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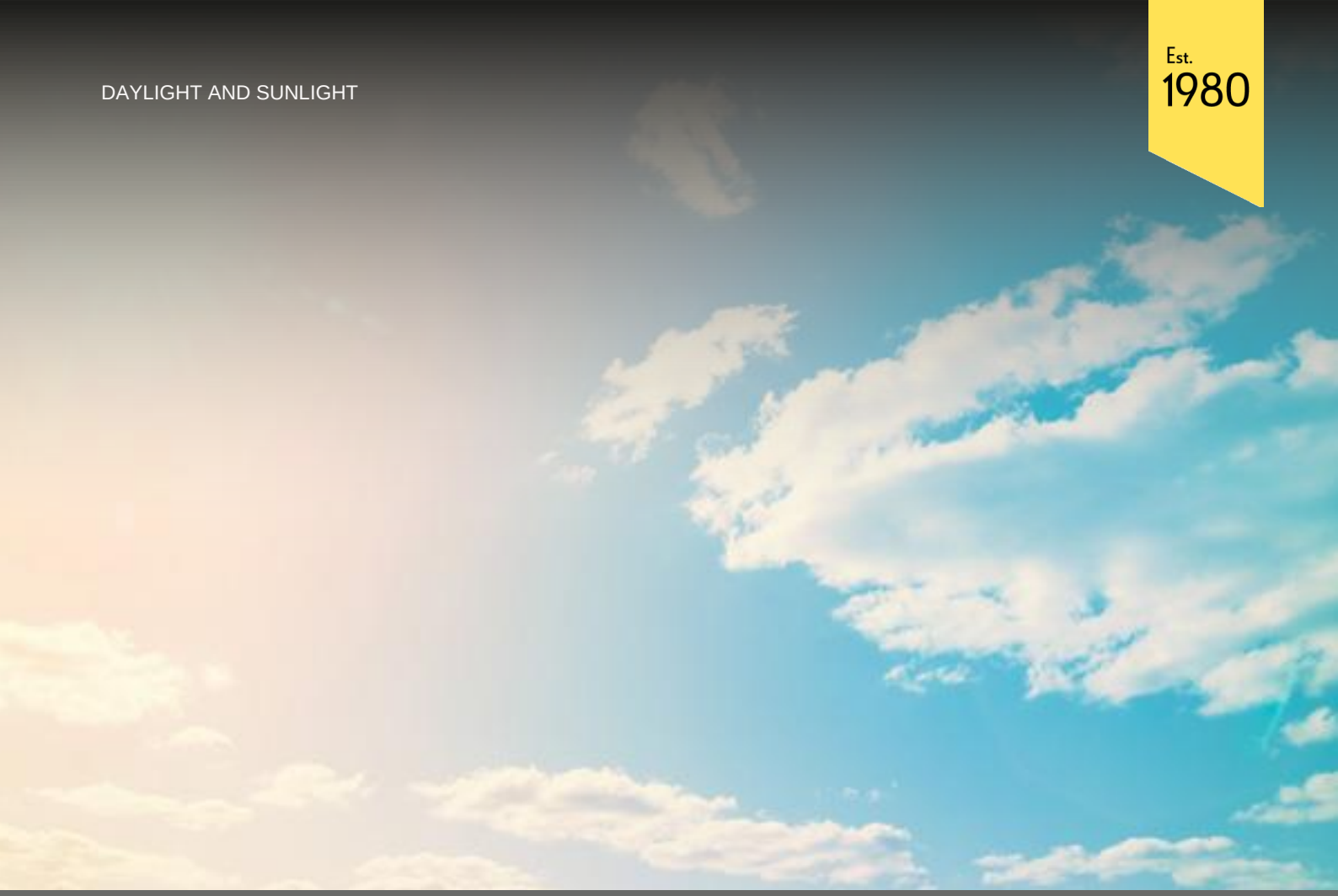

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Internal Daylight and Sunlight Report

February 2024

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Statements and opinions in this report are expressed on behalf of Delva Patman Redler LLP.

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APPENDICES

1. Introduction

1.1. Delva Patman Redler LLP have been engaged by the Applicant to assess daylight and sunlight provision to the new dwellings within the proposed development at Bounty House, Stowage, London SE8 3DE ("the Site"). This report has been prepared to accompany the Applicant's planning application.

1.2. The potential impact of the proposed development on existing neighbouring properties is covered in a separate report.

1.3. The Site is located within the London Borough of Camden.

1.4. The proposed development and surrounding context is replicated in our 3D computer analysis model shown in Figure 1 below and on the spot-height drawing at Appendix 2.

1.5. The development comprises the demolition of existing petrol filling station and associated convenience store (sui generis), and erection of a six-storey building comprising ground floor commercial space (Class E) and flexible commercial/educational space (Class E/F1), and 31 x residential apartments above.

Figure 1 – Aerial image from Google © of the existing site

1.6. Our daylight and sunlight study has been carried out using the assessment methodologies recommended in *'Site Layout Planning for Daylight and Sunlight: A guide to good practice'* (BR209, 2022 edition) published by the Building Research Establishment.

1.7. The 2022 edition of the BRE guide introduced new methodologies and numerical guidelines for assessing internal daylight and sunlight within buildings. The numerical guidelines for daylight provision recommended in the 2022 edition of the BRE guide are more difficult to achieve than those in the 2011 edition. Consequently, proposed development will achieve a lower percentage adherence to the 2022 guidelines than to the 2011 guidelines. Our assessment of the previous scheme included a supplementary assessment of internal daylight using the 2011 methodology.

1.8. This report is accompanied by the Appendices listed on the Contents page, including an explanation of the BRE assessment methodologies, a glossary of technical terms, drawings, and tabulated results.

2. Planning policy and guidance

National Planning Policy and Guidance

National Planning Policy Framework (September 2023)

2.1. The National Planning Policy Framework (NPPF) sets out the Government's planning policies and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. It places an emphasis on sustainable development and delivery of housing.

2.2. Chapter 11 of the NPPF, entitled *"Making effective use of land"*, promotes the effective use of land in meeting the need for homes and other uses. It gives examples such as developing under-utilised land and buildings, especially if this would help to meet identified needs for housing where land supply is constrained and available sites could be used more effectively, and upward extensions to create new homes, where they would be consistent with the prevailing height and form of neighbouring properties and the overall street scene.

2.3. In particular, paragraph 125 of the NPPF states:

> *Area-based character assessments, design guides and codes and masterplans can be used to help ensure that land is used efficiently while also creating beautiful and sustainable places. 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. In these circumstances:*
>
> *c) 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 (as long as the resulting scheme would provide acceptable living standards).*

National Design Guide (January 2021)

2.4. The National Design Guide is part of a suite of planning practice guidance that supports the NPPF. The National Design Guide outlines the Government's priorities for well-designed places.

2.5. Paragraph 71 of the guidance dealing with built form states:

> *Proposals for tall buildings (and other buildings with a significantly larger scale or bulk than their surroundings) require special consideration. This includes their location and siting; relationship to context; impact on local character, views and sight lines; composition - how they meet the ground and the sky; and environmental impacts, such as sunlight, daylight, overshadowing and wind. These need to be resolved satisfactorily in relation to the context and local character.*

2.6. Paragraphs 126 and 130 of the guidance dealing with homes and buildings state:

> *Well-designed homes and communal areas within buildings provide a good standard and quality of internal space. This includes room sizes, floor-to-ceiling heights, internal and external storage, sunlight, daylight and ventilation. The quality of internal space needs careful consideration in higher density developments, particularly for family accommodation, where access, privacy, daylight and external amenity space are also important.*
>
> *Well-designed private or shared external spaces are fit for purpose and incorporate planting wherever possible. The appropriate size, shape and position for an external amenity space can be defined by considering:*

- *how the associated building sits in the wider context, including access to public and open spaces;*
- *how the amenity space will be used, what for, and by whom;*
- *environmental factors that may affect its usability, such as sunlight and shade, noise or pollution;*
- *wider environmental factors affecting its quality or sustainability, such as a green corridor or drainage.*

National Model Design Code (June 2021)

2.7. The National Model Design Code provides detailed guidance to planning authorities on the production of design codes, guides and policies to promote successful design.

