  - 10.3.3 VSC Results
  - 10.3.4 DD Results
  - 10.3.5 APSH Results

10.2 METHODOLOGY

10.2.1 Legislation, Policy and Guidance

This section reviews the existing national, regional and local planning policy legislation and guidance relevant to daylight, sunlight and overshadowing.

10.2.1.1 Liverpool Local Plan (Submission Version May 2018)

The existing adopted Unitary Development Plan (UDP) contains no policies or guidance relevant to the assessment. The emerging Local Plan, which is awaiting formal examination, does however contain policy UD2 'Development Layout and Form' which states that:

"1. Development proposals should demonstrate that the layout and form of the proposal ensures that: … o. There is sufficient sunlight and daylight to penetrate into and between buildings and ensure that adjoining land or properties are protected from unacceptable overshadowing."

Draft Policy UD5 (New Buildings) specifies that all new buildings must be designed to the highest design standards, based on a clear rationale, and aesthetic based on the characteristics of the area. Design proposals for new buildings must demonstrate that (clause c) orientation and micro-climate, overlooking and interface issues that may impact on existing structures or neighbouring plots have been considered.

10.2.1.2 National Planning Policy

There is no current, specific national planning policy or legislation relating to developments and their potential effects on daylight, sunlight and overshadowing.

10.2.1.3 Building Research Establishment Handbook: Site Layout Planning for Daylight and Sunlight 2011: A Guide to Good Practice (Second Edition) (BRE Guidelines) (2011)

Detailed guidance on daylight, sunlight and overshadowing was published by the BRE in 2011. The daylight, sunlight and overshadowing assessment

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has been undertaken in accordance with the methodologies and numerical guidelines recommended in the BRE Guidelines.

The BRE Guidelines provide guidance on site layout to retain good daylighting and sunlighting in existing surrounding buildings. Whilst the guidelines are intended for use by designers, consultants and planning officers and give numerical guidelines, the advice given is not mandatory and should not be used as an instrument of planning policy. The introduction section of the BRE Guidelines states that:

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

The Guidelines further state:

"…its aim is to help rather than constrain the designer. Although it gives numerical guidelines these should be interpreted flexibly since natural lighting is only one of many factors in the application site layout design. In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings" (Section 1, Paragraphs 6).

10.2.2 Consultees

Consultation with regards to Daylight, Sunlight and Overshadowing has been undertaken through the EIA scoping process, as set out in the section below.

10.2.3 Scoping

Following issue of the EIA Scoping Report (Appendix 2.1) to LCC on 15th May 2017, LCC issued their Scoping Opinion (Appendix 2.2) on 7th July 2017. A summary of the comments made in regard to daylight, sunlight and overshadowing is provided in Table 10.1 below.

Table 10.1
Relevant Scoping Consultation Responses

CONSULTEE	SCOPING OPINION COMMENTS	FURTHER INFORMATION
Historic England	Due to the high grade of Anfield Cemetery and Stanley Park, they should be considered as sensitive receptors in the noise, air quality and shadowing chapters	Anfield Cemetery and Stanley Park have been scoped out of the assessment with regards to overshadowing. This is due to the separation distances between these amenity spaces and the proposed development site.

The assessment in this chapter has been carried out in accordance with the methodology described in the EIA Scoping Report.

In accordance with what was proposed in the Scoping Report, the assessments reported in this ES chapter consider the effects of the proposed development on sensitive receptors in proximity to the application site. The potential for daylight and sunlight availability within the proposed residential units and outdoor amenity spaces within the application site is dependent on the design of the proposed development, and is a design consideration, rather than an EIA issue. An assessment of daylight and sunlight availability within the application site has therefore not been undertaken as part of this ES chapter.

No changes to the scope of the assessment have been made as part of the revisions made to this ES chapter to support the revised December 2020 ES.

10.2.4 Consideration of Climate Change

The projected climate that is predicted to occur as a result of climate change is set out in Chapter 2 EIA Methodology of this ES. The climate changes that are predicted are not anticipated to significantly affect the daylight, sunlight and overshadowing assessments reported in this ES chapter.

10.2.5 Consideration of Human Health

People expect good natural lighting in their homes, as outlined by the BRE guidelines. Sunlight in particular is an integral factor in human health, as sunlight is considered to provide light and warmth, make a room look bright and cheerful and also have a therapeutic effect. As such, the assessments reported in this ES chapter inherently include a consideration of effects on human health.

10.2.6 Consideration of Risk of Major Accidents and/or Disasters

Major accidents and/or disasters identified as relevant to the proposed development are not applicable to the daylight, sunlight and overshadowing studies and therefore have not been considered in this chapter.

10.2.7 Alternatives

Chapter 5: Alternatives and Design Evolution within this volume of the ES discusses the alternative designs considered for the development. None of these alternatives are considered relevant to this chapter.

10.2.8 Technical Assessment Methodology

10.2.8.1 Data Collection

The data on the existing, proposed and surrounding buildings was collated from the following sources:

- Point Cloud data collected by MBS and received on 17/10/2019 of the existing surrounding buildings;
- Massing Parameter model of the proposed outline scheme provided by Planit-IE Architects on 13/11/2020; and
- Drawings of the proposed neighbouring scheme at the land bounded by Walton Lane, Bullens Road and Diana Street under application number 18F/1316. Referred to as the 'Walton Lane' scheme/development for the remainder of this chapter.

10.2.8.2 Computer Modelling

Computer simulation was used to carry out the technical analysis using the tests recommended within the BRE Guidelines. A three-dimensional computer model was built in AutoCAD from measured survey. The model includes the existing Application Site, surrounding residential receptors, the proposed development and any other background context massing which may have a bearing on daylight, sunlight and overshadowing. The proposed model has been positioned at a ground level of 40.2m according to survey heights along Goodison Road and Gwladys Street. The final ground height will be clarified at Reserved Matters stage.

Specialist software, which uses the Waldram Method of analysis as described in Appendix B of the BRE Report 209, was used to quantify the level of daylight and sunlight in the Baseline Scenario and Proposed Scenario.

The assessment of potential effects of the proposed development has primarily considered the operational phase of the completed scheme, which is the permanent position. The approach to the assessment of construction phase effects is discussed in the 'Assessment Scenarios' section below.

The operational phase impact assessment was carried out using the tests recommended in the BRE guidelines, as described below.

10.2.8.3 Daylight to Surrounding Buildings

Section 2.2 of BRE Guidelines makes recommendations concerning the effect of new development on daylight to existing buildings. In summary, the BRE Guidelines states that:

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

So, where the angle to the horizontal subtended by a new development, measured at the centre of the lowest window in an existing surrounding building (the angle of obstruction), is less than 25°, the diffuse daylight to that building is unlikely to be adversely affected and therefore, it has not been assessed.

Where the obstruction angle is greater than 25°, the BRE Guidelines recommend carrying out two more detailed daylight tests, namely the vertical sky component (VSC) and the no-sky line tests.

Vertical Sky Component (VSC)

The VSC test measures the amount of sky visible at the centre of a window on the external plane of the window wall. It has a maximum value of almost 40% for a completely unobstructed vertical window wall whilst skylights and tilted windows can achieve up to 90%. The test takes no account of the size of the window being tested, the size of the room it lights or the fact that the room may be lit by more than one window. The results can therefore be misleading if considered in isolation and they need to be read in conjunction with the results of the second test, namely daylight distribution.

Daylight Distribution

The no-sky line (NSL) test assesses the daylight distribution inside the room by calculating the area at working plane level that will have a direct view of the sky. This is done by plotting the no-sky line, which is the line on the horizontal working plane beyond which no direct light from the sky will reach. This no-sky line is plotted in both the Baseline Scenario and Development Scenario so that the effect on Daylight Distribution (DD) can be quantified as either a loss or gain in lit area.

One benefit of the daylight distribution test is that the resulting contour plans show where the daylight falls within a room and a judgment may be made as to whether the room will retain light to a reasonable depth.

In respect of dwellings, the BRE Guidelines state at paragraph 2.2.2 that daylight in living rooms, dining rooms and kitchens should be assessed. Bedrooms should also be checked, although it states that these are less important. Other rooms such as bathrooms, toilets, storerooms, circulation areas and garages need not be checked.

Average Daylight Factor (ADF)

Daylight provision in new development may be checked using the Average Daylight Factor (ADF) calculation. The ADF is defined as:

"*A ratio of total daylight flux incident on a reference area to the total area of the reference area, expressed as a percentage of outdoor luminance on a horizontal plane, due to an unobstructed sky of assumed or known luminance distribution*".

The ADF method of assessment takes into account:

- The diffuse visible transmittance of the glazing to the room in question (i.e. how much light gets through the window glass);
- The net glazed area of the window in question;
- The total area of the room surfaces (ceiling, walls, floor and windows);
- The proportion of window located above the working plane; and
- The angle of visible sky reaching the window/windows in question.

It also makes allowance for the average reflectance of the internal surfaces of the room and for external obstruction. Reasonable estimations of internal reflectance are used if not known.

The BRE guidelines (Building Research Establishment, 2011) set out the ADF test at Appendix C, and further guidance, such as the reflectance of certain materials, is provided within BS8206-2:2008.

The BRE guidelines and BS 8206-2:2008 suggest that the following ADF values should be achieved for the following room types:

- Bedrooms 1%;
- Living Rooms 1.5%; and
- Kitchens 2%.

Certain constants are assumed in the formula, which in the case of the assessments confirmed in this report, are as follows:

- The diffuse light transmittance is taken as 0.68;
- Maintenance factor for dirt on glass is taken as 0.92; and
- The average reflectance of interior surface was taken as 0.8 (i.e. showing the equivalent of white walls and light coloured flooring).

The ADF results are obtained for each room individually and expressed as a percentage. Where there are two or more windows serving one room, the ADF is calculated separately for each window, and the results summed.

Where a room has more than one use i.e. a kitchen, living room and dining room, the higher of the ADF values for the uses is used. With an open plan living/dining/kitchen area, the kitchen has the highest value of 2% ADF, and it is this value that would be used. However, although the above is considered best practice it may also be appropriate to consider whether the room without the kitchen area would achieve the suggested standard for a living room (1.5% ADF), as the kitchen area is likely to have additional task lighting fitted.

The ADF calculation is designed to quantify the amount of daylight in a room as a whole and does not, therefore, illustrate the likely levels of daylight in the different areas of a large multi-use room. For example, where the living room is generally situated at the front of the room, followed by the dining area and then the kitchen at the rear, the living room area may actually receive good levels of daylight whilst the kitchen at the rear may not. Although the open plan living space as a whole may not strictly meet the ADF criteria, the significance of the impact is less if the living area at the front of the room can still receive good levels of daylight. The BRE guidelines go further at paragraph 2.1.14 to state that if the layout means that an internal kitchen is inevitable then *"it should be directly linked to a well daylit living room"*.

The BRE guidelines support the above by stating at paragraph 2.1.14:

"Non-daylit internal kitchens should be avoided wherever possible, especially if the kitchen is used as a dining area too. If the layout means that a small internal gallery-type kitchen is inevitable, it should be directly linked to a well daylit living room."

Internal kitchens are not uncommon, and the design of open plan living/dining/kitchens can normally be re-configured to create a separately enclosed kitchen, which would then be excluded from the ADF assessment. However, it is generally better to include the kitchen in the open plan area as this reflects the current trends of urban living accommodation, which is the approach adopted in this assessment.

10.2.8.4 Sunlight to Surrounding Buildings

Section 3.2 of the BRE Guidelines makes recommendations concerning the effect of development on levels of sunlight. The BRE Guidelines note that:

"…obstruction to sunlight may become an issue if:

some part of a new development is situated within 90° of due south of a main window wall of an existing building; and,

in the section drawn perpendicular to the existing window wall, the new development subtends an angle greater than 25° to the horizontal measured from a point 2m above the ground."

