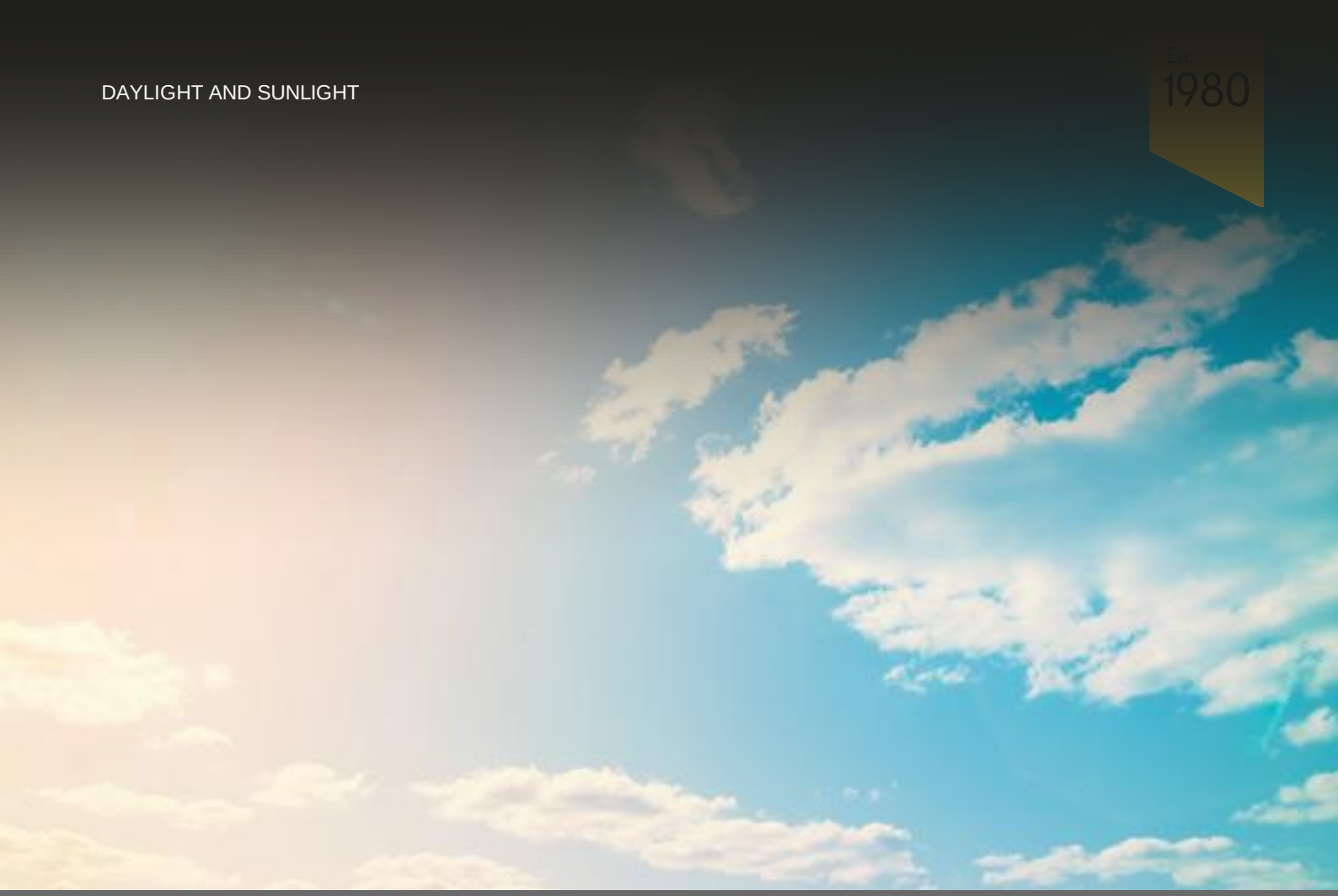

ABBEY ROAD PHASE THREE

Daylight and Sunlight Report

April 2022

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APPENDICES

1. Introduction

1.1. Delva Patman Redler LLP ("we") have been engaged by the Applicant to assess daylight and sunlight for a planning application for proposed development at Abbey Road ("the Site"). We have been instructed to assess the potential effects on neighbouring properties.

1.2. Our daylight and sunlight study has been carried out using the assessment methodology recommended in the Building Research Establishment (BRE) Report 209, *'Site Layout Planning for Daylight and Sunlight: A guide to good practice'* (second edition, 2011) ("the BRE guide") and the Professional Guidance Note, *'Daylighting and sunlighting'* (1st edition, 2012), published by the Royal Institution of Chartered Surveyors.

1.3. The Site is located within The London Borough of Camden. The Site is shown outlined in red in the aerial photograph in Figure 1 below and on the location plan in Appendix 2.

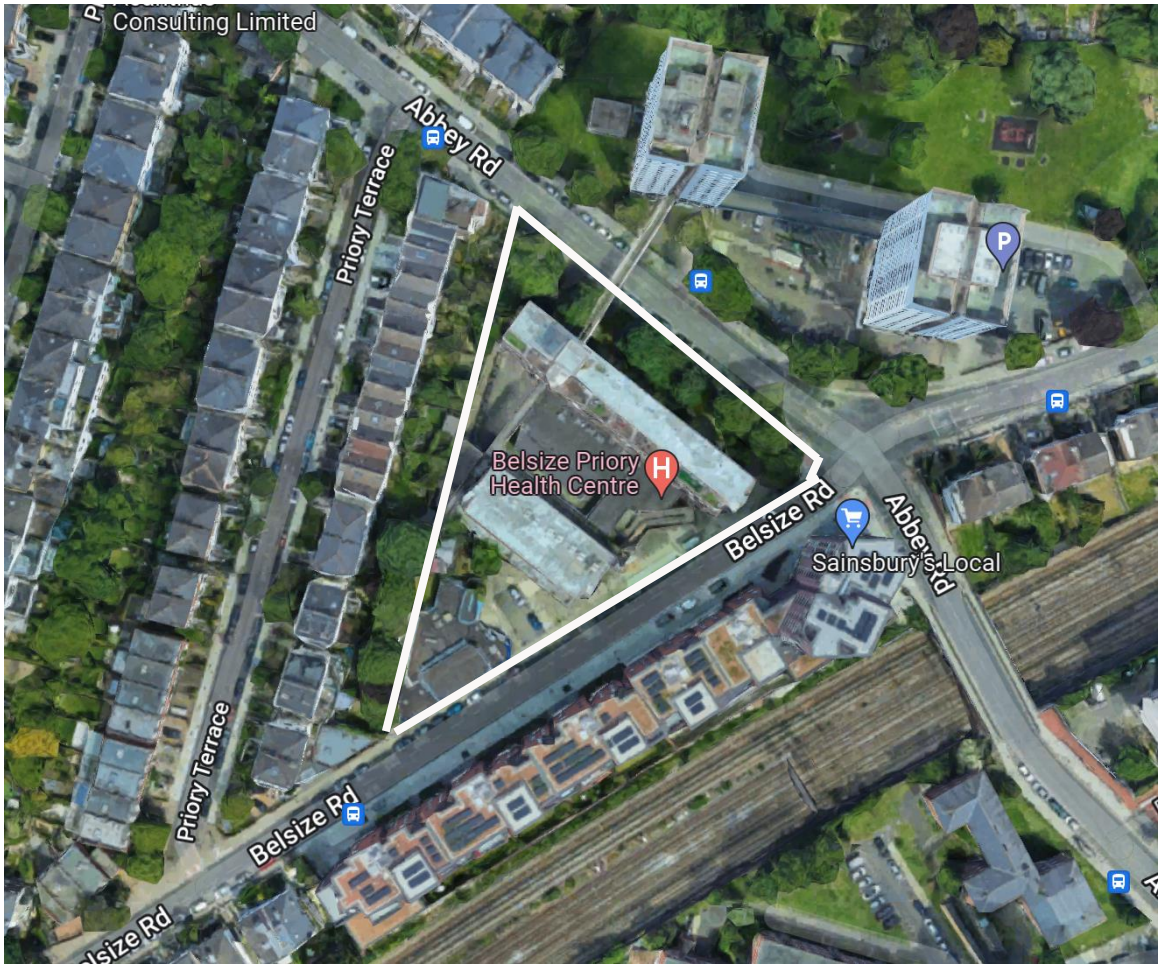


Figure 1 - Aerial photo of the Site and neighbouring buildings (© Google)

1.4. The proposed development is illustrated in spot-height drawings in Appendix 2. The proposals consist of the demolition and redevelopment of Emminster and Hinstock blocks including Belsize Priory Health Centre, Abbey Community Centre, public house and commercial units to provide new residential accommodation (Use Class C3) and ground floor commercial space (Use Class E/Sui Generis) to be used as flexible commercial units, across three buildings ranging from 4 to 11 storeys, along with car and bicycle parking, landscaping and all necessary ancillary and enabling works

1.5. This report is accompanied by Appendices explaining the BRE assessment methodology and containing drawings and tabulated results, as listed on the Contents page.

2. Planning policy and guidance

National Planning Policy and Guidance

National Planning Policy Framework (July 2021)

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).*

BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2011)

2.4. The leading publication providing national guidance on the provision of daylight and sunlight to new development, and the impacts of development on daylight and sunlight to neighbouring buildings and open spaces, is BRE Report 209, '*Site Layout Planning for Daylight and Sunlight: A guide to good practice*' (second edition, 2011). It is referred to in the development plan documents or supplementary planning documents of most planning authorities.

2.5. The BRE guide states:

> *(Its) main aim is … to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.*
>
> *The guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the report should not be seen as a part of planning policy. Its aim is to help rather than constrain the designer.*
>
> *Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design.*
>
> *In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings… The calculation methods … are entirely flexible in this respect.*

British Standard, BS EN 17037:2019, 'Daylight in buildings'

2.6. British Standard, BS EN 17037:2019, *'Daylight in buildings'* provides a standard and methodology by which to assess daylight and sunlight in new buildings. It does not deal with sunlight to open spaces or the effects of development on daylight and sunlight to existing neighbouring buildings.

Regional planning policy and guidance

The London Plan (March 2021)

2.1. 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.

2.2. 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'*

2.3. 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'*

2.4. 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 D9 *'Tall buildings'*

2.5. Policy D9 states:

> *Impacts*
>
> *C Development proposals should address the following impacts:*
>
> *3) environmental impact*
>
> *a) 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

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

2.6. *'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.

2.7. 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.

Overshadowing

The BRE guidelines recommend that at least half of private amenity and public open space should receive at least two hours of sunlight on March 21. Development should be designed to maximise sunlight in these spaces, particularly during the winter, and at least meet the BRE guidelines. The design of outside communal space should be planned so that seating areas or play space are located in the areas that are most likely to receive sunlight.

Local planning policy

Camden Local Plan 2017

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

2.9. 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;

2.10. The supporting text states, at paragraph 6.5:

Loss of daylight and sunlight can be caused if spaces are overshadowed by development. To assess whether acceptable levels of daylight and sunlight are available to habitable, outdoor amenity and open spaces, the Council will take into account the most recent guidance published by the Building Research Establishment

(currently the Building Research Establishment's Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011). Further detail can be found within our supplementary planning document Camden Planning Guidance on amenity.

Camden Planning Guidance, 'Amenity'

2.11. 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'

2.12. 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].*

Amenity

- *Amenity of neighbours – The proposal should not have a significant detrimental impact to neighbouring amenity in terms of neighbouring outlook, privacy, sunlight, daylight, noise or vibration. Additionally, the proposal should not result in any overlooking into neighbouring habitable rooms. [Local Plan Policy A1; CPG for Design and for Amenity].*

3. Acceptability of daylight/sunlight levels and impacts

3.1. The assessment of impact on daylight and sunlight amenity is a two-part process[1]: first, as a matter of calculation, whether there would be a material deterioration in conditions by reference to the BRE guidelines; and second, as a matter of judgment, whether that deterioration would be acceptable in the circumstances.

3.2. The first stage can be addressed by applying the BRE assessment methodology and numerical guidelines. The second stage brings into play much wider considerations, such as:

i) Whether the neighbouring building stands unusually close to the site boundary, including the highway, taking more than its fair share of light, such that a greater reduction in light may be unavoidable if one site is not to be prejudiced by how another has been developed. (A 'mirror-image' study can be informative in such cases.)

ii) Whether windows in neighbouring buildings are self-obstructed by overhanging or inset balconies or other projections such as to make relatively larger reductions unavoidable even if there is a modest new obstruction opposite - in effect themselves taking away more than their fair share of light. (A 'without balconies' study can be informative in such cases.)

iii) In historic city centres or areas characterised by modern tall buildings, high density and close proximity, a higher degree of obstruction may be unavoidable if new buildings are to match the height and proportion of existing buildings.

iv) In areas that are designated by planning authorities for substantial growth or providing opportunities for change and sustainable regeneration, the sort of change that would be brought about by the introduction of taller, denser development is to be expected, including reductions in daylight and sunlight levels, closer proximity, loss of outlook, etc.

3.3. Where a higher degree of obstruction may be unavoidable it is appropriate to consider the reasonableness of the retained levels of daylight and sunlight with the proposed development in place.

[1] Rainbird, R (on the application of) v The Council of the London Borough of Tower Hamlets [2018]

4. Assessment methodology and numerical guidelines

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

4.2. The principal assessments and numerical criteria are summarised below. A fuller explanation of the assessment methodology is given at Appendix 1 of this report.

4.3. British Standard, BS EN 17037:2019, *'Daylight in buildings'* provides an alternative method for assessing daylight and sunlight in new buildings; however, it does not cover impacts on existing neighbouring buildings or sunlight to open spaces. The BRE guide does and is the leading publication providing national guidance and is referred to in development plan documents or supplementary planning documents of most planning authorities. We have therefore followed the methodologies in the BRE guide.

New development

Daylight to new dwellings

4.4. The principal BRE test for daylight provision to rooms in new buildings is the average daylight factor (**ADF**), which measures the overall amount of daylight in a space.

4.5. The calculation takes account of the amount of visible sky, net glazed area of windows/doors, diffuse visible light transmittance of the glazing, maintenance factor for the effects of dirt, total area of the room surfaces and their average reflectance.

4.6. The minimum recommended ADF in housing is 1% for bedrooms, 1.5% for living rooms and 2% for kitchens. Bathrooms, stairwells and other areas without a special requirement for daylight need not be assessed.

4.7. Strictly speaking, in multi-purpose rooms, such as open-plan living/kitchen/dining rooms (LKDs), the target for kitchens should apply. However, planning authorities frequently accept the living room target (1.5% ADF) for LKDs in modern housing development. That view is supported by the author of the BRE guide, Dr Paul Littlefair, who explains it thus[2]:

> *Where a room has a shared use, the British Standard states that the higher minimum value should apply. However, local authorities frequently accept the living room standard for a shared kitchen/living room, as a small kitchen would not be considered as a habitable room. This is a practical approach, as it is seldom in the final resident's interest to have a closed off, small kitchen which is completely artificially lit in order to force compliance with the Standard for the living room. In this case an average daylight factor of 1.5% or more might be acceptable.*

4.8. We have therefore adopted an alternative target of 1.5% for LKDs in our assessment

4.9. For good daylight distribution, at least 80% of the area of the working plane in a room should lie within the no-sky line (**NSL**) to receive direct skylight) and the room depth criterion (**RDC**) should be satisfied.

Sunlight to new dwellings

4.10. In housing, sunlight should be assessed in living rooms and conservatories. The amount of sunlight reaching the interior of a space is measured by calculating the percentage of annual probable sunlight hours (**APSH**) reaching the centre of each window.

4.11. The BRE guide recommends that living rooms and conservatories should receive at least 25% APSH, including least 5% of APSH in the winter months between 21 September and 21 March. Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings meeting this recommendation.

[2] BRE Client Report (paragraph 2.3.5) dated 5 March 2019 for Reardon and Lowder Houses, Wapping on behalf of London Borough of Tower Hamlets (LBTH planning application reference PA/18/03541/A1)

Existing neighbouring buildings and amenity spaces

Daylight to neighbouring buildings

4.12. If the head of the new development subtends an angle of more than 25° measured from the centre of the lowest affected window in an existing neighbouring building in a plane perpendicular to the window wall, then a more detailed check is needed to find the loss of skylight.