2.8. Paragraphs 114 to 117 of section B.2. dealing with built form states:

> *Building height may also have an impact on local environmental conditions in neighbouring properties, amenity spaces and public spaces in terms of daylight, sunlight, overshadowing, wind and micro-climate. The placing of tall buildings needs to maximise user comfort of spaces between buildings by taking into account their impact on orientation and overshadowing of public and private spaces, quality of external spaces at ground level, wind tunnel effect, noise pollution and enable safe dispersion of pollutants.*
>
> *Tall buildings can be considered in design codes. It may be appropriate to include criteria for the locations of tall buildings in some area types.… Tools that can assist with this include … characterisation studies and design strategies, dealing with issues such as urban form, historic character, building typologies, prevailing sunlight and daylight levels, green infrastructure, amenity space and quality of external spaces at ground level.*

2.9. Paragraph 188 of section H.2 dealing with health and wellbeing states:

> *The built environment has a significant impact on people's health and wellbeing. This relates across the design code with regard to walkable neighbourhoods, access to greenery and recreation, attractive buildings and public spaces, space standards, and strong communities. There are also specific elements relating to the impact of the design of homes and buildings that affect wellbeing including daylight, aspect and privacy, noise mitigation, security and access to private outdoor space.*
>
> *Good quality housing creates a pleasant indoor environment with adequate levels of natural lighting, and sunlight, without problems of overheating, good quality ventilation, privacy from overlooking and minimal noise impact.*

2.10. Paragraph 202 of section R.1 dealing with energy states:

> *The design of windows needs to consider orientation to balance heat loss and beneficial solar gain, daylight and sunlight. Southern-facing glazing can be beneficial in contributing to overall energy demand in winter. It can lead to overheating in summer and excessive heat loss on cold cloudy days in winter. Glazing needs to be sized appropriately for context and passive measures such as external shading devices or provision for future installation of shading devices needs to be considered to reduce reliance on mechanical ventilation.*

BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2022)

2.11. The leading publication providing national guidance on the provision of daylight and sunlight to new development, is '*Site Layout Planning for Daylight and Sunlight: A guide to good practice*' (BR209, third edition, 2022) published by the Building Research Establishment (hereafter referred to as "the BRE guide"). It is referred to in development plan documents or supplementary planning documents of most planning authorities. It is intended to be used in conjunction with the interior daylighting

recommendations in BS EN17037:2018 '*Daylight in buildings'* and in CIBSE's lighting guide, *LG 10 'Daylighting - a guide to designer'.*

2.12. The BRE guide states:

> *Summary*
>
> *This guide gives advice on site layout planning to achieve good daylighting and sun lighting, within buildings and in the open spaces between them. It is intended to be used in conjunction with the interior daylight recommendations for new buildings in the British Standard, 'Daylight in buildings', BS EN 17037… It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.*
>
> *Introduction*
>
> *(Its) main aim is … to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between the buildings for good interior and exterior conditions.*
>
> *The guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values.*

British Standard, BS EN 17037:2018, 'Daylight in buildings' (May 2019)

2.13. British Standard, BS EN 17037:2018, *'Daylight in buildings'* provides a standard and methodology by which to assess daylight and sunlight provision in new buildings. Its general recommendations for daylight provision in a space may not be achievable for some buildings in the UK, particularly dwellings; for example, those with basement rooms or significant external obstructions, such as those in dense urban areas or in existing buildings being refurbished or converted into dwellings. The standard's National Annex therefore provides guidance on minimum daylight provision in UK dwellings.

Regional planning policy and guidance

The London Plan (March 2021)

2.14. The London Plan 2021 is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the Mayor's vision for Good Growth. Its policies should inform decisions on planning applications across the capital.

2.15. The Plan notes that if London is to meet the challenges of the future, all parts of London will need to embrace and manage change. In many places, change will occur incrementally, especially in outer London, where the suburban pattern of development has significant potential for appropriate intensification over time, particularly for additional housing. The areas that will see the most significant change are identified as Opportunity Areas, many of which are already seeing significant development. London's Central Activities Zone (CAZ) and town centre network have a crucial role to play in supporting London's growth.

Policy GG2 *'Making the best use of land'*

2.16. Policy GG2 states:

> *To create successful sustainable mixed-use places that make the best use of land, those involved in planning and development must:*
>
> *B prioritise sites which are well-connected by existing or planned public transport*

> *C proactively explore the potential to intensify the use of land to support additional homes and workspaces, promoting higher density development, particularly in locations that are well-connected to jobs, services, infrastructure and amenities by public transport, walking and cycling*
>
> *D applying a design–led approach to determine the optimum development capacity of sites*

Policy D3 *'Optimising site capacity through the design-led approach'*

2.17. Policy D3 states:

> *A All development must make the best use of land by following a design-led approach that optimises the capacity of sites, including site allocations. Optimising site capacity means ensuring that development is of the most appropriate form and land use for the site…*
>
> *B Higher density developments should generally be promoted in locations that are well connected to jobs, services, infrastructure and amenities by public transport, walking and cycling…*

Policy D6 *'Housing quality and standards'*

2.18. Policy D6 states:

> *C Housing development should maximise the provision of dual aspect dwellings and normally avoid the provision of single aspect dwellings. A single aspect dwelling should only be provided where it is considered a more appropriate design solution to meet the requirements of Part B in Policy D3 'Optimising site capacity through the design-led approach' than a dual aspect dwelling, and it can be demonstrated that it will have adequate passive ventilation, daylight and privacy, and avoid overheating.*
>
> *D 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.*

2.19. The supporting text notes that dual aspect dwellings with opening windows on at least two sides have many inherent benefits, including better daylight, a greater chance of direct sunlight for longer periods, natural cross-ventilation, etc. It notes that the design of single aspect dwellings must demonstrate that all habitable rooms and the kitchen are provided with adequate daylight, and that the orientation enhances amenity, including views. Single aspect dwellings that are north facing should be avoided. Having bay windows can optimise daylight and sunlight and allow buildings to be closer together than can otherwise be achieved.

2.20. The Mayor intends to produce a single guidance document on housing design standards which need to be met in order to implement Policy D6 *'Housing quality and standards'*. This will include guidance on daylight and sunlight standards and will build on the guidance set out in the 2016 Housing SPG.

Mayor of London's Housing Supplementary Planning Guidance (March 2016)

2.21. The Mayor of London's *'Housing Supplementary Planning Guidance'* (March 2016) was developed to support previous versions of the London Plan but remains relevant for the implementation of the London Plan 2021.

2.22. Part 1.3 of the SPG deals with optimising housing potential in development opportunities. At paragraphs 1.3.45 and 1.3.46 it states:

> *Policy 7.6Bd requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to privacy and overshadowing and where tall buildings are proposed. 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, especially in opportunity areas, town centres, large sites and accessible locations, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances; the need to optimise housing capacity; and scope for the character and form of an area to change over time.

The degree of harm on adjacent properties and the daylight targets within a proposed scheme should be assessed drawing on broadly comparable residential typologies within the area and of a similar nature across London. Decision makers should recognise that fully optimising housing potential on large sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm.

2.23. Part 2 of the SPG deals with quality of new housing development.

2.23.1. Standard 4 deals with communal open space and states:

> *Where communal open space is provided, development proposals should demonstrate that the space … is designed to take advantage of direct sunlight.*

2.23.2. Standard 29 deals with dual aspect design of dwellings and states:

> *Developments should minimise the number of single aspect dwellings. Single aspect dwellings that are north facing[1], or exposed to noise levels above which significant adverse effects on health and quality of life occur, or which contain three or more bedrooms should be avoided.*

2.23.3. Standard 32 deals with daylight and sunlight provision to new dwellings and states:

> *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.*

2.23.4. The supporting text at paragraphs 2.3.45 to 2.3.47 states:

Daylight enhances residents' enjoyment of an interior and reduces the energy needed to provide light for everyday activities, while controlled sunlight can help to meet part of the winter heating requirement. Sunlight is particularly desirable in living areas and kitchen dining spaces. The risk of overheating should be taken into account when designing for sunlight alongside the need to ensure appropriate levels of privacy. In addition to the above standards, BRE good practice guidelines and methodology can be used to assess the levels of daylight and sunlight achieved within new developments, taking into account guidance below and in Section 1.3.

Where direct sunlight cannot be achieved in line with Standard 32, developers should demonstrate how the daylight standards proposed within a scheme and individual units will achieve good amenity for residents. They should also demonstrate how the design has sought to optimise the amount of daylight and amenity available to residents, for example, through the design, colour and landscaping of surrounding buildings and spaces within a development.