If these criteria are not met, the BRE Guidelines recommend a more detailed check to calculate the effect of new development on the available sunlight. Paragraph 3.2.3 of the BRE Guidelines suggest:

"…all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun."

Annual Probable Sunlight Hours

The available sunlight is measured in terms of the percentage of annual probable sunlight hours (APSH) at the same reference point as the VSC. Probable sunlight hours are defined at paragraph 3.1.10 of the BRE Guidelines as:

"…the total amount of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question."

The BRE guidelines suggest that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important. For completeness all rooms with a window facing within 90° of due south have been included in the assessment of the proposed development.

A number of the of the potentially affected windows in the receptors do not face within 90 degrees of due south and the application site lies to their north. Therefore, in accordance with the BRE Guidelines, it would not be necessary to undertake an assessment of the impact of the proposed development on sunlight using the BRE APSH methodology in relation to these receptors.

10.2.8.5 Sun on Ground to Amenity Areas

Section 3.3 of BRE Report makes recommendations concerning the effect of new development on sunlight to open spaces situated between buildings, such as main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas (such as in public squares) and focal points for views (such as a group of monuments or fountains). The guide recommends that the level of overshadowing on

such areas should be checked on the equinox (21 March). The BRE Guidelines note that sunlight into these open spaces is valuable for a number of reasons, to:

"…provide attractive sunlit views (all year); make outdoor activities like sitting out and children's play more pleasant (mainly warmer months); encourage plant growth (mainly spring and summer); dry out the ground, reducing moss and slime (mainly in colder months); melt frost, ice and snow (in winter); dry clothes (all year)."

The BRE Guidelines recognise that each of the above open spaces has different sunlighting requirements and that it is difficult to suggest a hard and fast rule. It recommends that:

"...at least half of the amenity areas listed above should receive at least two hours of sunlight on 21 March."

When assessing the impact of a development on the level of overshadowing of an existing open amenity, the BRE Guidelines recommends that:

"…if, as a result of new development the area which can receive two hours of direct sunlight on 21 March is reduced to less than 0.8 times its former size, this further loss of sunlight is significant. The garden or amenity area will tend to look more heavily overshadowed."

The BRE method of assessment takes no account of fences or walls less than 1.5 metres high or trees or shrubs. The BRE guidelines note that:

"Normally trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly the dappled shade of a tree is more pleasant than a deep shadow of a building (this applies to deciduous trees)".

As indicated, deciduous trees provide welcome shade in the summer whilst allowing sunlight to penetrate during the winter months.

10.2.8.6 Application of the Guidance in BRE Report 209

The BRE Guidelines comprise an advisory document which does not constitute a rigid set of rules. In its introduction it is stated:

(Its) "main aim is … to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer.

"Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in Site layout design."

In theory the BRE Guidelines may be applied to any setting, whether that is a city centre, suburban area or rural village. However, the document notes:

"In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings."

At page 7 it is stated that:

"…numerical values given here are purely advisory. Different criteria may be used, based upon the requirements for daylighting in an area viewed against other site layout constraints."

Care must therefore be taken in applying the recommendations of BRE Guidelines because rigid application of the numerical guidelines could well give rise to under-utilisation of land in urban areas such as the application site.

10.2.9 Assessment Scenarios

10.2.9.1 Construction Phase

The demolition and construction phases are less relevant for the assessment of daylight, sunlight and overshadowing because the full effects will only occur once construction of the proposed development is complete. Following demolition of the existing structures, there will be a temporary light increase. As the proposed development is constructed, light levels will generally decrease as the proposed massing is built up.

A qualitative summary of the short-term effects of the demolition and construction phase is, however, set out in the 'Potential Effects' section of this chapter.

10.2.9.2 Baseline & Operational Phase Assessment Scenarios

The following scenarios have been considered within this chapter and are described in more detail below:

- Baseline Scenario;
- Future Baseline Scenario;
- Proposed Development versus Baseline Scenario;
- Proposed Development versus Future Baseline Scenario; and
- Cumulative versus Baseline Scenario.

Baseline Scenario

The Baseline Scenario consists of the Goodison Park site (the application site) in its existing condition and considers the daylight and sunlight currently being received within the existing residential receptors in proximity to the site. **This scenario is illustrated on drawings ROL7692_R04_V01_001, 002 and 003 at Appendix 10.1 (ES Volume III).**

Future Baseline Scenario

The Future Baseline Scenario consists of the Goodison Park site (the application site) in its existing condition with the neighbouring Walton Lane scheme built out. It therefore considers the daylight and sunlight which will be received within the existing residential receptors assuming the Walton Lane scheme is approved. In terms of existing neighbours, this scenario only considers those in close proximity to the Walton Lane Scheme. This scenario also considers the daylight and sunlight availability to the proposed Walton Lane development. **This scenario is illustrated on drawings ROL7692_R05_V01_001, 002 and 003 at Appendix 10.1 (ES Volume III).**

Proposed Development versus Baseline Scenario

This assessment considers the potential daylight and sunlight effects of the proposed development at Goodison Park on the existing residential receptors in proximity to the site assessed against the Baseline Scenario. **This scenario is illustrated on drawings ROL7692_R04_V01_004, 005 and 006 at Appendix 10.1 (ES Volume IV).**

Proposed Development versus Future Baseline Scenario

This assessment considers the potential daylight and sunlight effects of the proposed development at Goodison Park on the existing residential receptors in proximity to the site assessed against the Future Baseline Scenario. This scenario also considers the daylight and sunlight availability to the proposed Walton Lane development. **This scenario is illustrated on drawings ROL7692_R05_V01_004, 005 and 006 at Appendix 10.1 (ES Volume IV).**

10.2.9.3 Cumulative Effects

The cumulative schemes reported in Chapter 2 of this volume of the ES have been reviewed and, as noted above, there is one scheme in sufficient proximity to the application site. This is the proposed neighbouring scheme at the land bounded by Walton Lane, Bullens Road and Diana Street under application number 18F/1316. Therefore, the assessment has also been considered under the following scenario:

- Cumulative versus Baseline Scenario

This scenario is described in further detail below:

This assessment considers the potential daylight and sunlight effects of the proposed development at Goodison Park along with the proposed development of the Walton Lane Scheme on the existing residential receptors in proximity to the site assessed against the Baseline Scenario. **This scenario is illustrated on drawings ROL7692_R06_V01_004, 005 and 006 at Appendix 10.6 (ES Volume IV).**

10.2.10 Receptor Sensitivity

10.2.10.1 Existing Daylight and Sunlight Receptors

When assessing any potential effects on surrounding sensitive receptors, the BRE guidelines suggest that only those windows and rooms that have a 'reasonable expectation' of daylight and sunlight need to be assessed. In particular, the BRE guidelines state at paragraph 2.2.2:

"The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and

bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices."

The uses of the surrounding properties have been established from research undertaken, external observation as well as undertaking Valuation Office Agency (VOA) checks to identify those properties in residential occupation where council tax is applicable. The preliminary 25-degree test described below and within the BRE guidelines has also been applied in order to determine those sensitive receptors which require daylight and sunlight consideration.

The neighbouring commercial properties are not considered to have a reasonable expectation of daylight or sunlight, as they are designed to rely on electric lighting to provide sufficient light by which to work, rather than natural daylight or sunlight.

The existing neighbouring properties (the receptors) identified as requiring consideration are listed in Table 10.2 and illustrated in Figure 10.1. Further information and 3D views can be found on plan ROL7692_R03_V01_*V01*_001 to 003 at Appendix 10.1.

Table 10.2

Existing Receptors Considered within the Assessment

ADDRESS	DAYLIGHT	SUNLIGHT
Salop Chapel - 62 Spellow Lane	Yes	Yes
67 Spellow Lane	Yes	Yes
5 Goodison Road	Yes	Yes
7 Goodison Road	Yes	Yes
9 Goodison Road	Yes	Yes
11 Goodison Road	Yes	Yes
13 Goodison Road	Yes	Yes
15 Goodison Road	Yes	Yes
17 Goodison Road	Yes	Yes
19 Goodison Road	Yes	Yes
21 Goodison Road	Yes	Yes
23 Goodison Road	Yes	Yes
25 Goodison Road	Yes	Yes
27 Goodison Road	Yes	Yes
29 Goodison Road	Yes	Yes
Winslow Hotel Public House	Yes	Yes
33A Goodison Road	Yes	Yes
33 Goodison Road	Yes	Yes
35 Goodison Road	Yes	Yes
37 Goodison Road	Yes	Yes
39 Goodison Road	Yes	Yes
41 Goodison Road	Yes	Yes
43 Goodison Road	Yes	Yes
Church of St Luke the Evangelist	Yes	Yes
Little Lukes Preschool	Yes	Yes
5 Gwladys Street	Yes	Yes
7 Gwladys Street	Yes	Yes
9 Gwladys Street	Yes	Yes
11 Gwladys Street	Yes	Yes
13 Gwladys Street	Yes	Yes
15 Gwladys Street	Yes	Yes
17 Gwladys Street	Yes	Yes
19 Gwladys Street	Yes	Yes
21 Gwladys Street	Yes	Yes
23 Gwladys Street	Yes	Yes
25 Gwladys Street	Yes	Yes
27 Gwladys Street	Yes	Yes
29 Gwladys Street	Yes	Yes
31 Gwladys Street	Yes	Yes
33 Gwladys Street	Yes	Yes
35 Gwladys Street	Yes	Yes
37 Gwladys Street	Yes	Yes
39 Gwladys Street	Yes	Yes
41 Gwladys Street	Yes	Yes
43 Gwladys Street	Yes	Yes
45 Gwladys Street	Yes	Yes
47 Gwladys Street	Yes	Yes
49 Gwladys Street	Yes	Yes
51 Gwladys Street	Yes	Yes
53 Gwladys Street	Yes	Yes
55 Gwladys Street	Yes	Yes
57 Gwladys Street	Yes	Yes
59 Gwladys Street	Yes	Yes
61 Gwladys Street	Yes	Yes
63 Gwladys Street	Yes	Yes
65 Gwladys Street	Yes	Yes
Gwladys Street Primary School	Yes	Yes
2 Muriel Street	Yes	Yes
1A Diana Street	Yes	Yes
3A Diana Street	Yes	Yes
5A Diana Street	Yes	Yes
1 Bullens Road	Yes	Yes
2A Diana Street	Yes	Yes
4A Diana Street	Yes	Yes

Table 10.3

Future Receptors Considered within the Assessment

ADDRESS	DAYLIGHT	SUNLIGHT
Land bounded by Walton Lane, Bullens Road and Diana Street	Yes	Yes

For the purposes of this assessment: for both daylight and sunlight, all windows serving habitable rooms have been attributed high sensitivity, as the room uses are unknown. This is considered a robust approach. Bathrooms, toilets, store rooms and circulation areas have been attributed negligible sensitivity and therefore, in accordance with BRE guidelines, have not been tested.

For the purpose of the ES Chapter, some of the neighbouring properties have been grouped and a description of each property/property group is provided below:

Salop Chapel, 62 Spellow Lane

This neighbouring receptor is a religious building located to the south-west of the development site. The main room within the church has been assessed.

67 Spellow Lane

This neighbouring residential property is located to the south-west of the application site and forms the end of a 3-storey terraced block. All habitable windows facing the site have been assessed.

5-17 (odds) Goodison Road

These neighbouring residential properties are located to the south-west of the application site and form a small 2-storey terraced block. All habitable windows facing the site have been assessed.

19-29 (odds) Goodison Road

These neighbouring residential properties are located to the south-west of the application site and form a small 3-storey terraced block. All habitable windows facing the site have been assessed.

Winslow Hotel Public House

This neighbouring property is the Winslow Hotel public house which is located to the west of the application site. All habitable windows facing the site have been assessed.

