

9. DAYLIGHT, SUNLIGHT & OVERSHADOWING

Introduction

- 9.1 This chapter of the ES assesses the likely significant effects of the Development on the surrounding environment in respect of daylight, sunlight and overshadowing effects.
- 9.2 This chapter is supplemented by the following appendices:
- Appendix 9.1: Methodology and Baseline Daylight and Sunlight levels to surrounding properties;
 - Appendix 9.2: Drawings;
 - Appendix 9.3: Daylight and Sunlight Results to surrounding sensitive receptors;
 - Appendix 9.4: Overshadowing Results;
 - Appendix 9.5: Sensitive Receptor Window Maps; and
 - Appendix 9.6: Daylight and Sunlight Summary Tables and Analysis.
- 9.1 Daylight, sunlight and overshadowing performance within the Development is considered a design matter owing to the performance being a function of the way the proposed buildings interact with one-another and respond to the surrounding context. Therefore, a report has been prepared by GIA, demonstrating the daylight, sunlight and overshadowing performance within the Development. Full detailed assessment is provided for the Phase 1 buildings whilst the Illustrative Masterplan has been assessed for those phases submitted in outline, and an overshadowing assessment is provided for all public and communal amenity areas within the site. The Internal Daylight, Sunlight and Overshadowing Assessment report does not form part of the ES but is submitted in support of the planning application.
- 9.2 A standalone Daylight, Sunlight and Overshadowing Impacts to Neighbours report has been undertaken alongside the analysis for this ES Chapter and submitted in support of the planning Application. The standalone report provides analysis of the Illustrative Masterplan (Figure 3.1), which represents an articulated example of the Development following the implementation of mitigation measures. The standalone report supplements the impacts identified for the surrounding sensitive properties in this ES, providing a worked example of the residual effects as a result of the Illustrative Masterplan.
- 9.3 Therefore, the results presented in this ES chapter, from the assessment of the maximum parameter envelope of those elements of the Development submitted in outline, represent an absolute worst-case scenario. The maximum parameters are utilised as an envelope within which future development will take place and therefore massing will not be extruded to these

extents and will be restricted by mitigating measures included as part of the Reserved Matters Applications (RMAs).

Policy Context, Legislation and Guidance

- 9.4 This section reviews the national, regional and local planning policy as well as legislation and guidance, relevant to the daylight, sunlight and overshadowing aspects of the Development.

National Planning Policy and Guidance

National Planning Policy Framework

- 9.5 In February 2019, the Secretary of State for Housing, Communities and Local Government published the revised National Planning Policy Framework (NPPF). The document, *"sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced."*

- 9.6 Within Section 11 'Making Effective Use of Land', the document outlines how land should be optimised to meet the need for housing with density. In "Achieving appropriate densities", it states:

"123. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities, and ensure that developments make optimal use of the potential of each site."

- 9.7 In these circumstances:

"a) plans should contain policies to optimise the use of land in their area and meet as much of the identified need for housing as possible. This will be tested robustly at examination and should include the use of minimum density standards for city and town centres and other locations that are well served by public transport. These standards should seek a significant uplift in the average density of residential development within these areas, unless it can be shown that there are strong reasons why this would be inappropriate;

b) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site."

- 9.8 The above demonstrates the Government's recognition that a flexible approach should be taken in relation to daylight and sunlight targets. As to achieve efficient use of land and maximise massing, effects to existing neighbours' daylight and sunlight amenity will likely occur.

Planning Practice Guidanceⁱⁱ

- 9.9 The updated NPPG includes a section (paragraph 007 Reference ID: 66-006-20190722) relating to more effective use of land and reference is made to daylight and sunlight. The update which was made on 22nd July 2019ⁱⁱⁱ notes, "*What are the wider planning considerations in assessing appropriate levels of sunlight and daylight? All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design.*"
- 9.10 The above paragraph recognises the potential significance of context in the wider planning balance when determining what are appropriate levels of daylight and sunlight amenity.
- 9.11 In respect to building scale it states at paragraph 26 (Reference ID 26-026-20140306)^{iv} that:

"Account should be taken of local climatic conditions, including daylight and sunlight, wind, temperature and frost pockets."

Regional Planning Policy

The London Plan - The Spatial Development Strategy for London Consolidated with Alterations Since 2011 (2016)^v

- 9.12 The key policies from the adopted London Plan of relevance to this assessment are:

- Policy '7.6 – Architecture' which states that "*...buildings and structures should...not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to privacy, overshadowing, wind and micro-climate.*"; and
- Policy '7.7 - Location and Design of Tall Buildings' which states that "*...large buildings should not adversely affect their surroundings in terms of overshadowing and solar reflected glare: "Location and design of tall buildings should not affect their surroundings adversely in terms of microclimate, wind turbulence, overshadowing, noise, reflected glare, aviation, navigation and telecommunication interference."*

The Draft New London Plan - Intend to Publish Version (December 2019)^{vi}

9.13 This document identifies Opportunity Areas capable of supporting development within Kingston upon Thames, which include the Site.

9.14 Additionally, Policy D6 Housing Quality and Standards states that:

"The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space."

9.15 Policy D9 Tall buildings states that:

"...development proposals should address the following impacts: ...buildings should not cause adverse reflected glare [and] ...buildings should be designed to minimise light pollution from internal and external lighting." It continues that "wind, daylight, sunlight penetration and temperature conditions around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open spaces, including water spaces, around the building."

The Mayor's Housing Supplementary Planning Guidance (SPG) (March 2016)^{vii}

9.16 The SPG draws on the London Plan, primarily policy 7.6Bd, and provides further guidance on standards to daylight, and overshadowing. The guidance states that:

"...an appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new

development on surrounding properties, as well as within new developments themselves... Guidelines should be applied sensitively to higher density development...where BRE advice suggests considering the use of alternative targets' taking in to account the 'local circumstances; the need to optimise housing capacity; and scope for character and form of an area to change over time."

9.17 Standard 32 states that:

"All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight."

9.18 It is also states that:

"Natural light is also vital to a sense of wellbeing in the home, and this may be restricted in densely developed parts of the city".

9.19 The Mayor seeks to encourage housing that provides *"comfortable and enjoyable places of retreat and privacy"* and factors to be considered include daylight and sunlight.

Local Planning Policy

Local Development Framework, Planning for the future Core Strategy (April 2012)^{viii}

9.20 Policy DM 10 of the Design Requirements for New states that proposals will be required to incorporate principles of good design. Development proposals should also:

"k. have regard to the amenities of occupants and neighbours, including in terms of privacy, outlook, sunlight/daylight, avoidance of visual intrusion and noise and disturbance"

9.21 Policy CS 10 Housing Delivery identifies the Site as a regeneration area with scope for significant change and future housing growth.

Local Development Framework, Residential Design Supplementary Planning Document (November 2013)^x

- 9.22 This SPD outlines that it is consistent with the key principles set out in Chapter 2 of the Mayor's Housing SPG. *Policy Guidance 17* of this document references BRE Guidelines as an instrument of planning, includes a section in paragraph 3.66 on Daylighting and Sunlighting, stipulating that:

"The size and volume of any new build or extension may also be limited by the degree to which it would block out daylight to the habitable rooms of a neighbouring property. The need to maintain a reasonable outlook for neighbouring properties should also be carefully considered"

National Legislation

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

Assessment Methodology

- 9.24 For the daylight and sunlight assessment, the study area was defined by the extent of residential properties which have windows facing the Site and that, using professional experience, were considered in close enough proximity to the Site to be affected by the Development. The residential properties included within the study area for daylight and sunlight are presented on Figure 9.1 Surrounding Sensitive Receptors for Daylight and Sunlight.
- 9.25 For the overshadowing assessment, the study area was defined through the use of an initial transient overshadowing assessment and all amenity areas that receive shadow cast by the Development have been included within the study area. The amenity areas (private gardens and areas of public realm) included within the study area for overshadowing are presented Appendix 9.4 Overshadowing Assessment.

Consultation

- 9.26 A formal request for an EIA Scoping Opinion was submitted to RBKuT on 28th April 2020. The EIA Scoping Opinion was received on 12th June 2020 and is included at Appendix 2.2.

- 9.27 The EIA Scoping Opinion confirmed acceptability the scope and method proposed for the Daylight, Sunlight and Overshadowing assessments.

Baseline Characterisation

- 9.28 An existing baseline characterisation was completed by firstly undertaking a review of the surrounding land uses, using information and data sources from the RBKuT's Valuation Office Agency (VOA) website^x and Google Maps. This review to identify potentially sensitive receptors was undertaken using professional judgement for properties and amenity areas in close enough proximity to the Site to be affected by the Development. Whilst ultimately professional judgement has been used to establish the potentially sensitive receptors, the following factors have aided the characterisation of the study area:

- Property uses as determined through VOA and planning portal search;
- Google Maps, planning portal and real estate websites to identify windows facing towards the Site;
- As a guide to buildings which are likely to be affected in terms of daylight by the Development, the 25° subtend angle has been mapped from continuous obstructions of the Development; and
- 3D models have been used to establish where existing buildings in the forefront obscure the Development from the view of windows.

- 9.29 The study area for daylight and sunlight (Figure 9.1) has been reviewed throughout the design evolution and interim testing process, and where necessary the study area has been extended to ensure the likely significant effects of the Development are reported in full. The scope of buildings assessed has been determined as a reasonable zone which considers both the scale of the Development and the proximity of those buildings which surround and face the Site.