BRE guidelines on assessing daylight and sunlight should be applied sensitively to higher density development in London, particularly in central and urban settings, recognising the London Plan's strategic approach to optimise housing output (Policy 3.4) and the need to accommodate additional housing supply in locations with good accessibility suitable for higher density development (Policy 3.3). Quantitative standards on daylight and sunlight

[1] In the context of the SPG 'north-facing' means an orientation within 45 degrees either side of due north.

should not be applied rigidly, without carefully considering the location and context and standards experienced in broadly comparable housing typologies in London.

2.24. Clearly, the guidelines and recommendations given in the BRE guide should be applied with an appropriate degree of flexibility and sensitivity to higher-density housing development, especially in opportunity areas, town centres, large sites and accessible locations. Account should be taken of local circumstances, the need to optimise housing capacity and scope for the character and form of an area to change over time.

Good Quality Homes for all Londoners - consultation draft (October 2020)

2.25. *'Good Quality Homes for All Londoners'* is consultation draft guidance on housing design and delivery. The consultation ended in January 2021 and the final guidance is awaited. It illustrates the direction of travel for standards and guidance for housing design in London, including daylight and sunlight guidance.

2.26. The consultation draft contains the following draft housing standards:

C5.2 Aspect and outlook

C5.2.1 All new dwellings should be dual aspect, unless there are exceptional circumstances that justify the inclusion of any single-aspect homes. Single-aspect dwellings that are north facing, contain three or more bedrooms, or are exposed to noise levels with significant adverse effects on health and quality of life, should not be permitted.

C5.2.2 Where single-aspect dwellings are proposed (by exception), the design team should demonstrate how good levels of ventilation, daylight, privacy and thermal comfort will be provided to each habitable room and the kitchen.

C5.3 Daylight, sunlight and overshadowing

C5.3.1 New dwellings should achieve a minimum average daylight factor (ADF) target value of 1 per cent for a bedroom and 1.5 per cent for a living room.

C5.3.2 Proposed development should maximise quality and availability of sunlight and natural light in outdoor spaces, particularly in winter. Outdoor spaces should benefit from at least two hours of daylight on 21st March into 50 per cent of space in line with BRE guidance.

C5.3.3 All homes must 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.

2.27. The supporting text on daylight, sunlight and overshadowing states:

Balancing natural light

Providing good levels of natural light makes for a more pleasant internal environment, improving wellbeing as well as reducing the energy required for artificial lighting. This document prioritises good daylight to the home in determining suitable development capacity…

…Natural light can be restricted in densely developed areas. However, an appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts within proposed new homes, as well as the impact that proposed development would have on surrounding homes and open spaces.

Applying BRE guidelines in relation to neighbouring homes

Decision-makers should recognise that fully optimising housing potential on sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm.

Guidelines should be applied sensitively to higher density development, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances, the need to optimise housing capacity, and the scope for the character and form of an area to change over time.

The BRE guidelines apply nationwide, and the default numerical targets provided are purely advisory. These are based on a uniform, 25-degree development angle (vertical obstruction angle) typical of a low-rise suburban location. This corresponds to the Vertical Sky Component (VSC) target of 27 per cent cited in the guidelines. Typical development angles in a city or central urban location are considerably higher. In Central London, development angles of 40 degree or 50 degree are common and can, if well planned, deliver successful schemes. A uniform development angle of 40 degree corresponds to a VSC target of 18 per cent, and 50 degree gives a VSC target of 13 per cent. Such daylight levels have been accepted in many desirable central areas for well over a century. Module A: Optimising Site Capacity - A Design-led Approach therefore adopts a 50-degree development angle to determine offset distances.

Even with access to good levels of daylight on the outside of a building, it is possible to have low levels of daylight within a building due to design features such as small windows, recessed windows, poor placement of balconies or deep rooms. Therefore, consideration of the retained target VSC should be the principal consideration. Where this is not met in accordance with BRE guidance, it should not be less than 0.8 times its former value (which protects areas that already have low daylight levels).

Less weight should be given to the room-based measures of daylight such as 'no-sky line' or average daylight factor as these are dependent on the design of the neighbouring property. Except in exceptional circumstances, design features of neighbouring properties (referred to above) should not hamper the development potential of a site.

Applying BRE guidelines in relation to proposed homes

It may be possible to mitigate lower external daylight VSC levels by using design features such as larger windows, roof lights and light coloured internal and external surfaces to ensure reasonable internal daylight levels. Therefore, room-based measures of daylight and sunlight are most appropriate for judging the acceptability of a proposed development, as these encourage good daylight design. Appropriate 3D modelling should be used to demonstrate acceptable levels.

BRE guidelines confirm that the acceptable minimum average daylight factor target value depends on the room use. That is 1 per cent for a bedroom, 1.5 per cent for a living room and 2 per cent for a family kitchen. In cases where one room serves more than one purpose, the minimum ADF should be that for the room type with the higher value. Notwithstanding this, the independent daylight and sunlight review states that in practice, the principal use of rooms designed as a 'living room/kitchen/dining room' is as a living room. Accordingly, it would be reasonable to apply a target of 1.5 per cent to such rooms.

The need for balconies to be a minimum depth so as to function as usable amenity space, (see C4 Dwelling Space Standards), can have significant bearing on the daylight and sunlight levels reaching nearby windows and rooms. Inevitably, any window or room under a balcony will receive much lower daylight and sunlight levels, although the adjacent balcony space will typically have excellent levels of daylight and sunlight amenity. Given this, the Mayor encourages boroughs to allow the daylight levels on the balcony to contribute to the ADF of the adjacent living space.

Local planning policy and guidance

Camden Local Plan 2017

2.28. The Camden Local Plan (adopted 3 July 2017) contains the following policies that are relevant to daylight and sunlight.

2.29. Policy H2 *'Maximising the supply of self-contained housing from mixed-use schemes'* aims to maximise the contribution towards Camden's pressing need for self-contained housing from mixed-use developments where they are able to create an acceptable level of amenity, including adequate daylight and sunlight.

2.30. Policy H6 *'Housing choice and mix'* seeks to secure high quality homes in all developments that include housing. The accompanying text notes that aspects of quality that impact on health and well-being of occupiers include daylight and sunlight (page 83, paragraph 3.139).

2.31. Policy A1 'Managing the impact of development' states:

> *The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.*
>
> *We will:*
> *a. seek to ensure that the amenity of communities, occupiers and neighbours is protected; …*
>
> *The factors we will consider include:*
> *… f. sunlight, daylight and overshadowing;*

Camden Planning Guidance, 'Amenity'

2.32. Camden's Planning Guidance on Amenity (adopted January 2021) contains supplementary planning guidance of relevance to daylight and sunlight. It states:

> *The Council expects applicants to consider the impact of development schemes on daylight and sunlight levels. Where appropriate a daylight and sunlight assessment should submitted which should be follow the guidance in the BRE's 'Site layout planning for daylight and sunlight: A guide to good practice'.*
>
> *Levels of reported daylight and sunlight will be considered flexibly taking into account site-specific circumstances and context.*
>
> *The Council aims to protect the quality of life of occupiers and neighbours through Local Plan policy A1 Managing the Impact of Development, which seeks to ensure that development does not cause unacceptable harm to amenity, including in terms of daylight and sunlight.*
>
> *Major developments and proposals for new dwellings are expected to provide daylight and sunlight reports. These should always include the daylight and sunlight levels to any proposed new residential units. The reports should also include any nearby existing residential properties that may be affected. Although it is normally only residential uses that are assessed, there may also be non-residential uses, existing nearby or proposed as part of the application, that are particularly sensitive to light and so justify a report.*
>
> *To help determine whether a daylight and sunlight report is needed for other types of development, the Council will have regard to several tests, taken from the BRE guidance. These are referred to as the 45-degree test and the 25- degree test.*
>
> *The BRE guidance should form the basis for daylight and sunlight reports. They should be prepared by a specialist surveyor or consultant and assess the following:*

1. *Levels of daylight and sunlight that occupiers are likely to experience within the proposed development and gardens and open spaces (where relevant); and*

2. *The extent that the proposed development is likely to cause on levels of daylight and sunlight entering windows of neighbouring properties, gardens and open spaces (where relevant)*

Daylight and sunlight reports should also demonstrate how the design has taken into consideration the guidance contained in the BRE document on passive solar design; and have optimised solar gain.

The Council will expect daylight and sunlight reports to report daylight and sunlight levels using the tools cited in the BRE guidance. The most common tools used are:

- *Vertical Sky Component (VSC)*
- *No Sky Line (NSL) also referred to as Daylight Distribution (DD)*
- *Average Daylight Factor (ADF)*
- *Annual Probable Sunlight Hours (APSH)*

Flexible consideration of daylight and sunlight

The Council notes the intentions of the BRE document is to provide advice to developers and decision makers and therefore it should be regarded as a guide rather than policy.