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33A – 43 (odds) Goodison Road

These neighbouring residential properties are located to the west of the application site and form a two storey terraced block. All habitable windows facing the site have been assessed.

Church of St Luke the Evangelist

This neighbouring receptor is a religious building located to the north-west of the development site. All windows within the church which face the site have been assessed.

Little Lukes Preschool

This neighbouring receptor is an educational building located to the north-west of the development site. All windows which face the site have been assessed.

5-13 (odds) Gwladys Street

These neighbouring residential properties are located to the north of the application site and form a two storey terraced block. All habitable windows facing the site have been assessed.

15-23 (odds) Gwladys Street

These neighbouring residential properties are located to the north of the application site and form a two storey terraced block. All habitable windows facing the site have been assessed.

25-33 (odds) Gwladys Street

These neighbouring residential properties are located to the north of the application site and form a two storey terraced block. All habitable windows facing the site have been assessed.

35-43 (odds) Gwladys Street

These neighbouring residential properties are located to the north of the application site and form a two storey terraced block. All habitable windows facing the site have been assessed.

45-53 (odds) Gwladys Street

These neighbouring residential properties are located to the north of the application site and form a two storey terraced block. All habitable windows facing the site have been assessed.

55-65 (odds) Gwladys Street

These neighbouring residential properties are located to the north of the application site and form a two storey terraced block. All habitable windows facing the site have been assessed.

Gwladys Street Primary School

This neighbouring receptor is an educational building located to the east of the development site. All windows which face the site have been assessed.

2 Muriel Street

This neighbouring residential property is located to the east of the application site and forms the end of a two storey terraced block. All habitable windows which take their light over the site have been assessed.

1A, 3A & 5A Diana Street

These neighbouring residential properties are located to the east of the application site and form a two storey terraced block. All habitable windows which take their light over the site have been assessed.

1 Bullens Road, 2A & 4A Diana Street

These neighbouring residential properties are located to the east of the application site and form a two storey terraced block. All habitable windows which take their light over the site have been assessed.

Land bounded by Walton Lane, Bullens Road and Diana Street

This future residential receptor lies to the south-east of the site and is currently under consideration by Liverpool City Council under application number 18F/1316. The application consists of 106 residential units. All habitable windows which take their light over the site have been assessed.

10.2.10.2 Overshadowing Receptors

No existing outdoor amenity areas have been identified in sufficient proximity to the site such that they could be affected by overshadowing from the proposed development. The amenity areas which serve the properties to the west and north of the site are situated on the far side of the property, away from the site. The properties to the east of the site appear to have some outdoor spaces, however, these would not be considered for overshadowing analysis as they are neither gardens nor sitting out areas. As discussed in table 10.1 above, Anfield Cemetery and Stanley Park have also been scoped out of the assessment due to the separation distance between these spaces and the development site. As such, overshadowing has not been considered further within this ES chapter.

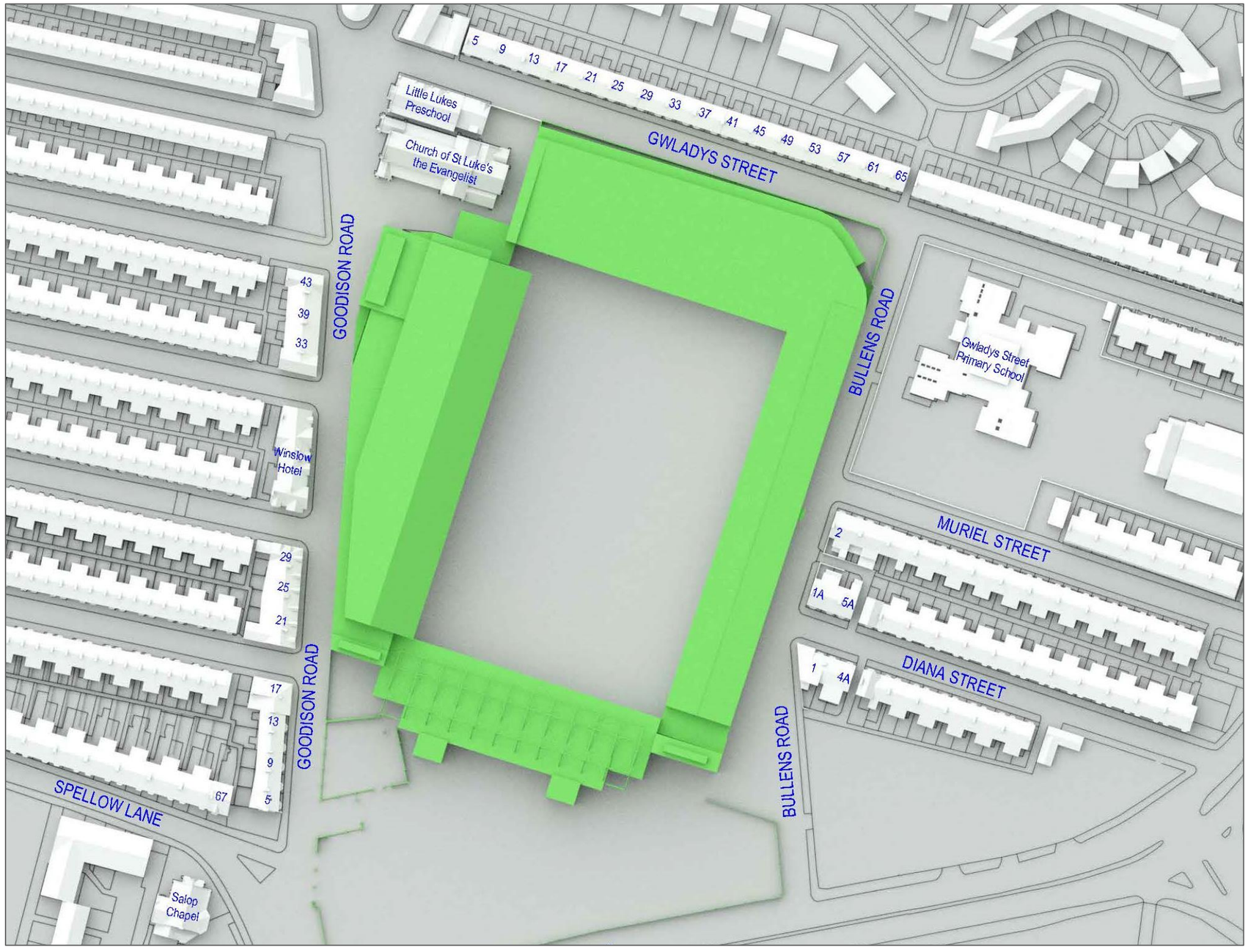

Figure 10.1

Plan Showing Existing Conditions on the Application Site (Existing Baseline), with existing sensitive receptors labelled

DAYLIGHT, SUNLIGHT & OVERSHADOWING

10.2.11 Assessment of Magnitude

10.2.11.1 Daylight and Sunlight

In relation to the magnitude of impact, the BRE Guidelines give much more simplistic guidance for each type of assessment, simply suggesting whether the impact will be noticeable to the occupiers. Essentially, the BRE work on the general principle that a reduction in daylight or sunlight to less than 0.8 times its former value will be noticeable (equating to more than a 20% reduction), unless the quantity retained will be above a certain level. The numerical guidelines for each test are summarised within Table 10.4 below.

Table 10.4

BRE daylight/sunlight criteria numerical guidelines for assessing impacts on existing receptors

BRE TEST	BRE CRITERIA
VSC	The loss of daylight to a window will be noticeable if the VSC will be reduced to less than 27% and less than 0.8 times its former value.
Daylight Distribution	The loss of daylight to a room will be noticeable if the area of the working plane which can receive direct skylight will be reduced to less than 0.8 times its former value.
APSH	A window should still receive enough sunlight if it receives at least 25% APSH for the whole year including 5% of this during the winter months. If the available sunlight hours are less than this, and/or less than 0.8 times their former value, either during the winter or over the whole year, and/or the actual alteration is greater than 4% APSH, then a window may be adversely affected.

In order to develop criteria to categorise the magnitude of any impact that exceeds the preliminary numerical guidelines, professional judgement has been applied.

Tables 10.5 to 10.8 present the daylight and sunlight impact magnitude criteria that have been applied to existing sensitive receptors. The criteria show a 20% margin of acceptable deviation (as set out by the BRE guidelines) for a negligible effect and then margins of 10% deviation thereafter for low, medium and high magnitudes.

The proposed development will result in a reduction in building height in some parts of the application site on comparison with the baseline condition, which has the potential to result in beneficial effects on some receptors.

Appendix I of the BRE guidelines states the following regarding beneficial impacts:

"Beneficial impacts occur when there is a significant increase in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space. Beneficial impacts should be worked out using the same principles as adverse impacts. Thus, a tiny increase in light would be classified as a negligible impact, not a minor beneficial impact."

Impact magnitude tables to categorise beneficial impacts have been included below. In accordance with the BRE guidance, the criteria are based on the same principles as the impact magnitude criteria for adverse impacts, showing a 20% margin of deviation for a negligible effect and then margins of 10% deviation thereafter for low, medium and high magnitudes.

Table 10.5

Scale of Impact Magnitude for Change in Daylight (Adverse)

MAGNITUDE	VSC	DAYLIGHT DISTRIBUTION
Negligible	Proposed VSC ≥ 27% OR Proposed VSC <27% and ≥ 0.8 times former value	Proposed lit area is ≥0.8 times former value
Low	Proposed VSC <27% and between 0.7-0.79 times former value	Proposed lit area is between 0.7-0.79 times former value
Medium	Proposed VSC <27% and between 0.6-0.69 times former value	Proposed lit area is between 0.6-0.69 times former value
High	Proposed VSC <27% and <0.6 times former value	Proposed lit area is <0.6 times former value

Table 10.6

Scale of Impact Magnitude for Change in Daylight (Beneficial)

MAGNITUDE	VSC	DAYLIGHT DISTRIBUTION
Negligible	Proposed VSC between 1.0 and 1.20 times former value	Proposed lit area between 1.0 and 1.20 times former value
Low	Proposed VSC between 1.21 and 1.30 times former value	Proposed lit area between 1.21 and 1.30 times former value
Medium	Proposed VSC between 1.31-1.40 times former value	Proposed lit area between 1.31-1.40 times former value
High	Proposed VSC ≥ 1.41 times former value	Proposed lit area ≥ 1.41 times former value

Table 10.7

Scale of Magnitude for Change in Sunlight (Adverse)

MAGNITUDE	APSH TEST	APSH IN WINTER TEST
Negligible	Proposed APSH ≥ 25% OR Proposed APSH < 25% and ≥ 0.8 times former value OR < 4% APSH loss over the whole year	Proposed APSH in winter ≥ 5% OR Proposed APSH <5% and ≥ 0.8 times former value OR < 4% APSH loss over the whole year
Low	Proposed APSH <25% and between 0.7-0.79 times former value	Proposed APSH in winter < 5% and between 0.7-0.79 times former value
Medium	Proposed APSH <25% and between 0.6-0.69 times former value	Proposed APSH in winter < 5% between 0.6-0.69 times former value
High	Proposed APSH <25% and <0.6 times former value	Proposed area is <0.6 times former value

Table 10.8

Scale of Magnitude for Change in Sunlight (Beneficial)

MAGNITUDE	APSH TEST	APSH IN WINTER TEST
Negligible	Proposed APSH between 1.0 and 1.20 times former value	Proposed APSH between 1.0 and 1.20 times former value
Low	Proposed APSH between 1.21 and 1.30 times former value	Proposed APSH between 1.21 and 1.30 times former value
Medium	Proposed APSH between 1.31-1.40 times former value	Proposed APSH between 1.31-1.40 times former value
High	Proposed APSH ≥ 1.41 times former value	Proposed APSH ≥ 1.41 times former value

All effects are considered permanent unless otherwise stated in the text.