- 9.30 From the review of the surrounding context, a 3D computer model was developed for the existing surrounding properties and amenity areas. This has been used to understand the base levels and heights of the surrounding buildings. The location and size of those apertures that surround and face the Site have been modelled using a mix of Site photographs and Ordnance Survey (OS) information to estimate as closely as possible the position of buildings and windows within the relevant elevations.

Scenarios Assessed

- 9.31 The following scenarios have been assessed and are reported within this ES chapter:

- Baseline; and
- The Development.

Baseline

- 9.32 This scenario considers the baseline condition of the receptors shown in Figure 9.1 (at the time of writing this chapter) and is depicted on drawings 14047/06/01/01-03 in Appendix 9.2.
- 9.33 The daylight and sunlight baseline levels are presented in Appendix 9.3 and the baseline shadow condition is shown in Appendix 9.4.

The Development

- 9.34 This scenario consists of the Development in the context of the surrounding existing environment. This scenario has assessed the potential daylight, sunlight and overshadowing effects of the Development on the surrounding residential receptors and amenity spaces. In ascertaining the effects, comparisons are made with the Baseline scenario.
- 9.35 The Development consists of a residential led mixed-use scheme, comprising the demolition of existing buildings on the Site and the construction of new residential units as well as commercial and community floorspace.
- 9.36 Phase 1 of the Development is in detail, whilst Phases 2 to 5 of the Development are in outline. Refer to Chapter 3 Site and Development for a full description.
- 9.37 As such, those elements proposed in detail are assessed for their fully articulated form and extents (refer to the detailed drawings in Appendix 3.1), whilst those elements proposed in outline are assessed as their maximum parameters (refer to the parameter plans at Appendix 3.2) portraying a worst-case scenario. Therefore, the Development (as described) forms the basis of the daylight, sunlight and overshadowing assessment undertaken within this ES chapter.
- 9.38 For those elements proposed in outline, future RMAs would fall within the maximum parameter envelope and thus the effects in terms of daylight, sunlight and overshadowing would be no worse than those presented in this chapter.

- 9.39 The Development scenario (detailed 3D massing for Phase 1 and maximum parameter massing for the rest of the Development) is illustrated on drawings 14047/06/01/04-06 in Appendix 9.2.

Cumulative Scenario

- 9.40 A review of the committed developments in Chapter 2 EIA Methodology identified that all are too far from the Site to give rise to cumulative daylight, sunlight and overshadowing effects to the sensitive receptors assessed. As such, a cumulative assessment is not considered necessary within this chapter.

Methodology

- 9.41 The BRE Guidelines suggest that residential properties have the highest requirement for daylight and sunlight:

"the guidelines are intended for use for rooms in adjoining dwellings where light is required, including living rooms, kitchens and bedrooms."

- 9.42 The BRE Guidelines provide the following methodologies for assessment of daylight, sunlight and overshadowing. Values in the BRE Guidelines are derived on the basis of a 2-3 storey suburban model, therefore the application of its guidelines in urban environments or regeneration areas should be treated flexibly. This is acknowledged within the BRE Guidelines, stating in paragraph 2.2.3:

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

- 9.43 More detail on the daylight, sunlight and overshadowing methodologies outlined in the BRE Guidelines can be found in Appendix 9.1.

Daylight

- 9.44 The following methodologies are used to assess daylight:
- Vertical Sky Component (VSC); and
 - No Sky Line (NSL) Method.

- 9.45 Vertical sky component (VSC) is a 'spot' measure of the skylight reaching the mid-point of a window from an overcast sky. It represents the amount of visible sky that can be seen from that reference point, from over and around an obstruction in front of the window. That area of visible sky is expressed as a percentage of an unobstructed hemisphere of sky, and, therefore, represents the amount of daylight available for that particular window.
- 9.46 No-sky line (NSL) is a measure of the distribution of diffuse daylight within a room. The NSL simply follows the division between those parts of a room that can receive some direct skylight from those that cannot. If from a point in a room on the working plane (a plane 850mm above the floor) it is possible to see some sky then that point will lie inside the NSL contour. Conversely, if no sky is visible from that point then it would lie outside the contour.

Sunlight

- 9.47 The Annual Probable Sunlight Hours (APSH) is used to assess sunlight.
- 9.48 Annual probable sunlight hours (APSH) is a measure of sunlight that a given window may expect over a year period. The BRE guidance recognises that sunlight is less important than daylight in the amenity of a room and is heavily influenced by orientation. North facing windows may receive sunlight on only a handful of occasions in a year, and windows facing eastwards or westwards will only receive sunlight for some of the day. The BRE guidance states that only windows with an orientation within 90 degrees of south need be assessed. Therefore, in terms of sunlight, only rooms facing south are assessed for APSH as north facing rooms will not receive direct sunlight.
- 9.49 For the baseline both annual APSH and winter PSH are assessed. The APSH and winter PSH have different BRE criteria (refer Table 9.1). For the assessment of the Development, the annual APSH and winter PSH are reported separately, to provide a more detailed assessment reflecting the different sunlight conditions.

Summary of Criteria for Daylight and Sunlight

- 9.50 The following table provides a summary of the criteria set out within the BRE Guidelines for daylight and sunlight.

Table 9.1: Summary of Daylight and Sunlight Assessment Criteria

Method	BRE Criteria
VSC	A window would be adversely affected if its VSC measured at the centre

Method	BRE Criteria
	of the window is less than 27% and less than 0.8 times its former value.
NSL	A room would be adversely affected if the daylight distribution (NSL) is reduced beyond 0.8 times its existing area.
APSH	A window would be adversely affected if a point at the centre of the window received for the whole year, less than 25% of the APSH including at least 5% of the APSH during the winter months (21 st September to 21 st March) and less than 0.8 times its former sunlight hours during either period, and for existing neighbouring buildings, if there is a reduction in total APSH which is greater than 4%.

9.51 This chapter also considers that a mid-teen retained VSC level of approximately 15% is acceptable given the regeneration aspirations of the Site and a portion falling within the designated main shopping area as set out in the RBKuT Local Development Framework, this is based on the outcome of multiple Greater London Authority (GLA) and appeal decisions for similar urban typologies within London and a review of the existing VSC levels of properties surrounding the Site.

9.52 This chapter also considers that a retained NSL level of approximately 50% is acceptable given the Site's central location, regeneration aspirations of the Site and a portion falling within the designated main shopping area. This is based on a review of the existing NSL levels of properties surrounding the Site.

Overshadowing

9.53 Where a Development includes tall buildings, these may affect the sunlight availability to gardens or open spaces in close proximity to the Site. Owing to the southerly location of the sun path, only amenity areas located within 90° of due north of the Site have the potential to be affected by overshadowing from tall buildings of the Development and are therefore taken into consideration in this assessment.

9.54 The following methodologies are used to assess overshadowing:

- Transient Overshadowing (TOS); and
- Sun Hours on Ground.

9.55 Both TOS and Sun Hours on ground assessments determine the extent of overshadowing on surrounding amenity areas. A TOS is initially used as a screening exercise to determine which amenity areas should be included for the purpose of the sun hours on ground assessment.

- 9.56 For large amenity areas TOS is used as the main assessment given the difficulties to quantify using the sun hours on ground assessment.
- 9.57 For smaller amenity areas with distinct boundaries, sun hours on ground is used as the main assessment.
- 9.58 Using specialist software, the path of the sun is tracked to determine where the sun would reach the ground and where it would not.

Methodology for Determining Construction Effects

- 9.59 Owing to the evolving and changing nature of demolition and construction activities, the assessment of likely significant effects during demolition and construction of the Development on daylight, sunlight and overshadowing to surrounding properties has not been modelled. Instead, a qualitative assessment has been undertaken using professional judgement and based on the construction methodology set out in Chapter 5 Construction Methodology and Phasing.

Methodology for Determining Baseline Conditions and Sensitive Receptors

Receptors considered sensitive to Daylight and Sunlight

- 9.60 Only those surrounding properties which have windows facing towards the Site were included in the assessment. If a nearby property has no windows facing the Site, these properties would not be affected by the Development in terms of light and are therefore not included in the assessment. This approach is considered appropriate and proportionate.
- 9.61 The BRE Guidelines state that for adjoining properties, where room layouts are known, the effect on the daylight distribution can be calculated by plotting the NSL.
- 9.62 Where actual room layouts were available, these are considered in the modelling of the internal layouts within the adjoining properties. Obtaining these room layouts enables precise evaluation of the diffuse levels of daylight within each of the rooms via the NSL. Those properties where room layouts have been obtained are given in paragraph 9.93. Where layout information was not available, assumptions have been made as to the use and internal configuration of the rooms (from external observations) behind the fenestration observed, as noted in the limitations and assumptions section below.

9.63 For sunlight, it is often not possible to determine the room uses within each of the neighbouring properties, nor is it clear which windows should be considered as the 'main windows'. Therefore, regardless of use, all the rooms with windows facing the Site and within 90 degrees of due south have been considered in the assessment.

9.64 The residential properties that have been considered due to their proximity to the Site are presented on Figure 9.1 Surrounding Sensitive Receptors for Daylight and Sunlight.

Receptors considered sensitive to overshadowing

9.65 The public, communal areas of amenity and rear private gardens that have been identified as sensitive receptors are presented in Appendix 9.4.