While we support the aims of the BRE methodology for assessing sunlight and daylight we will consider the outcomes of the assessments flexibly where appropriate, taking into account site specific circumstances and context. For example, to enable new development to respect the existing layout and form in some historic areas, or dense urban environments, it may be necessary to consider exceptions to the recommendations cited in the BRE guidance. Any exceptions will assessed on a case-by-case basis.

Camden Planning Guidance, 'Housing'

2.33. Camden's Planning Guidance on Housing (adopted January 2021) contains supplementary planning guidance of relevance to daylight and sunlight. It states:

Layout

In general, the internal layout should seek to ensure the main living room and other frequently used rooms are on the south side and rooms that require less sunlight (bathrooms, utility rooms) are on the north side. Kitchens are better positioned on the north side to avoid excessive heat gain.

Additionally, it is preferable that permanent partitions are present between eating and sleeping areas; and between kitchens and living rooms. Combined kitchens and living areas can be acceptable where sufficient floor area allows a greater range of activity.

- *Dual aspect – Proposals should achieve good dual aspect [London Housing SPG 2016 Standard 29]. Habitable rooms should also have suitable outlook.*

- *Natural light, Daylight/sunlight - All the habitable rooms must have direct natural light, particularly the main living room. The applicant must ensure that the levels of daylight and sunlight that enter habitable rooms comply with BRE standards and that the report for 'Daylight and Sunlight' is submitted with the proposal [London Housing SPG 2016 Standard 32; CPG for Amenity].*

3. Assessment methodology and numerical guidelines

3.1. The technical assessments that underpin this daylight and sunlight study have been carried out in accordance with the assessment methodologies recommended in the BRE guide.

3.2. The BRE guidance and numerical guidelines are summarised below. The technical assessment methodologies are explained at Appendix 1 of this report, which also contains a glossary of technical terms.

Daylight to new dwellings

Detailed design

3.3. Detailed recommendations for daylight in new buildings are given in BS EN 17037, *'Daylight in Buildings'* ('the British Standard') and repeated in the BRE guide. Appendix C of the BRE guide gives guidance on how to calculate the amount of daylight inside a room, which is summarised at Appendix 1 of this report.

3.4. Daylight provision in new rooms may be checked using either of the methods described in the BRE guide: either direct prediction of daylight illuminance levels using hourly climate data, or the use of the daylight factor, which is a ratio of unobstructed external illuminance under overcast sky conditions. Both are measures of the overall amount of daylight in a space. We have calculated daylight provision using the illuminance method.

3.5. The amount of daylight inside a room will depend on:

- the view of sky and level of obstruction outside the window(s);
- the surface reflectances of the external environment;
- the size, position and diffuse light transmittance of the window glazing; and
- the surface reflectances of the room surfaces.

3.6. Appendix C of the BRE guide gives recommendations for typical and maximum reflectances of exterior and interior surfaces and glazing transmittance, which are repeated at Appendix 1 of this report.

Numerical guidelines

3.7. The following minimum recommendations are given for housing in the UK:

- 100 lux in bedrooms
- 150 lux in living rooms
- 200 lux in kitchens

3.8. These are the median illuminances, to be exceeded over at least 50% of the assessment points in the room for at least half of the annual daylight hours.

3.9. They are minimum recommended values for locations where a predominantly daylit appearance is not achievable; for example, in basements or with significant external obstructions, such as in a dense urban area or with tall trees outside, or for existing buildings being refurbished or converted into dwellings.

3.10. 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 kitchen is inevitable, it should be directly linked to a well daylit room.

3.11. Where a room has a shared use, the highest target should apply. For example, in a bed-sitting room in student accommodation, the value for a living room should be used if students would often spend time in their rooms during the day. However, the BRE guide advises that local authorities could use discretion here. For example, the target for a living room could be used for a combined living/kitchen/dining area (LKD) of kitchen-diner (KD) if the kitchens are not treated as habitable

spaces, as it may avoid small separate kitchens in a design. (The kitchen space would still need to be included in the assessment area.)

Sunlight to new dwellings

3.12. In housing, the main requirement for sunlight is in living rooms, where it is valued at any time of day but especially in the afternoon. Sunlight is also required in conservatories. It is viewed as less important in bedrooms and in kitchens.

3.13. Site layout is the most important factor affecting the duration of sunlight in buildings. It can be divided into two main issues, orientation and overshadowing.

3.14. A south-facing window will, in general, receive most sunlight, while east- and west-facing windows will receive sunlight only at certain times of the day, and a north-facing elevation will only receive it on a handful of occasions (early morning and late evening in summer).

3.15. Sensitive layout design of flats will attempt to ensure that each individual dwelling has at least one main living room which can receive a reasonable amount of sunlight. The overall sunlighting potential of a large residential development may be initially assessed by counting how many dwellings have a window to a main living room facing south, east, or west. The aim should be to minimise the number of dwellings whose living rooms face solely north, northeast, or northwest, unless there is some compensating factor such as an appealing view to the north.

3.16. The overall access to sunlight of a new development can be considerably enhanced if the layout of new buildings is designed with care so that they overshadow each other as little as possible.

Numerical guideline

3.17. For interiors, access to sunlight can be quantified. BS EN 17037 recommends that a space should receive a minimum of 1.5 hours of direct sunlight on a selected date between 1 February and 21 March with cloudless conditions. The BRE guide suggests that 21 March (equinox) is used. The medium and high levels of recommendation are three hours and four hours respectively.

3.18. The criterion apply to rooms of all orientations, although the BRE guide advises that if a room faces significantly north of due east or west it is unlikely to be met. At least one habitable room per dwelling – preferably a main living room – should meet at least the minimum criterion.

Summary

3.19. In general, a dwelling will appear reasonably sunlit provided:

- at least one main window wall faces within 90° of due south; and
- a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March.

3.20. Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the above recommendations.

Numerical guideline

3.21. The guide recommends, as a check, that at least 50% of the area of any of the amenity spaces listed above should receive at least two hours of sunlight on 21 March. It can be instructive to draw the ‘two hours sun contour’ that marks this area on plan, because the use of specific parts of a site can be planned with sunlight in mind. This could include reserving the sunniest parts of the site for gardens and sitting out, while using the shadier areas for car parking (in summer, shade is often valued in car parks).

3.22. If a detailed calculation cannot be carried out, and the area is a simple shape, the BRE guide suggests that the centre of the area should receive at least two hours of sunlight on 21 March.

Flexible application of the guidelines and alternative target values

3.23. The default numerical guidelines in the BRE guide are not mandatory and must be interpreted flexibly because natural lighting is only one of many factors in site layout design (see paragraph 2.12 above).

3.24. For housing applications, the NPPF requires local planning authorities to take a flexible approach in applying daylight and sunlight policies and guidance where they would otherwise inhibit making efficient use of a site, as long as the resulting scheme would provide acceptable living standards (see paragraph 2.3 above).

3.25. For the reasons explained at paragraph 3.11 above, we have adopted an alternative target of 150 lux for the minimum illuminance level for any space multi-purpose space containing a kitchen, such as LKDs, KDs and studios.

3.26. Ultimately, it is for the planning authority to judge whether the levels of daylight and sunlight provision within the proposed development are acceptable in their neighbourhood context, having regard to all relevant planning policies and guidance and balanced against the merits of the proposed development.

Calculation model

3.27. The assessments require preparation of a 3D computer model of the development and its window apertures and internal spaces together with nearby obstructions (existing and potential future obstructions, if other buildings are planned to be constructed nearby).

3.28. The daylight assessment requires reasonable parameters to be used for internal and external surface reflectances, diffuse light transmittance of the glazing, and maintenance factors for the effects of dirt that are a representative of the proposed completed building.

3.29. The information and parameters used in our computer modelling and analysis are stated below at Section 5.

4. Scope of the assessment

4.1. Within the proposed development, we have assessed daylight and sunlight to all relevant habitable rooms on all floors within the proposed development.

5. Information used in our technical study

5.1. We have undertaken our technical study using a 3D computer model built in AutoCAD or Revit and specialist analysis software, which runs the assessments recommended in the BRE guide.