These numerical guidelines and the provisions within Appendix I of the BRE Guidelines have been considered. Positive effects (i.e. gains in light) are described as beneficial and negative effects (i.e. reductions in light) are described as adverse, except where the impacts are within the BRE numerical guidelines, in which case they are described as negligible.

In terms of assessment of daylight and sunlight to future sensitive receptors, the numerical guidelines in tables 10.9 and 10.10 below are utilised. This is because the ADF looks at the absolute values and not the reduction. Therefore, the magnitude is set against the BRE target values, not the reduction against baseline, especially as future occupants will never have experienced the light loss. This is also the case for sunlight where the same recommended values are applied as those for existing receptors, however the occupants will not experience the reductions.

Table 10.9

Scale of Impact Magnitude for ADF Assessment in future sensitive receptors

	ROOM TYPE		
MAGNITUDE	KITCHEN	LIVING ROOMS	BEDROOM
Negligible	At least 2%	At least 1.5%	At least 1%
Low	1.99% to 1.6%	1.49% to 1.2%	0.99% to 0.8%
Medium	1.59% to 1.2%	1.19% to 0.9%	0.79% to 0.6%
High	1.2% to 0.0%	0.9% to 0%	0.6% to 0.0%

Table 10.10

Scale of Impact Magnitude for APSH Assessment in Future Sensitive Receptors

IMPACT MAGNITUDE	ANNUAL PROBABLE SUNLIGHT HOURS (APSH) TEST	APSH IN WINTER TEST
Negligible	≥25%	≥5%
Low	≥20% <25%	≥4% <5%
Medium	≥15% <20%	≥3% <4%
High	<15%	<3%

10.2.12 Assessment of Significance

Appendix I of the BRE Guidelines explains how to apply the daylight and sunlight criteria to Environmental Impact Assessments.

Appendix I, paragraph I3 of the BRE Guidelines states:

"Adverse impacts occur when there is a significant decrease in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space"

Paragraph I5 states:

"Where the loss of skylight or sunlight fully meets the guidelines in this book, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or limited area of open space 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 area are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space."

Paragraphs I6 and I7 continue:

"Where the loss of skylight or sunlight does not meet the guidelines in this book, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:

- only a small number of windows or limited area of open space are affected
- the loss of light is only marginally outside the guidelines
- an affected room has other sources of skylight or sunlight
- the affected building or open space only has a low-level requirement for skylight or sunlight
- there are particular reasons why an alternative, less stringent, guideline should be applied.".

"Factors tending towards a major adverse impact include:

- a large number of windows or large area of open space are affected
- the loss of light is substantially outside the guidelines
- all the windows in a particular property are affected
- the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, e.g. a living room in a dwelling or a children's playground."

Effect significance has been assessed in accordance with the matrix presented in Table 10.11 below.

Table 10.11

Significance Matrix

IMPACT MAGNITUDE	SENSITIVITY OF RECEPTOR		
	High	**Medium**	**Low**
High	Major	Moderate to Major	Minor to moderate
Medium	Moderate	Moderate	Minor
Low	Minor	Minor	Minor
Negligible	Negligible	Negligible	Negligible

10.2.13 Relevant Associated Development

The proposed associated development is described in Chapter 3 of this volume of the ES. None of the proposed works are considered relevant to the assessment.

10.2.14 Assumptions/Limitations

In undertaking the Daylight and Sunlight assessment of the application site and wider surrounding area, there are a number of limitations and constraints affecting the outputs from this work. These include:

- Where plans or access to the existing properties were not available, the internal layouts have been based on assumptions (where possible from external observation, otherwise using professional judgment). Where the layouts have been estimated, this has no bearing on the assessment of the vertical sky component or annual probable sunlight hours tests which are both considered at the centre of the window. The internal dimensions are only relevant to the daylight distribution (the second method of daylight analysis). However, in the absence of suitable plans, estimation is the conventional approach.

DAYLIGHT, SUNLIGHT & OVERSHADOWING

10.3 BASELINE CONDITIONS

10.3.1 Existing Baseline

The Baseline Scenario for daylight and sunlight around the application site has been quantified and compared against the BRE criteria summarised in Tables 10.4 to 10.7 and detailed below. The Baseline Scenario consists of the application site in its current condition and the existing surrounding sensitive receptors. This scenario confirms the daylight and sunlight levels currently experienced by the neighbouring sensitive receptors. The detailed results of the baseline daylight and sunlight conditions are set out in the following table and in the contour drawings (existing contour coloured green) within Appendix 10.1.

Table 10.12

Daylight and Sunlight Results for Existing Receptors Considered within the Assessment of the Baseline Condition

	VERTICAL SKY COMPONENT (VSC)		DAYLIGHT DISTRIBUTION (DD)		ANNUAL PROBABLE SUNLIGHT HOURS (APSH)			
RECEPTOR	WINDOWS ASSESSED	≥ 27% VSC	ROOMS ASSESSED	≥ 80% DAYLIT AREA	ROOMS ASSESSED	≥ 25% APSH	≥ 5% APSH IN WINTER	FURTHER INFORMATION
Salop Chapel, 62 Spellow Lane	13	12	1	1	1	1	1	Appendix 10.1.2 – 10.1.4, ES Volume III
67 Spellow Lane	10	10	4	4	4	4	4	Appendix 10.1.2 – 10.1.4, ES Volume III
5 Goodison Road	6	5	3	2	3	3	3	Appendix 10.1.2 – 10.1.4, ES Volume III
7 Goodison Road	5	4	2	2	2	2	2	Appendix 10.1.2 – 10.1.4, ES Volume III
9 Goodison Road	5	4	2	2	2	2	2	Appendix 10.1.2 – 10.1.4, ES Volume III
11 Goodison Road	5	4	2	2	2	2	2	Appendix 10.1.2 – 10.1.4, ES Volume III
13 Goodison Road	5	4	2	2	2	2	2	Appendix 10.1.2 – 10.1.4, ES Volume III
15-17 (odds) Goodison Road	8	2	6	5	2	2	2	Appendix 10.1.2 – 10.1.4, ES Volume III
19-29 (odds) Goodison Road	37	9	27	10	23	12	22	Appendix 10.1.2 – 10.1.4, ES Volume III
Winslow Hotel Public House	50	9	18	7	16	5	5	Appendix 10.1.2 – 10.1.4, ES Volume III
33A – 43 (odds) Goodison Road	27	6	17	6	16	3	3	Appendix 10.1.2 – 10.1.4, ES Volume III
Church of St Luke's the Evangelist	57	9	2	1	2	2	1	Appendix 10.1.2 – 10.1.4, ES Volume III
Little Lukes Preschool	36	10	9	2	9	9	3	Appendix 10.1.2 – 10.1.4, ES Volume III
5-13 (odds) Gwladys Street	24	9	10	10	10	10	10	Appendix 10.1.2 – 10.1.4, ES Volume III
15-23 (odds) Gwladys Street	25	1	10	4	10	10	10	Appendix 10.1.2 – 10.1.4, ES Volume III
25-33 (odds) Gwladys Street	25	0	10	0	10	10	5	Appendix 10.1.2 – 10.1.4, ES Volume III
35-43 (odds) Gwladys Street	25	0	10	0	10	10	7	Appendix 10.1.2 – 10.1.4, ES Volume III
45-53 (odds) Gwladys Street	25	0	10	0	10	10	10	Appendix 10.1.2 – 10.1.4, ES Volume III
55-65 (odds) Gwladys Street	30	10	12	8	12	12	12	Appendix 10.1.2 – 10.1.4, ES Volume III
Gwladys Street Primary School	42	34	11	11	9	9	9	Appendix 10.1.2 – 10.1.4, ES Volume III
2 Muriel Street	11	4	7	6	4	4	4	Appendix 10.1.2 – 10.1.4, ES Volume III
1A, 3A & 5A Diana Street	29	9	18	14	6	6	6	Appendix 10.1.2 – 10.1.4, ES Volume III
1 Bullens Road, 2A & 4A Diana Street	35	14	23	20	15	15	15	Appendix 10.1.2 – 10.1.4, ES Volume III

DAYLIGHT, SUNLIGHT & OVERSHADOWING

Salop Chapel, 62 Spellow Lane

Of the 13 windows tested for VSC, 12 (92%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, the 1 room assessed currently receives daylight over at least 80% of the area of the working plane.

The single room tested for APSH currently receives more than the BRE recommended 25% annual APSH and 5% winter APSH.

67 Spellow Lane

Of the 10 windows tested for VSC, all 10 (100%) receive more than the BRE recommended 27% VSC. In terms of daylight distribution, all 4 (100%) of the rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that all 4 (100%) of the rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

5-17 (odds) Goodison Road

Of the 34 windows tested for VSC, 23 (68%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 15 (88%) of the 17 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that all 13 (100%) of the rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

19-29 (odds) Goodison Road

Of the 37 windows tested for VSC, 9 (24%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 10 (37%) of the 27 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 12 (52%) of the 23 rooms tested currently receive more than the BRE recommended 25% annual APSH and 22 (96%) of the rooms tested currently receive more than 5% winter APSH.

Winslow Hotel Public House

Of the 50 windows tested for VSC, 9 (18%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 7 (39%) of the 18 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 5 (31%) of the 16 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

33A – 43 (odds) Goodison Road

Of the 27 windows tested for VSC, 6 (22%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 6 (35%) of the 17 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 3 (19%) of the 16 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

Church of St Luke the Evangelist

Of the 57 windows tested for VSC, 9 (16%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 1 (50%) of the 2 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 2 (100%) of the 2 rooms tested currently receive more than the BRE recommended 25% annual APSH and 1 (50%) of the rooms tested currently receive more than 5% winter APSH.

Little Lukes Preschool

Of the 36 windows tested for VSC, 10 (28%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 2 (22%) of the 9 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 9 (100%) of the 9 rooms tested currently receive more than the BRE recommended 25% annual APSH and 3 (33%) of the rooms tested currently receive more than 5% winter APSH.

5-13 (odds) Gwladys Street

Of the 24 windows tested for VSC, 9 (38%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 10 (100%) of the 10 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that all 10 of the rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

15-23 (odds) Gwladys Street

Of the 25 windows tested for VSC, 1 (4%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 4 (40%) of the 10 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that all 10 of the rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

25-33 (odds) Gwladys Street

Of the 25 windows tested for VSC, 0 (0%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 0 (0%) of the 10 rooms currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 10 (100%) of the 10 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5 (50%) of the rooms tested currently receive more than 5% winter APSH.

DAYLIGHT, SUNLIGHT & OVERSHADOWING

35-43 (odds) Gwladys Street

Of the 25 windows tested for VSC, 0 (0%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 0 (0%) of the 10 rooms currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 10 (100%) of the 10 rooms tested currently receive more than the BRE recommended 25% annual APSH and 7 (70%) of the rooms tested currently receive more than 5% winter APSH.

45-53 (odds) Gwladys Street

Of the 25 windows tested for VSC, 0 (0%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 0 (0%) of the 10 rooms currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 10 (100%) of the 10 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

55-65 (odds) Gwladys Street

Of the 30 windows tested for VSC, 10 (33%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 8 (67%) of the 12 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 12 (100%) of the 12 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

Gwladys Street Primary School

Of the 42 windows tested for VSC, 34 (81%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 11 (100%) of the 11 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 9 (100%) of the 9 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

2 Muriel Street

Of the 11 windows tested for VSC, 4 (36%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 6 (86%) of the 7 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 4 (100%) of the 4 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

1A, 3A & 5A Diana Street

Of the 29 windows tested for VSC, 9 (31%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 14 (78%) of the 18 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 6 (100%) of the 6 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

1 Bullens Road, 2A & 4A Diana Street

Of the 35 windows tested for VSC, 14 (40%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 20 (87%) of the 23 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 15 (100%) of the 15 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

10.3.1.1 Summary of Baseline Condition

In summary, the application site has been tested in its current condition and the assessment demonstrates that a number of neighbouring receptors considered in the assessment fall short of the BRE guideline levels for daylight and sunlight availability.