Methodology for Determining Baseline Conditions

9.66 For daylight and sunlight, the 3D model uses Waldram Diagrams^{xi} to establish the baseline VSC levels, and 3D geometric calculations for daylight distribution (NSL) and APSH. This model (which is orientated to north by the use of OS information) also enables the path of the sun to be tracked throughout the year to establish the shadow cast by the existing and proposed buildings, and thus calculate the transient overshadowing and sun hours on ground.

9.67 The baseline daylight, sunlight and overshadowing levels are measured against the BRE criteria.

Methodology for Determining Operational Effects

9.68 The following methodologies are used to assess the daylight and sunlight effects on the sensitive receptors of surrounding properties when the Development is completed and operational:

- Daylight:
 - Vertical Sky Component (VSC); and
 - No Sky Line (NSL) Method.
- Sunlight:
 - Annual Probable Sunlight Hours (APSH).

9.69 The methodology used for assessing the overshadowing effects on external amenity areas is transient overshadowing and sun hours on ground.

Significance Criteria

- 9.70 In terms of sensitivity, surrounding properties are considered highly sensitive to daylight and sunlight levels, and specifically habitable rooms within the properties such as living rooms, kitchens and bedrooms, in accordance with the BRE Guidelines.
- 9.71 All existing residential receptors and schools assessed within this chapter are considered highly sensitive due to the expectation of natural light and given equal weighting, and therefore each individual receptor is not assigned a level of sensitivity i.e. high, medium, low or very low.
- 9.72 However, it should be noted that paragraph 2.2.8 within the BRE Guidelines suggest that bedrooms are considered less important in relation to daylight distribution, given that the primary use of the room is for sleeping and they therefore have a lower requirement for daylight. However, it is stated that care should be taken not to block too much sun.
- 9.73 Buildings with transient occupants such as hotels and student accommodation, are considered low sensitivity as they are not permanent residences.
- 9.74 For overshadowing, all public areas of open space such as playgrounds, playing fields, parks, squares and private gardens in proximity to the Site are considered highly sensitive and are considered within the assessment.
- 9.75 The key terminology used to describe the magnitude of effects is as follows and is further described in the below sections of this chapter:
- Major;
 - Moderate;
 - Minor; and
 - Negligible.
- 9.76 The nature of the effects may be either Adverse (negative or detrimental), Beneficial (advantageous or positive) or Neutral (equally beneficial and adverse).
- 9.77 Where the alteration would have no discernible effect to a sensitive receptor, the effect has been stated as Negligible.

9.78 Following the determination of the magnitude of an effect, using this methodology a clear statement is then made as to whether the effect is significant or not significant. As a general rule, the following criteria is applied:

- 'Moderate' or 'Major' effects are deemed to be 'significant'; and
- 'Negligible' and 'Minor' effects are deemed to be 'not significant'.

9.79 The assessment of daylight, sunlight and overshadowing effects presented in this chapter is based upon the buildings of the phase 1 proposed in detail and the maximum parameter massing of phases 2 to 5 as described in Chapter 3 and set out in the parameter plans (Appendix 3.2). As such, the outline elements of this assessment considered an absolute worst-case, representing the maximum effects of the Development built out to its full maximum parameters, rather than a fully articulated form that would be developed at the reserved matters stage.

9.80 Therefore, in consideration the effects for daylight, sunlight and overshadowing, it is important to note that where effects of the assessment of the maximum parameters are significant, these would reduce, as indicated by assessment of the Illustrative Masterplan, which shows one way the Development could be built out in detail within the parameters of the outline application. This is reported in the standalone Daylight, Sunlight and Overshadowing Impacts to Neighbours report, submitted in support of the planning application.

Evaluation Effects and Significance – Daylight, Sunlight and Overshadowing

Daylight and Sunlight

9.81 For daylight and sunlight, the BRE Guidelines outline the following approach within the accompanying appendix, in terms of assigning criteria to assess the overall magnitude of effects:

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

"Where the loss of skylight or sunlight fully meets the guidelines, the impact is assessed as Negligible or Minor Adverse. Where the loss of light is well within the guidelines, or only a small number of windows 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 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."

"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; and*
- The affected building or open space only has a low level of requirement for skylight or sunlight."*

9.82 The classification of Major Adverse is documented within paragraph 7 of the BRE Guidelines as follows:

"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; and*
- the affected indoor or outdoor spaces have a particular strong requirement for skylight or sunlight, e.g. a living room in a dwelling or a children's playground".*

9.83 Where the BRE Guidelines are met, the magnitude of the effects would be considered negligible.

9.84 Taking into consideration the BRE Guidelines, professional judgement has been used to

determine whether the likely overall effects would result in adverse or beneficial daylight and sunlight effects. The initial numerical criteria for determining the magnitude of effect for VSC, NSL and APSH is based on percentage alterations, as follows:

- 0-19.9 % alteration = Negligible;
- 20-29.9 % alteration = Minor;
- 30-39.9 % alteration = Moderate; and
- 40 % alteration = Major.

9.85 For instances where existing VSC, NSL and APSH levels within a property are low, any alteration may result in a disproportionate percentage change, whereby the actual change in daylight or sunlight within the property experienced by the occupant may not be as noticeable as the percentage change would suggest. This is one example of when professional judgement is taken into account.

9.86 Therefore, when assigning an overall significance per property, consideration has been given to the proportion of rooms/ windows affected, as well as the percentage alterations, absolute changes, retained levels and any other relevant factors, such as there may be mitigating factors including balconies, overhangs or design features which may also affect the determination of assigning the significance criteria. As a general rule, 'Negligible' and 'Minor' effects are considered not significant whilst 'Moderate' and 'Major' and considered significant.

9.87 Where room uses are unknown, all rooms assessed within the property or building are considered habitable to give the worst-case scenario for potential daylight and sunlight effects caused by the Development.

9.88 Where the scale of VSC levels and NSL levels within a property differ, professional judgement has also been used to determine an overall significance. In addition, if the scale of total APSH and winter PSH differ greatly, professional judgement has also been used to determine the significance of the effect.

Overshadowing

Transient Overshadowing

9.89 The BRE Guidelines do not include criteria for the significance of transient overshadowing other than to identify the different times of the day and year when shadow would be cast over a surrounding area.

9.90 The assessment of likely significant effects as a result of transient overshadowing has therefore been based on professional judgement, taking into consideration the conditions of the existing Site and surrounding area, and comparing these conditions against the effect of the Development. In addition, professional judgement considers:

- The quantum of shade cast on an area;
- The areas use;
- The times of the day and year when shade would occur; and
- The duration the shade remains within the area.

Table 9.2: Transient Overshadowing Significance Criteria

Significance	Possible factors
Negligible	No shadow cast by the Development within the amenity areas or small areas of shadow that occur within the space for an hour or less and would not be perceptible by users of the space.
Minor Adverse	Small areas of shadow cast by the Development that would occur throughout the year but would not noticeably change the use of the space. Large portions of shadow falling within an area for a short period of time (1-3 hours) and the space not being shaded by the Development on one or more of the dates assessed.
Moderate Adverse	A large portion of shadow cast by the Development within the space for a short period of time when it is most valued, such as within a public square in the afternoons, or for a longer duration, greater than 3 hours or more than one of the dates assessed.
Major Adverse	A large area of shadow cast by the Development within the space for a longer duration (greater than 3 hours or more) throughout the year. The shadow cast by the Development would likely change the use of the space.

Sun Hours on Ground

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

9.92 Where the results show compliance with the BRE Guidelines criteria, the occupants are unlikely to experience any noticeable change to their sunlight amenity levels. For the purposes of this assessment, such an effect would be considered negligible and not significant. Should

the relevant criteria not be achieved, a judgement has to be made as to the scale and nature of effects and their resultant significance based on the level of loss, retained sunlight levels and the relevant baseline scenario.

- 9.93 Table 9.3 sets out the numerical criteria adopted in relation to the sun on ground assessment. All effects greater than negligible are considered significant.

Table 9.3: Sun Hours on Ground Significance Criteria

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

Limitations and Assumptions

- 9.94 Where actual room layouts were available (noted in Appendix 9.3), these have been considered when modelling the internal layouts of surrounding properties. The properties where internal layouts were obtained are listed below:

- 1, 3 Portman Road (Layout)
- 22, 24, 28, 30, 36 Piper Road (Layout)
- 38 Piper Road (Copied Layout)
- 5 Portman Road (Copied Layout)
- 7 Portman Road (Layout)
- 1 Somerset Road (Partial Layout)
- 60 Vincent Road (Copied Layout)
- 20 Vincent Road (Layout)
- 18 Vincent Road (Layout)
- 16 Vincent Road (Layout)
- 14 Vincent Road (Copied Layout)
- 12 Vincent Road (Layout)
- 10 Vincent Road (Copied Layout)
- 8 Vincent Road (Layout)
- 6 Vincent Road (Copied Layout)
- 4 Vincent Road (Copied Layout)
- 2 Vincent Road (Copied Layout)
- 22 Vincent Road (Copied Layout)
- 24 Vincent Road (Copied Layout)
- 26 Vincent Road (Copied Layout)
- 28 Vincent Road (Copied Layout)
- 30 Vincent Road (Layout)
- 32 Vincent Road (Layout)
- Cambridge Gardens (Partial Layout)
- 48 Vincent Road (Copied Layout)
- 34 Vincent Road (Layout)
- 52 Vincent Road (Layout)
- 50 Vincent Road (Layout)
- 46 Vincent Road (Copied Layout)
- 44 Vincent Road (Copied Layout)
- 42 Vincent Road (Layout)