5.2. We compiled our 3D computer model from the following information:

5.2.1. Contextual massing: 3D computer model of the existing surrounding massing produced from photogrammetry (aerial photography) supplied by AccuCities Ltd, subsequently enhanced by us with the more detailed information listed below

5.2.2. Measured survey model point cloud produced by our in-house measured survey team in February 2018.

5.2.3. Floor plans for neighbouring buildings, where available;

5.2.4. Proposed development: 3D model supplied by TPBennett Architects on 31 January 2024 (file name: 5_Revised Planning-App Massing Model post Chairs Review preferred option.skp)

5.3. Our 3D computer model is illustrated in Figure 1 of Section 1 and on our spot-height drawing at Appendix 2.

5.4. For the daylight illuminance assessment, we used the window and room parameters stated in Table 1.

Table 1 *– Window and room parameters used in illuminance calculations*

Parameter	Value – Proposed Dwellings
Maintenance factor (dirt on glass)	0.92 for vertical windows with normal exposure in residential developments in urban locations with good maintenance
Diffuse light transmittance of glazing	0.68 for double glazing
Frame and glazing bar factor	0.7 for metal frames and large panes
Internal surface reflectance's	Reflectance's taken from guidelines: 0.8 for white ceilings 0.7 for pale cream walls 0.4 for light wood floors

Limitations and assumptions

5.5. In compiling our 3D computer model for our technical study, we have sought to be as accurate as reasonably possible within the scope of our instruction. We have relied upon the information noted above.

5.6. We have used proven and trusted specialist computer software (Waldram Tools for AutoCAD® or Revit®) to run the calculations recommended in the BRE guide.

5.7. To the best of our knowledge, the information and advice contained in this report is accurate at the date of issue, based on the information provided to or procured by us prior to its production.

6. Results of internal daylight and sunlight assessment

6.1. We assessed all habitable rooms in the development, comprising 81 rooms across ground to fourth floors.

6.2. The room uses and reference numbers of the rooms that are included in our assessment are shown on the room location plans at Appendix 3.

6.3. The daylight and sunlight assessment results are tabulated at Appendix 3. Coloured font has been used in the table to identify results that would be below the numerical guidelines, as follows:

- Orange font = proposed value is within 20% of the guideline
- Red font = proposed value is not within 20% of the guideline.

6.4. To recap, the numerical guidelines are:

6.4.1. Daylight: 100 lux in bedrooms, 150 lux in living rooms, or 200 lux in kitchens or multi-purpose rooms containing a kitchen, e.g., LKDs. (Note: These are the median illuminances to be exceeded over at least 50% of the assessment points in the room for at least half of the annual daylight hours.)

6.4.2. Sunlight: At least 1.5 hours of sunlight on 21 March to at least one habitable room per dwelling, preferably a main living room.

Daylight to new dwellings

6.5. The level of adherence to the BRE daylight guidelines overall, is summarised in **Table 2** below.

Table 2 *– Summary of daylight illuminance results overall*

Building	Room use	No. of rooms tested	Daylight illuminance		
			Meeting min. target		No. below min. target
			No.	%	
104 Finchley Road					
	LKD	31	11	*35%*	20
	Bedroom	50	42	*84%*	8
	Totals:	**81**	**53**	***65%***	**28**
	Grand Total:	**81**	**53**	***65%***	**28**

6.6. The results table above shows that a total of 53 (65%) out of the 81 rooms assessed will fully comply with the target criteria.

6.7. This compares to the previous scheme where 53 (62%) of the 85 rooms assessed complied with the target criteria.

Sunlight to new dwellings

6.8. All rooms in our assessment have been assessed for sunlight regardless of orientation or room use.

6.9. Although results are included for all room types, the guidelines for flatted developments are that one habitable room per dwelling (preferably a living room) should meet the sunlight guideline. Therefore, we set out in **Table 3** below the level of adherence to the BRE numerical guidelines for each of the dwellings that we assessed.

***Table 3** - Summary of sunlight exposure results where at least one window in th main living rooms faces within 90º of due south*

Building	**Sunlight exposure** (main living rooms with a southerly-aspect window)						
	No. of rooms tested	Meeting min. target		No. below min. target	*≥ 80% of min. target (≥ 1.2 hrs)*		*<80% of min. target (<1.2 hrs)*
		No.	*%*		*No.*	*%*	
104 Finchley Road	26	19	*73%*	7	*20*	*77%*	*6*
Totals:	**26**	**19**		**7**	***20***		***6***
		73%		***27%***	***77%***		***23%***

6.10. Of the 26 rooms assessed, 19 (73%) would satisfy the sunlight guidelines with at least one habitable room capable of receiving at least 1.5 hours of sunlight on 21 March.

6.11. This compares to the previous scheme where 23 (100%) out of 23 rooms assessed complied with the target criteria.

6.12. Also only a single apartment at ground and first floor will fail to contain at least one habitable room which should receive at least 1.5hours of sunlight on 21 March with 2 each at first second and third.

7. Summary and conclusion

7.1. We assessed the daylight and sunlight provision to all of the new dwellings and sunlight to amenity spaces within the proposed development using the methodologies recommended in the BRE guide (2022 edition).

7.2. The assessed dwellings comprise a mixture of 1-bed, 2-bed, 3-bed and 4-bed units. The rooms assessed comprise a mixture of living/kitchen/dining rooms (LKDs) (including kitchen-diners), living rooms and bedrooms.

7.3. In total, 81 habitable rooms have been assessed across ground to fourth floors.

7.4. Of the 81 rooms assessed, 53 (65%) would satisfy an application of the guidelines win daylight terms compared to 62% of rooms previously.

7.5. Turning to sunlight, of the 26 rooms assessed, 19 (73%) would satisfy the guidelines, with at least one habitable room capable of receiving at least 1.5 hours of sunlight on 21 March. This compares to 100% of the rooms in the previous submission.

7.6. The advice in the BRE guide is not mandatory, and its numerical guidelines should be interpreted flexibly.

7.7. In conclusion, it is submitted that the layout of the proposed development is generally consistent with the Council's local planning policy on internal daylight adequacy and largely consistent with the previous submission in daylight terms.

Delva Patman Redler LLP
Chartered Surveyors

Appendix 1

Assessment methodology and glossary

1. This appendix explains the daylight and sunlight assessment methodology recommended in *'Site Layout Planning for Daylight and Sunlight: A guide to good practice'* (BR209, 2022 edition) ('the BRE guide') and provides a glossary of the terminology used.

Daylight to new dwellings

2. BS EN 17037 *'Daylight in Buildings'* ('the British Standard') and the BRE guide provide two alternative methods for calculating the overall amount of daylight in a space:

   - illuminance method, or
   - daylight factor method.

Illuminance method

3. *Illuminance* is a measure of the amount of light falling on a surface, usually measured in lux (lumens per square metre). The illuminance method calculates the illuminance from daylight at each point on an assessment grid on the reference plane at hourly intervals for a typical year. It uses hourly climatic data for a typical year collected by a weather station near to the site's location and a mathematical model for the spatial distribution of real-world sky luminance (e.g., the Perez All-Weather Sky Model). Appropriate weather data files are available from various sources, including EnergyPlus and CIBSE.

4. The illuminance recommendations in the British Standard and BRE guide are based around the illuminances that would be met or exceeded over half of the room, over half of the annual daylight hours.

Daylight factor method

5. *Daylight factor* is the ratio of daylight illuminance at a reference point on the working plane within a space to outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky The daylight factor method calculates the daylight factor at each point on an assessment grid on the reference plane. The standard overcast sky model is independent of orientation and location. In order to account for different climatic conditions at different locations, the British Standard and BRE guide give equivalent different daylight factor targets for various locations in the UK.

6. The daylight factor recommendations in the British Standard and BRE guide are based on calculating the daylight factor that would be exceeded over half of the room. The recommended daylight factor values are location specific; a set of targets is provided for each of 10 locations in the UK. The target values for the reference location at the nearest latitude to the development location should be used.

Calculation model

7. Both methodologies usually require assessment via detailed computer modelling to simulate the illuminance or daylight factor at calculation points within a proposed space. Appropriate simulation settings must be used. The calculation model should include all the room surfaces, and any surface outside the room that could affect the light received.

Surface reflectance

8. Internal and exterior surfaces and obstructions need to be modelled including appropriate surface reflectances. Fixtures and fittings need not be included. Surface reflectances should represent real conditions.

9. Where reflectance values have not been measured or specified, default values to be used in the calculation are given in Table C4 of the BRE guide, as follows: ceilings, 0.7; interior walls, 0.5; floors, 0.2; exterior walls and obstructions, 0.2; exterior ground, 0.2.