4.13. The more detailed tests are:

i) vertical sky component (**VSC**) at the centre of each main window, which measures the total amount of skylight available; and

ii) no-sky line (**NSL**) on the working plane inside a room, where room layouts are known, which measures the area that can receive direct skylight and assesses the distribution of daylight around the room.

4.14. Loss of daylight resulting from development will be noticeable if either:

- the VSC at the centre of the window will be reduced to both less than 27% and less than 0.8 times its former value, or
- the area of the working plane in a room that is enclosed by the no-sky line (NSL) and can receive direct skylight will be reduced to less than 0.8 times its former value.

4.15. In respect of these numerical guidelines, the BRE guide states:

> *Note that 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.*

4.16. In respect of the windows and rooms to be assessed, the BRE guide states:

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

4.17. In housing, living rooms, dining rooms and kitchens have a greater requirement for daylight. Bedrooms should also be analysed but are less important. Bathrooms, stairwells and other areas without a requirement for daylight need not be assessed.

4.18. For a bay window, the centre window facing directly outwards can be taken as the main window for the VSC calculation. If a room has two or more windows of equal size, the mean of their VSCs may be taken.

4.19. A third daylight test in the BRE guide is the average daylight factor (**ADF**), which assesses the average level of daylight inside a room. It is primarily intended for assessing daylight provision to new buildings, but it may also be used to assess neighbouring consented development that is not yet built and could be affected by the proposed development.

4.20. The ADF test can potentially be a useful supplementary test for existing neighbouring buildings to aid a more rounded judgement on the acceptability of VSC and NSL effects, as the post-development retained ADF values may be checked against the minimum recommendations for new dwellings. They are 1% for bedrooms, 1.5% for living rooms and 2% for kitchens.

4.21. Strictly speaking, in multi-purpose rooms, such as open-plan living/kitchen/dining rooms (LKDs), the target for kitchens should apply. However, planning authorities frequently accept the living room target (1.5% ADF) as a suitable alternative target for LKDs in modern dense housing developments. That view is supported by the author of the BRE guide, Dr Paul Littlefair, who explains it thus[3]:

[3] BRE Client Report (paragraph 2.3.5) dated 5 March 2019 for Reardon and Lowder Houses, Wapping on behalf of London Borough of Tower Hamlets (LBTH planning application reference PA/18/03541/A1)

> *Where a room has a shared use, the British Standard states that the higher minimum value should apply. However, local authorities frequently accept the living room standard for a shared kitchen/living room, as a small kitchen would not be considered as a habitable room. This is a practical approach, as it is seldom in the final resident's interest to have a closed off, small kitchen which is completely artificially lit in order to force compliance with the Standard for the living room. In this case an average daylight factor of 1.5% or more might be acceptable.*

Sunlight to neighbouring buildings

4.22. In designing new development, care should be taken to safeguard the access to sunlight for existing dwellings and any nearby non-domestic buildings where there is a particular requirement for sunlight.

4.23. Obstruction to sunlight may become an issue if part of the development is situated within 90˚ of due south of a main window wall of an existing building, and in the section drawn perpendicular to this existing window wall, the new development subtends an angle greater than 25˚ to the horizontal measured from the centre of the lowest window to a main living room.

4.24. The amount of sunlight reaching a room is measured by calculating the percentage of annual probable sunlight hours (**APSH**) at the centre its windows.

4.25. If, following development, the APSH will be greater than 25%, including at least 5% of APSH in the winter months between 21 September and 21 March, then the room should still receive enough sunlight.

4.26. Sunlight will be adversely affected if the centre of the window will:

- receive less than 25% APSH or less than 5% APSH during the winter months (21 September to 21 March); and
- less than 0.8 times its former sunlight hours during either period; and
- the reduction in sunlight over the whole year will be greater than 4% APSH.

4.27. All main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90˚of due south.

4.28. When asked to clarify whether bedrooms should be assessed, the author of the BRE guide, Dr Paul Littlefair, wrote:

> *"The BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice' recommends that 'all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.' Normally we would not include loss of sunlight to bedrooms in a detailed analysis; and loss of sunlight to bedrooms would not be treated as a material issue except in bedrooms that also comprised a living space, for example a bed sitting room in an old people's home. Loss of diffuse daylight to bedrooms does need to be taken into account, as stated in paragraph 2.2.2 of the BRE Report."* [4]

4.29. Our assessment has therefore focused our assessment of the loss of sunlight to living rooms.

[4] BRE letter dated 16 December 2014

5. Categorisation of magnitudes of impact and significance of effects

5.1. In our summary tables, we have counted the number of impacts that would be inside and outside the BRE guidelines and categorised the latter according to their magnitude of impact. There is no industry-standard scale and this study adopts the approach in Table 1 below.

Table 1 *– Categorisation of magnitudes of impact on existing neighbouring properties*

Impact inside BRE guidelines	**Impact outside BRE guidelines**		
	0.70-0.79 times former value (21% to 30% loss)	**0.60-0.69** times former value (31% to 40% loss)	**<0.60** times former value (>40% loss)
Negligible impact	Low adverse impact	Medium adverse impact	High adverse impact

5.2. To understand the significance of effect on a building, it is necessary to consider both the number and magnitude of impacts and a range of other factors. Appendix I of the BRE guide, which is intended for use in Environmental Impact Assessments, provides the following advice on ascribing significance to 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 area are affected, a minor adverse impact would be more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space.*
>
> *Where the loss of skylight or sunlight does not meet the guidelines, the impact is assessed as minor, moderate or major adverse. Factors tending towards a minor adverse impact include:*
>
> - *only a small number of windows or limited area of open space are affected;*
> - *the loss of light is only marginally outside the guidelines;*
> - *an affected room has other sources of skylight or sunlight;*
> - *the affected building or open space only has a low level requirement for skylight or sunlight; and*
> - *there are particular reasons why an alternative, less stringent, guideline should be applied.*
>
> *Factors tending towards a major adverse impact include:*
>
> - *a large number of windows or large area of open space are affected;*
> - *the loss of light is substantially outside the guidelines;*
> - *all the windows in a particular property are affected; and*
> - *the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, e.g. a living room in a dwelling or a children's playground.*

6. Flexible application of the guidelines and alternative target values

6.1. As noted in paragraph 2.4 above, the BRE guide states that its default numerical guidelines are not mandatory and must be interpreted flexibly because natural lighting is only one of many factors in site layout design. In certain circumstances, such as city centres or areas with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.

6.2. We set out below some examples of a flexible approach to applying the BRE guidelines that are of relevance.

Reasonableness of retained values in a site's context

6.3. One example of flexible application of the guidelines was demonstrated in the Inspector's appeal decision for a development of the Whitechapel Estate site between Varden Street and Ashfield Street, London E1 in the London Borough of Tower Hamlets in February 2018 (Appeal Ref: APP/E5900/W/17/3171437).

6.4. In the aforementioned case the Inspector found that materially adverse impacts on daylight were nonetheless acceptable. He noted that development that resulted in a proportion of residual VSC values in the mid-teens, with a smaller proportion in the bands below 15% VSC, have been found acceptable in major developments across London. More specifically, the Inspector stated:

> *108. The BRE document offers guidance on generally acceptable standards of daylight and sunlight, but advises that numerical values are not to be rigidly applied and recognises the importance of the specific circumstances of each case. Inner city development is one of the examples where a different approach might be justified. This is specifically endorsed by the [Mayor of London's] Housing SPG, which calls for guidelines to be applied sensitively to higher density developments, especially in (among others) opportunity areas and accessible locations, taking 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. … I agree with the appellants that blanket application of the BRE guide optimum standards, which are best achieved in relatively low-rise well spaced layouts, is not appropriate in this instance.*
>
> *109. The SPG advises that the daylight impact on adjacent properties should be assessed drawing on "broadly comparable residential typologies within the area and of a similar nature across London"...*
>
> *112. The figures [from comparable typologies from a range of example sites across Central London analysed by the appellants, comprising both traditional urban streets and recently permitted areas of significant development] show that a proportion of residual Vertical Sky Component ('VSC') values in the mid-teens have been found acceptable in major developments across London. This echoes the Mayor's endorsement in the pre SPG decision at Monmouth House, Islington that VSC values in the mid-teens are acceptable in an inner urban environment. They also show a smaller proportion in the bands below 15%...*
>
> *113. I acknowledge that a focus on overall residual levels could risk losing sight of individual problem areas. It is accepted that light is only one factor in assessing overall levels of amenity, but I consider that the trade-off with other factors, such as access to public transport or green space, is likely to be of more relevance to an occupier of new development than to an existing neighbour whose long-enjoyed living conditions would be adversely affected by new buildings. However, I also consider that Inner London is an area where there should generally be a high expectation of development taking place. This is particularly so in the case of the appeal site, where the Whitechapel Vision Masterplan and the City Fringe Opportunity Area Planning Framework have flagged the desirability of high density development. Existing residents would in my view be prepared for change and would not necessarily expect existing standards of daylight and sunlight to persist after development.*

6.5. Ultimately, it is for the planning authority to judge whether affected properties would be left with acceptable levels of daylight and sunlight in their neighbourhood context, having regard to all relevant planning policies and guidance and balanced against the merits of the proposed development.

Proximity of neighbouring building to site boundary

6.6. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light. Appendix F of the BRE guide gives further guidance. This involves setting alternative target values generated from the layout dimensions of the existing neighbouring building and its position relative to the boundary. To ensure that new development matches the height and proportions of existing buildings, the VSC and APSH targets for the neighbouring windows could be set to those for a 'mirror-image' building of the same height and size, an equal distance away on the other side of the boundary.

6.7. In the Inspector's appeal decision for a development at Enterprise House, 21 Buckle Street, London E1 8NN in the London Borough of Tower Hamlets dated 17 December 2018 (Appeal Ref: APP/E5900/W/17/3191757) he interpreted this as applying to buildings built at the back edge of pavement and whose windows were therefore "effectively on the site boundary". He stated:

> *19. … The BRE Guide recognises that windows that are unusually close to the boundary take more than their fair share of light. This is an acknowledgement that the first built scheme of a local cluster could otherwise prevent the full potential of adjacent sites from being realised.*
>
> *20. In such inequitable circumstances the Rainbird judgement found that 'If an existing building has been so designed that, whether by the inclusion of balconies or overhangs, it makes relatively larger reductions in daylight unavoidable even if there is a modest new obstruction opposite, that design could be seen as taking for the existing building 'more than their fair share of light' in the same way the BRE Guide regards a building that has windows that 'are unusually close to the site boundary' as doing; in each case, a greater reduction in daylight and sunlight may be unavoidable if one site is not to be unfairly prejudiced by how another has been developed.'*[5]
>
> *21. In such a situation the BRE Guide advises that 'To ensure that new development matches the height and proportion of existing buildings, the VSC and APSH targets for these windows could be set to those for a 'mirror-image' building of the same height and size, an equal distance away on the other side of the boundary.*[6]
>
> *22. The appellants carried out an assessment of the impact on all affected windows through a range of criteria, including a mirror image exercise with the 28 storey Altitude/Goldpence Apartments building…*
>
> *23. The mirror-image exercise, although not quite to the letter of the guidelines, gives a clear indication that overall, in this more equitable arrangement, many more flats in the Altitude/Goldpence Apartments building would be affected and many more in the upper storeys would have a material deterioration in daylight and sunlight levels similar to those in the lower storeys. Such an impact would be considered acceptable, in terms of a fair share of light. In my view this provides a reasonable justification for a greater reduction in daylight and sunlight levels in the surrounding buildings as a result of this proposal than might otherwise be considered appropriate. By strictly applying the BRE guidelines, development of the site would be unfairly prejudiced.*

[5] Rainbird, R (on the application of) v The Council of the London Borough of Tower Hamlets [2018]
[6] Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2nd Edition, 2011) - Appendix F para F5.

Self-obstructing balconies, wings and other projections

6.8. Balconies and projecting wings to existing neighbouring buildings obstruct the available daylight and sunlight and can therefore cause relative reductions in light to be amplified. The BRE guide states:

> *2.2.11 Existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC, and on the area receiving direct skylight. One way to demonstrate this would be to carry out an additional calculation of the VSC and area receiving direct skylight, for both the existing and proposed situations, without the balcony in place. For example, if the proposed VSC with the balcony was under 0.8 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of light.*
>
> *2.2.12 A larger relative reduction in VSC may also be unavoidable if the existing window has projecting wings on one or both sides of it, or is recessed into the building so that it is obstructed on both sides as well as above.*
>
> *3.2.9 Balconies and overhangs above an existing window tend to block sunlight, especially in summer. Even a modest obstruction opposite may result in a large relative impact on the sunlight received. One way to demonstrate this would be to carry out an additional calculation of the APSH, for both the existing and proposed situations, without the balcony in place. For example, if the proposed APSH with the balcony was under 0.8 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of sunlight.*

6.9. Clearly, balconies, wings and other projections from buildings can be a factor in the relative light loss to such buildings. In such instances it can be helpful to run a supplementary assessment with the projections removed, in order to understand the degree to which they contribute to the relative light loss.

Deep, side-lit rooms

6.10. Another example where the standard numerical guidelines need to be applied sensibly is in relation to deep, side-lit rooms. The BRE guide states:

> *If an existing building contains rooms lit from one side only and greater than 5 m deep, then a greater movement of the no sky line may be unavoidable.*

Truncated living/kitchen/diner

6.11. Given the greater flexibility afforded by the NPPF and Mayor of London's Housing SPG, it is appropriate to separate kitchens from living/kitchen/diners if they are located in the rear of the room and can reasonably be considered as a separate, internalised non-day-lit room. Where it cannot be reasonably separated, the kitchen should be included as the part of the room as a whole.

7. Scope of the assessment

New development

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

7.2. Daylight has been assessed to all types of habitable rooms.

7.3. Sunlight has been assessed to all types of habitable rooms, where they have at least one window facing within 90˚ of due south.

Neighbouring buildings

7.4. The principal recommendations in the BRE guide relate to residential buildings. Its guidelines on daylight are intended for use for rooms in neighbouring dwellings where daylight is required, including living rooms, kitchens and bedrooms (BRE paragraph 2.2.2). Its guidelines on sunlight apply to all main living rooms of neighbouring dwellings and conservatories that have a window facing within 90˚of due south (BRE paragraph 3.2.3).

7.5. Consequently, our assessment has been scoped to include nearby residential accommodation, as is common practice for studies for planning applications.

7.6. We identified the properties that are in residential use from a site visit and online research, including the Valuation Office Agency council tax list, local authority planning records, and estate agency websites.

7.7. We have run the BRE daylight and sunlight tests in the existing baseline and proposed development scenarios. This establishes the levels that would be retained in the proposed development condition and the degree to which they change from the existing baseline.

8. Information used in our technical study

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

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

8.2.1. 3D computer model of the existing buildings on the Site and the contextual massing produced from photogrammetry (aerial photography) supplied by AccuCities Ltd, subsequently enhanced by us with the more detailed information listed below

8.2.2. Measured survey information from APR Services

8.2.3. Floor plans for neighbouring buildings, where available

8.2.4. Proposed development: 3D model supplied by Pollard Thomas Edwards Architects in 2022 (file name: APR-PTE-ZZZ-XX-M3-A-00002_Building-Copy (2)-1.0-rvt)

8.3. To aid accuracy of the assessment and interpretation of the results, we carried out online searches to obtain the floor plans for the neighbouring buildings referred to above, including from online planning application records and general estate agency websites. This is the approach recommended in the Professional Guidance Note, 'Daylighting and sunlighting' (1st edition, 2012), published by the Royal Institution of Chartered Surveyors, which states:

> *As a minimum, and subject to any limitations relating to a client instruction, surveyors should undertake searches of the local authority's planning portal to establish existing or proposed room layouts of neighbouring properties if they are available. This will ensure a robust approach and enable the surveyor to produce reliable information for daylight distribution analysis, or if average daylight factor (ADF) tests are appropriate … Surveyors should also use the internet to search for other relevant information, including estate agent details, which commonly include plans of properties that can also be useful in determining a room layout or use.*

8.4. Our research yielded the information listed in **Table 2** below. The plan ref. refers to the numbering on the location plan at Appendix 2.