- 40 Vincent Road (Copied Layout)
- 38 Vincent Road (Copied Layout)
- 36 Vincent Road (Copied Layout)
- Cascadia House Cambridge Road (Partial Layout)
- 2 Hampden Road (Layout)
- 54 Vincent Road (Layout)
- 56 Vincent Road (Copied Layout)
- 58 Vincent Road (Layout)
- 62 Vincent Road (Copied Layout)
- 64 Vincent Road (Copied Layout)
- 66 Vincent Road (Copied Layout)
- 13 Portman Road (Layout)
- 17 Portman Road (Layout)
- 25 Portman Road (Layout)
- 33 Portman Road (Layout)
- 15 Portman Road (Copied Layout)
- 19 Portman Road (Copied Layout)
- 27 Portman Road (Copied Layout)
- 31 Portman Road (Copied Layout)
- 29 Portman Road (Copied Layout)
- 43 Portman Road (Copied Layout)
- 41 Portman Road (Copied Layout)
- 45 Portman Road (Copied Layout)
- 47 Portman Road (Copied Layout)
- 39 Portman Road (Copied Layout)
- 2 Somerset Road (Copied Layout)
- 3 Somerset Road (Layout)
- 4 Somerset Road (Layout)
- 30 Rowlls Road (Copied Layout)
- 28 Rowlls Road (Copied Layout)
- 26 Rowlls Road (Copied Layout)
- 24 Rowlls Road (Layout)
- 22 Rowlls Road (Copied Layout)
- 20 Rowlls Road (Copied Layout)
- 65 Cambridge Grove Road (Copied Layout)
- 67 Cambridge Grove Road (Copied Layout)
- 69 Cambridge Grove Road (Copied Layout)
- 71 Cambridge Grove Road (Copied Layout)
- 73 Cambridge Grove Road (Copied Layout)
- 75 Cambridge Grove Road (Copied Layout)
- 77 Cambridge Grove Road (Copied Layout)
- 79 Cambridge Grove Road (Copied Layout)
- 81 Cambridge Grove Road (Copied Layout)
- 83 Cambridge Grove Road (Copied Layout)
- 17 Piper Road (Layout)
- 11 Piper Road (Layout)
- 13 Piper Road (Layout)
- 87 Bonner Hill Road (Layout)
- 85 Bonner Hill Road (Copied Layout)
- 15 Piper Road (Copied Layout)

9.95 Where layout information was not available, assumptions have been made as to the internal configuration of the rooms (from external observations) behind the fenestration observed. No assumptions have been made on the use of the rooms and these are noted as “unknown”. In such cases a standard 4.2m (14ft) room depth has been assumed, unless the building form dictated otherwise. This is common practice where access to buildings for surveying is unavailable. Obtaining these room layouts enables precise evaluation of the diffuse levels of daylight within each of the rooms via the NSL.

9.96 Floor levels have been assumed for surrounding properties where access has not been obtained. With the working plane located 850mm above the finished floor level, this has the potential to affect the assessment of NSL.

Baseline Conditions

9.97 The Baseline scenario is shown in drawings 14047/06/01/01-03 in Appendix 9.2.

9.98 The location of the sensitive receptors considered in the assessment for daylight and sunlight are shown in Figure 9.1 Surrounding Sensitive Receptors for Daylight and Sunlight, with the results presented in Appendix 9.3.

9.99 The location of sensitive receptors considered in the assessment of overshadowing are shown in Appendix 9.3, where the baseline shadow condition is presented.

Existing Sensitive Receptors

Daylight and Sunlight

9.100 The assessment methodology section confirms that existing residential receptors are sensitive receptors that may be affected by the Development. The sensitive receptors can be seen in Figure 9.1 Surrounding Sensitive Receptors for Daylight and Sunlight and Appendix 9.3 and are outlined below.

9.101 The sensitive receptors assessed for daylight and sunlight are as follows:

- 67 Hawks Road
- 65 Hawks Road
- 69-69a Hawks Road
- 71 Hawks Road
- 73 Hawks Road
- 75 Hawks Road
- 77 Hawks Road
- 79 Hawks Road
- 81 Hawks Road
- 83 Hawks Road
- 89 Hawks Road
- 87 Hawks Road
- 85 Hawks Road
- 93 Hawks Road
- 91 Hawks Road
- Pyramid Court 99 Hawks Road
- 3 Portman Road
- 1 Portman Road
- 40 Piper Road
- 36 Piper Road
- 38 Piper Road
- 32 Piper Road
- 34 Piper Road
- 30 Piper Road
- 28 Piper Road

- 22 Piper Road
- 24 Piper Road
- 26 Piper Road
- 5 Portman Road
- 7 Portman Road
- 35 Rowlls Road
- 1 Somerset Road
- 35 Portman Road
- 37 Portman Road
- 21 Portman Road
- 23 Portman Road
- 9 Portman Road
- 11 Portman Road
- 21 Piper Road
- 19 Piper Road
- 37 Cambridge Road
- 35 Cambridge Road
- 61 Cambridge Grove Road
- 60 Vincent Road
- 20 Vincent Road
- 18 Vincent Road
- 16 Vincent Road
- 14 Vincent Road
- 12 Vincent Road
- 10 Vincent Road
- 8 Vincent Road
- 6 Vincent Road
- 4 Vincent Road
- 2 Vincent Road
- 22 Vincent Road
- 24 Vincent Road
- 26 Vincent Road
- 28 Vincent Road
- 30 Vincent Road
- 32 Vincent Road
- The Lodge 42 Cambridge Road
- Cambridge Gardens
- 136 Gloucester Road
- 134 Gloucester Road
- 59 Cambridge Road
- 57 Cambridge Road
- 63 Cambridge Road
- 61 Cambridge Road
- 48 Vincent Road
- 34 Vincent Road
- 52 Vincent Road
- 50 Vincent Road
- 46 Vincent Road
- 44 Vincent Road
- 42 Vincent Road
- 40 Vincent Road
- 38 Vincent Road
- 36 Vincent Road
- 33 Cambridge Road
- 31 Cambridge Road
- 29 Cambridge Road
- 27 Cambridge Road
- Vibe Student Living 66-70
Cambridge Road
- Cascadia House Cambridge Road
- 140 Cambridge Road
- 138 Cambridge Road
- 136 Cambridge Road
- 134 Cambridge Road
- 142 Cambridge Road
- 144 Cambridge Road
- 146 Cambridge Road
- 148 Cambridge Road
- 2 Hampden Road
- 54 Vincent Road
- 56 Vincent Road
- 58 Vincent Road
- 62 Vincent Road
- 64 Vincent Road
- 66 Vincent Road
- 13 Portman Road
- 17 Portman Road
- 25 Portman Road
- 33 Portman Road
- 15 Portman Road

- 19 Portman Road
- 27 Portman Road
- 31 Portman Road
- 29 Portman Road
- 43 Portman Road
- 41 Portman Road
- 45 Portman Road
- 47 Portman Road
- 39 Portman Road
- 2 Somerset Road
- 3 Somerset Road
- 4 Somerset Road
- 29 Rowlls Road
- 31 Rowlls Road
- 30 Rowlls Road
- 28 Rowlls Road
- 26 Rowlls Road
- 24 Rowlls Road
- 22 Rowlls Road
- 20 Rowlls Road
- 33 Rowlls Road
- 63 Cambridge Grove Road
- 65 Cambridge Grove Road
- 67 Cambridge Grove Road
- 69 Cambridge Grove Road
- 71 Cambridge Grove Road
- 73 Cambridge Grove Road
- 75 Cambridge Grove Road
- 77 Cambridge Grove Road
- 79 Cambridge Grove Road
- 81 Cambridge Grove Road
- 83 Cambridge Grove Road
- 17 Piper Road
- 11 Piper Road
- 13 Piper Road
- 27 Piper Road
- 25 Piper Road
- 27a Piper Road
- 87 Bonner Hill Road
- 85 Bonner Hill Road
- 89 Bonner Hill Road
- 15 Piper Road
- 33 Hampden Road
- 22 Hampden Road
- 141 Bonner Hill Road
- 23 Piper Road

Baseline Daylight and Sunlight Levels

- 9.102 The full baseline daylight and sunlight can be found within Appendix 9.1 and is discussed in more detailed below.
- 9.103 Of the 150 properties considered as sensitive receptors, a total of 1814 windows serving 1314 rooms were assessed for daylight and 710 rooms were assessed for sunlight.
- 9.104 For daylight in the baseline condition, 1024 (56.5%) of the 1814 windows assessed for VSC and 1136 (86.5%) of the 1314 rooms assessed for NSL would meet BRE criteria for daylight. For sunlight, 552 (77.7%) of the 710 rooms assessed meet BRE criteria.

Baseline Overshadowing Levels

- 9.105 The full baseline transient overshadowing images can be found in Appendix 9.4.

- 9.106 A total of 138 amenity areas (private gardens and communal amenity areas of public realm) and have been assessed in terms of overshadowing.
- 9.107 This includes private rear gardens along Gloucester Road, Vincent Road, Cambridge Grove Road, Piper Road, Somerset Road, Rowlls Road, Portman Road and Hawks Road. Communal amenity areas of public realm along Cambridge Road are also considered.
- 9.108 The baseline results show that 54 amenity areas would not comply with BRE recommendations in the existing condition, although a number of these are only marginally below the 50% threshold. The remaining 84 private rear gardens and communal amenity areas of public realm assessed are fully compliant with BRE Guidelines recommendations in the baseline.