10.3.2 Future Baseline

The Future Baseline Scenario for daylight and sunlight around the application site has been quantified and compared against the BRE criteria summarised in Tables 10.9 to 10.10 and detailed below. The Future Baseline Scenario consists of the application site in its current condition with the proposed Walton Lane Scheme and the existing surrounding sensitive receptors. This scenario confirms the daylight and sunlight levels which will be experienced by the neighbouring properties assuming the Walton Lane development comes forwards before the Goodison Park scheme. This scenario only considers the neighbouring receptors which are positioned such that their light could potentially be affected by both the Walton Lane and Goodison Park schemes. The light levels available to the future occupants of the Walton Lane development have also been quantified. The detailed results of the future baseline daylight and sunlight conditions are set out in the following table and in the contour drawings (existing contour coloured green) within Appendix 10.2.

DAYLIGHT, SUNLIGHT & OVERSHADOWING

Table 10.13

Daylight and Sunlight Results for Existing Receptors Considered within the Assessment of the Future Baseline Condition

	VERTICAL SKY COMPONENT (VSC)		DAYLIGHT DISTRIBUTION (DD)		ANNUAL PROBABLE SUNLIGHT HOURS (APSH)			
RECEPTOR	WINDOWS ASSESSED	≥ 27% VSC	ROOMS ASSESSED	≥ 80% DAYLIT AREA	ROOMS ASSESSED	≥ 25% APSH	≥ 5% APSH IN WINTER	FURTHER INFORMATION
2 Muriel Street	11	4	7	6	4	4	4	Appendix 10.2.2 – 10.2.4, ES Volume III
1A, 3A &5A Diana Street	29	9	18	14	6	6	6	Appendix 10.2.2 – 10.2.4, ES Volume III
1 Bullens Road,2A &4A Diana Street	35	13	23	19	15	15	15	Appendix 10.2.2 – 10.2.4, ES Volume III

2 Muriel Street

Of the 11 windows tested for VSC, 4 (36%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 6 (86%) of the 7 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 4 (100%) of the 4 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

1A, 3A &5A Diana Street

Of the 29 windows tested for VSC, 9 (31%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 14 (78%) of the 18 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 6 (100%) of the 6 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

1 Bullens Road, 2A &4A (evens) Diana Street

Of the 35 windows tested for VSC, 13 (37%) satisfy the BRE Guidelines by exceeding 27% VSC. In terms of daylight distribution, 19 (83%) of the 23 rooms tested currently receive daylight over at least 80% of the area of the working plane.

The APSH results indicate that 15 (100%) of the 15 rooms tested currently receive more than the BRE recommended 25% annual APSH and 5% winter APSH.

Table 10.14

Sunlight Results for Future Receptors Considered within the Assessment of the Future Baseline Condition

WALTON LANE RECEPTORS	AVERAGE DAYLIGHT FACTOR (ADF)				FURTHER INFORMATION
Total number of Living Kitchen Diners Tested	ADF >2.0%	ADF 1.99% - 1.6%	ADF 1.59% – 1.2%	ADF 1.2% - 0.0%	
15	10	2	3	0	Appendix 10.3.2 – 10.3.4, ES Volume III
Total number of Living/Diners Tested	ADF > 1.5%	ADF 1.49% - 1.2%	ADF 1.19% - 0.9%	ADF 0.9% - 0.0%	
1	1	0	0	0	Appendix 10.3.2 – 10.3.4, ES Volume III
Total number of Bedrooms Tested	ADF >1.0%	ADF 0.99% - 0.8%	ADF 0.79% – 0.6%	ADF 0.6% - 0.0%	
17	17	0	0	0	Appendix 10.3.2 – 10.3.4, ES Volume III
Total number of Studios Tested	ADF >2.0%	ADF 1.99% - 1.6%	ADF 1.59% – 1.2%	ADF 1.2% - 0.0%	
4	3	0	1	0	Appendix 10.3.2 – 10.3.4, ES Volume III
Totals					
37	31	2	4	0	

Table 10.15

Sunlight Results for Future Receptors Considered within the Assessment of the Future Baseline Condition

		ANNUAL APSH RESULTS				WINTER APSH RESULTS				
RECEPTOR	ROOMS ASSESSED	APSH ≥25%	APSH ≥20% <25%	APSH ≥15% <20%	APSH <15%	APSH ≥5%	APSH ≥4% <5%	APSH ≥3% <4%	APSH <3%	FURTHER INFORMATION
Walton Lane	34	31	3	0	0	31	2	1	0	Appendix 10.3.2 – 10.3.4, ES Volume III

Walton Lane

The ADF assessment for Walton Lane shows that of the 37 habitable rooms tested 31 (84%) would meet the guideline values in the future baseline condition. This is due to the low density of the existing obstructions in the Future Baseline condition. The rooms which fall short of the guideline values include 5 Living Kitchen Diners (LKDs) and 1 kitchen. This is due to the inhibiting design of the future sensitive receptors at Walton Lane. These receptors will therefore be more sensitive to change in the proposed scenario.

The APSH results for the Walton Lane development show that of the 34 rooms assessed, 31 (91%) achieve the guideline values on an annual and winter basis. All 3 of the rooms which fall short of the guideline values are bedrooms.

10.4 POTENTIAL SIGNIFICANT IMPACTS

Table 10.16

Potential Impacts of Development on Existing Receptors

PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Construction	Potential daylight, sunlight and overshadowing effects on neighbouring receptors as the structure is constructed, increasing to a maximum equal to the impact caused by the operational development and not exceeding this. Given that effects will be temporary and short-term and will not exceed the operational phase effects assessed in this chapter, the construction phase effects have not been assessed further in this chapter.	Beneficial (immediately following demolition) Adverse to beneficial (as the proposed development is constructed) on comparison with the baseline scenario
Operation	Potential effects on daylight levels on neighbouring receptors from the proposed building massing.	Adverse to Beneficial
Operation	Potential effects on sunlight levels on neighbouring receptors from the proposed building massing.	Adverse to Beneficial

10.5 DESIGN INTERVENTIONS

During design development prior to first submission of the planning application in April 2020, the proposed maximum building heights of the blocks in the south of the site were reduced from 12 storeys to 6 storeys, which will have resulted in improvements in daylight and sunlight levels in some existing sensitive receptors on comparison with the previous iteration of the scheme designs. The subsequent design changes made post-submission of the planning application (reference 20O/0997) have resulted in further changes including the establishment of development plots which are more flexible than the blocks previously proposed; the reduction in height of the plots to the north of the site, part increase and part decrease in height of the plots to the east of the site, a slight increase in height to the plots to the west of the site and an overall decrease in height and reconfiguration of the plots to the south of the site.

No other design interventions have been considered necessary in relation to daylight, sunlight and overshadowing, as a high level of BRE adherence is achieved in the context of the completed and operational development, as is illustrated in Section 10.6 below.

10.6 ASSESSMENT OF PROPOSED DEVELOPMENT PRE-MITIGATION (INCLUDING DESIGN INTERVENTION)

10.6.1 Proposed Development versus Baseline Scenario

Daylight and sunlight around the application site has been quantified under the Proposed Development Scenario and compared against the BRE criteria summarised in Table 10.5 and 10.7.

The detailed results are set out in the following tables and in 3D views and contour drawings (existing contour coloured green) within Appendix 10.1.

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Table 10.17

VSC Results for Existing Receptors Considered within the Assessment of the Proposed Development versus Baseline Scenario

		VERTICAL SKY COMPONENT (VSC)												
PHASE	RECEPTOR	NO. OF WINDOWS	WINDOWS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	Salop Chapel, 62 Spellow Lane	13	0	0	0	1	12	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	67 Spellow Lane	10	0	0	0	0	10	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	5 Goodison Road	6	0	0	0	0	1	1	3	1	Medium	Moderate Adverse	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	7 Goodison Road	5	0	0	0	0	1	1	2	1	Medium	Moderate Adverse	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	9 Goodison Road	5	0	0	0	0	1	2	2	0	Low/Medium	Minor/Moderate Adverse	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	11 Goodison Road	5	0	0	0	1	1	1	2	0	Low/Medium	Minor/Moderate Adverse	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	13 Goodison Road	5	0	0	1	0	3	0	1	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	15-17 (odds) Goodison Road	8	0	1	2	4	1	0	0	0	Negligible/Low	Negligible/Minor Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	19-29 (odds) Goodison Road	37	23	1	4	1	8	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Winslow Hotel Public House	50	32	0	5	12	1	0	0	0	Medium/High	Moderate/Major Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	33A – 43 (odds) Goodison Road	27	17	0	1	8	1	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Church of St Luke' the Evangelist	57	27	2	4	5	19	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	Little Lukes Preschool	36	0	0	3	3	30	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	5-13 (odds) Gwladys Street	24	0	2	5	16	1	0	0	0	Negligible/Low	Negligible/Minor Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	15-23 (odds) Gwladys Street	25	11	7	5	2	0	0	0	0	/Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	25-33 (odds) Gwladys Street	25	23	2	0	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	35-43 (odds) Gwladys Street	25	25	0	0	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	45-53 (odds) Gwladys Street	25	23	2	0	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	55-65 (odds) Gwladys Street	30	8	8	6	8	0	0	0	0	Low/Medium	Minor/ Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Gwladys Street Primary School	42	2	0	1	30	9	0	0	0	Negligible/Low	Negligible/Minor Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	2 Muriel Street	11	0	0	1	9	1	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	29	0	0	1	10	18	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	35	0	0	0	4	27	4	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III

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Table 10.18

Daylight Distribution Results for Existing Receptors Considered within the Assessment of the Proposed Development versus Baseline Scenario

		DAYLIGHT DISTRIBUTION												
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	Salop Chapel, 62 Spellow Lane	1	0	0	0	0	1	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	67 Spellow Lane	4	0	0	0	0	4	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	5 Goodison Road	3	0	0	0	0	1	0	1	1	Medium	Moderate Adverse	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	7 Goodison Road	2	0	0	0	0	0	1	0	1	Medium	Moderate Adverse	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	9 Goodison Road	2	0	0	0	0	1	0	0	1	Medium	Moderate Adverse	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	11 Goodison Road	2	0	0	0	0	1	0	1	0	Low	Minor adverse	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	13 Goodison Road	2	0	0	0	0	1	1	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	15-17 (odds) Goodison Road	6	0	0	0	4	2	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	19-29 (odds) Goodison Road	27	13	2	2	2	8	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Winslow Hotel Public House	18	10	1	0	6	1	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	33A – 43 (odds) Goodison Road	17	11	0	1	2	3	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Church of St Luke' the Evangelist	2	0	0	0	1	1	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	Little Lukes Preschool	9	0	0	0	1	8	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	5-13 (odds) Gwladys Street	10	0	0	0	7	3	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	15-23 (odds) Gwladys Street	10	3	1	2	4	0	0	0	0	Negligible/Low	Negligible/Minor Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III

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		DAYLIGHT DISTRIBUTION												
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	25-33 (odds) Gwladys Street	10	10	0	0	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	35-43 (odds) Gwladys Street	10	10	0	0	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	45-53 (odds) Gwladys Street	10	10	0	0	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	55-65 (odds) Gwladys Street	12	3	0	2	7	0	0	0	0	Negligible/Low	Negligible/Minor Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Gwladys Street Primary School	11	0	0	0	2	9	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	2 Muriel Street	7	0	0	0	2	5	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	18	0	0	0	4	14	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	23	0	0	1	2	19	0	1	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III

Table 10.19

APSH Results for Existing Receptors Considered within the Assessment of the Proposed Development versus Baseline Scenario