***Table 2** - Information on internal layouts of neighbouring properties*

Plan ref.	Neighbouring property	Nature of plans	Comment
1	2 Priory Terrace	Plans from council planning records	Full plans
3	6 Priory Terrace	Plans from council planning records	Full plans
6	12 Priory Terrace	Plans from council planning records	Partial plans
9	18 Priory Terrace	Plans from council planning records	Full plans
10	20 Priory Terrace	Plans from council planning records	Full plans
11	22 Priory Terrace	Plans from council planning records	Full plans
15	30 Priory Terrace	Plans from council planning records	Partial plans
17	34 Priory Terrace	Plans from council planning records	Partial plans
19	142 Abbey Road	Plans from council planning records	Full plans
20	126 Abbey Road	Plans from council planning records	Full plans
21	124 Abbey Road	Plans from council planning records	Full plans
23	125 Belize Road	Plans from council planning records	Full plans
24	127 Belsize Road	Plans from council planning records	Full plans

Plan ref.	Neighbouring property	Nature of plans	Comment
25	129 Belsize Road	Plans from council planning records	Full plans
28	181 Belsize Road	Plans from council planning records	Full plans

8.5. Where we found plans for neighbouring properties, we used them to model their rooms. Where we were been unable to find plans, we modelled their rooms based on estimated dimensions, typically adopting a generic 4m-deep room for residential premises, unless the style of building suggested otherwise.

8.6. Our 3D computer model is shown on our spot-height drawings at Appendix 2.

8.7. For the ADF assessment we used the window and room parameters stated in Table 3.

***Table 3** – Window and room parameters used in ADF calculations*

Parameter	Value – Neighbouring Properties	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	0.92 for vertical windows with normal exposure in residential developments in urban locations with good maintenance
Diffuse light transmittance of glazing	0.8 for single glazing, 0.68 for double glazing	0.68 for double glazing
Frame and glazing bar factor	0.7 for wooden frames and large panes of glass	0.8 for metal frames and large panes
Internal surface reflectance	0.5 – BRE default mean value where finishes are not known	0.85 for white ceilings 0.81 for pale cream walls 0.4 for light wood floors

Limitations and assumptions

8.8. 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.

8.9. Whilst we have used plans for neighbouring buildings where available, we have typically made reasonable assumptions as to their internal floor levels and wall thicknesses.

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

8.11. 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.

9. Light within the proposed development

9.1. It should be noted that where there are open-plan living/kitchen/dining rooms (LKDs) which have kitchens in the rear of the space, they have been notionally truncated to exclude the kitchen area. This effectively treats it as a non-day-lit internalised room, and the remaining living/dining area has been assessed. This is a deviation from the standard methodology and estimates the average daylight in the living area, not the average for the room. However, given the greater flexibility afforded by the NPPF and the Mayor of London's Housing SPG, it is advised this is a reasonable approach.

9.2. Where kitchens cannot be reasonably truncated, they have been left to be included in the wider room area as it is believed this is a more appropriate approach for this type of layout.

9.3. Both standard and alternative guideline targets have been assessed and reported to provide a more comprehensive understanding of the levels in the proposed development. As previously stated, the BRE guide says that its default numerical guidelines are not mandatory and must be interpreted flexibly because natural lighting is only one of many factors in site layout design.

Daylight to new dwellings

ADF

9.4. The results of the ADF test for the assessed proposed dwellings are set out in the table of results at Appendix C. The level of adherence to the BRE numerical guidelines is summarised in **Table 4** below.

***Table 4** - Number of rooms meeting ADF guidelines – Truncated kitchens*

Floor level	Total number of rooms tested	Number of rooms meeting ADF guidelines	Number of rooms below ADF guidelines
Block A	163	106	57
Block B	152	126	26
Block C	82	62	20
Total	**397**	**294**	**103**

9.5. **Table 4** shows that 294 (74%) rooms assessed would satisfy the BRE guidelines for ADF.

9.6. Of the rooms that do not meet the criteria, there are unavoidable design factors, such as deep rooms where it is challenging to allow light to reach the back of the rooms. The other leading cause of failures is where balconies are situated directly above. 73 of these rooms that fail to meet guidance have windows that are served by an inset balcony or has a balcony directly above. Many of these are bedrooms, which are less reliant on light than the other habitable rooms assessed.

***Table 5** - Number of rooms meeting alternative ADF guidelines – Truncated kitchens*

Floor level	Total number of rooms tested	Number of rooms meeting ADF guidelines	Number of rooms below ADF guidelines
Block A	163	*113*	*50*
Block B	152	*132*	*20*
Block C	82	*68*	*14*
Total	**397**	***313***	***84***

9.7. When considering alternative target values for ADF in respect of LKD, Kitchens and Studios, 313 rooms satisfy the criteria, making the overall pass rate 79%. As shown in is summarised in **Table 5** above.

***Table 6** - Number of rooms meeting ADF guidelines – Full room layouts*

Floor level	Total number of rooms tested	Number of rooms meeting ADF guidelines	Number of rooms below ADF guidelines
Block A	163	98	65
Block B	152	100	52

Floor level	Total number of rooms tested	Number of rooms meeting ADF guidelines	Number of rooms below ADF guidelines
Block C	82	48	34
Total	**397**	**246**	**151**

9.8. **Table 6** shows that 246 (62%) rooms assessed would satisfy the BRE guidelines for ADF when considering the full layout of all LKD's. No truncated kitchens.

***Table 7** - Number of rooms meeting alternative ADF guidelines – Full room layouts*

Floor level	Total number of rooms tested	Number of rooms meeting ADF guidelines	Number of rooms below ADF guidelines
Block A	163	*102*	*61*
Block B	152	*122*	*30*
Block C	82	*58*	*24*
Total	**397**	***282***	***115***

9.9. When considering alternative target values for ADF in respect of LKD, Kitchens and Studios, 282 rooms satisfy the criteria, making the overall pass rate 71%. As shown in is summarised in **Table 7** above.

9.10. Overall it is believed, given the addition of private external amenity space in the form of balconies the dense surrounding context, and the recommended flexible approach to ADF targets in line with the BRE guidance the level of ADF within the development is appropriate.

Additional recommendations: no-sky line

NSL

9.11. The results of the NSL test are set out in the table of results at Appendix C. The level of adherence to the BRE recommendations are summarised in Table 8 below.

***Table 8** - Number of rooms meeting NSL guidelines – Truncated kitchens*

Floor level	Total number of rooms tested	Number of rooms meeting room depth guidelines	Number of rooms not meeting room depth guidelines
Block A	163	125	38
Block B	152	102	50
Block C	82	54	28
Total	397	**281**	**116**

9.12. **Table 8** shows that 281 (71%) rooms assessed would satisfy the room depth guidelines.

9.13. As with the ADF results, there are a number of the rooms that are deep single aspect rooms, and rooms with balconies overhanging above them.

9.14. Of the rooms that do not meet criteria, there are factors of design that is unavoidable. 36 rooms are deep rooms, making it difficult to achieve higher levels of direct sky visibility in rear of the room. 47 rooms are served by inset balconies or have balconies overhanging directly above, which also direct sky visibility.

9.15. Another element that is limiting direct sky visibility is the position of rooms that look directly onto one of the other buildings within the development or directly at Phase 1 on the south side of Belsize Road. Where possible, bedrooms have been put in these locations, which are less reliant on daylight.

***Table 9** - Number of rooms meeting alternative NSL guidelines – Truncated kitchens*

Floor level	Total number of rooms tested	Number of rooms meeting room depth guidelines	Number of rooms not meeting room depth guidelines
Block A	163	*144*	*19*
Block B	152	*128*	*24*

Floor level	Total number of rooms tested	Number of rooms meeting room depth guidelines	Number of rooms not meeting room depth guidelines
Block C	82	*65*	*17*
Total	397	***337***	***60***

9.16. **Table 9** shows that 337 (85%) rooms assessed would satisfy the room depth guidelines. The increase considering the alternative targets allow for a flexible approach to the BRE guidelines that can be considered appropriate.

Table 10 *- Number of rooms meeting NSL guidelines – Full room layouts*

Floor level	Total number of rooms tested	Number of rooms meeting room depth guidelines	Number of rooms not meeting room depth guidelines
Block A	163	125	38
Block B	152	101	51
Block C	82	53	29
Total	397	**279**	**118**

9.17. **Table 10** shows that 279 (70%) rooms assessed would satisfy the room depth guidelines.

9.18. As with the ADF results, there are a number of the rooms that are deep single aspect rooms, and rooms with balconies overhanging above them.

Table 11 *- Number of rooms meeting alternative NSL guidelines – Full room layouts*

Floor level	Total number of rooms tested	Number of rooms meeting room depth guidelines	Number of rooms not meeting room depth guidelines
Block A	163	*144*	*19*
Block B	152	*124*	*28*
Block C	82	*63*	*19*
Total	397	***331***	***66***

9.19. **Table 11** shows that 331 (83%) rooms assessed would satisfy the room depth guidelines.

9.20. As expected, when removing kitchens in the rear of a joint space, it allows light to achieve room depth guidelines. As we believe it is appropriate to consider these truncated kitchens as non-daylight- lit rooms, this is the appropriate approach

Sunlight to new dwellings

9.21. The results of the sunlight analysis of the main living rooms with at least one room facing within 90 degrees due south and with truncated kitchens, within the proposed scheme are tabulated at Appendix C and summarised in **Table 12** below.

Table 12 *- Number of main living rooms meeting APSH guidelines – Truncated kitchens*

Location within the proposed development	Total number of rooms tested	Number of rooms meeting APSH guidelines	Number of rooms below APSH guidelines
Block A	57	18	39
Block B	44	42	2
Block C	25	20	5
Total	**126**	**80**	**46**

9.22. Table 12 shows that 80 (63%) rooms assessed will satisfy the APSH guidelines.

9.23. Of the rooms that do not satisfy both annual and winder APSH guidelines with at least one window facing 90 degrees due south, 15 rooms will satisfy at least either winter guidelines or annual guidelines. Combining these with the 80 rooms that do meet criteria increases the percentage to 75% that either meet both criteria or at least one of winter or annual sunlight guidance.

9.24. Considering the alternative guidelines for APSH are summarised in **Table 13** below:

Table 13 *- Number of main living rooms meeting alternative APSH guidelines – Truncated kitchens*

Location within the proposed development	Total number of rooms tested	Number of rooms meeting APSH guidelines	Number of rooms below APSH guidelines
Block A	57	*27*	*30*
Block B	44	*44*	*0*
Block C	25	*22*	*3*
Total	**126**	***93***	***33***

9.25. **Table 13** shows that 93 (74%) rooms assessed will satisfy the APSH alternative guidelines.

9.26. The results of the sunlight analysis of the main living rooms with at least one room facing within 90 degrees due south and with full room layouts within the proposed scheme are tabulated at Appendix C and summarised in **Table 14** below.

Table 14 *- Number of main living rooms meeting APSH guidelines – Full room layouts*

Location within the proposed development	Total number of rooms tested	Number of rooms meeting APSH guidelines	Number of rooms below APSH guidelines
Block A	57	18	39
Block B	44	42	2
Block C	25	20	5
Total	**126**	**80**	46

9.27. **Table 14** shows that 80 (63%) rooms assessed will satisfy the APSH guidelines.

9.28. Of the rooms that do not satisfy both annual and winder APSH guidelines with at least one window facing 90 degrees due south, 15 will satisfy either winter or annual sunlight guidelines. This increases the percentage to 82% if you consider rooms that meet both or one of the guidelines for sunlight.

9.29. Considering the alternative guidelines for APSH are summarised in **Table 15** below:

Table 15 *- Number of main living rooms meeting alternative APSH guidelines – Full room layouts*

Location within the proposed development	Total number of rooms tested	Number of rooms meeting APSH guidelines	Number of rooms below APSH guidelines
Block A	57	*27*	30
Block B	44	*44*	0
Block C	25	*22*	3
Total	**126**	***93***	**33**

9.30. **Table 15** shows that 93 (74%) rooms assessed will satisfy the APSH guidelines.

9.31. Overall the sunlight experienced by the main living rooms within the development are of good levels with a good number meeting both annual and winder criteria, or at least one of them.

10. Baseline condition for neighbouring properties

10.1. We have assessed the impacts of the proposed development relative to the existing baseline condition.

10.2. The existing baseline scenario and the proposed development scenario are shown on our spot-height drawing no 19495_SPT_005 at Appendix 2.

10.3. The daylight and sunlight levels in the existing baseline and proposed development conditions are shown in the results tables Appendix 4.

10.4. The levels in the proposed scenario are then compared with those in the baseline scenario so that the loss of natural light can be quantified and compared with the BRE numerical guidelines.

10.5. Window maps for the assessed buildings are attached at Appendix 2.

11. Effects of the proposed development on neighbouring properties

11.1. We assessed the effects of the proposed development on the following properties:

2 Priory Terrace	26 Priory Terrace	123 Belsize Road
4 Priory Terrace	28 Priory Terrace	125 Belsize Road
6 Priory Terrace	30 Priory Terrace	127 Belsize Road
8 Priory Terrace	32 Priory Terrace	129 Belsize
10 Priory Terrace	34 Priory Terrace	Wingreen
12 Priory Terrace	36 Priory Terrace	Sanbourne
14 Priory Terrace	143 Abbey Road	Abbey Road Phase 1
16 Priory Terrace	126 Abbey Road	181 Belzine Road
18 Priory Terrace	Flat 1 -102 Snowman House	1 Priory Terrace
20 Priory Terrace		3 Priory Terrace
22 Priory Terrace	Flat 1- 102 Casterbridge House	3a Priory Terrace
24 Priory Terrace		5 Priory Terrace

Daylight to neighbouring properties

VSC and NSL

11.2. The results of the VSC and NSL analyses of the neighbouring properties are tabulated in Appendix 4 and summarised in **Table 16** and **Table 17** below.

***Table 16** - Number of rooms experiencing VSC effects as a result of the proposed development*

Address	Total number of windows tested	Number of windows meeting VSC guidelines	Number of windows with impacts beyond VSC guidelines
2 Priory Terrace	2	2	-
4 Priory Terrace	2	2	-
6 Priory Terrace	15	15	-
8 Priory Terrace	6	6	-
10 Priory Terrace	7	6	1
12 Priory Terrace	7	4	3
14 Priory Terrace	12	10	2
16 Priory Terrace	12	12	-
18 Priory Terrace	9	9	-
20 Priory Terrace	9	9	-
22 Priory Terrace	8	8	-
24 Priory Terrace	9	9	-
26 Priory Terrace	9	9	-
28 Priory Terrace	9	9	-
30 Priory Terrace	9	9	-
32 Priory Terrace	9	9	-
34 Priory Terrace	9	9	-
36 Priory Terrace	8	5	3
143 Abbey Road	13	12	1
126 Abbey Road	9	9	-
124 Abbey Road	9	9	-

Address	Total number of windows tested	Number of windows meeting VSC guidelines	Number of windows with impacts beyond VSC guidelines
Flat 1 to 102 Snowman House	136	136	-
Flat 1 to 102 Casterbridge	306	302	4
123 Belsize Road	14	14	-
125 Belsize Road	10	10	-
127 Belsize Road	14	14	-
129 Belsize Road	15	15	-
Wingreen	52	52	-
Sandbourne	36	36	-
Abbey Rd_	199	119	80
181 Belsize Road	6	6	-
1 Priory Terrace	5	5	-
3 Priory Terrace	5	5	-
3a Priory Terrace	5	5	-
5 Priory Terrace	5	5	-
Total	**990**	**896**	**94**

11.3. Of the 990 windows of habitable rooms assessed in the 35 neighbouring properties, 896 (90%) would satisfy the VSC guidelines.