Likely Significant Effects

Construction Phase

- 9.109 The likely effects in relation to the daylight, sunlight and overshadowing for the surrounding properties and amenity areas would vary throughout the demolition and construction works, depending on the level of obstruction caused.
- 9.110 The daylight, sunlight and overshadowing effects during demolition would be beneficial until the point of construction. As construction works progress, the new buildings would steadily increase in magnitude as the superstructure is built and then clad. Those effects that are perceptible, as the superstructure and cladding progress, would be similar to those once the Development is complete and operational, as presented below. It is therefore considered that the completed Development represents the worst-case assessment in terms of likely daylight, sunlight and overshadowing effects.
- 9.111 During the demolition and construction phase, a number of tall cranes are likely to be present on-Site, however their size and temporary presence would lead to generally imperceptible effects of a temporary nature.
- 9.112 The phased impacts on receptors internal to the Site will be considered as part of the RMAs, with the detailed design for each phase considering a worst-case scenario.
- 9.113 As such, the overall effect in terms of daylight, sunlight and overshadowing would range from being temporary, beneficial effects during demolition, gradually changing to **Negligible** to

Major Adverse, once the Development is complete, as set out in the assessment of the Operational Phase, representing the worst case assessment of the maximum parameters of the outline element.

Operational Phase

9.114 In terms of daylight, sunlight and overshadowing, mitigation was embedded during the design process for the detailed Phase 1 element of the Development to minimise the effects on surrounding sensitive receptors. The design interventions are included within the assessment and constitute part of the iterative design process.

9.115 As the design of the outline element of the Development progresses to the reserved matters stages, this element of the Development will be designed to further minimise effects. Design principles have been provided within the mitigation section of this chapter to ensure the effects are further reduced through the detailed design.

Daylight to Surrounding Sensitive Receptors

9.116 The potential daylight effects on surrounding sensitive properties arising from the Development have been assessed against the Baseline in regard to VSC and NSL in accordance with the BRE criteria. The full daylight assessment for the Development can be found within Appendix 9.3.

9.117 A total of 1814 windows serving 1314 rooms have been assessed within 150 surrounding residential buildings in terms of daylight. Overall, of the 1814 windows assessed for VSC, 911 (50.2%) would meet the BRE criteria for VSC. Of the 1314 rooms assessed for NSL, 782 (59.4%) would meet the BRE criteria for NSL.

9.118 The following 33 properties (highlighted in blue in Table 9.B in Appendix 9.6) would experience no or little alteration (below 20%), and the effect on daylight to these properties would therefore be **Negligible**:

- 67 Hawks Road;
- 65 Hawks Road;
- 69-69a Hawks Road;
- 71 Hawks Road;
- 73 Hawks Road;
- 75 Hawks Road;
- 77 Hawks Road;

- 83 Hawks Road;
- 89 Hawks Road;
- 87 Hawks Road;
- 85 Hawks Road;
- 93 Hawks Road;
- 91 Hawks Road;
- 1 Portman Road;
- 36 Piper Road;
- 38 Piper Road;
- 32 Piper Road;
- 34 Piper Road;
- 5 Portman Road;
- 136 Gloucester Road;
- 59 Cambridge Road;
- 63 Cambridge Road;
- 61 Cambridge Road;
- 29 Rowlls Road;
- 30 Rowlls Road;
- 28 Rowlls Road;
- 26 Rowlls Road;
- 24 Rowlls Road;
- 22 Rowlls Road;
- 20 Rowlls Road;
- 33 Rowlls Road;
- 85 Bonner Hill Road; and
- 22 Hampden Road.

9.119 The daylight effect to the remaining 117 properties are summarised in Table 9.4. The full impact summary table and discussion of affected properties can be found in Appendix 9.6 Daylight and Sunlight Summary Tables and Analysis.

9.120 The likely significant effects reported below represent an absolute worst-case scenario. Reference should be made to the standalone Daylight, Sunlight and Overshadowing Impacts Report submitted as part of the planning application, which highlights the effects of a refined scheme.

Table 9.4 Summary of Daylight Effects to Properties

Address	Significance of Daylight Effect
79 Hawks Road	Negligible to Minor Adverse (not significant)
81 Hawks Road	Negligible to Minor Adverse (not significant)
Pyramid Court 99 Hawks Road	Negligible (not significant)
3 Portman Road	Negligible to Minor Adverse (not significant)
40 Piper Road	Negligible to Minor Adverse (not significant)
30 Piper Road	Negligible to Minor Adverse (not significant)
30 Piper Road	Negligible to Minor Adverse (not significant)
28 Piper Road	Negligible to Minor Adverse (not significant)
22 Piper Road	Negligible to Minor Adverse (not significant)
24 Piper Road	Negligible to Minor Adverse (not significant)
26 Piper Road	Negligible to Minor Adverse (not significant)
5 Portman Road	Minor Adverse (not significant)
7 Portman Road	Moderate Adverse (significant)
35 Rowlls Road	Moderate Adverse (significant)
1 Somerset Road	Minor Adverse (not significant)
35 Portman Road	Moderate Adverse (significant)
37 Portman Road	Moderate Adverse (significant)
21 Portman Road	Moderate Adverse (significant)
23 Portman Road	Moderate Adverse (significant)
9 Portman Road	Moderate Adverse (significant)
11 Portman Road	Moderate Adverse (significant)
21 Piper Road	Moderate Adverse (significant)
19 Piper Road	Moderate Adverse (significant)
37 Cambridge Road	Negligible to Minor Adverse (not significant)
35 Cambridge Road	Negligible to Minor Adverse (not significant)
61 Cambridge Grove Road	Major Adverse (significant)
60 Vincent Road	Major Adverse (significant)
20 Vincent Road	Moderate Adverse (significant)
18 Vincent Road	Moderate Adverse (significant)
16 Vincent Road	Moderate to Major Adverse (significant)
14 Vincent Road	Moderate to Major Adverse (significant)
12 Vincent Road	Major Adverse (significant)
10 Vincent Road	Major Adverse (significant)
8 Vincent Road	Major Adverse (significant)
6 Vincent Road	Major Adverse (significant)
4 Vincent Road	Major Adverse (significant)
2 Vincent Road	Major Adverse (significant)
22 Vincent Road	Moderate to Major Adverse (significant)
24 Vincent Road	Major Adverse (significant)
26 Vincent Road	Major Adverse (significant)
28 Vincent Road	Major Adverse (significant)
30 Vincent Road	Major Adverse (significant)
32 Vincent Road	Major Adverse (significant)
The Lodge 42 Cambridge Road	Negligible to Minor Adverse (not significant)
Cambridge Gardens	Moderate Adverse (significant)
134 Gloucester Road	Moderate Adverse (significant)
57 Cambridge Road	Negligible to Minor Adverse (not significant)
48 Vincent Road	Major Adverse (significant)
34 Vincent Road	Major Adverse (significant)
52 Vincent Road	Major Adverse (significant)
50 Vincent Road	Major Adverse (significant)

46 Vincent Road	Major Adverse (significant)
44 Vincent Road	Major Adverse (significant)
42 Vincent Road	Major Adverse (significant)
40 Vincent Road	Major Adverse (significant)
38 Vincent Road	Major Adverse (significant)
36 Vincent Road	Major Adverse (significant)
33 Cambridge Road	Negligible to Minor Adverse (not significant)
31 Cambridge Road	Negligible to Minor Adverse (not significant)
29 Cambridge Road	Negligible to Minor Adverse (not significant)
27 Cambridge Road	Negligible to Minor Adverse (not significant)
Vibe Student Living 66-70 Cambridge Road	Major Adverse (significant)
Cascadia House Cambridge Road	Major Adverse (significant)
140 Cambridge Road	Moderate to Major Adverse (significant)
138 Cambridge Road	Moderate Adverse (significant)
136 Cambridge Road	Moderate to Major Adverse (significant)
134 Cambridge Road	Major Adverse (significant)
142 Cambridge Road	Moderate to Major Adverse (significant)
144 Cambridge Road	Moderate to Major Adverse (significant)
146 Cambridge Road	Moderate Adverse (significant)
148 Cambridge Road	Moderate Adverse (significant)
2 Hampden Road	Major Adverse (significant)
54 Vincent Road	Major Adverse (significant)
56 Vincent Road	Major Adverse (significant)
58 Vincent Road	Major Adverse (significant)
62 Vincent Road	Major Adverse (significant)
64 Vincent Road	Moderate to Major Adverse (significant)
66 Vincent Road	Moderate Adverse (significant)
13 Portman Road	Negligible to Minor Adverse (not significant)
17 Portman Road	Minor Adverse (not significant)
25 Portman Road	Minor Adverse (not significant)
33 Portman Road	Minor Adverse (not significant)
15 Portman Road	Minor Adverse (not significant)
19 Portman Road	Moderate Adverse (significant)
27 Portman Road	Minor Adverse (not significant)
31 Portman Road	Moderate Adverse (significant)
29 Portman Road	Minor Adverse (not significant)
43 Portman Road	Minor Adverse (not significant)
41 Portman Road	Minor Adverse (not significant)
45 Portman Road	Minor Adverse (not significant)
47 Portman Road	Negligible to Minor Adverse (not significant)
39 Portman Road	Negligible to Minor Adverse (not significant)
2 Somerset Road	Negligible to Minor Adverse (not significant)
3 Somerset Road	Negligible to Minor Adverse (not significant)
4 Somerset Road	Negligible to Minor Adverse (not significant)
29 Rowlls Road	Negligible to Minor Adverse (not significant)
31 Rowlls Road	Negligible to Minor Adverse (not significant)
63 Cambridge Grove Road	Moderate to Major Adverse (significant)
65 Cambridge Grove Road	Moderate to Major Adverse (significant)
67 Cambridge Grove Road	Moderate to Major Adverse (significant)
69 Cambridge Grove Road	Moderate to Major Adverse (significant)
71 Cambridge Grove Road	Moderate to Major Adverse (significant)
73 Cambridge Grove Road	Moderate to Major Adverse (significant)
75 Cambridge Grove Road	Moderate to Major Adverse (significant)
77 Cambridge Grove Road	Moderate to Major Adverse (significant)
79 Cambridge Grove Road	Moderate to Major Adverse (significant)