			ANNUAL PROBABLE SUNLIGHT HOURS (APSH)								PROBABLE SUNLIGHT HOURS (APSH) IN WINTER										
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	Salop Chapel, 62 Spellow Lane	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III

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			ANNUAL PROBABLE SUNLIGHT HOURS (APSH)									PROBABLE SUNLIGHT HOURS (APSH) IN WINTER											
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	67 Spellow Lane	4	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	5 Goodison Road	3	0	0	0	0	1	0	2	0	0	0	0	1	2	0	0	0	Negligible *(Retained values over 25% and 5%)*	Negligible *(Retained values over 25% and 5%)*	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	7 Goodison Road	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	Negligible *(Retained values over 25% and 5%)*	Negligible *(Retained values over 25% and 5%)*	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	9 Goodison Road	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	Negligible *(Retained values over 25% and 5%)*	Negligible *(Retained values over 25% and 5%)*	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	11 Goodison Road	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	Negligible *(Retained values over 25% and 5%)*	Negligible *(Retained values over 25% and 5%)*	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	13 Goodison Road	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	Negligible *(Retained values over 25% and 5%)*	Negligible *(Retained values over 25% and 5%)*	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	15-17 (odds) Goodison Road	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	Negligible *(Retained values over 25% and 5%)*	Negligible *(Retained values over 25% and 5%)*	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	19-29 (odds) Goodison Road	23	13	1	1	6	2	0	0	0	8	0	4	9	2	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Winslow Hotel Public House	16	13	1	0	2	0	0	0	0	13	2	1	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	33A – 43 (odds) Goodison Road	16	14	0	0	2	0	0	0	0	14	0	2	0	0	0	0	0	High	Major Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Church of St Luke' the Evangelist	2	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	Little Lukes Preschool	9	0	0	0	1	8	0	0	0	1	0	0	0	8	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	5-13 (odds) Gwladys Street	10	0	0	0	10	0	0	0	0	6	2	1	1	0	0	0	0	Negligible/Low	Negligible/Minor Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	15-23 (odds) Gwladys Street	10	0	3	5	2	0	0	0	0	10	0	0	0	0	0	0	0	Medium	Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	25-33 (odds) Gwladys Street	10	0	7	3	0	0	0	0	0	10	0	0	0	0	0	0	0	Medium	Moderate Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III

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			ANNUAL PROBABLE SUNLIGHT HOURS (APSH)									PROBABLE SUNLIGHT HOURS (APSH) IN WINTER											
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	35-43 (odds) Gwladys Street	10	5	5	0	0	0	0	0	0	10	0	0	0	0	0	0	0	Medium/High	Moderate/Major Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	45-53 (odds) Gwladys Street	10	1	5	4	0	0	0	0	0	10	0	0	0	0	0	0	0	Medium	Moderate Beneficial	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	55-65 (odds) Gwladys Street	12	0	1	4	7	0	0	0	0	7	3	2	0	0	0	0	0	Low/Medium	Minor/Moderate Beneficial	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	Gwladys Street Primary School	9	0	0	0	8	1	0	0	0	0	0	0	5	4	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	2 Muriel Street	4	0	0	0	4	0	0	0	0	1	0	0	3	0	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	6	0	0	0	6	0	0	0	0	0	0	0	0	6	0	0	0	Negligible	Negligible	No	Appendix 10.1.2 – 10.1.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	15	0	0	0	0	12	3	0	0	0	0	0	0	9	3	2	1	Negligible*	Negligible	No	Appendix 10.1.2 – 10.1.4 ES Volume III

**See additional commentary in the text below.*

Salop Chapel, 62 Spellow Lane

Of the 13 windows tested for VSC, all 13 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 1 experiences an increase in VSC of between 1.01 and 1.2 times former value. In terms of daylight distribution, the 1 room tested will satisfy the BRE guidelines by retaining greater than 0.8 times former value.

The single room tested for APSH also achieves the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible** and the effect on sunlight to this receptor will also be **negligible**.

67 Spellow Lane

Of the 10 windows tested for VSC, all 10 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. In terms of daylight distribution, all 4 (100%) of the rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value.

The APSH results indicate that all 4 (100%) of the rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible** and the effect on sunlight to this receptor will also be **negligible**.

5 Goodison Road

Of the 6 windows tested for VSC, 1 (17%) satisfies the BRE Guidelines and either retains a VSC of at least 27% or at least 0.8 times its former value in the proposed condition. Of the remaining windows, 1 achieves a factor of former value between 0.79 and 0.70 times, 3 achieve factor of former values between 0.69 to 0.6 times and the remaining window achieves a factor of former value below 0.6 times. In terms of daylight distribution, 1 (33%) of the rooms tested satisfies the BRE guidelines by retaining greater than 0.8 times former value. Of the remaining rooms, 1 achieves a factor of former value of between 0.69 and 0.6 times and one achieves a factor of former value below 0.6 times. When considering

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the daylight impacts identified, it is important to consider the results in the context of the site. In the existing baseline condition, this receptor faces onto a car park and the existing daylight levels are high. Therefore, any meaningful development of the existing underdeveloped portion of the site would likely result in reductions outside of the guideline values.

The APSH results indicate that all 3 (100%) of the rooms tested achieve the guideline values for APSH on an annual basis by receiving at least 25% APSH throughout the year. On a winter basis all 3 (100%) of the rooms achieve the guideline values by receiving at least 5% APSH during the winter months.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **moderate adverse** and the effect on sunlight to these receptors will be **negligible**.

7 Goodison Road

Of the 5 windows tested for VSC, 1 (20%) satisfies the BRE Guidelines and either retains a VSC of at least 27% or at least 0.8 times its former value in the proposed condition. Of the remaining windows, 1 achieves a factor of former value between 0.79 and 0.70 times, 2 achieve factor of former values between 0.69 to 0.6 times and the remaining window achieves a factor of former value below 0.6 times. In terms of daylight distribution, none of the rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of the two rooms assessed, 1 achieves a factor of former value of between 0.79 and 0.70 times and the remaining room achieves a factor of former value below 0.6 times. When considering the daylight impacts identified, it is important to consider the results in the context of the site. In the existing baseline condition, this receptor faces onto a car park and the existing daylight levels are high. Therefore, any meaningful development of the existing underdeveloped portion of the site would likely result in reductions outside of the guideline values.

The APSH results indicate that all 2 (100%) of the rooms tested achieves the guideline values for APSH on an annual basis by receiving at least 25% APSH throughout the year. On a winter basis all 2 (100%) of the rooms achieve the guideline values by receiving at least 5% APSH during the winter months.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **moderate adverse** and the effect on sunlight to these receptors will be **negligible**.

9 Goodison Road

Of the 5 windows tested for VSC, 1 (20%) satisfies the BRE Guidelines and either retains a VSC of at least 27% or at least 0.8 times its former value in the proposed condition. Of the remaining windows, 2 achieve factor of former values between 0.79 and 0.70 times, and 2 achieve factor of former values between 0.69 to 0.6 times. In terms of daylight distribution, 1 (50%) of the rooms tested satisfies the BRE guidelines by retaining greater than 0.8 times former value. The remaining room achieves a factor of former value below 0.6 times. When considering the daylight impacts identified, it is important to consider the results in the context of the site. In the existing baseline condition, this receptor faces onto a car park and the existing daylight levels are high. Therefore, any meaningful development of the existing underdeveloped portion of the site would likely result in reductions outside of the guideline values.

The APSH results indicate that all 2 (100%) of the rooms tested achieves the guideline values for APSH on an annual basis by receiving at least 25% APSH throughout the year. On a winter basis all 2 (100%) of the rooms achieve the guideline values by receiving at least 5% APSH during the winter months.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **moderate adverse** and the effect on sunlight to these receptors will be **negligible**.

11 Goodison Road

Of the 5 windows tested for VSC, 2 (40%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former values in the proposed condition. Of the remaining windows, 1 achieves a factor of former value between 0.79 and 0.70 times and 2 achieve factor of former values between 0.69 to 0.6 times. In terms of daylight distribution, 1 (50%) of the rooms tested satisfies the BRE guidelines by retaining greater than 0.8 times former value. The remaining room achieves a factor of former value of between 0.69 and 0.6 times. When considering the daylight impacts identified, it is important to consider the results in the context of the site. In the existing baseline condition, this receptor faces onto a car park and the existing daylight levels are high. Therefore, any meaningful development of the existing underdeveloped portion of the site would likely result in reductions outside of the guideline values.

The APSH results indicate that all 2 (100%) of the rooms tested achieves the guideline values for APSH on an annual basis by receiving at least 25% APSH throughout the year. On a winter basis all 2 (100%) of the rooms achieve the guideline values by receiving at least 5% APSH during the winter months.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **minor to moderate adverse** and the effect on sunlight to these receptors will be **negligible**.

13 Goodison Road

Of the 5 windows tested for VSC, 4 (80%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former values in the proposed condition. The remaining window achieves a factor of former value between 0.69 to 0.6 times. In terms of daylight distribution, 1 (50%) of the rooms tested satisfies the BRE guidelines by retaining greater than 0.8 times former value. The remaining room achieves a factor of former value of between 0.79 and 0.70 times. When considering the daylight impacts identified, it is important to consider the results in the context of the site. In the existing baseline condition, this receptor faces onto a car park and the existing daylight levels are high. Therefore, any meaningful development of the existing underdeveloped portion of the site would likely result in reductions outside of the guideline values.

The APSH results indicate that all 2 (100%) of the rooms tested achieves the guideline values for APSH on an annual basis by receiving at least 25% APSH throughout the year. On a winter basis all 2 (100%) of the rooms achieve the guideline values by receiving at least 5% APSH during the winter months.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will be **negligible**.

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15-17 (odds) Goodison Road

Of the 8 windows tested for VSC, 8 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 6 experience an increase in VSC of between 1.01 and 1.3 times former value and 1 experiences an increase in VSC of greater than 1.31 times former value. In terms of daylight distribution, all 6 (100%) of the rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value.

The APSH results indicate that all 2 (100%) of the rooms tested achieve the guideline values for APSH on an annual basis. On a winter basis 2 (100%) of the rooms achieve the guideline values by receiving at least 5% APSH during the winter months.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will also be **negligible**.

19-29 (odds) Goodison Road

Of the 37 windows tested for VSC, 37 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 5 experience an increase in VSC of between 1.01 and 1.3 times former value and 24 experience an increase in VSC of greater than 1.31 times former value. In terms of daylight distribution, 27 (100%) of the 27 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 4 experience an increase of between 1.01 and 1.3 times former value and 15 experience an increase of greater than 1.31 times former value.

The APSH results indicate that 23 (100%) of the 23 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. Of these rooms,7 experience an increase of between 1.01 and 1.3 times former value and 14 experience an increase of greater than 1.31 times former value on an annual basis. On a winter basis, 13 rooms experience an increase of between 1.01 and 1.3 times former value and 8 rooms experience an increase of greater than 1.40 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **minor to moderate beneficial** and the effect on sunlight to these receptors will also be **minor to moderate beneficial**.

Winslow Hotel Public House

Of the 50 windows tested for VSC, 50 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 17 experience an increase in VSC of between 1.01 and 1.3 times former value and 32 experience an increase in VSC of greater than 1.31 times former value. In terms of daylight distribution, 18 (100%) of the 18 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 6 experience an increase of between 1.01 and 1.3 times former value and 11 experience an increase of greater than 1.31 times former value.