10. Where surface finishes have been specified or measured on site, they can be used in the calculations with appropriate factors for maintenance and furniture. To allow for these factors, maximum

reflectances in the calculations should not exceed: white painted surfaces, 0.8 indoors and 0.6 outdoors; light pastel walls, 0.7; light wood floors, 0.4. Surface reflectances used should be presented in the assessment, along with a specification of the materials if non-default reflectances are used.

Glazing transmission

11. Glazing transmission factors, including maintenance factors, need to be included in the simulation along with account for, or modelling of, window framing. Where window frames are not specifically included in the model, frame factors should be applied based on the ratio of glass to overall window aperture area for the type of window to be used; this will generally vary with window size and whether the windows have opening lights. Where window types have not been specified, results for the overall window aperture should be multiplied by a default framing factor as given in Table C5 of the BRE guide, as follows: windows with small panes, 0.5; normal windows with opening lights, 0.6; patio doors, 0.7.

12. For clean, clear double glazing with a low emissivity coating, a value of 0.68 for diffuse transmittance can be used. For other types of glazing, the diffuse transmittance, if needed, can be found by multiplying the manufacturer's normal incidence light transmittance by 0.91. Care needs to be taken to apply the correct values within the calculation software; often software programs use the normal incidence transmittance, which is directly available from the glazing manufacturer, and have inbuilt correction for light coming from oblique angles.

13. An additional maintenance factor also needs to be applied to the glazing transmission to account for dirt on the windows. Full details are given in the National Annex to BS EN 17037. For the more common residential applications, values are given in Table C6 of the BRE guide and reproduced below. These assume the windows will be regularly cleaned.

Table C6 – Maintenance factors for different types of windows

Type of window	Maintenance factor	
	Rural/suburban	Urban
Vertical, no overhang	0.96	0.92
Vertical, sheltered from rain, e.g. by balcony or overhang	0.88	0.76
Sloping rooflight	0.92	0.84
Horizontal rooflight	0.88	0.76

Assessment grid

14. The daylight calculations need to be carried out on a grid of points on a reference plane within each room assessed. The plane should normally be 0.85m from the floor level (sometimes described as the working plane height). The British Standard states that the assessment grid should exclude a band of 0.5m from the walls, unless otherwise specified. The BRE guide recommends that in dwellings the width of the band to be excluded should be of 0.3 m, to avoid excluding parts of the room that are used by the occupants.

15. The BRE guide advises that professional judgement should be used when setting up the reference plane in irregularly shaped rooms or those with corridor or annex areas. Examples are given in Figures C2 to C5 of the guide and include the following:

    - Where room layouts have small variations or alcoves along a wall's length, the inner or dominant section should be taken as a basis for the 0.3m gap to the assessment grid area. Fixed floor to ceiling cupboards can be excluded from the room area, but not kitchen units incorporating a worktop. Areas in bay windows may be included unless they are winter gardens separated from the room by a fixed partition.
    - In a room with a corridor, or annexed entrance, the corridor need not be included in the assessment grid area (unless it is wide enough to be part of the usable space in a room, typically over 1.5m wide). The room layout and surfaces, including the corridor would still need to be included in the calculation model.

- For a combined living/kitchen/ dining area (LKD), the kitchen should always be included as part of the room area in the calculations, even in cases where the kitchen is deemed non-habitable and the living room criterion is applied to the whole space.

16. The British Standard gives an equation for maximum grid spacing. However, for domestic rooms this could potentially give only nine points in the room. The BRE guide therefore recommends a maximum grid spacing of 0.3m and preferably less.

17. Outdoor and semi-conditioned spaces, partitioned from the room, like balconies and winter gardens should not be included in the reference grid, but the effects of balconies and overhangs above a window should be modelled.

Presentation of results

18. It may not be necessary to analyse every room in a proposed development. For example, if a building has the same room and window layouts on each floor, and rooms on a lower floor meet the recommendations, then the corresponding rooms on upper floors would be expected to meet the recommendations too.

19. For each room, the median illuminance or median daylight factor (exceeded over 50% of the reference plane) should be presented, as this enables comparison with the different recommendations in BS EN 17037.

20. Contour plots showing illuminances or daylight factors throughout the room may also be presented.

21. The proportional area of the reference plane exceeding a particular target value may also be presented. This value is labelled as 'SDA % of Area' on our contour plots. ('SDA' is an acronym for 'spatial daylight autonomy', which is a yearly metric that describes the percentage of room area that receives sufficient daylight according to the specified criteria in a particular standard.)

Sunlight to new dwellings

22. When calculating the sunlight, the BRE guide advises that:

> *If window positions are already known, a reference point on the inside face of the window aperture at the centre of the opening width and at least 1.2 m above the floor and 0.3 m above the sill (whichever is the higher) is used. Sunlight blocked by window reveals and balconies or overhangs above the window should not be included, but the effect of window frames and bars can be discounted. Surrounding obstructions should be modelled in detail, and if this is done a minimum solar altitude, as suggested in BS EN 17037, need not apply. If a room has multiple windows, the amount of sunlight received by each can be added together provided they occur at different times and sunlight hours are not double counted.*

23. In a room with multiple windows, our computer software calculates the total sunlight hours across all its windows without double counting.