81 Cambridge Grove Road	Moderate to Major Adverse (significant)
83 Cambridge Grove Road	Moderate to Major Adverse (significant)
17 Piper Road	Moderate to Major Adverse (significant)
11 Piper Road	Moderate to Major Adverse (significant)
13 Piper Road	Moderate to Major Adverse (significant)
27 Piper Road	Moderate to Major Adverse (significant)
25 Piper Road	Moderate Adverse (significant)
27a Piper Road	Moderate to Major Adverse (significant)
87 Bonner Hill Road	Minor Adverse (not significant)
89 Bonner Hill Road	Minor Adverse (not significant)
15 Piper Road	Minor Adverse (not significant)
33 Hampden Road	Negligible to Minor Adverse (not significant)
141 Bonner Hill Road	Negligible to Minor Adverse (not significant)
23 Piper Road	Minor Adverse (not significant)

Sunlight to Surrounding Sensitive Receptors

9.121 The potential sunlight effects on surrounding sensitive properties arising from the Development have been assessed against the Baseline with regard to APSH and WPSH in accordance with BRE criteria. The full sunlight assessment can be found in Appendix 9.3 of this ES.

9.122 A total of 89 buildings were assessed for sunlight alterations. Of the 710 rooms assessed for sunlight, 437 (61.5%) would meet the BRE's criteria for both annual and winter PSH and are therefore considered to experience a Negligible effect.

9.123 The following 58 buildings (highlighted in blue in Table 9C in Appendix 9.5) would experience little or no alteration (below 20%), and the effect on sunlight to these properties would therefore be **Negligible**:

- 67 Hawks Road;
- 65 Hawks Road;
- 69-69a Hawks Road;
- 71 Hawks Road;
- 73 Hawks Road;
- 75 Hawks Road;
- 77 Hawks Road;
- 79 Hawks Road;
- 81 Hawks Road;
- 83 Hawks Road;
- 89 Hawks Road;
- 87 Hawks Road;
- 85 Hawks Road;

- 93 Hawks Road;
- 91 Hawks Road;
- 3 Portman Road;
- 40 Piper Road;
- 36 Piper Road;
- 38 Piper Road;
- 32 Piper Road;
- 34 Piper Road;
- 30 Piper Road;
- 28 Piper Road;
- 22 Piper Road;
- 24 Piper Road;
- 26 Piper Road;
- 35 Rowlls Road;
- 1 Somerset Road;
- 35 Portman Road;
- 23 Portman Road;
- 37 Cambridge Road;
- 35 Cambridge Road;
- The Lodge 42 Cambridge Road;
- 59 Cambridge Road;
- 57 Cambridge Road;
- 63 Cambridge Road;
- 61 Cambridge Road;
- 48 Vincent Road;
- 33 Cambridge Road;
- 31 Cambridge Road;
- 29 Cambridge Road;
- 27 Cambridge Road;
- 136 Cambridge Road;
- 134 Cambridge Road;
- 15 Portman Road;
- 31 Portman Road;
- 43 Portman Road;
- 45 Portman Road;
- 47 Portman Road;
- 39 Portman Road;
- 29 Rowlls Road;
- 30 Rowlls Road;
- 26 Rowlls Road;

- 22 Rowlls Road;
- 81 Cambridge Grove Road;
- 83 Cambridge Grove Road;
- 89 Bonner Hill Road; and
- 33 Hampden Road.

9.124 The sunlight effect to the remaining 31 affected buildings are summarised in Table 9.5. The full impact summary table and discussion of affected properties can be found in Appendix 9.6 Daylight and Sunlight Summary Tables and Analysis.

9.125 The likely significant effects reported below represent an absolute worst-case scenario. Reference should be made to the standalone Daylight, Sunlight and Overshadowing Impacts Report submitted as part of the planning application, which highlights the likely effects of a refined scheme.

Table 9.5 Summary of Sunlight Effects to Properties

Address	Significance of Sunlight Effect
Pyramid Court 99 Hawks Road	Minor Adverse (not significant)
19 Piper Road	Minor Adverse (not significant)
61 Cambridge Grove Road	Negligible (not significant)
Cambridge Gardens	Minor Adverse (not significant)
136 Gloucester Road	Minor Adverse (not significant)
134 Gloucester Road	Minor Adverse (not significant)
Vibe Student Living 66-70 Cambridge Road	Moderate Adverse (significant)
Cascadia House Cambridge Road	Moderate Adverse (significant)
140 Cambridge Road	Minor Adverse (not significant)
138 Cambridge Road	Minor Adverse (not significant)
142 Cambridge Road	Minor Adverse (not significant)
144 Cambridge Road	Minor Adverse (not significant)
146 Cambridge Road	Minor Adverse (not significant)
148 Cambridge Road	Minor Adverse (not significant)
2 Hampden Road	Moderate Adverse (significant)
19 Portman Road	Negligible (not significant)
27 Portman Road	Negligible (not significant)
63 Cambridge Grove Road	Minor Adverse (not significant)
65 Cambridge Grove Road	Minor Adverse (not significant)
67 Cambridge Grove Road	Minor Adverse (not significant)
69 Cambridge Grove Road	Minor Adverse (not significant)
71 Cambridge Grove Road	Minor Adverse (not significant)
73 Cambridge Grove Road	Minor Adverse (not significant)
75 Cambridge Grove Road	Minor Adverse (not significant)
77 Cambridge Grove Road	Minor Adverse (not significant)
79 Cambridge Grove Road	Minor Adverse (not significant)
17 Piper Road	Moderate Adverse (significant)
11 Piper Road	Negligible (not significant)
13 Piper Road	Moderate Adverse (significant)
15 Piper Road	Minor Adverse (not significant)
23 Piper Road	Minor Adverse (not significant)

Overshadowing to Surrounding Sensitive Receptors

- 9.126 The potential overshadowing effects of the Development on surrounding amenity areas have been assessed against the Baseline scenario. The full overshadowing assessment showing the location of the amenity areas assessed can be found within Appendix 9.4 and is summarised below.
- 9.127 A total of 138 amenity areas have been assessed in terms of overshadowing, comprising 124 private rear gardens and 14 areas of public realm.
- 9.128 The 124 private gardens considered for assessment are to the rear of properties along Gloucester Road, Vincent Road, Cambridge Grove Road, Piper Road, Somerset Road, Rowlls Road, Portman Road, Hawks Road and Cambridge Road. 14 communal amenity areas of public realm along Cambridge Road have also been considered.

Transient Overshadowing

March 21st (Spring Equinox)

- 9.129 On this day, shadow is cast from the Development at 08:00 GMT in a north westerly direction, at which point the amenity areas and rear gardens along Portman Street and Hawks Road are cast in shadow, partially from the Development with shadowing also caused in the baseline by e.g. fencing and existing structures. At this time Vincent Road is cast in shadow from the Development, with Rowlls Road, Somerset Road, Cambridge Grove Road and Piper Road gardens experiencing a period of shadowing between 08:00 GMT and 09:00 GMT. The shadow continues in a clockwise direction and at 10:00 GMT, Portman Street, Hawks Road, Rowlls Road, Somerset Road, Cambridge Grove Road and Piper Road gardens are no longer affected by shadow cast from the Development. At this time shadowing has encroached onto the communal gardens along Cambridge Road. The shadow continues across this area throughout the morning and into the afternoon, with Vincent Road gardens also still in shadow. By 13:00 GMT, shadow begins to partially affect rear gardens along Gloucester Road and Cambridge Road. As the sun lowers in the sky during the afternoon, these areas along with Vincent Road gardens and the communal amenity areas of public realm by Cambridge Road and Queen Mary Hall remain in shadow, partially as a result of the Development.
- 9.130 These amenity areas are assessed quantitatively using the BRE sun hours on ground methodology in the following section, where they are assigned a significance criterion.

June 21st (Summer Solstice)

- 9.131 On this day, shadow cast from the Development in a south west direction from 06:00 BST. At this time rear gardens along Vincent Road, Rowlls Road Somerset Road, Cambridge Grove Road and Piper Road are cast in shadow partially from the Development. The shadow moves in a clockwise direction, drawing back from the gardens throughout the morning, with minimal overshadowing to these amenity areas by 11:00 BST. For the next three hours, none of the amenity areas are affected. However, by 14:00 BST, shadow begins to encroach on the communal amenity areas of public realm by Cambridge Road and Queen Mary Hall. This only affects a small portion of this area and clears for the rest of the day by 18:00 BST. The rear gardens along Cambridge Road and Gloucester Road would experience periods of overshadowing between 16:00 BST and 19:00 BST.