The APSH results indicate that 16 (100%) of the 16 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. Of these rooms, 2 experience an increase of between 1.01 and 1.3 times former value and 14 experience an increase of greater than 1.31 times former value on an annual basis. On a winter basis, 1 room experiences an increase of between 1.01 and 1.3 times former value and 15 rooms experience an increase of greater than 1.31 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **moderate beneficial** and the effect on sunlight to this receptor will be **major beneficial.**

33A - 43 (odds) Goodison Road

Of the 27 windows tested for VSC, 27 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 9 experience an increase in VSC of between 1.01 and 1.3 times former value and 17 experience an increase in VSC of greater than 1.40 times former value. In terms of daylight distribution, 17 (100%) of the 17 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 3 experience an increase of between 1.01 and 1.2 times former value and 11 experience an increase of greater than 1.40 times former value.

The APSH results indicate that 16 (100%) of the 16 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On both an annual and winter basis there are 2 rooms which experience an increase of between 1.01 and 1.3 times former value and 14 rooms which experience an increase of greater than 1.40 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **minor to moderate beneficial** and the effect on sunlight to these receptors will be **major beneficial**.

Church of St Luke the Evangelist

Of the 57 windows tested for VSC, 57 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 9 experience an increase in VSC of between 1.01 and 1.3 times former value and 29 experience an increase in VSC of greater than 1.31 times former value. In terms of daylight distribution, 2 (100%) of the 2 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 1 experience an increase of between 1.01 and 1.2 times former value.

The APSH results indicate that 2 (100%) of the 2 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual and winter basis there is 1 room which experiences an increase of greater than 1.40 times former value and on a winter basis both rooms experience an increase of the same magnitude.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible to minor beneficial** and the effect on sunlight to this receptor will be **minor to moderate beneficial**.

Little Lukes Preschool

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Of the 36 windows tested for VSC, 36 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows,3 experience an increase in VSC of between 1.01 and 1.2 times former value and 3 experience an increase of between 1.21 and 1.3 times former value. In terms of daylight distribution, 9 (100%) of the 9 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 1 experiences an increase of between 1.01 and 1.2 times former value.

The APSH results indicate that 9 (100%) of the 9 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible** and the effect on sunlight to this receptor will also be **negligible**.

5-13 (odds) Gwladys Street

Of the 24 windows tested for VSC, 24 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 16 experience an increase in VSC of between 1.01 and 1.2 times former value and 7 experience an increase of between 1.21 and 1.4 times former value. In terms of daylight distribution, 10 (100%) of the 10 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 7 experience an increase of between 1.01 and 1.2 times former value.

The APSH results indicate that 10 (100%) of the 10 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis all 10 rooms experience an increase of between 1.01 and 1.2 times former value. On a winter basis, 1 room experiences an increase between 1.01 and 1.2 times former value and the remaining 9 rooms experience an increase of greater than 1.21 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will also be **negligible**.

15-23 (odds) Gwladys Street

Of the 25 windows tested for VSC, 25 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 7 experience an increase in VSC of between 1.01 and 1.3 times former value and 18 windows experience an increase of greater than 1.31 times former value. In terms of daylight distribution, 10 (100%) of the 10 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 6 experience an increase of between 1.01 and 1.30 times former value and the remaining 4 rooms experience an increase of greater than 1.31 times former value.

The APSH results indicate that 10 (100%) of the 10 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis 2 rooms experience an increase of between 1.01 and 1.2 times former value and the remaining 8 rooms experience an increase of between1.21 and 1.4 times former value. On a winter basis, all 10 rooms experience an increase greater than 1.4 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible to minor beneficial** and the effect on sunlight to these receptors will be **moderate beneficial**.

25-33 (odds) Gwladys Street

Of the 25 windows tested for VSC, 25 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 2 experience an increase in VSC of between 1.31 and 1.40 times former value and the remaining 23 windows experience an increase of greater than 1.4 times former value. In terms of daylight distribution, 10 (100%) of the 10 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. All 10 of the rooms tested experience an increase of greater than 1.4 times former value.

The APSH results indicate that 10 (100%) of the 10 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, 3 rooms experience an increase of between 1.01 and 1.3 times former value and the remaining 7 rooms experience an increase of between 1.31 and 1.40 times former value. On a winter basis, all 10 rooms experience an increase greater than 1.4 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **major beneficial** and the effect on sunlight to these receptors will be **moderate beneficial**.

35-43 (odds) Gwladys Street

Of the 25 windows tested for VSC, 25 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. All of these windows experience an increase in VSC greater than 1.4 times former value. In terms of daylight distribution, 10 (100%) of the 10 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. All 10 of the rooms tested experience an increase of greater than 1.4 times former value.

The APSH results indicate that 10 (100%) of the 10 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, 5 rooms experience an increase of between 1.31 and 1.40 times former value and the remaining 5 rooms experience an increase of greater than 1.40 times former value. On a winter basis, all 10 rooms experience an increase greater than 1.4 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **major beneficial** and the effect on sunlight to these receptors will be **moderate to major beneficial**.

45-53 (odds) Gwladys Street

Of the 25 windows tested for VSC, 25 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 2 experience an increase in VSC of between 1.31 and 1.40 times former value and 23 windows experience an increase of greater than 1.40 times former value. In terms of daylight distribution, 10 (100%) of the 10 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. All 10 of the rooms tested experience an increase of greater than 1.4 times former value.

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The APSH results indicate that 10 (100%) of the 10 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, 4 rooms experience an increase of between 1.21 and 1.30 times former value and the remaining 6 rooms experience an increase of greater than 1.31 times former value On a winter basis, all 10 rooms experience an increase greater than 1.40 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **major beneficial** and the effect on sunlight to these receptors will be **moderate beneficial**.

55-65 (odds) Gwladys Street

Of the 30 windows tested for VSC, 30 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 14 experience an increase in VSC of between 1.01 and 1.30 times former value and the remaining 16 windows experience an increase of greater than 1.31 times former value. In terms of daylight distribution, 12 (100%) of the 12 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 9 experience an increase of between 1.01 and 1.30 times former value and the remaining 3 rooms experience an increase of greater than 1.40 times former value.

The APSH results indicate that 12 (100%) of the 12 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, 11 rooms experience an increase of between 1.01 and 1.30 times former value and the remaining room experiences an increase of between 1.31 and 1.40 times former value. On a winter basis, 5 rooms experience an increase of between 1.21 and 1.40 times former value and the remaining 7 rooms experience an increase greater than 1.40 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible to minor beneficial** and the effect on sunlight to these receptors will be **minor to moderate beneficial.**

Gwladys Street Primary School

Of the 42 windows tested for VSC, 42 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 31 experience an increase in VSC of between 1.01 and 1.30 times former value and 2 experience an increase of greater than 1.40 times former value. In terms of daylight distribution, 11 (100%) of the 11 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 2 experience an increase of between 1.01 and 1.20 times former value.

The APSH results indicate that 9 (100%) of the 9 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, 8 rooms experience an increase of between 1.01 and 1.20 times former value. On a winter basis, 5 rooms experience an increase of between 1.01 and 1.20 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible** and the effect on sunlight to this receptor will also be **negligible**.

2 Muriel Street

Of the 11 windows tested for VSC, 11 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 10 experience an increase in VSC of between 1.01 and 1.30 times former value. In terms of daylight distribution, 7 (100%) of the 7 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 2 experience an increase of between 1.01 and 1.20 times former value.

The APSH results indicate that 4 (100%) of the 4 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, all 4 rooms experience an increase of between 1.01 and 1.20 times former value. On a winter basis, 3 rooms experience an increase of between 1.01 and 1.20 times former value and the remaining room experiences an increase of greater than 1.40 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible** and the effect on sunlight to this receptor will also be **negligible**.

1A, 3A & 5A Diana Street

Of the 29 windows tested for VSC, 29 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 14 experience an increase in VSC of between 1.01 and 1.30 times former value.. In terms of daylight distribution, 18 (100%) of the 18 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 4 experience an increase of between 1.01 and 1.20 times former value.

The APSH results indicate that 6 (100%) of the 6 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, all 6 rooms experience an increase of between 1.01 and 1.20 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will also be **negligible**.

1 Bullens Road, 2A & 4A Diana Street

Of the 35 windows tested for VSC, 31 (89%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 4 experience an increase in VSC of between 1.01 and 1.20 times former value. There are also 4 windows in 2A Diana Street which experience reductions marginally outside of the BRE Guideline values, achieving factor of former value between 0.70 and 0.79 times. In terms of daylight distribution, 22 (96%) of the 23 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 3 experience an increase of between 1.01 and 1.30 times former value. There is also a single room within 1 Bullens Road which experiences a reduction outside of the guideline values, achieving a factor of former value between 0.60 and 0.69 times. It is important to note that the BRE guidelines suggest the results of the two daylight tests are considered in parallel and where any reductions outside the guideline values are identified, these are only for one of the two daylight tests

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The APSH results indicate that 12 (80%) of the 15 rooms tested achieve the guideline values for APSH on an annual basis by retaining greater than 0.8 times former value. The 3 rooms which fall marginally outside of the guideline values achieve factor of former values of between 0.70 and 0.79 times. Furthermore, these rooms achieve absolute APSH values of either 23% or 24% against a guideline of 25% APSH. On a winter basis, 14 (93%) of the 15 rooms achieve the guideline values by receiving at least 5% APSH during the winter months. There is a single room which falls marginally outside of the guideline values, achieving 4% APSH during the winter months against a recommended guideline value of 5% APSH.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will be **negligible**.

10.6.2 Proposed Development versus Future Baseline Scenario

Daylight and sunlight around the application site has been quantified under the Proposed Development versus Future Baseline Scenario and compared against the BRE criteria summarised in Table 10.5 and 10.7.

The detailed results are set out in the following tables and in 3D views and contour drawings (existing contour coloured green) within Appendix 10.2.

Table 10.20

VSC Results for Existing Receptors Considered within the Assessment of the Proposed Development versus Future Baseline Scenario

		VERTICAL SKY COMPONENT (VSC)												
PHASE	RECEPTOR	NO. OF WINDOWS	WINDOWS SATISFYING BRE CRITERIA> 1.4 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	2 Muriel Street	11	0	0	1	9	1	0	0	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	29	0	0	1	10	18	0	0	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	35	0	0	0	4	27	4	0	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.4 ES Volume III

Table 10.21

Daylight Distribution Results for Existing Receptors Considered within the Assessment of the Proposed Development versus Future Baseline Scenario

		DAYLIGHT DISTRIBUTION												
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	2 Muriel Street	7	0	0	0	2	5	0	0	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	18	0	0	0	4	14	0	0	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	23	0	0	1	2	19	0	1	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.4 ES Volume III

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Table 10.22

APSH Results for Existing Receptors Considered within the Assessment of the Proposed Development versus Future Baseline Scenario

			ANNUAL PROBABLE SUNLIGHT HOURS (APSH)									PROBABLE SUNLIGHT HOURS (APSH) IN WINTER										
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	2 Muriel Street	4	0	0	0	4	0	0	0	0	0	1	0	3	0	0	0	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	6	0	0	0	6	0	0	0	0	0	0	0	0	6	0	0	0	Negligible	Negligible	No	Appendix 10.2.2 – 10.2.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	15	0	0	0	0	12	3	0	0	0	0	0	0	6	6	2	1	Negligible*	Negligible	No	Appendix 10.2.2 – 10.2.4 ES Volume III

**See additional commentary in the text below.*

2 Muriel Street

Of the 11 windows tested for VSC, 11 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 10 experience an increase in VSC of between 1.01 and 1.30 times former value. In terms of daylight distribution, 7 (100%) of the 7 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 2 experience an increase of between 1.01 and 1.20 times former value.

The APSH results indicate that 4 (100%) of the 4 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, all 4 rooms experience an increase of between 1.01 and 1.20 times former value. On a winter basis, 3 rooms experience an increase of between 1.01 and 1.20 times former value and the remaining room experiences an increase of between 1.31 and 1.40 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible** and the effect on sunlight to this receptor will also be **negligible**.