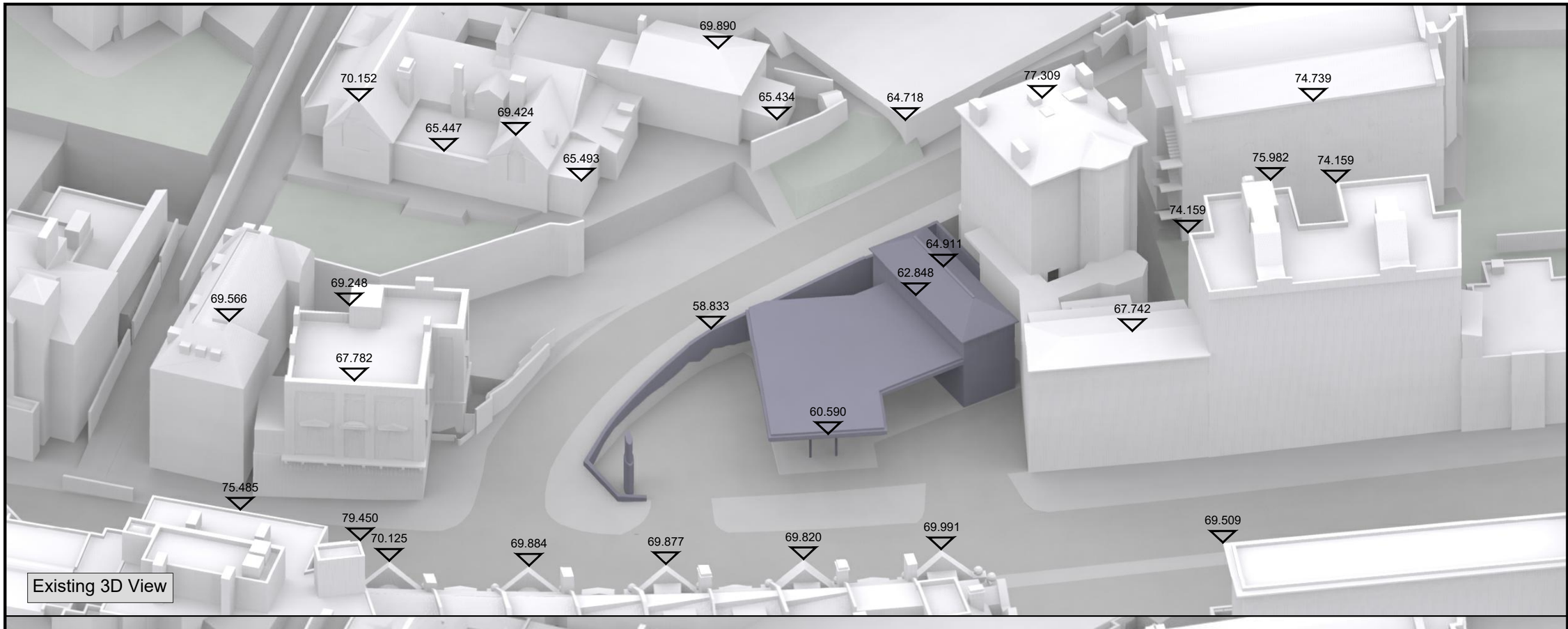
Glossary of terms

24. The daylight and sunlight terminology used in our report is explained below.

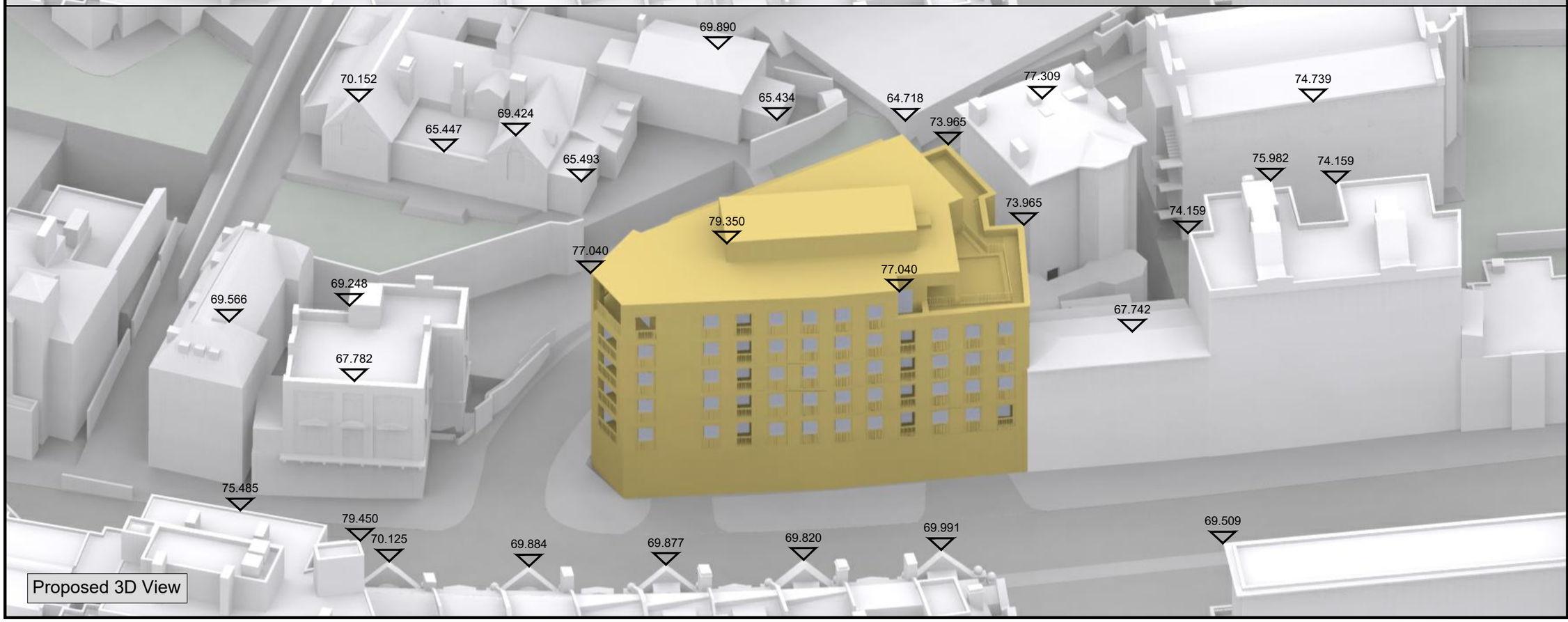
Term	Meaning
Daylight, natural light	Combined skylight and sunlight.
Illuminance	A measure of the amount of light falling on a surface, usually measured in lux.
Diffuse horizontal illuminance (from the sky)	Illuminance produced by skylight on a horizontal surface on the Earth.
Target illuminance	Illuminance from daylight that should be achieved for at least half of annual daylight hours across a specified fraction of the reference plane in a daylit space.
Climate-based daylight modelling	The prediction of daylight illuminance across a grid of points on the working plane inside a room at no greater than hourly intervals in a typical year using hourly climate data for a typical year collected by a weather station near to the site's location and a mathematical model for the spatial distribution of real-world sky luminance (e.g., the Perez All-Weather Sky Model).
Daylight factor	Ratio of total daylight illuminance at a reference point on the working plane within a space to outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky.
Target daylight factor	Daylight factor value equivalent to the target illuminance to be exceeded for more than half of annual daylight hours over a specified fraction of the reference plane within a daylit space.
CIE standard overcast sky	A theoretical completely overcast sky whose luminance varies with angle of elevation, being three times brighter at the zenith (vertically overhead) than on the horizon, but not with orientation.
Obstruction angle	The angular altitude of the top of an obstruction above the horizontal, measured from a reference point in a vertical plane in a section perpendicular to the vertical plane.
Vertical sky component (**VSC**)	The amount of daylight falling on a vertical wall or window. It is the ratio of that part of illuminance, at a point on a given vertical plane (e.g. window), that is received directly from a CIE standard overcast sky, to simultaneous illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The VSC does not include reflected light, either from the ground or from other buildings. The ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall.
Reference plane or working plane	Horizontal, vertical, or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 0.85 m above the floor in housing.
Assessment grid or calculation grid	Grid of calculation points on the reference plane that is used to calculate daylight factor or illuminance from daylight.

Appendix 2

Spot-height drawing



Existing 3D View



Proposed 3D View

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Consented
- Proposed
- Cumulative
- Neighboring Property
- Cutback Envelope

SOURCE DATA:

Existing and surrounding buildings:
Zmap model received 27.09.2017 - Harben Parade_301115_Solids.dwg

Proposed scheme:
TP Bennett:
Dwg No: A12003_D0211 to 13 Rev I3;
A12003_D0201 to 05 Rev I3;
A12003_D0099 Rev I2;
A12003_D0100 Rev I5;
A12003_D0101 to 103 Rev I4;
A12003_D0101 to 104 Rev I5

3D model received on 31.01.2024 - 5_Revised Planning-App Massing Model post Chairs Review preferred option.skp

NOTES:
All heights given in m AOD

REV	Description	Drawn	Date

DELVA PATMAN REDLER
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TITLE:
HAMPSTEAD SERVICE STATION,
104 FINCHLEY ROAD
LONDON
NW3

DRAWING:
Existing V Proposed
Plan and 3D Views
.

DRAWN: RM	JOB NBR: 17482
SCALE: NTS	
DATE: 13.02.2024	
DWG NO: SPT_002	REV: -

Appendix 3

Daylight and sunlight results for proposed dwellings

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:
Median illuminance (lux)

- ≥ 200
- ≥ 150
- ≥ 100
- ≥ 50
- < 50

SOURCE DATA:

Existing and surrounding buildings:
Zmap model received 27.09.2017 - Harben Parade_301115_Solids.dwg

Proposed scheme:
TP Bennett:
Dwg No: A12003_D0211 to 13 Rev I3;
A12003_D0201 to 05 Rev I3;
A12003_D0099 Rev I2;
A12003_D0100 Rev I5;
A12003_D0101 to 103 Rev I4;
A12003_D0101 to 104 Rev I5

3D model received on 31.01.2024 - 5_Revised Planning-App Massing Model post Chairs Review preferred option.skp

NOTES:
Illuminance level calculated in accordance with the BRE guide 2022
"A space is considered to provide adequate daylight if a target illuminance level is achieved across a 50% of the space for at least half of the daylight hours in the year."
The total number of daylight hours are considered as 4,380.

Table NA.1 - Values of target illuminance for room types in UK dwellings:

Room type	Target illuminance (lux)
Kitchen	200
Living room	150
Bedroom	100

F00M

F01

F02

F03

REV	Description	Drawn	Date

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TITLE:
HAMPSTEAD SERVICE STATION, 104 FINCHLEY ROAD
LONDON
NW3

DRAWING:
LOCATION PLAN
Daylight Illuminance Method
.

DRAWN: RM	JOB NBR: 17482
SCALE: 1:250@A3	
DATE: 13.02.2023	
DWG NO: ST_006	REV: -

F04

NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:
Median illuminance (lux)

- ≥ 200
- ≥ 150
- ≥ 100
- ≥ 50
- < 50

SOURCE DATA:

Existing and surrounding buildings:
Zmap model received 27.09.2017 - Harben Parade_301115_Solids.dwg

Proposed scheme:
TP Bennett:
Dwg No: A12003_D0211 to 13 Rev I3;
A12003_D0201 to 05 Rev I3;
A12003_D0099 Rev I2;
A12003_D0100 Rev I5;
A12003_D0101 to 103 Rev I4;
A12003_D0101 to 104 Rev I5

3D model received on 31.01.2024 - 5_Revised Planning-App Massing Model post Chairs Review preferred option.skp

NOTES:

Illuminance level calculated in accordance with the BRE guide 2022
"A space is considered to provide adequate daylight if a target illuminance level is achieved across a 50% of the space for at least half of the daylight hours in the year."
The total number of daylight hours are considered as 4,380.