December 21st (Winter Solstice)

- 9.132 On this day, shadow is cast from the Development at 09:00 GMT in a north westerly direction, at which point each of the amenity areas are cast in shadow in the baseline condition. Strips of shadow from the Development are cast onto rear gardens along Vincent Road, Somerset Road, Cambridge Road and the communal amenity areas of public realm by Cambridge Road and Queen Mary Hall. The shadow continues in a clockwise direction, clearing the rear gardens of Somerset Road by 10:00 GMT. By 11:00 GMT, shadow cast from the northern extent of the Development begins to encroach on the rear gardens of Gloucester Road, with a large portion of the communal amenity areas of public realm by Cambridge Road and Queen Mary Hall affected by the Development. Throughout the afternoon, these shadows stretch eastward across these areas and begin to affect the rear gardens of Cambridge Road Grove at 13:00 GMT. Each of these areas remain overshadowed for the remainder of the day.

Sun Hours on Ground

- 9.133 A total of 138 rear gardens and communal amenity areas of public realm have been assessed for sun hours on ground. With the Development in place, 78 of these would meet BRE's criteria of at least 2 hours of sun on 50% of the total area and experience little to no alteration (below 20%) and are therefore considered to experience a **Negligible** (not significant) effect.
- 9.134 A further 53 private gardens and amenity areas are considered to not experience significant effects. This is because either:
- **No impact** occurs and the Development does not result in any alteration in the total area seeing at least two hours of sun;

- A **Negligible** effect occurs, which as set out in BRE Guidelines is an alteration in the total area below 20%; or
- The area would experience an alteration above 20% as a result of the Development, however, it would retain more than 20% of the total area experiencing at least 2 hours of sun.

9.135 Therefore, a total of 131 amenity areas are considered to experience a **Negligible** (not significant) effect. These amenity areas are shown on Table 9.5. Where appropriate rows of terraced houses have been grouped together for brevity.

Table 9.5: Sun Hours on Ground – Amenity areas experiencing a negligible effect/ no impact

Area in sun hours on ground assessment	Address of private garden / communal amenity area
1 to 16	1-26 Cambridge Road (rear gardens)
17 to 31	65 and 97 Hawks Road (rear gardens)
32 to 55	1 to 47 Portman Road (rear gardens)
56 to 6	1 to 11 Somerset Road (rear gardens)
67 to 80	29 to 35 Rowlls Road (rear and front gardens)
81 to 90	21 to 27a Piper Road (rear gardens)
91 to 93	89 Bonner Gill Road (front garden)
94 to 102	2 to 18 Vincent Road (rear gardens)
103 to 105	57 to 61 Cambridge Road (rear gardens)
106 to 109	134 to 138 Gloucester Road (rear gardens)
110 to 116	89 to 101 Gloucester Road (rear gardens)
124	The Lodge (rear garden)
125 to 138	Cambridge Gardens and Queen Mary Hall (communal amenity areas of public realm).

- 9.136 The remaining seven affected amenity areas affected by the Development are discussed in further detail below.
- 9.137 Each of the affected gardens are located to the rear of 134 to 148 Cambridge Road and are identified as areas 117, 118, 119, 120, 121, 122 and 123 in the sun hours on ground assessment. These are illustrated in Appendix 9.4.
- 9.138 Six of these areas (117-122) would experience a reduction above 40% which is considered a **Major Adverse** (significant) effect, whilst area 123 would experience an alteration of 33% which would be considered **Moderate Adverse** (significant).
- 9.139 However, the effects to these rear gardens represent the worst-case scenario, whereas in reality the maximum parameters of the outline elements of the Development would never be built out to their fullest extent.

9.140 Therefore, reference should be made to the standalone Daylight, Sunlight and Overshadowing Impacts to Neighbours report, submitted in support of the planning application. This report demonstrates a worked example of how the Illustrative Masterplan would reduce the overshadowing effects. This report indicates only one rear garden references as 122 in the Sun Hours on Ground assessment (136 Cambridge Gardens) would experience a Minor Adverse effect, which is considered not significant.

Mitigation Measures

Construction Phase

9.141 The likely significant daylight, sunlight and overshadowing effects during demolition and construction would gradually increase in magnitude as the massing of the Development increases. Accordingly, the mitigation measure that are provided for the Operation Phase below also mitigate the likely significant daylight, sunlight and overshadowing effects during demolition and construction, including those of the existing and future buildings within the Site. As set out in Chapter 5, construction equipment would be present on Site with the potential to generate short term and temporary daylight, sunlight and overshadowing effects but there is no specific mitigation available for the construction phase of the Development.

Operational Phase

9.142 As discussed within the methodology, the daylight, sunlight and overshadowing assessment is based on the detailed elements of Phase 1 of the Development as well as the outline elements of Phases 2 to 5, representing the full extents of the maximum parameters and portraying a worst case scenario.

9.143 The Operational Phase assessment identified significant effects to 78 buildings in relation to daylight, four significant effects to buildings in relation to sunlight and seven significant effects to amenity areas in relation to overshadowing.

9.144 The following mitigation measures have been identified and committed to by the Applicant, in line with the Design Code, which would be brought forward for as part of future reserved matters applications for the outline element of the Development:

- Further inclusion of streets to minimise continuous obstructions;
- Introduction of gaps within the massing of each plot, such as between two blocks;
- Ensuring the gaps between blocks and streets are as wide as possible to allow an increase in sky visibility and where possible, locate these opposite neighbouring receptors;

- Orientation of blocks in relation to neighbouring receptors to minimise continuous obstructions;
- Where possible, position buildings within the Site away from boundaries with surrounding residential properties;
- Staggering of building heights;
- Incorporation of set-backs on the upper floors of taller elements; and
- Incorporation of chamfered edges of blocks both vertically and horizontally (where possible) to allow for additional daylight availability.

9.145 The above mitigation measures provide a set of principles that future reserved matters applications for the outline element of the Development would adhere to.

9.146 As explained in the methodology section above, an Illustrative Masterplan has been prepared to support the planning application demonstrating a possible interpretation of how the Development could be brought forward within the set maximum parameters of the Development. This Illustrative Masterplan shows a worked example of how the above mitigation could be reasonably included within the Development. The standalone Daylight, Sunlight and Overshadowing Impacts to Neighbours report, submitted in support of the planning application demonstrates how the Illustrative Masterplan could mitigate and reduce to the significant effects presented in this ES chapter.

9.147 For each future reserved matters application of the Development, detailed daylight, sunlight and overshadowing assessments will be undertaken for the relevant surrounding sensitive receptors to assess the potential effects of the detailed design utilising the principles identified in above whilst maintaining a viable scheme.

Residual Effects

Construction Phase

9.148 The residual daylight, sunlight and overshadowing effects during demolition and construction would gradually increase in magnitude as the massing of the Development increases. Accordingly, the residual effect of the Development would increase from Negligible up to Major Adverse, as stated for the operational phase of the Development.

Operational Phase

9.149 Based on professional judgement and experience on schemes of a similar nature, the incorporation of the mitigation measures within the detailed design would reduce the potential for significant adverse effects. With the incorporation of the proposed mitigation measures as part of the design evolution, and as indicated by the assessment results of the illustrative masterplan, the residual effects would be reduced. At this stage, it is not possible to conclude the extent to which the significance of effect would be reduced. However, based on the worked example of the Illustrative Masterplan and using professional judgement to determine where the Design Codes could be implemented, opportunities to reduce the effects to properties have been identified and the effects to properties along the following roads would be reduced:

- Portman Road;
- Hawkes Road;
- Vincent Road;
- Cambridge Road;
- Cambridge Grove Road; and
- Piper Road.

9.150 In relation to overshadowing the significant effects to the rear gardens along Cambridge Road would be reduced following the implementation of mitigation measures.

9.151 A standalone Daylight and Sunlight Impacts to Neighbours report has been submitted in support of the planning application and provides a daylight, sunlight and overshadowing assessment of the illustrative masterplan which outlines a worked example mitigation measures incorporated into the design, highlighting where residual effects could be reduced.

9.152 It is considered that the residual effects to the remaining properties in terms of daylight and sunlight and amenity areas in terms of overshadowing would be in line with or no worse than those reported in this ES chapter.

Cumulative Effects

9.153 As discussed in the Assessment Methodology section in this chapter, due to the distance of the Development to the surrounding committed developments, there would not be any cumulative daylight, sunlight and overshadowing effects on sensitive receptors.