1A, 3A & 5A Diana Street

Of the 29 windows tested for VSC, 29 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 11 experience an increase in VSC of between 1.01 and 1.30 times former value. In terms of daylight distribution, 18 (100%) of the 18 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 4 experience an increase of between 1.01 and 1.20 times former value.

The APSH results indicate that 6 (100%) of the 6 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, all 6 rooms experience an increase of between 1.01 and 1.20 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will also be **negligible**.

1 Bullens Road, 2A &4 A Diana Street

Of the 35 windows tested for VSC, 31 (89%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 4 experience an increase in VSC of between 1.01 and 1.20 times former value. There are also 4 windows in 2A Diana Street which experience reductions marginally outside of the BRE Guideline values, achieving factor of former value between 0.70 and 0.79 times. In terms of daylight distribution, 22 (96%) of the 23 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 3 experience an increase of between 1.01 and 1.30 times former value. There is also a single room

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within 1 Bullens Road which experiences a reduction outside of the guideline values, achieving a factor of former value between 0.60 and 0,69 times. It is important to note that the BRE guidelines suggest the results of the two daylight tests are considered in parallel and where any reductions outside the guideline values are identified, these are only for one of the two daylight tests.

The APSH results indicate that 12 (80%) of the 15 rooms tested achieve the guideline values for APSH on an annual basis by retaining greater than 0.8 times former value. The 3 rooms which fall marginally outside of the guideline values achieve factor of former values of between 0.70 and 0.79 times. Furthermore, these rooms achieve absolute APSH values of either 23% or 24% against a guideline of 25% APSH. On a winter basis, 14 (93%) of the 15 rooms achieve the guideline values by receiving at least 5% APSH during the winter months. There is a single room which falls marginally outside of the guideline values, achieving 4% APSH during the winter months against a recommended guideline value of 5% APSH.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will be **negligible.**

Table 10.23

Sunlight Results for Future Receptors Considered within the Assessment of the Proposed Development versus Future Baseline Scenario

WALTON LANE RECEPTORS	AVERAGE DAYLIGTH FACTOR (ADF)				FURTHER INFORMATION
Total number of Living Kitchen Diners Tested	ADF >2.0%	ADF 1.99% - 1.6%	ADF 1.59% – 1.2%	ADF 1.2% - 0.0%	
15	6	4	3	2	Appendix 10.3.2 – 10.3.4, ES Volume III
Total number of Living/Diners Tested	ADF > 1.5%	ADF 1.49% - 1.2%	ADF 1.19% - 0.9%	ADF 0.9% - 0.0%	
1	1	0	0	0	Appendix 10.3.2 – 10.3.4, ES Volume III
Total number of Bedrooms Tested	ADF >1.0%	ADF 0.99% - 0.8%	ADF 0.79% – 0.6%	ADF 0.6% - 0.0%	
17	16	1	0	0	Appendix 10.3.2 – 10.3.4, ES Volume III
Total number of Studios Tested	ADF >2.0%	ADF 1.99% - 1.6%	ADF 1.59% – 1.2%	ADF 1.2% - 0.0%	
4	3	0	0	1	Appendix 10.3.2 – 10.3.4, ES Volume III
Totals					
37	26	5	3	3	

Table 10.24

Sunlight Results for Future Receptors Considered within the Assessment of the Proposed Development versus Future Baseline Scenario

		ANNUAL APSH RESULTS					WINTER APSH RESULTS			
RECEPTOR	ROOMS ASSESSED	APSH ≥25%	APSH ≥20% <25%	APSH ≥15% <20%	APSH <15%	APSH ≥5%	APSH ≥4% <5%	APSH ≥3% <4%	APSH <3%	FURTHER INFORMATION
Walton Lane	34	13	14	5	2	16	3	7	8	Appendix 10.3.2 – 10.3.4, ES Volume III

Walton Lane

The ADF assessment for Walton Lane shows that of the 37 habitable rooms tested, 26 (70%) would meet the guideline values in the proposed development versus future baseline condition. Of the rooms which do not meet the guidelines four are LKD's which achieve ADF values between 1.64% and 1.1%. This is due to the inclusion of the kitchen within the principle living space which serves to increase the depth of the room and applies a higher target value. These four LKD's exceed the guideline value for a living room of 1.5%. There is 1 bedroom which falls short of the guideline values. This bedroom achieves 0.81% ADF in the proposed condition and therefore falls only slightly below the guideline value of 1%. This bedroom is served by an inset window and therefore relies solely on light from across the development site as it is unable to receive light from the top portion of the sky.

The remaining 6 rooms include 5 LKD's and 1 studio, all of which fell short of the guideline values in the future baseline condition. It can therefore be considered that it is the design of the proposed building as opposed to the proposed development which is limiting the amount of daylight available to these rooms.

The APSH results for the Walton Lane development show that of the 34 rooms assessed, 13 (38%) achieve the guideline values on an annual basis and 16 (47%) achieve the guidelines on a winter basis. The part of the Walton Lane scheme which faces towards the Goodison site is orientated slightly south of due west. Therefore, the rooms assessed are only able to receive sunlight from across the Goodison Park site.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **minor to moderate adverse** and the effect on sunlight to this receptor will be **minor to moderate adverse**.

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10.7 MITIGATION & ENHANCEMENT MEASURES

No mitigation or enhancement measures are proposed in regard to the assessments reported in this chapter.

10.8 ASSESSMENT POST-MITIGATION

Given that no mitigation or enhancement measures are proposed, the residual effects of the proposed development remain in accordance with the effects reported in section 10.6 above. All effects range from Moderate adverse to Major Beneficial and are long-term, direct, permanent and irreversible.

10.9 DAYLIGHT AND SUNLIGHT: INTER-CUMULATIVE SCHEME IMPACTS

As discussed in the methodology section earlier in this chapter, the cumulative schemes reported in Chapter 2 of this volume of the ES have been reviewed and there is one scheme in sufficient proximity to the application site such that cumulative daylight, sunlight and overshadowing effects could arise: Land bounded by Walton Lane, Bullens Road and Diana Street (18F/1316). On this basis, a cumulative scenario has been assessed and the results of this scenario are set out below:

Table 10.25

VSC Results for Existing Receptors Considered within the Assessment of the Cumulative Development versus Baseline Scenario

			VERTICAL SKY COMPONENT (VSC)											
PHASE	RECEPTOR	NO. OF WINDOWS	WINDOWS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	WINDOWS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	< 0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	2 Muriel Street	11	0	0	1	10	1	0	0	0	Negligible	Negligible	No	Appendix 10.3.2 – 10.3.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	29	0	0	1	9	19	0	0	0	Negligible	Negligible	No	Appendix 10.3.2 – 10.3.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	35	0	0	0	4	20	10	1	0	Negligible/Low	Negligible/Minor Adverse	No	Appendix 10.3.2 – 10.3.4 ES Volume III

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Table 10.26

Daylight Distribution Results for Existing Receptors Considered within the Assessment of the Cumulative Development versus Baseline Scenario

			DAYLIGHT DISTRIBUTION												
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	2 Muriel Street	7	0	0	0	2	5	0	0	0	Negligible	Negligible	No	Appendix 10.3.2 – 10.3.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	18	0	0	0	4	14	0	0	0	Negligible	Negligible	No	Appendix 10.3.2 – 10.3.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	23	0	0	1	2	17	2	1	0	Negligible	Negligible	No	Appendix 10.3.2 – 10.3.4 ES Volume III

Table 10.27

APSH Results for Existing Receptors Considered within the Assessment of the Cumulative Development versus Baseline Scenario

			ANNUAL PROBABLE SUNLIGHT HOURS (APSH)								PROBABLE SUNLIGHT HOURS (APSH) IN WINTER											
PHASE	RECEPTOR	NO. OF ROOMS	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA > 1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.31-1.4 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.21-1.3 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 1.01-1.2 X FORMER VALUE	ROOMS SATISFYING BRE CRITERIA BETWEEN 0.8-1.0 X FORMER VALUE	0.79-0.7 X FORMER VALUE	0.69-0.6 X FORMER VALUE	<0.6 X FORMER VALUE	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	2 Muriel Street	4	0	0	0	4	0	0	0	0	0	1	0	3	0	0	0	0	Negligible	Negligible	No	Appendix 10.3.2 – 10.3.4 ES Volume III
Operation	1A, 3A & 5A Diana Street	6	0	0	0	6	0	0	0	0	0	0	0	0	6	0	0	0	Negligible	Negligible	No	Appendix 10.3.2 – 10.3.5 ES Volume III
Operation	1 Bullens Road, 2A & 4A Diana Street	15	0	0	0	0	9	6	0	0	0	0	0	0	3	4	4	4	Negligible*	Negligible	No	Appendix 10.3.2 – 10.3.4 ES Volume III

**See commentary in the text below.*

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2 Muriel Street

Of the 11 windows tested for VSC, 11 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 10 experience an increase in VSC of between 1.01 and 1.30 times former value. In terms of daylight distribution, 7 (100%) of the 7 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 2 experience an increase of between 1.01 and 1.20 times former value.

The APSH results indicate that 4 (100%) of the 4 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, all 4 rooms experience an increase of between 1.01 and 1.20 times former value. On a winter basis, 3 rooms experience an increase of between 1.01 and 1.20 times former value and the remaining room experiences an increase of greater than 1.40 times former value.

It is therefore considered that the effect of the proposed development on the daylight to this receptor will be **negligible** and the effect on sunlight to this receptor will also be **negligible**.

1A, 3A & 5A Diana Street

Of the 29 windows tested for VSC, 29 (100%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 10 experience an increase in VSC of between 1.01 and 1.30 times former value. In terms of daylight distribution, 18 (100%) of the 18 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 4 experience an increase of between 1.01 and 1.20 times former value.

The APSH results indicate that 6 (100%) of the 6 rooms tested achieve the guideline values for APSH on both an annual and winter basis by retaining greater than 0.8 times former value. On an annual basis, all 6 rooms experience an increase of between 1.01 and 1.20 times former value.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible** and the effect on sunlight to these receptors will also be **negligible**.

1 Bullens Road, 2A & 4A Diana Street

Of the 35 windows tested for VSC, 24 (69%) satisfy the BRE Guidelines and either retain a VSC of at least 27% or at least 0.8 times their former value in the proposed condition. Of these windows, 4 experience an increase in VSC of between 1.01 and 1.20 times former value. Of the remaining 11 windows, 10 experience reductions marginally outside of the BRE Guideline values, achieving factor of former values between 0.79 and 0.7 times. The final window experiences a reduction of between 0.69 to 0.6 times former value. In terms of daylight distribution, 20 (87%) of the 23 rooms tested satisfy the BRE guidelines by retaining greater than 0.8 times former value. Of these rooms, 3 experience an increase of between 1.01 and 1.30 times former value. Of the remaining 3 rooms, 2 fall marginally short of the guideline values achieving factor of former values between 0.79 and 0.70 times.. It is important to note that the BRE guidelines suggest the results of the two daylight tests are considered in parallel.

The APSH results indicate that 12 (80%) of the 15 rooms tested achieve the guideline values for APSH on an annual basis by retaining greater than 25% APSH. On a winter basis, 14 (93%) of the 15 rooms achieve the guideline values by receiving at least 5% APSH during the winter months.

It is therefore considered that the effect of the proposed development on the daylight to these receptors will be **negligible to minor adverse** and the effect on sunlight to these receptors will be **negligible.**

10.10 BIBLIOGRAPHY

DCLG, (2019). Revised National Planning Policy Framework, February 2019.

DCLG, (Live Document). Planning Practice Guidance [online]. Available: http://planningguidance.communities.gov.uk/

BRE Report 209, (2011). Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice (Second Edition).

Liverpool Local Plan (Submission Version, May 2018)

English Heritage and CABE, (2015). Historic England (formerly English Heritage) / Commission for Architecture and the Built Environment (CABE) Guidance on Tall Buildings.