***Table 17** - Number of rooms experiencing NSL effects as a result of the proposed development*

Address	Total number of rooms tested	Number of rooms meeting NSL guidelines	Number of rooms with impacts beyond NSL guidelines
2 Priory Terrace	1	1	-
4 Priory Terrace	2	2	-
6 Priory Terrace	6	6	-
8 Priory Terrace	4	3	1
10 Priory Terrace	5	3	2
12 Priory Terrace	4	2	2
14 Priory Terrace	8	6	2
16 Priory Terrace	8	6	2
18 Priory Terrace	8	8	-
20 Priory Terrace	8	8	-
22 Priory Terrace	6	6	-
24 Priory Terrace	8	8	-
26 Priory Terrace	8	6	2
28 Priory Terrace	8	6	2
30 Priory Terrace	8	5	3
32 Priory Terrace	8	5	3
34 Priory Terrace	7	3	4
36 Priory Terrace	8	6	2
143 Abbey Road	9	9	-
126 Abbey Road	7	7	-
124 Abbey Road	7	7	-
Flat 1 to 102 Snowman House	102	91	11
Flat 1 to 102 Casterbridge	204	204	-
123 Belsize Road	10	10	-
125 Belsize Road	6	6	-
127 Belsize Road	10	10	-
129 Belsize Road	10	10	-
Wingreen	28	28	-
Sandbourne	23	23	-
Abbey Rd_	164	118	46

Address	Total number of rooms tested	Number of rooms meeting NSL guidelines	Number of rooms with impacts beyond NSL guidelines
181 Belsize Road	4	4	-
1 Priory Terrace	4	4	-
3 Priory Terrace	3	3	-
3a Priory Terrace	3	3	-
5 Priory Terrace	3	3	-
Total	**712**	**630**	**82**

11.4. Of the 712 Habitable Rooms assessed in the 35 neighbouring properties 630 (88%) would satisfy the NSL guidelines.

11.5. The impacts on VSC and NSL would full satisfy the BRE guidelines for the following properties:

2 Priory Terrace	126 Abbey Road	Sandbourne
4 Priory Terrace	124 Abbey Road	181 Belsize Road
6 Priory Terrace	123 Belsize Road	1 Priory Terrace
18 Priory Terrace	125 Belsize Road	3 Priory Terrace
20 Priory Terrace	127 Belsize Road	3a Priory Terrace
22 Priory Terrace	129 Belsize Road	5 Priory Terrace
24 Priory Terrace	Wingreen	

11.6. The impacts on VSC and NSL would not fully satisfy the BRE guidelines for the following properties and are examined in further detail:

8 Priory Terrace	26 Priory Terrace	143 Abbey Road
10 Priory Terrace	28 Priory Terrace	Flat 1-102 Snowman House
12 Priory Terrace	30 Priory Terrace	
14 Priory Terrace	32 Priory Terrace	Flat 1-102 Casterbridge
16 Priory Terrace	34 Priory Terrace	Abbey Road Phase 1

11.7. Of the 7 properties that would not satisfy VSC the BRE guidelines, 2 would satisfy the NSL assessment. Conversely, of the 13 properties that would not satisfy NSL the BRE guidelines, 8 would satisfy VSC guidance. This means only 5 properties will not meet either criterion.

11.8. Of the overall VSC results, 47 (5%) windows of the 990 windows assessed will only incur a low adverse impact due to the development's completion. If these were to be included with the 897 windows that do meet the criteria, 96% of neighbour windows will meet guidance or only incur a low adverse impact.

11.9. Of the overall NSL results, 32 (4%) rooms of the 712 habitable rooms assessed will incur a low adverse impact due to the development's completion. If these were to be included with the 633 rooms that do meet the criteria, 93% of neighbouring rooms will meet guidance or only incur a low adverse impact.

11.10. Only one building will see low, medium and high adverse impacts regarding VSC and NSL, Abbey Rd Phase 1. Considering VSC, 35 (18%) windows will see a low negative impact, 35 (18%) windows will see a medium adverse impact, and 11 (6%) will see a high negative impact. This means 59%, leaving an overall pass rate of 59% windows. Considering NSL, 13 (8%) rooms will see a low adverse impact, 11 (7%) windows will see a medium adverse impact, and 22 (13%) will see a high adverse impact. This means there is an overall pass rate of 72% of rooms. the 7 properties that would not satisfy VSC the BRE guidelines, 2 would satisfy the NSL assessment. Of

the 13 properties that would not satisfy NSL the BRE guidelines, 8 would satisfy VSC guidance. This means only 5 properties will not meet either criteria.

ADF (supplementary test)

11.11. The results of the supplementary daylight test for ADF are tabulated in Appendix B and summarised in Table 18 below.

***Table 18** - Number of rooms experiencing ADF effects as a result of the proposed development*

Address	Total number of rooms tested	Number of rooms meeting ADF guidelines	Number of rooms below ADF guidelines
2 Priory Terrace	1	1	-
4 Priory Terrace	2	1	1
6 Priory Terrace	6	5	-
8 Priory Terrace	4	3	1
10 Priory Terrace	5	2	3
12 Priory Terrace	4	0	4
14 Priory Terrace	8	4	4
16 Priory Terrace	8	4	4
18 Priory Terrace	8	7	1
20 Priory Terrace	8	7	1
22 Priory Terrace	6	4	2
24 Priory Terrace	8	2	6
26 Priory Terrace	8	1	7
28 Priory Terrace	8	1	7
30 Priory Terrace	8	3	5
32 Priory Terrace	8	2	6
34 Priory Terrace	7	2	5
36 Priory Terrace	8	0	8
143 Abbey Road	9	3	6
126 Abbey Road	7	7	-
124 Abbey Road	7	7	-
Flat 1 to 102 Snowman	102	101	1
Flat 1 to 102 Casterbridge	204	167	37
123 Belsize Road	10	8	2
125 Belsize Road	6	3	3
127 Belsize Road	10	6	4
129 Belsize Road	10	4	6
Wingreen	28	24	4
Sandbourne	23	23	-
Abbey Rd_	164	118	46
181 Belsize Road	4	4	-
1 Priory Terrace	4	4	-
3 Priory Terrace	3	3	-
3a Priory Terrace	3	3	-
5 Priory Terrace	3	3	-
Total	**712**	**537**	**174**

11.12. Table 18 shows that of the 712 rooms assessed in 35 neighbouring properties, 537 rooms (76%) would satisfy the BRE guidelines for ADF.

11.13. 157 (22%) habitable rooms assessed that do not meet guidance only incur a low adverse impact with the exception of one. If these were to be included with the 537 rooms that meet the criteria, 93% of neighbouring rooms will meet guidance or only incur a low adverse impact. Abbey Rd Phase 1 will incur a low adverse impact on 29 rooms (18%) and a medium adverse impact on 17

rooms (10%). 118 rooms (72%) will meet the BRE guidelines. Showing ADF, as a supplementary assessment, results at a much higher level than that of VSC and NSL.

11.14. Of the windows that do not satisfy the VSC criteria, 49 will only incur a minor transgression. Meaning that 945 windows will satisfy the guidance or only incur a minor transgression. Increasing the percentage from 91% to 95%. Of the rooms that do not satisfy the NSL criteria, 33 would only incur a minor transgressions. Meaning that 663 would satisfy the BRE guidance or only incur a minor transgression, increasing the overall percentage from 88% to 93%.

Sunlight to neighbouring properties

11.15. The results of the annual and winter sunlight analyses are tabulated in Appendix B and summarised **Table 19** below.

Table 19 *– Number of rooms experiencing APSH effects as a result of the proposed development*

Address	Total number of windows tested	Number of windows meeting APSH guidelines	Number of windows with impacts beyond APSH guidelines
2 Priory Terrace	-	-	-
4 Priory Terrace	-	-	-
6 Priory Terrace	3	3	-
8 Priory Terrace	2	2	-
10 Priory Terrace	3	3	-
12 Priory Terrace	2	2	-
14 Priory Terrace	8	8	-
16 Priory Terrace	8	8	-
18 Priory Terrace	-	-	-
20 Priory Terrace	-	-	-
22 Priory Terrace	1	1	-
24 Priory Terrace	8	8	-
26 Priory Terrace	8	8	-
28 Priory Terrace	8	8	-
30 Priory Terrace	4	4	-
32 Priory Terrace	8	8	-
34 Priory Terrace	6	6	-
36 Priory Terrace	8	8	-
143 Abbey Road	4	4	-
126 Abbey Road	3	3	-
124 Abbey Road	1	1	-
Flat 1 to 102 Snowman	-	-	-
Flat 1 to 102 Casterbridge	34	34	-
123 Belsize Road	-	-	-
125 Belsize Road	-	-	-
127 Belsize Road	-	-	-
129 Belsize Road	-	-	-
Wingreen	-	-	-
Sandbourne	-	-	-
Abbey Rd_	-	-	-
181 Belsize Road	-	-	-
1 Priory Terrace	3	3	-
3 Priory Terrace	2	2	-
3a Priory Terrace	2	2	-
5 Priory Terrace	2	2	-
Total	**128**	**128**	-

Table 19 shows that of the 128 rooms assessed in 35 neighbouring properties, 128 rooms (100%) would satisfy the BRE guidelines for both annual and winter APSH.

12. Conclusion

12.1. We assessed the daylight and sunlight provision to the new dwellings and sunlight to amenity spaces within the proposed development. We also assessed the potential effects of the proposed development on daylight and sunlight to surrounding residential properties and amenity spaces.

12.2. We ran our assessments using methodologies recommended in the BRE guide.

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

12.4. As the development contains housing, I refer to the NPPR and the Mayor of London's Housing SPG, which emphasise the need for flexible application of the BRE guidelines.

12.5. Camden's local planning policy specifically acknowledges that the BRE guidance has been developed with lower density suburban situations in mind and that the numerical guidelines should therefore be operated more flexibly in dense inner-urban locations within the borough.

12.6. The overall daylight adherence within the development is 74% for ADF and 71% for NSL, considering the alternative target guidance. For sunlight, the adherence percentage is 74% for the alternative target guidance. Many non-adherence results for both Daylight and Sunlight are the inclusion of inset or protruding balconies.

12.7. The overall daylight adherence considering the impact on neighbouring properties is 91% for VSC and 88% for NSL. Both are high levels of adherence. In respect of sunlight, the overall adherence is 100%.

12.8. In conclusion, it is submitted that the layout of the proposed development is consistent with the Council's local planning policy on daylight and sunlight, particularly having regard to paragraph 123(c) of the National Planning Policy Framework and paragraphs 1.3.45 and 1.3.46 of the Mayor of London's Housing SPG.

Delva Patman Redler LLP
Chartered Surveyors

Appendix 1

Assessment methodology and glossary

1. This appendix explains the daylight and sunlight assessment methodology recommended in BRE Report 209, *'Site Layout Planning for Daylight and Sunlight: A guide to good practice'* (2011) and provides a glossary of the terminology used.

Assessment methodology

Daylight and sunlight in new development

Daylight to new dwellings

*Vertical sky component (**VSC**)*

2. At the very early stages in design and at outline planning application stage, when room layouts and window locations may be undecided, daylight availability may be checked by calculating the VSC at a series of points on each main face of the building.

3. Although the BRE guide recommends setting the calculation points at 1.6 m above the ground (or base of the lowest storey) and no more than 5 m apart, with computer software it is possible to set up a grid of points across the facades.

4. The guide advises that if the VSC is found to change rapidly along a façade it is worthwhile, if possible, siting windows where most daylight is available.

5. The amount of daylight a room needs depends on what it is being used for. But roughly speaking, if the VSC is:

    - at least 27% (obstruction angle less than 25˚), conventional window design will usually give reasonable results;
    - between 15% and 27% (obstruction angle between 25˚and 45˚), special measures (for example, larger windows or changes to room layout) might be needed to provide adequate daylight;
    - between 5% and 15% (obstruction angle between 45˚and 65˚), it is very difficult to provide adequate daylight unless very large windows and/or light internal surface finishes are used;
    - less than 5% (obstruction angle greater than 65˚), it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.

*Average daylight factor (**ADF**)*

6. The BRE guide advises that daylight provision in new rooms can be checked using the average daylight factor (ADF). The ADF is a measure of the overall amount of daylight in a space.

7. Living rooms and kitchens need more daylight than bedrooms. Areas without a special requirement for daylight, like bathrooms, stairwells, garages and storage areas, need not be assessed.

8. Appendix C of the BRE guide gives guidance on how to calculate the ADF. Where there are multiple windows, the ADF due to each one can be added together. The ADF due to each window can be calculated using the following formula:

$$ADF = \frac{TMA_w\theta}{A(1-R^2)}$$

where:

T is the diffuse visible transmittance of the glazing (for clean, clear double glazing with a low emissivity coating, a value of 0.68 can be used);

M is a maintenance factor, allowing for the effects of dirt;

A_w is the net glazed area of the window (m^2);

A is the total area of the room surfaces: ceiling, floor, walls and windows (m^2);

R is their average reflectance based on the reflectances of the room finishes (if room finishes are not known a default value of 0.5 can be taken for fairly light-coloured rooms);

θ is the angle of visible sky in degrees, measured from a point halfway between the inner and outer faces of the window wall.

9. Of these quantities, only θ depends on external obstruction. It can be directly related to the vertical sky component (VSC), which can be calculated using the Waldram diagram method explained in Appendix B of the BRE guide. Our computer software uses this calculation method and converts the VSC value to an equivalent angle of visible sky for use in the ADF formula.

10. A special procedure is required for floor to ceiling windows such as patio doors. If part of a window is below the height of the working plane (a horizontal plane 0.85 m above the floor in housing), this portion should be treated as a separate window. The ADF for this window has an extra factor applied to it, to take account of the reduced effectiveness of low-level glazing in lighting the room. A value equal to the floor reflectance may be taken for this factor, if this is known. If room reflectances are not known, a value of 0.15 can be taken. The ADF for the portion of the window above the working plane is calculated in the normal way without this additional factor, and the ADFs for the two portions are added together.

11. The BRE guide gives minimum values of ADF in housing of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. It notes that with a higher ADF, indoor daylight will be sufficient for more of the year. So, although the minimum values can be used as targets for daylight in obstructed situations, achieving higher levels will give improved daylight provision.

12. The BRE guide advises that non-daylit internal kitchens should be avoided wherever possible, especially if the kitchen is used as a dining area too. It suggests that if the layout means that a small internal galley-type kitchen is inevitable, it should be directly linked to a well-daylit living room.

*Additional recommendations: room depth and no-sky line (**RDC** and **NSL**)*

13. Appendix C of the BRE guide makes two additional recommendations beyond ADF.

14. Firstly, the guide advises that if a daylit room is lit by windows in one wall only, the depth of the room, L, should not exceed the limiting value given by the following room depth criterion (RDC) formula:

$$\frac{L}{W} + \frac{L}{H} < \frac{2}{(1 - R_b)}$$

Where:

W is the room width

H is the window head height above floor level

R_b is the average reflectance of surfaces in the rear half of the room.

15. If L exceeds this value, the rear half of the room will tend to look gloomy and supplementary electric lighting will be required. For a typical room in a dwelling, where W = 4 m, H = 2.4 m and R_b = 0.5, the limiting depth L is just over 5 m.

16. Secondly, the guide advises that if a significant area of the working plane (normally more than 20%) lies beyond the no sky line (NSL) and receives no direct skylight, the distribution of daylight in the room will look poor and supplementary electric lighting will be required. Therefore, at least 80% of the area of the working plane in a room should lie within the no-sky line and receive direct skylight.

17. Our computer software plots the NSL within our 3D computer model and calculates the percentage of the room area with a view of sky from the working plane.

Sunlight to new dwellings

18. The BRE guide states:

> *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, where people prefer it in the morning rather than the afternoon.*
>
> *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, north east or north west, unless there is some compensating factor such as an appealing view to the north.*

19. In general, a dwelling will appear reasonably sunlit if at least one main window wall faces within 90˚ of due south and the centre of at least one window to a main living room can receive 25% of annual probable sunlight hours (**APSH**), including at least 5% of APSH in the winter months between 21 September and 21 March.

20. Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings that meet this recommendation.

21. Although the criteria applies to rooms of all orientations, if a room faces significantly north of due east or west, the guide notes they are unlikely to be met.

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

> *… the centre of each main living room window can be used for the calculation. In the case of a floor-to-ceiling window such as a patio door, a point 1.6 m above ground on the centre line of the window may be used.*

23. It also advises that:

> *… a point on the inside face of the window wall should be taken. Sunlight blocked by the window reveals should not be included, but the effect of the window frames in blocking sunlight need not be taken into account. If a room has multiple windows on the same wall or on adjacent walls, the highest value of APSH should be taken. If a room has two windows on opposite walls, the APSH due to each can be added together.*

24. In rooms with multiple windows, our computer software calculates the total APSH across all windows.

Sunlight to new gardens and amenity spaces

25. Sunlight should be assessed on the equinox (21 March) to new amenity spaces within proposed development, including private or shared gardens, children's playgrounds, and sitting-out areas, such as in public squares.

26. The assessment measures the percentage of each new amenity area that can receive at least two hours of sunlight on 21 March - the 'two-hours sun-on-ground' (**SOG**) test. At least 50% of each amenity area should be able to receive at least two hours of direct sunlight on 21 March.