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Bedroom	100

REV	Description	Drawn	Date

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TITLE:
HAMPSTEAD SERVICE STATION,
104 FINCHLEY ROAD
LONDON
NW3

DRAWING:
LOCATION PLAN
Daylight Illuminance Method
.

DRAWN: RM	JOB NBR: 17482
SCALE: 1:250@A3	
DATE: 13.02.2024	
DWG NO: ST_007	REV: -

Property & room attributes					Daylight/Sunlight (BRE 2022)					
					Daylight (illum)			Sun exp.	BS EN17037	
Floor	Flat/Unit no.	Room ref.	Property type	Room use	Target illum (lx)	Median illum (lx)	% area ≥target	Room (Hrs)	Rm Sun exp. level	Flat/Unit Satisfies?
104 Finchley Road										
F00M	Flat 01	R1	Residential	LKD	200	121	25%	6.6	High	
	Flat 01	R2	Residential	Bedroom	100	258	100%	6.6	High	Yes
	Flat 02	R3	Residential	LKD	200	98	21%	6.6	High	
	Flat 02	R4	Residential	Bedroom	100	262	100%	6.5	High	Yes
	Flat 03	R5	Residential	Bedroom	100	268	100%	6.4	High	
	Flat 03	R6	Residential	LKD	200	87	19%	6.3	High	Yes
	Flat 04	R7	Residential	Bedroom	100	311	100%	6.1	High	
	Flat 04	R8	Residential	LKD	200	262	63%	5.9	High	
	Flat 04	R9	Residential	Bedroom	100	89	48%	0.0	Not met	Yes
	Flat 05	R10	Residential	LKD	200	183	49%	0.0	Not met	
	Flat 05	R11	Residential	Bedroom	100	108	55%	0.0	Not met	
	Flat 05	R12	Residential	Bedroom	100	39	13%	0.0	Not met	No
F01	Flat 06	R1	Residential	LKD	200	34	0%	1.3	Not met	
	Flat 06	R2	Residential	Bedroom	100	390	100%	6.6	High	
	Flat 06	R3	Residential	Bedroom	100	328	100%	6.6	High	
	Flat 06	R4	Residential	Bedroom	100	286	100%	6.6	High	Yes
	Flat 07	R5	Residential	LKD	200	112	23%	6.6	High	
	Flat 07	R6	Residential	Bedroom	100	290	100%	6.6	High	Yes
	Flat 08	R7	Residential	Bedroom	100	298	100%	6.4	High	
	Flat 08	R8	Residential	LKD	200	102	21%	6.4	High	Yes
	Flat 09	R9	Residential	Bedroom	100	349	100%	6.4	High	
	Flat 09	R10	Residential	LKD	200	314	72%	6.1	High	
	Flat 09	R11	Residential	Bedroom	100	119	62%	0.0	Not met	Yes
	Flat 10	R12	Residential	LKD	200	151	44%	0.0	Not met	
	Flat 10	R13	Residential	Bedroom	100	259	100%	0.0	Not met	
	Flat 10	R14	Residential	Bedroom	100	128	67%	0.0	Not met	No
	Flat 11	R15	Residential	Bedroom	100	74	34%	0.0	Not met	
	Flat 11	R16	Residential	Bedroom	100	91	43%	0.0	Not met	
	Flat 11	R17	Residential	LKD	200	213	54%	0.0	Not met	No
	Flat 12	R18	Residential	LKD	200	119	26%	0.5	Not met	
	Flat 12	R19	Residential	Bedroom	100	17	5%	2.2	Minimum	Yes
F02	Flat 13	R1	Residential	LKD	200	43	1%	1.6	Minimum	
	Flat 13	R2	Residential	Bedroom	100	411	100%	6.6	High	
	Flat 13	R3	Residential	Bedroom	100	348	100%	6.6	High	
	Flat 13	R4	Residential	Bedroom	100	303	100%	6.6	High	Yes
	Flat 14	R5	Residential	LKD	200	126	24%	6.6	High	
	Flat 14	R6	Residential	Bedroom	100	309	100%	6.6	High	Yes
	Flat 15	R7	Residential	Bedroom	100	316	100%	6.4	High	
	Flat 15	R8	Residential	LKD	200	118	23%	6.4	High	Yes
	Flat 16	R9	Residential	Bedroom	100	379	100%	6.4	High	
	Flat 16	R10	Residential	LKD	200	361	88%	6.4	High	

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Property & room attributes					Daylight/Sunlight (BRE 2022)					
					Daylight (illum)			Sun exp.	BS EN17037	
Floor	Flat/Unit no.	Room ref.	Property type	Room use	Target illum (lx)	Median illum (lx)	% area ≥target	Room (Hrs)	Rm Sun exp. level	Flat/Unit Satisfies?
	Flat 16	R11	Residential	Bedroom	100	133	70%	0.0	Not met	Yes
	Flat 17	R12	Residential	LKD	200	171	48%	0.0	Not met	
	Flat 17	R13	Residential	Bedroom	100	278	100%	0.0	Not met	
	Flat 17	R14	Residential	Bedroom	100	142	75%	0.0	Not met	No
	Flat 18	R15	Residential	Bedroom	100	91	46%	0.0	Not met	
	Flat 18	R16	Residential	Bedroom	100	110	64%	0.0	Not met	
	Flat 18	R17	Residential	LKD	200	240	60%	0.0	Not met	No
	Flat 19	R18	Residential	LKD	200	143	43%	0.5	Not met	
	Flat 19	R19	Residential	Bedroom	100	23	7%	2.2	Minimum	Yes
F03	Flat 20	R1	Residential	LKD	200	71	6%	1.6	Minimum	
	Flat 20	R2	Residential	Bedroom	100	420	100%	6.6	High	
	Flat 20	R3	Residential	Bedroom	100	366	100%	6.6	High	
	Flat 20	R4	Residential	Bedroom	100	314	100%	6.6	High	Yes
	Flat 21	R5	Residential	LKD	200	133	25%	6.6	High	
	Flat 21	R6	Residential	Bedroom	100	321	100%	6.6	High	Yes
	Flat 22	R7	Residential	Bedroom	100	327	100%	6.4	High	
	Flat 22	R8	Residential	LKD	200	127	25%	6.4	High	Yes
	Flat 23	R9	Residential	Bedroom	100	398	100%	6.4	High	
	Flat 23	R10	Residential	LKD	200	388	97%	6.4	High	
	Flat 23	R11	Residential	Bedroom	100	139	77%	0.0	Not met	Yes
	Flat 24	R12	Residential	LKD	200	185	49%	0.0	Not met	
	Flat 24	R13	Residential	Bedroom	100	296	100%	0.0	Not met	
	Flat 24	R14	Residential	Bedroom	100	153	79%	0.0	Not met	No
	Flat 25	R15	Residential	Bedroom	100	106	60%	0.0	Not met	
	Flat 25	R16	Residential	Bedroom	100	124	99%	0.0	Not met	
	Flat 25	R17	Residential	LKD	200	264	67%	0.1	Not met	No
	Flat 26	R18	Residential	LKD	200	177	49%	0.9	Not met	
	Flat 26	R19	Residential	Bedroom	100	35	19%	2.2	Minimum	Yes
F04	Flat 27	R1	Residential	LKD	200	300	92%	8.7	High	
	Flat 27	R2	Residential	Bedroom	100	325	100%	6.6	High	Yes
	Flat 28	R3	Residential	Bedroom	100	327	100%	6.4	High	
	Flat 28	R4	Residential	LKD	200	131	25%	6.4	High	Yes
	Flat 29	R5	Residential	LKD	200	383	95%	6.4	High	
	Flat 29	R6	Residential	Bedroom	100	175	99%	0.0	Not met	
	Flat 29	R7	Residential	Bedroom	100	324	100%	0.0	Not met	Yes
	Flat 30	R8	Residential	LKD	200	365	97%	0.0	Not met	
	Flat 30	R9	Residential	Bedroom	100	217	97%	0.0	Not met	No
	Flat 31	R10	Residential	Bedroom	100	245	100%	0.0	Not met	
	Flat 31	R11	Residential	LKD	200	605	100%	3.9	Medium	
	Flat 31	R12	Residential	Bedroom	100	207	98%	3.5	Medium	Yes

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