Summary

- 9.154 The daylight, sunlight and overshadowing assessments have been undertaken by reference to the BRE Guidelines and for all of the sensitive receptors surrounding the Site.
- 9.155 To assess the surrounding existing residential properties, the BRE Guidelines provide two main methods for assessing daylight: 'Vertical Sky Component' (VSC) and 'No Sky Line' (NSL). The VSC method measures the amount of light available on a vertical wall or window following the introduction of barriers such as buildings. The NSL method is a measure of the distribution of daylight at the 'working plane' within a room (i.e. a horizontal 'desktop' plane of 0.85 metres in height). The NSL divides those areas of working plane in a room which receive direct sky light through the windows from those areas of the working plane which cannot. Where all of the windows meet the VSC and all of the rooms meet the NSL criteria within a residential property, the effect would not be noticeable.
- 9.156 For the assessment of sunlight, the approach considers the 'Annual Probable Sunlight Hours' (APSH) for a reference point on a window (i.e. if a window point can receive at least 25% APSH, then the room should still receive enough sunlight). Rooms are checked if they are served by windows facing 90° due south, with the emphasis on main living rooms and other rooms such as the kitchen and bedrooms being of less importance.
- 9.157 To assess overshadowing of surrounding public realm, communal amenity areas and rear private gardens, the 'Transient Overshadowing' approach was used in conjunction with the 'Sun Hours on Ground' method. The transient overshadowing approach visualises the shadows cast on ground hourly on 21st March (spring equinox), 21st June (summer solstice) and 21st December (winter solstice). On the 21st September (autumn equinox), this would show the same shadows as 21st March and therefore does not need to be visualised. The sun hours on ground method divides those areas of an amenity which receive direct sunlight for two or more hours from those that do not. Where an amenity area sees half its area with two or more hours of direct sunlight, the effect would not be noticeable.
- 9.158 Of the 150 properties considered as sensitive receptors, a total of 1814 windows serving 1314 rooms were assessed for daylight and 710 rooms were assessed for sunlight.
- 9.159 A total of 138 amenity areas (private gardens and communal amenity areas of public realm) and have been assessed in terms of overshadowing.
- 9.160 In this baseline condition for daylight, 1024 (56.4%) of the 1814 windows assessed for VSC and 1136 (86.5%) of the 1136 rooms assessed for NSL would meet BRE criteria for daylight.

- 9.161 In the baseline condition for sunlight, 552 (77.7%) of the 710 rooms assessed meet BRE criteria.
- 9.162 In the baseline condition for overshadowing, 54 amenity areas would not comply with BRE recommendations in the existing condition, although a number of these are only marginally below the 50% threshold. The remaining 84 private rear gardens and communal amenity areas of public realm assessed are fully compliant with BRE Guidelines recommendations in the baseline.
- 9.163 With the Development in situ for daylight, of the 1814 windows assessed for VSC, 911 (50.2%) would meet the BRE criteria for VSC. Of the 1314 rooms assessed for NSL, 782 (59.5%) would meet the BRE criteria for NSL. Of the 150 buildings assessed, 74 are considered to experience **Negligible** to **Minor Adverse** effects which are considered not significant. The remaining 76 are considered to experience **Moderate** to **Major Adverse** effects, which are considered significant.
- 9.164 With the Development in situ for sunlight, of the 710 rooms assessed for sunlight, 437 (61.5%) would meet the BRE's criteria for both annual and winter PSH and are therefore considered to experience a **Negligible** effect. Of the 89 buildings assessed, 84 are considered to experience **Negligible** to **Minor Adverse** effects which are considered not significant. The remaining 5 buildings are considered to experience **Moderate Adverse** effects, which are considered significant.
- 9.165 With regard to Overshadowing in the Development scenario, of 138 amenity areas assessed in relation to overshadowing, 131 (94.9%) would meet the BRE Guidelines criteria and are considered to experience a **Negligible** effect, which is considered not significant. The remaining seven amenity areas are considered to experience **Moderate** to **Major Adverse** effects, which are considered significant.
- 9.166 During the iterative design process of the Development, design tools were utilised to minimise the impacts of daylight, sunlight and overshadowing to surrounding sensitive receptors as much as possible. A number of significant adverse effects have been reported prior to the implementation of any additional mitigation measures, as the assessment has been provided for the maximum parameters of the Development for Phases 2 to 5, which represents the absolute worst-case of these elements of the Development being fully built out. The likely significant effects will be mitigated through the detailed design to include articulation of the buildings, meaning there would be in a reduction in the massing overall and therefore a

reduction in the magnitude of impact to surrounding receptors that experience significant effects.

9.167 The standalone Daylight, Sunlight and Overshadowing Report Impacts to Neighbours submitted in support of the planning application, presents a worked example of the residual impacts as a result of the Illustrative Masterplan. The BRE compliance levels of the of the Illustrative Scheme, summarised from the standalone Daylight, Sunlight and Overshadowing Report Impacts to Neighbours are presented below in Table 9.5, where it can be seen that the BRE compliance rates improve considerably when compared against the Development.

Table 9.5: BRE Compliance levels of the Development vs. the Illustrative Scheme

	VSC	NSL	APSH	Overshadowing
Total assessed	1814 windows	1314 rooms	710 rooms	138 amenity areas
Maximum Parameter Scheme BRE compliance	911 (50.2%)	782 (59.5%)	437 (61.5%)	131
Illustrative Scheme BRE compliance	1307 (72.1%)	1042 (79.3%)	648 (91.3%)	137

9.168 As with most large-scale regeneration schemes, significant adverse residual effects are expected due to increased density, where the surrounding buildings often overlook undeveloped sites and thus enjoy uncharacteristically high levels of daylight. The residual effects of the Development following the implementation of the additional mitigation measures during the detailed design stages will significantly reduce the number of properties experiencing significant adverse effects in terms of daylight, sunlight and overshadowing. However, owing to the scale of the Development, isolated significant adverse effects are still likely to occur following full implementation of Development.

9.169 The Development gives rise to significant adverse effects in terms of daylight, sunlight and overshadowing to isolated areas, however this is inevitable for a regeneration scheme such as the Development, where there is an increase in density within the Site to provide an uplift in new homes within the borough. The Site is identified as an Opportunity Areas capable of supporting development within Kingston upon Thames in the Draft New London Plan - Intend to Publish Version (December 2019), with the Local Development Framework, Planning for the future Core Strategy (April 2012) citing the location as a regeneration area with scope for significant change and future housing growth.

9.170 A review of the committed developments in Chapter 2 EIA Methodology identified that all are too far from the Site to give rise to cumulative daylight, sunlight and overshadowing effects to the sensitive receptors assessed. As such, a cumulative assessment is not considered necessary within this chapter.

9.171 Table 9.6 contains a summary of the likely significant effects of the Development.

Table 9.6: Table of Significance – Daylight, Sunlight and Overshadowing

Potential Effect	Nature of Effect (Permanent/Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)	Mitigation / Enhancement Measures	Geographical Importance*							Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/Negligible)
				I	U	K	E	R	C	B	
Construction											
Daylight, Sunlight and Overshadowing during demolition.	Temporary	Negligible	None proposed.							*	Negligible
Daylight, Sunlight and Overshadowing to surrounding receptors during construction.	Permanent	Negligible (Effects would gradually change from beneficial to those expected once the Development is complete and operational)	Those proposed for the Operational Development.							*	Negligible to Major Adverse
Completed Development											
Daylight to surrounding residential properties.	Permanent	Negligible to Major Adverse	Mitigation through design, including articulation of blocks and inclusion of gaps to minimise daylight effects.								Negligible to Major Adverse (33 buildings experience a Negligible effect, 23 buildings experience a Negligible to Minor Adverse effect, 16 buildings experience Minor Adverse effect, 22 buildings experience Moderate Adverse effect, 22 buildings experience Moderate to Major Adverse effect and 35 buildings experience Major Adverse effect).

Sunlight to surrounding residential properties.	Permanent	Negligible to Moderate Adverse	Mitigation through design, including articulation of blocks and inclusion of gaps to minimise sunlight effects.								Negligible to Major Adverse (1 building experiences a Negligible effect, 21 buildings experience a Negligible to Minor Adverse effect, 4 buildings experience Minor Adverse effect and 5 buildings experience Moderate Adverse effect).
Overshadowing to surrounding areas of amenity.	Permanent	Negligible to Major Adverse	Mitigation through design, including articulation of blocks and inclusion of gaps to minimise overshadowing effects.								Negligible to Major Adverse (131 rear gardens and communal amenity areas experience a Negligible effect, 1 rear garden would experience a Moderate Adverse effect and 6 would experience a Major Adverse effect).
Cumulative Effects											
Daylight, sunlight and overshadowing to surrounding properties and areas of amenity.	Permanent	There are no cumulative effects, as such, the residual effects remain as reported for the Completed Development.	As per the Completed Development.								There are no cumulative effects, as such, the residual effects remain as reported for the Completed Development.

*** Geographical Level of Importance**

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local

REFERENCES

- ⁱ Ministry of Housing, Communities & Local Government (MHCLG) (February 2019), *National Planning Policy Framework*
- ⁱⁱ Ministry of Housing, Communities & Local Government (MHCLG) (Published 29 November 2016 Last updated 1 October 2019) *Planning practice guidance*
- ⁱⁱⁱ Ministry of Housing, Communities & Local Government (MHCLG) (October 2019), *Planning Practice Guidance – Efficient use of land*
- ^{iv} Ministry of Housing, Communities & Local Government (MHCLG) (October 2019), *Planning Practice Guidance – Efficient use of land*
- ^v Mayor of London (2016), *The London Plan - The Spatial Development Strategy for London Consolidated with Alterations Since 2011*
- ^{vi} Mayor of London (December 2019), *The Draft New London Plan - Intend to Publish Version*
- ^{vii} Mayor of London (March 2016) *Housing Supplementary Planning Guidance (SPG)*
- ^{viii} RBKuT (April 2012) *Local Development Framework, Planning for the future Core Strategy*
- ^{ix} RBKuT (November 2013) *Local Development Framework, Residential Design Supplementary Planning Document*
- ^x Valuation Office Agency (VOA) website (<http://cti.voa.gov.uk/cti/inits.asp>)
- ^{xi} Building Research Establishment (BRE) (2011), *Site Layout Planning for Daylight and Sunlight – A guide to good practice (Appendix B)*