27. Sunlight at an altitude of 10° or less is ignored, because it is likely to be blocked by planting, and fences or walls less than 1.5 metres high can also be ignored. Front gardens, driveways and hard standing for cars are usually omitted. Normally, trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than a deep shadow of a building.

Daylight and sunlight to neighbouring buildings and amenity spaces

Daylight to neighbouring buildings

28. The BRE guide states:

> *In designing a new development or extension to a building, it is important to safeguard the daylight to nearby buildings.*
>
> *The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices.*

29. To quantify the impact of development on daylight to a building, the BRE guide recommends two tests:

    a) calculating the vertical sky component (**VSC**) at the centre of each main window on the outside plane of the window wall, to measure the total amount of skylight available to the window; and

    b) plotting the no-sky line (**NSL**) on the working plane inside a room, where layouts are known, and measuring the area that can receive direct skylight, to assess the distribution of daylight around the room.

30. The VSC measures the skylight available at the window. The guide states:

> *Any reduction in the total amount of skylight can be calculated by finding the VSC at the centre of each main window … For a bay window, the centre window facing directly outwards can be taken as the main window. If a room has two or more windows of equal size, the mean of their VSCs may be taken. The reference point is in the external plane of the window wall. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.*

31. The NSL test is described thus:

> *Where room layouts are known, the impact on the daylighting distribution in the existing building can be found by plotting the 'no sky line' in each of the main rooms. For houses this would include living rooms, dining rooms and kitchens; bedrooms should also be analysed although they are less important. In non-domestic buildings each main room where daylight is expected should be investigated. The no sky line divides points on the working plane which can and cannot see the sky.*

32. If, following development, the VSC to a neighbouring window will be greater than 27% then enough skylight should still be reaching the window. Any reduction below this level should be kept to a minimum. If the VSC will be both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear more gloomy and electric lighting will be needed more of the time.

33. If, following development, the no-sky line moves so that the area of the existing room that can receive direct skylight will be reduced to less than 0.8 times its former value, this will be noticeable to the occupants and more of the room will appear poorly lit. This is also true if the no-sky line encroaches on key areas like kitchen sinks and worktops.

34. A third daylight test in the BRE guide is the average daylight factor (**ADF**), which assesses the average level of daylight inside a room. It is a detailed calculation that takes account of window and room parameters, including the net glazed area of each window (after discounting frames and glazing bars), the diffuse light transmittance of the glazing, the total surface area of the room, and the reflectance of those surfaces, plus the amount of sky visible at each of the windows. It is therefore primarily intended for assessing daylight within proposed buildings, where such parameters can be

readily established. It may also be used to assess neighbouring consented development that is not yet built and could be affected by the proposed development.

35. Using the ADF test for existing neighbouring buildings can potentially be a useful supplementary test to aid a more rounded and balanced judgement on the acceptability of VSC and NSL effects, as the post-development retained ADF values may be checked against the minimum recommendations for new dwellings. These are 1% in bedrooms, 1.5% in living rooms and 2% in kitchens.

Sunlight to neighbouring buildings

36. The BRE guide states:

> *To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90˚of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.*
>
> *A point at the centre of the window on the outside face of the window wall may be taken [as the calculation point].*

37. To quantify the available sunlight, the BRE guide advises measuring the percentage of annual probable sunlight hours (**APSH**), which is defined as follows:

> *'probable sunlight hours' means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question.*

38. The assessment calculates the percentage of APSH over the whole year (annual sunlight) and between 21 September and 21 March (winter sunlight).

39. If, following development, the APSH to a neighbouring window will be greater than 25%, including at least 5% of APSH in the winter months between 21 September and 21 March, then the room should still receive enough sunlight. Any reduction in sunlight access below this level should be kept to a minimum.

40. If the available sunlight hours will be both less than the above amounts and less than 0.8 times their former value, either over the whole year or just in the winter months, then the occupants of the building will notice the loss of sunlight; if the overall annual loss is greater than 4% of APSH, the room may appear colder and less cheerful and pleasant.

Sunlight to neighbouring gardens and amenity spaces

41. Sunlight should be assessed on the equinox (21 March) to main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views, such as a group of monuments or fountains.

42. The assessment measures the percentage of each area that can receive at least two hours of sunlight on 21 March - the 'two-hours sun-on-ground' (**SOG**) test.

43. It is recommended that at least half of the area of a garden or amenity space should be able to receive at least two hours of sunlight on 21 March. If such a space is already heavily obstructed, then any further loss of sunlight should be kept to a minimum. In this poorly sunlit case, if, following development, the area which can receive two hours of direct sunlight on 21 March is reduced to less than 0.8 times its former size, this loss of sunlight is likely to be noticeable. In such cases the garden or amenity area will tend to look more heavily overshadowed.

44. Sunlight at an altitude of 10° or less is ignored, because it is likely to be blocked by planting, and fences or walls less than 1.5 metres high can also be ignored. Front gardens, driveways and hard standing for cars are usually omitted. Normally, trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than a deep shadow of a building.

Glossary of terms

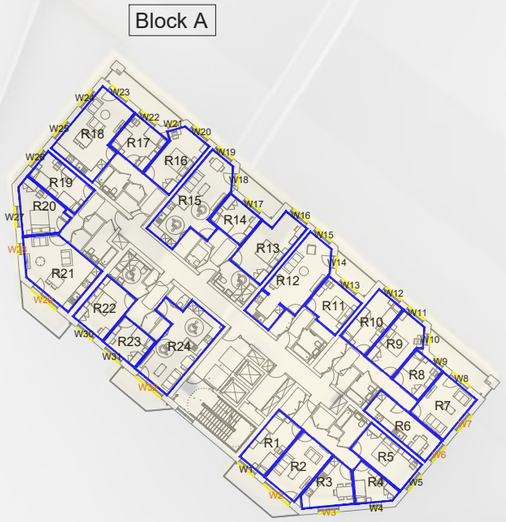
45. The daylight and sunlight terminology used in our report is explained below.

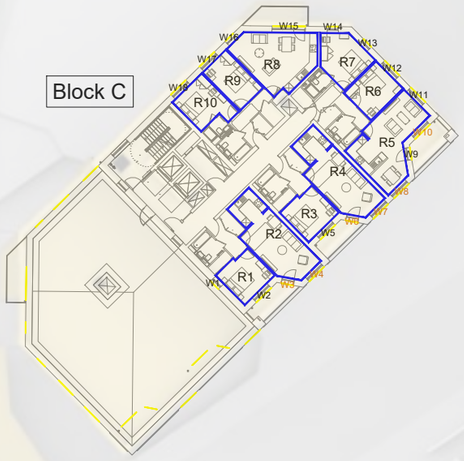
Term	Meaning
Annual probable sunlight hours (**APSH**)	The long-term average of the total number of hours during a year in which direct sunlight is expected to shine on the unobstructed ground, allowing for average levels of cloudiness for the location in question.
Average daylight factor (**ADF**)	Ratio of total daylight flux incident on the working plane to the area of the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky. Thus a 1% ADF would mean that the average indoor illuminance would be one hundredth the outdoor unobstructed illuminance.
Daylight	Combined skylight and sunlight.
No-sky line (**NSL**)	The outline on the working plane of the area from which no sky can be seen. It divides points on the working plane which can and cannot see the sky.
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.
Room depth criterion (**RDC**)	The limiting depth of a room for good daylighting, where it is lit from one side only. The limiting depth is a factor of the window head height above floor level, the room width, and the average reflectance of surfaces in the rear half of the room (away from the window). Sunlight below an angle of
Sky factor	Ratio of the parts of illuminance at a point on a given plane that would be received directly through unglazed openings from a sky of uniform luminance, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The sky factor does not include reflected light, either from outdoor or indoor surfaces.
Sun on ground (**SOG**)	The measure of sunlight potential to gardens and amenity spaces. It is measured in hours on the spring equinox (21 March) at a point on the ground accounting for the latitude of the site location. Sunlight below an altitude of 10° is usually discounted as it is likely to be prevented from reaching the ground by fences, plants or other low-level obstructions.
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.
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.

Appendix 2

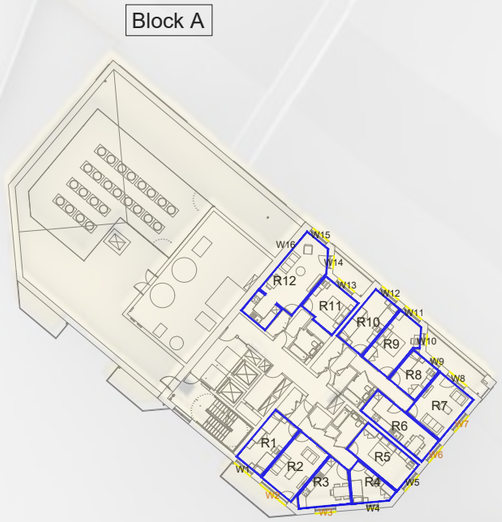
Location drawings

Site location plan
Spot-height drawings
Window maps
Room location plans





Fourth & Fifth Floor Plan



Block C

Sixth Floor Plan

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Proposed
- Surrounding
- Floor Layouts
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:

Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

Proposed Phase 3:
(Scheme Received 08.04.2022)
Pollard Thomas Edwards Architects:
3D Model File Name:
- ARR-PTE-ZZ-XX-M3-A-00002-1.0-.dwg

Dwg No's:
- ARR-PTE-ZZ-XX-SK-A-9401-06_RevA

NOTES:

REV	Description	Drawn	Ch'kd	Date

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TITLE:
ABBEY ROAD - PHASE 3
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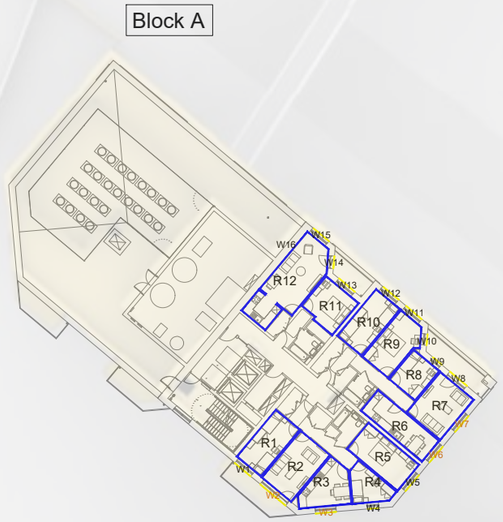
DRAWING:
KEY WINDOW LOCATIONS
Plan View
Proposed Fourth - Sixth Floor Layouts

DRAWN: VK	JOB NO: 19495
SCALE: 1:500@A3	
DATE: 13/04/2022	
DWG NO: LOC_007.1	REV: -



Block A

Block B

Block C

Seventh & Eighth Floor Plan

Block A

Block B

Block C

Ninth & Tenth Floor Plan

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

Proposed

Surrounding

Floor Layouts

W1 Windows tested Daylight only

W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:

Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

Proposed Phase 3:
(Scheme Received 08.04.2022)
Pollard Thomas Edwards Architects:
3D Model File Name:
- ARR-PTE-ZZ-XX-M3-A-00002-1.0-.dwg

Dwg No's:
- ARR-PTE-ZZ-XX-SK-A-9401-06_RevA

NOTES:

REV	Description	Drawn	Ch'kd	Date

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TITLE:

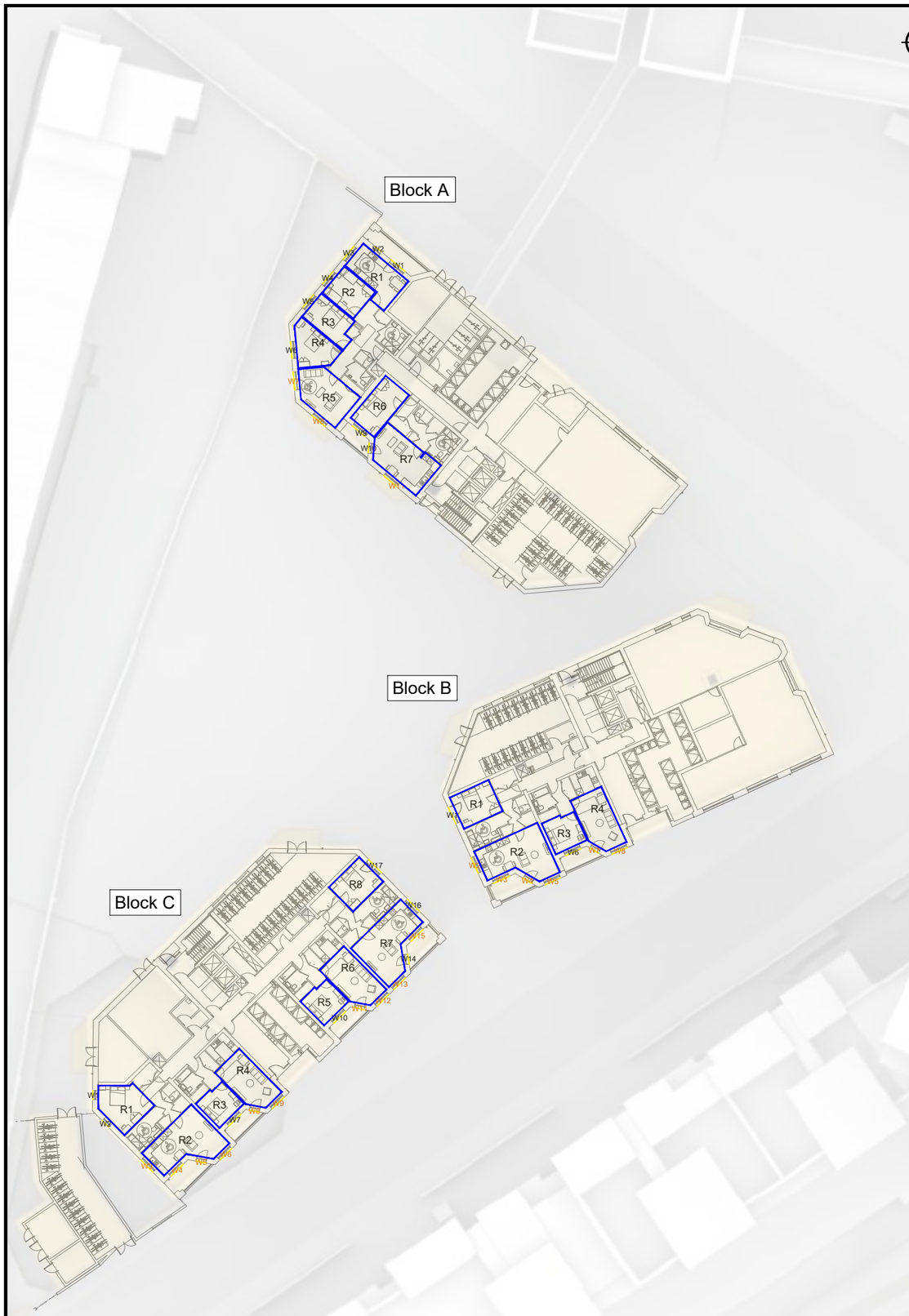
ABBEY ROAD - PHASE 3
LONDON, NW8.

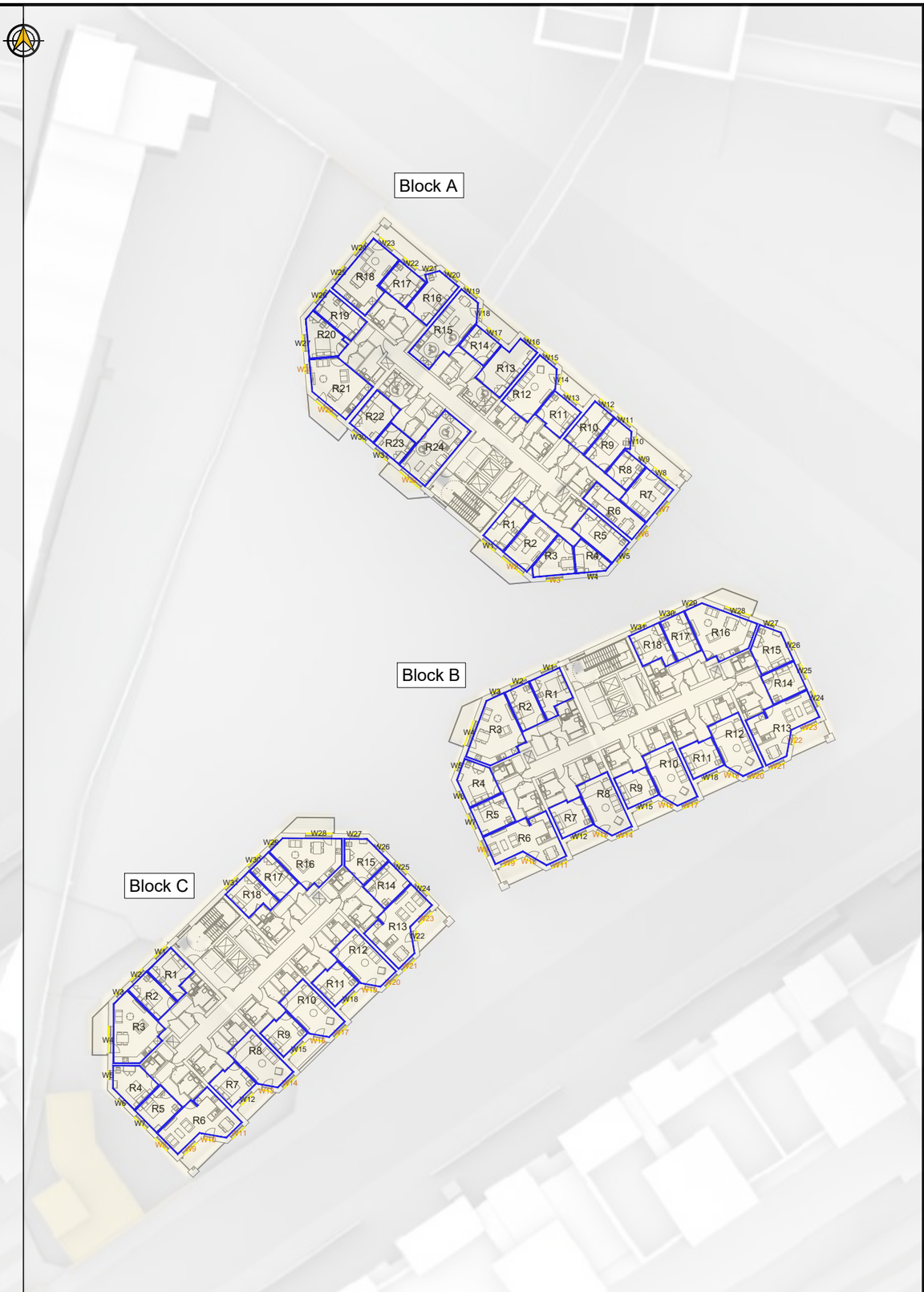
DRAWING:

KEY WINDOW LOCATIONS
Plan View

Proposed Seventh - Tenth Floor Layouts

DRAWN: VK	JOB NO: 19495
SCALE: 1:500@A3	
DATE: 13/04/2022	
DWG NO: LOC_007.2	REV: -





NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Proposed
- Surrounding
- Floor Layouts
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:

Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

Proposed Phase 3:
(Scheme Received 08.04.2022)
Pollard Thomas Edwards Architects:
3D Model File Name:
- ARR-PTE-ZZ-XX-M3-A-00002-1.0-.dwg

Dwg No's:
- ARR-PTE-ZZ-XX-SK-A-9401-06_RevA

NOTES:

REV	Description	Drawn	Ch'kd	Date

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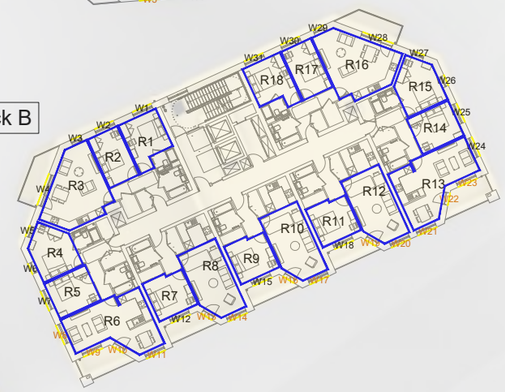
TITLE:
ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:
KEY WINDOW LOCATIONS
Plan View
Proposed Ground - Third Floor Layouts

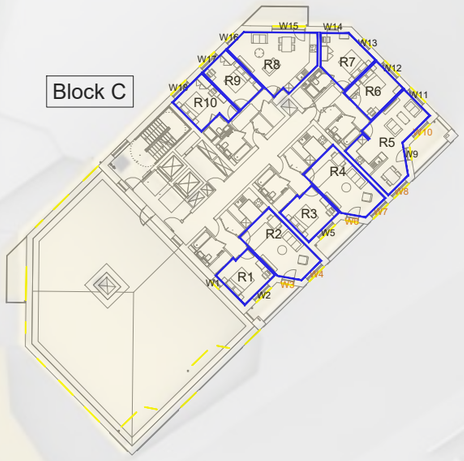
DRAWN: VK	JOB NO: 19495
SCALE: 1:500@A3	
DATE: 13/04/2022	
DWG NO: LOC_008	REV: -

Block A

Block B

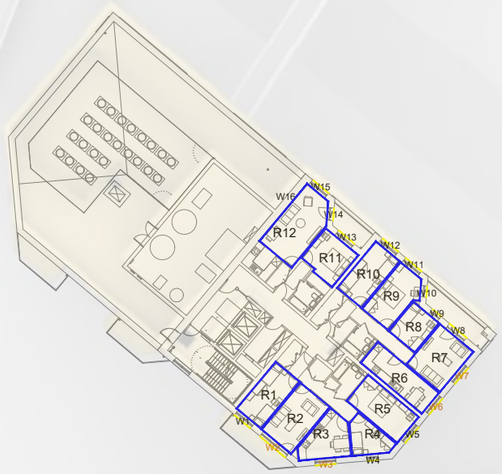


Block C

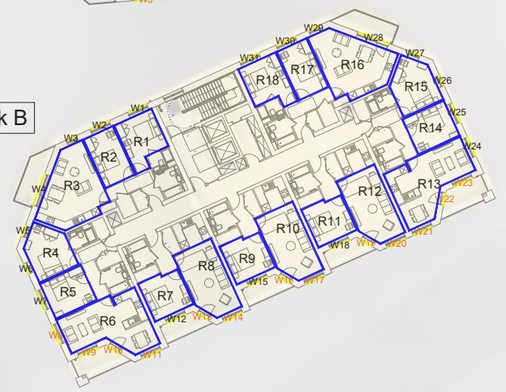


Fourth & Fifth Floor Plan

Block A



Block B



Block C

Sixth Floor Plan

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Proposed
- Surrounding
- Floor Layouts
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:

Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

Proposed Phase 3:
(Scheme Received 08.04.2022)
Pollard Thomas Edwards Architects:
3D Model File Name:
- ARR-PTE-ZZ-XX-M3-A-00002-1.0-.dwg

Dwg No's:
- ARR-PTE-ZZ-XX-SK-A-9401-06_RevA

NOTES:

REV	Description	Drawn	Ch'kd	Date

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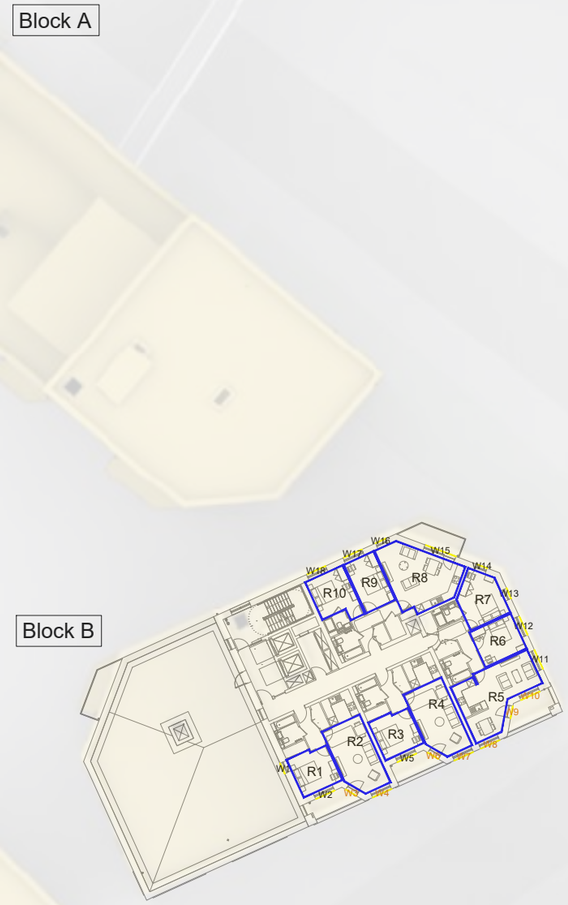
TITLE:
ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:
KEY WINDOW LOCATIONS
Plan View

Proposed Fourth - Sixth Floor Layouts

DRAWN: VK	JOB NO: 19495
SCALE: 1:500@A3	
DATE: 13/04/2022	
DWG NO: LOC_008.1	REV: -

Seventh & Eighth Floor Plan



Ninth & Tenth Floor Plan

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

Proposed

Surrounding

Floor Layouts

W1 Windows tested Daylight only

W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:

Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

Proposed Phase 3:
(Scheme Received 08.04.2022)
Pollard Thomas Edwards Architects:
3D Model File Name:
- ARR-PTE-ZZ-XX-M3-A-00002-1.0-.dwg

Dwg No's:
- ARR-PTE-ZZ-XX-SK-A-9401-06_RevA

NOTES:

REV	Description	Drawn	Ch'kd	Date

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TITLE:

ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:

KEY WINDOW LOCATIONS
Plan View

Proposed Seventh - Tenth Floor Layouts

DRAWN: VK	JOB NO: 19495
SCALE: 1:500@A3	
DATE: 13/04/2022	
DWG NO: LOC_008.2	REV: -

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

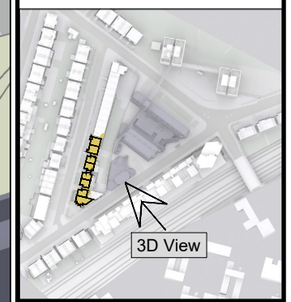
SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:



REV	Description	Drawn	Ch'kd	Date

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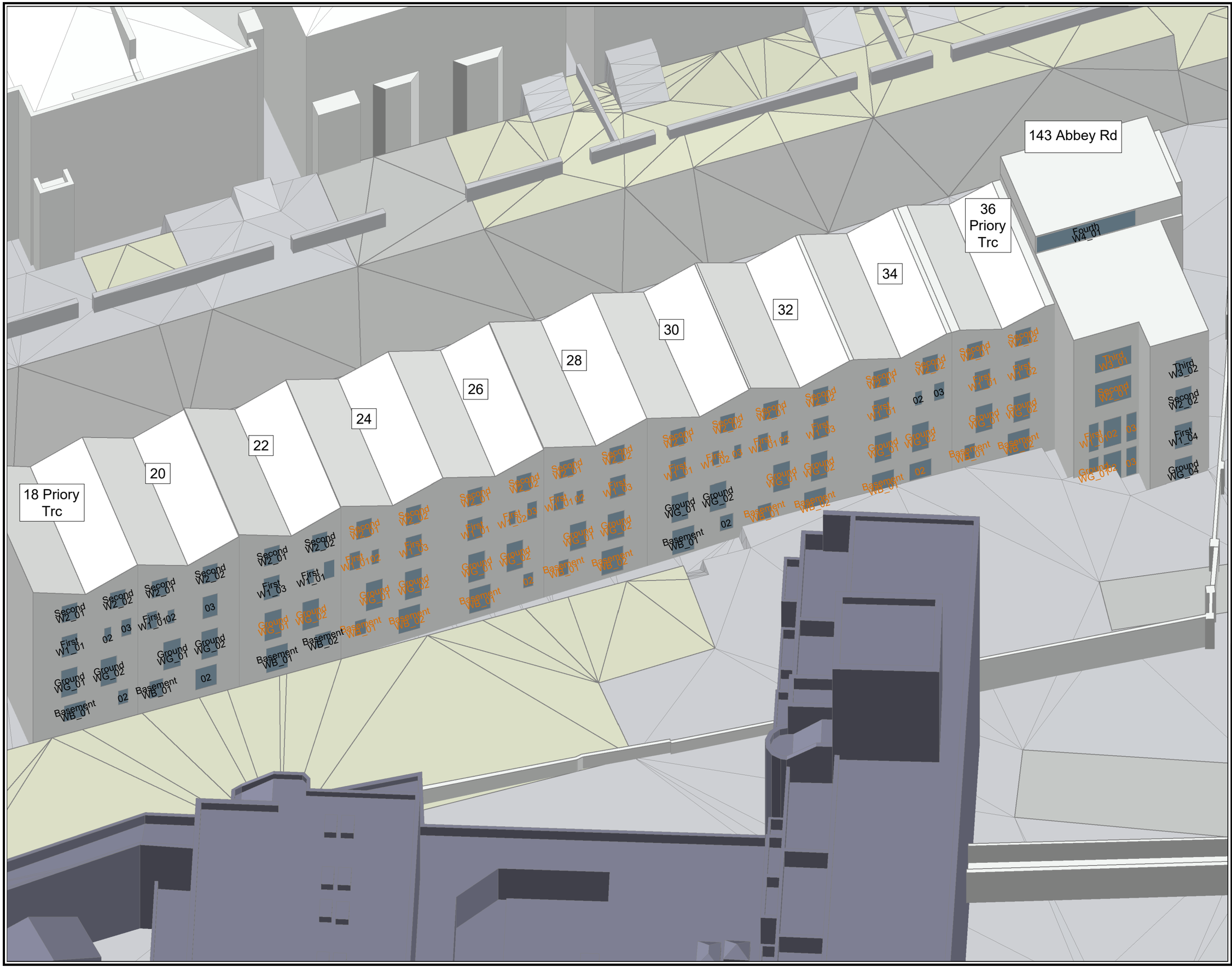
TITLE:

ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:

KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN: VK	JOB NO: 19495
SCALE: NTS	
DATE: 13/04/2022	
DWG NO: LOC_011	REV: -



NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

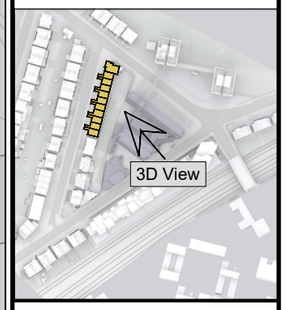
SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:



REV	Description	Drawn	Ch'kd	Date

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TITLE:
ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:
KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN: VK	JOB NO: 19495
SCALE: NTS	
DATE: 13/04/2022	
DWG NO: LOC_012	REV: -

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:

REV	Description	Drawn	Ch'kd	Date

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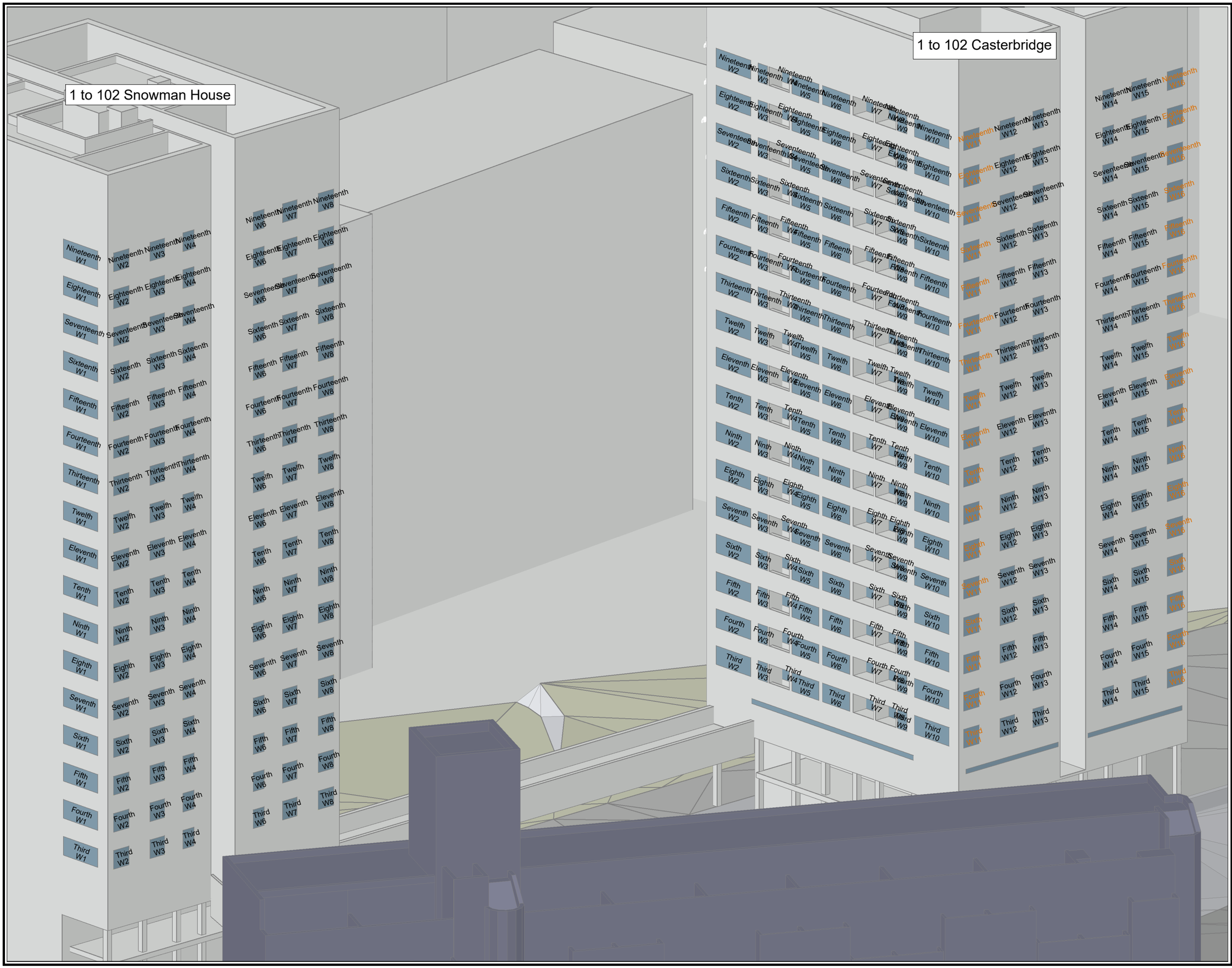
TITLE:
ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:
KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN:	VK	JOB NO:	19495
SCALE:	NTS		
DATE:	13/04/2022		
DWG NO:	LOC_013	REV:	-



NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:

REV	Description	Drawn	Ch'kd	Date

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Bristol 0117 450 9703
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TITLE:

ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:

KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN: VK	JOB NO: 19495
SCALE: NTS	
DATE: 13/04/2022	
DWG NO: LOC_014	REV: -

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

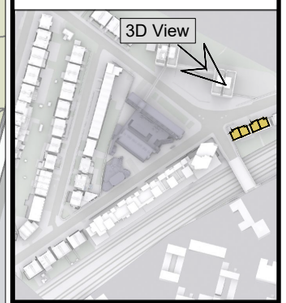
SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:



REV	Description	Drawn	Ch'kd	Date

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TITLE:
ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:
KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN: VK	JOB NO: 19495
SCALE: NTS	
DATE: 13/04/2022	
DWG NO: LOC_015	REV: -

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

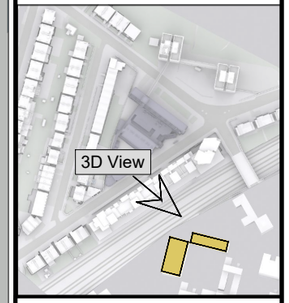
SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:



REV	Description	Drawn	Ch'kd	Date

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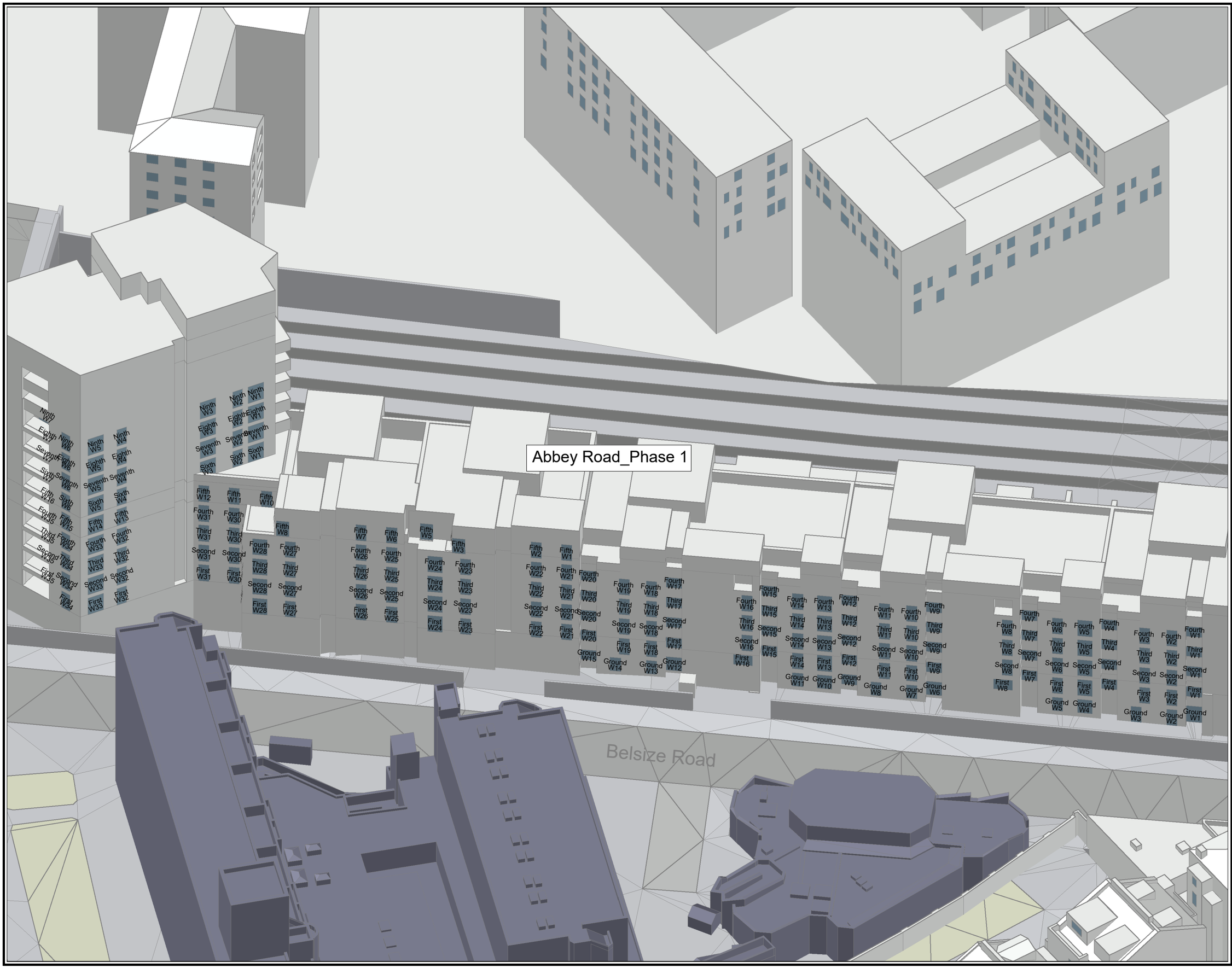
TITLE:
ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:
KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN: VK	JOB NO: 19495
SCALE: NTS	
DATE: 13/04/2022	
DWG NO: LOC_016	REV: -



NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

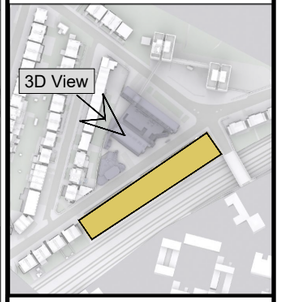
SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:



REV	Description	Drawn	Ch'kd	Date

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Chartered Surveyors

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Bristol 0117 450 9703

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info@delvapatmanredler.co.uk

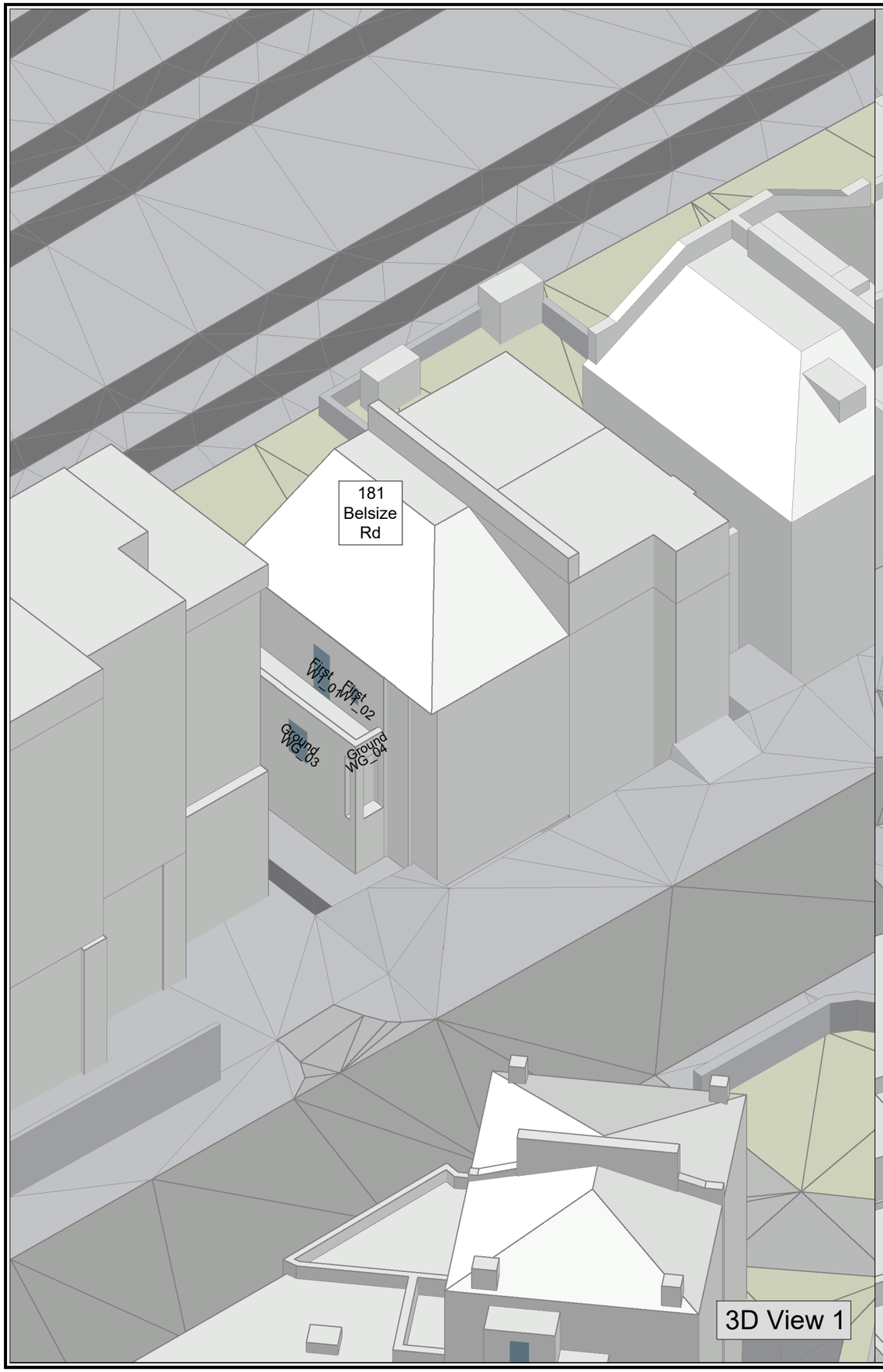
TITLE:

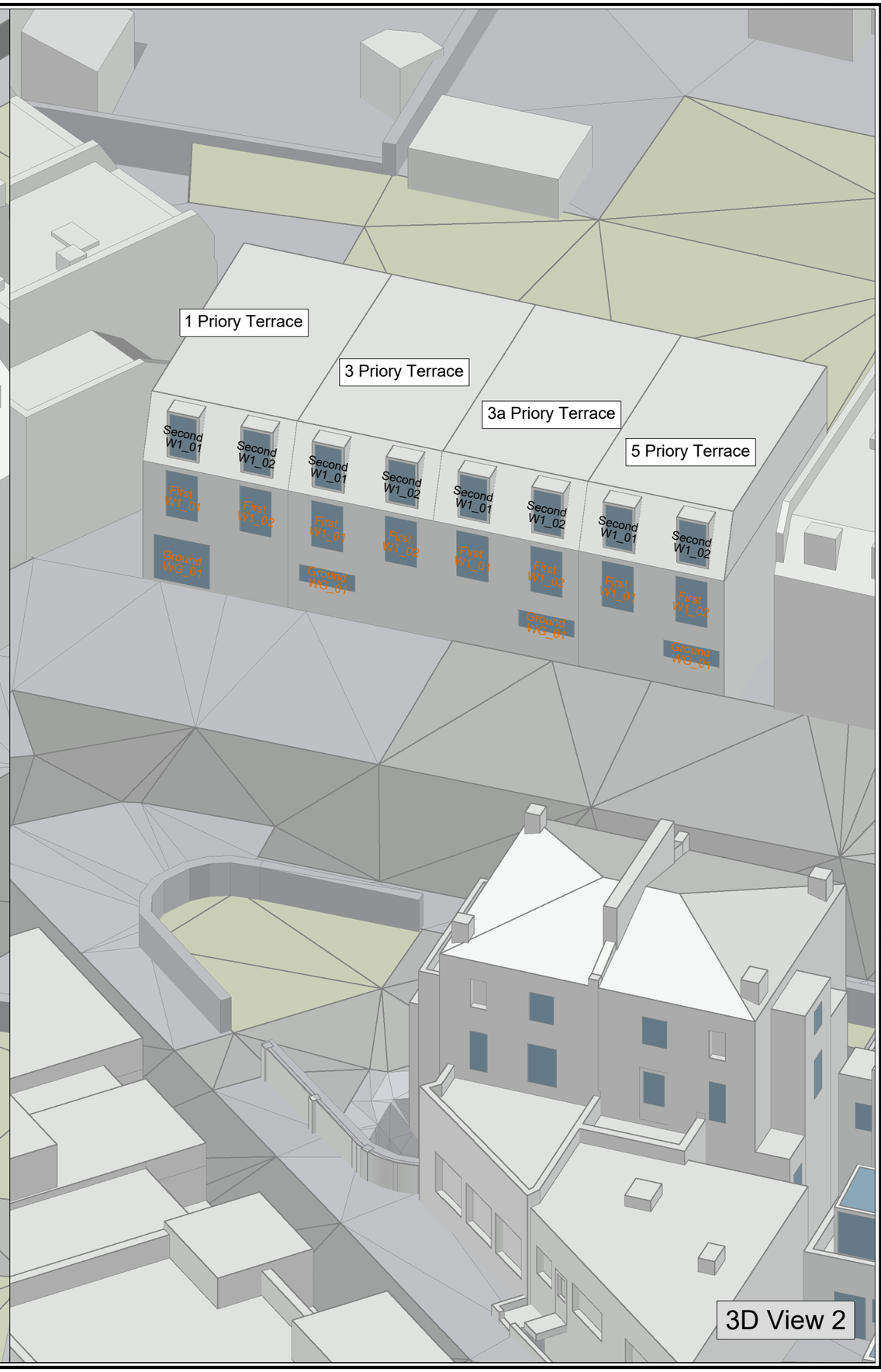
ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:

KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN: VK	JOB NO: 19495
SCALE: NTS	
DATE: 13/04/2022	
DWG NO: LOC_017	REV: -





NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighbouring Property
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

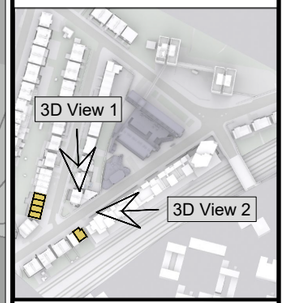
SOURCE DATA:

Drawings Used:
Existing and surrounding buildings:
APR Services:
Dwg No's: 912386 1-10, E1-E4

Accucites 3D contextual massing model.

Surrounding Phase 1 building:
(Received 02.2015)
Pollard Thomas Edwards Architects:
Dwg No's: - PL (00) 100 - 105, 200, 201, 300 - 302

NOTES:



REV	Description	Drawn	Ch'kd	Date

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Chartered Surveyors

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Bristol 0117 450 9703

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TITLE:

ABBEY ROAD - PHASE 3
LONDON, NW8.

DRAWING:

KEY WINDOW LOCATIONS
Plan and 3D Views

DRAWN: VK		JOB NO: 19495
SCALE: NTS		
DATE: 11/03/2022		
DWG NO: LOC_004		REV: -

Appendix 3

Daylight and sunlight results for proposed dwellings

Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
Block A Proposed																			
Ground	Plan(s)	R1	Residential	KD	W1	40°N	↗		*0.73*		*2*	*0*							
					W2	40°N	↗		*0.26*		*2*	*0*							
					W3	310°N	↖		*1.51*		*4*	*0*							
								2.0		2.50			6	0	Yes	-	No	19	5
	Plan(s)	R2	Residential	Bedroom	W4	310°N	↖		*1.94*		*4*	*0*							
								1.0		1.94			4	0	Yes	-	No	21	5
	Plan(s)	R3	Residential	Bedroom	W5	310°N	↖		*1.77*		*4*	*0*							
								1.0		1.77			4	0	Yes	-	No	21	5
	Plan(s)	R4	Residential	Bedroom	W6	265°	←		*1.82*		*20*	*5*							
								1.0		1.82			20	5	Yes	-	Win only	5	0
	Plan(s)	R5	Residential	Living Room	W7	265°	←		*1.43*		*25*	*5*							
					W8	220°	↙		*1.44*		*35*	*13*							
								1.5		2.87			36	13	Yes	-	Yes	-11	-8
	Plan(s)	R6	Residential	Bedroom	W9	220°	↙		*0.83*		*8*	*7*							
								1.0		0.83			8	7	No	0.17	Win only	17	-2
	Plan(s)	R7	Residential	LKD	W10	275°N	←		*0.43*		*14*	*0*							
					W11	220°	↙		*1.25*		*33*	*9*							
								2.0		1.67			34	9	No*	0.33	Yes	-9	-4
First	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		*1.26*		*15*	*8*							
								1.0		1.26			15	8	Yes	-	Win only	10	-3
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		*1.70*		*21*	*6*							
								1.5		1.70			21	6	Yes	-	Win only	4	-1
	Plan(s)	R3	Residential	KD	W3	175°	↓		*0.81*		*6*	*3*							
								2.0		0.81			6	3	No	1.19	No	19	2
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		*0.35*		*0*	*0*							
								1.0		0.35			0	0	No	0.65	No	25	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		*0.99*		*13*	*1*							
								1.0		0.99			13	1	No	0.01	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		*1.15*		*18*	*2*							
								2.0		1.15			18	2	No	0.85	No	7	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		*1.32*		*22*	*2*							
					W8	40°N	↗		*0.99*		*0*	*0*							
								1.5		2.30			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		*0.69*		*0*	*0*							
								1.0		0.69			0	0	No	0.31	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		*0.51*		*7*	*2*							
					W11	40°N	↗		*1.75*		*3*	*0*							
								1.0		2.26			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		*1.81*		*3*	*0*							
								1.0		1.81			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		*0.95*		*1*	*0*							
								1.0		0.95			1	0	No	0.05	No	24	5
		R12	Residential	LD	W14	95°	→		*0.49*		*7*	*0*							
					W15	40°N	↗		*1.29*		*4*	*0*							
								1.5		1.78			7	0	Yes	-	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		*1.34*		*3*	*0*							
								1.0		1.34			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		*1.11*		*1*	*0*							
								1.0		1.11			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		*0.35*		*6*	*0*							
					W19	40°N	↗		*0.99*		*2*	*0*							
								2.0		1.34			6	0	No	0.66	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		*1.52*		*2*	*0*							
					W21	345°N	↑		*0.50*		*0*	*0*							
								1.0		2.02			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		*0.91*		*1*	*0*							
								1.0		0.91			1	0	No	0.09	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		*0.48*		*2*	*0*							
					W24	310°N	↖		*1.34*		*6*	*0*							
					W25	310°N	↖		*1.22*		*6*	*0*							

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Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								2.0		3.05			8	0	Yes	-	No	17	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.03		5	0							
								1.0		2.03			5	0	Yes	-	No	20	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.02		25	6							
								1.0		2.02			25	6	Yes	-	Yes	0	-1
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.68		19	2							
					W29	220°	↙		1.54		27	13							
								2.0		2.22			32	13	Yes	-	Yes	-7	-8
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		1.90		41	16							
								1.0		1.90			41	16	Yes	-	Yes	-16	-11
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.52		39	12							
								1.0		2.52			39	12	Yes	-	Yes	-14	-7
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.40		28	14							
								2.0		1.40			28	14	No	0.60	Yes	-3	-9
Second	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.35		17	10							
								1.0		1.35			17	10	Yes	-	Win only	8	-5
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		1.83		22	7							
								1.5		1.83			22	7	Yes	-	Win only	3	-2
	Plan(s)	R3	Residential	KD	W3	175°	↓		0.88		6	3							
								2.0		0.88			6	3	No	1.12	No	19	2
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.39		0	0							
								1.0		0.39			0	0	No	0.61	No	25	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.00		13	1							
								1.0		1.00			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.17		18	2							
								2.0		1.17			18	2	No	0.83	No	7	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.34		22	2							
					W8	40°N	↗		1.01		0	0							
								1.5		2.35			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.71		0	0							
								1.0		0.71			0	0	No	0.29	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.52		7	2							
					W11	40°N	↗		1.79		3	0							
								1.0		2.31			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.85		3	0							
								1.0		1.85			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.96		1	0							
								1.0		0.96			1	0	No	0.04	No	24	5
		R12	Residential	LD	W14	95°	→		0.50		7	0							
					W15	40°N	↗		1.32		4	0							
								1.5		1.81			7	0	Yes	-	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.37		3	0							
								1.0		1.37			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.13		1	0							
								1.0		1.13			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.36		6	0							
					W19	40°N	↗		1.01		2	0							
								2.0		1.37			6	0	No	0.63	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.56		2	0							
					W21	345°N	↑		0.52		0	0							
								1.0		2.08			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.95		1	0							
								1.0		0.95			1	0	No	0.05	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.50		2	0							
					W24	310°N	↖		1.46		9	0							
					W25	310°N	↖		1.34		10	0							
								2.0		3.29			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.24		8	0							
								1.0		2.24			8	0	Yes	-	No	17	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.24		29	7							
								1.0		2.24			29	7	Yes	-	Yes	-4	-2
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.74		24	4							

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
					W29	220°	↙		1.68		34	17							
								2.0		2.42			39	17	Yes	-	Yes	-14	-12
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.02		46	20							
								1.0		2.02			46	20	Yes	-	Yes	-21	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.66		44	16							
								1.0		2.66			44	16	Yes	-	Yes	-19	-11
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.51		32	17							
								2.0		1.51			32	17	No*	0.49	Yes	-7	-12
Third	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.42		19	12							
								1.0		1.42			19	12	Yes	-	Win only	6	-7
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		1.94		24	9							
								1.5		1.94			24	9	Yes	-	Win only	1	-4
	Plan(s)	R3	Residential	KD	W3	175°	↓		0.97		11	4							
								2.0		0.97			11	4	No	1.03	No	14	1
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.44		0	0							
								1.0		0.44			0	0	No	0.56	No	25	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.01		13	1							
								1.0		1.01			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.19		18	2							
								2.0		1.19			18	2	No	0.81	No	7	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.37		22	2							
					W8	40°N	↗		1.03		0	0							
								1.5		2.40			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.72		0	0							
								1.0		0.72			0	0	No	0.28	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.53		7	2							
					W11	40°N	↗		1.83		3	0							
								1.0		2.36			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.89		3	0							
								1.0		1.89			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.98		1	0							
								1.0		0.98			1	0	No	0.02	No	24	5
		R12	Residential	LD	W14	95°	→		0.51		7	0							
					W15	40°N	↗		1.34		4	0							
								1.5		1.85			7	0	Yes	-	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.40		3	0							
								1.0		1.40			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.15		1	0							
								1.0		1.15			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.36		6	0							
					W19	40°N	↗		1.03		2	0							
								2.0		1.40			6	0	No	0.60	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.59		2	0							
					W21	345°N	↑		0.54		0	0							
								1.0		2.13			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.98		1	0							
								1.0		0.98			1	0	No	0.02	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.51		2	0							
					W24	310°N	↖		1.55		10	0							
					W25	310°N	↖		1.43		10	0							
								2.0		3.50			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.41		10	0							
								1.0		2.41			10	0	Yes	-	No	15	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.42		31	8							
								1.0		2.42			31	8	Yes	-	Yes	-6	-3
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.79		26	5							
					W29	220°	↙		1.80		35	18							
								2.0		2.59			41	18	Yes	-	Yes	-16	-13
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.12		46	20							
								1.0		2.12			46	20	Yes	-	Yes	-21	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.78		44	16							
								1.0		2.78			44	16	Yes	-	Yes	-19	-11

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Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.62		35	20							
								2.0		1.62			35	20	No*	0.38	Yes	-10	-15
Fourth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.48		20	13							
								1.0		1.48			20	13	Yes	-	Win only	5	-8
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.04		25	10							
								1.5		2.04			25	10	Yes	-	Yes	0	-5
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.09		14	5							
								2.0		1.09			14	5	No	0.91	Win only	11	0
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.50		2	0							
								1.0		0.50			2	0	No	0.50	No	23	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.03		13	1							
								1.0		1.03			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.21		19	2							
								2.0		1.21			19	2	No	0.79	No	6	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.40		22	2							
					W8	40°N	↗		1.04		0	0							
								1.5		2.44			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.54		7	2							
					W11	40°N	↗		1.86		3	0							
								1.0		2.41			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.92		3	0							
								1.0		1.92			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
		R12	Residential	LD	W14	95°	→		0.52		7	0							
					W15	40°N	↗		1.37		4	0							
								1.5		1.89			7	0	Yes	-	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.43		3	0							
								1.0		1.43			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.16		1	0							
								1.0		1.16			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.37		6	0							
					W19	40°N	↗		1.05		2	0							
								2.0		1.42			6	0	No	0.58	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.63		2	0							
					W21	345°N	↑		0.55		0	0							
								1.0		2.18			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.52		2	0							
					W24	310°N	↖		1.60		10	0							
					W25	310°N	↖		1.48		10	0							
								2.0		3.60			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.49		10	0							
								1.0		2.49			10	0	Yes	-	No	15	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.46		31	8							
								1.0		2.46			31	8	Yes	-	Yes	-6	-3
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.80		26	5							
					W29	220°	↙		1.85		37	20							
								2.0		2.65			43	20	Yes	-	Yes	-18	-15
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.17		46	20							
								1.0		2.17			46	20	Yes	-	Yes	-21	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.85		44	16							
								1.0		2.85			44	16	Yes	-	Yes	-19	-11
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.69		36	21							
								2.0		1.69			36	21	No*	0.31	Yes	-11	-16
Fifth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.55		20	13							
								1.0		1.55			20	13	Yes	-	Win only	5	-8
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.21		30	15							
								1.5		2.21			30	15	Yes	-	Yes	-5	-10

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Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.25		19	8							
								2.0		1.25			19	8	No	0.75	Win only	6	-3
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.58		4	1							
								1.0		0.58			4	1	No	0.42	No	21	4
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.06		13	1							
								1.0		1.06			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.24		19	2							
								2.0		1.24			19	2	No	0.76	No	6	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.45		22	2							
					W8	40°N	↗		1.04		0	0							
								1.5		2.49			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.56		7	2							
					W11	40°N	↗		1.90		3	0							
								1.0		2.45			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.96		3	0							
								1.0		1.96			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
		R12	Residential	LD	W14	95°	→		0.53		7	0							
					W15	40°N	↗		1.40		4	0							
								1.5		1.92			7	0	Yes	-	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.45		3	0							
								1.0		1.45			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.03		1	0							
								1.0		1.03			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.34		5	0							
					W19	40°N	↗		1.07		3	0							
								2.0		1.41			6	0	No	0.59	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.65		2	0							
					W21	345°N	↑		0.51		0	0							
								1.0		2.16			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.88		1	0							
								1.0		0.88			1	0	No	0.12	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.47		2	0							
					W24	310°N	↖		1.61		10	0							
					W25	310°N	↖		1.49		10	0							
								2.0		3.57			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.50		10	0							
								1.0		2.50			10	0	Yes	-	No	15	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.47		31	8							
								1.0		2.47			31	8	Yes	-	Yes	-6	-3
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.81		26	5							
					W29	220°	↙		2.77		61	24							
								2.0		3.58			62	24	Yes	-	Yes	-37	-19
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.40		50	20							
								1.0		2.40			50	20	Yes	-	Yes	-25	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		3.19		50	20							
								1.0		3.19			50	20	Yes	-	Yes	-25	-15
	Plan(s)	R24	Residential	LKD	W32	220°	↙		2.60		61	24							
								2.0		2.60			61	24	Yes	-	Yes	-36	-19
Sixth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.63		23	16							
								1.0		1.63			23	16	Yes	-	Win only	2	-11
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.40		34	19							
								1.5		2.40			34	19	Yes	-	Yes	-9	-14
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.44		22	11							
								2.0		1.44			22	11	No	0.56	Win only	3	-6
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.67		6	3							
								1.0		0.67			6	3	No	0.33	No	19	2
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.10		13	1							
								1.0		1.10			13	1	Yes	-	No	12	4

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Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.29		19	2							
								2.0		1.29			19	2	No	0.71	No	6	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.51		25	3							
					W8	40°N	↗		1.04		0	0							
								1.5		2.56			25	3	Yes	-	Ann only	0	2
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.57		7	2							
					W11	40°N	↗		1.93		3	0							
								1.0		2.50			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		2.00		3	0							
								1.0		2.00			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
		R12	Residential	LD	W14	95°	→		0.54		7	0							
					W15	40°N	↗		1.42		4	0							
								1.5		1.96			7	0	Yes	-	No	18	5
Seventl	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.69		23	16							
								1.0		1.69			23	16	Yes	-	Win only	2	-11
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.54		36	21							
								1.5		2.54			36	21	Yes	-	Yes	-11	-16
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.62		24	13							
								2.0		1.62			24	13	No*	0.38	Win only	1	-8
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.76		7	4							
								1.0		0.76			7	4	No	0.24	No	18	1
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.18		14	1							
								1.0		1.18			14	1	Yes	-	No	11	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.36		23	2							
								2.0		1.36			23	2	No	0.64	No	2	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.60		28	3							
					W8	40°N	↗		1.05		0	0							
								1.5		2.65			28	3	Yes	-	Ann only	-3	2
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.58		7	2							
					W11	40°N	↗		1.97		3	0							
								1.0		2.55			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		2.03		3	0							
								1.0		2.03			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
		R12	Residential	LD	W14	95°	→		0.55		7	0							
					W15	40°N	↗		1.45		4	0							
								1.5		2.00			7	0	Yes	-	No	18	5
Eighth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		2.44		47	20							
								1.0		2.44			47	20	Yes	-	Yes	-22	-15
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		3.76		57	21							
								1.5		3.76			57	21	Yes	-	Yes	-32	-16
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.74		27	13							
								2.0		1.74			27	13	No*	0.26	Yes	-2	-8
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.87		10	4							
								1.0		0.87			10	4	No	0.13	No	15	1
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.32		20	1							
								1.0		1.32			20	1	Yes	-	No	5	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.50		28	2							
								2.0		1.50			28	2	No*	0.50	Ann only	-3	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.73		33	3							
					W8	40°N	↗		0.94		0	0							
								1.5		2.67			33	3	Yes	-	Ann only	-8	2
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.65		0	0							
								1.0		0.65			0	0	No	0.35	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.52		3	1							

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
					W11	40°N	↗		*2.01*		*3*	*0*							
								1.0		2.53			6	1	Yes	-	No	19	4
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		*2.08*		*3*	*0*							
								1.0		2.08			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		*0.88*		*1*	*0*							
								1.0		0.88			1	0	No	0.12	No	24	5
		R12	Residential	LD	W14	95°	→		*0.50*		*6*	*0*							
					W15	40°N	↗		*1.48*		*4*	*0*							
								1.5		1.98			7	0	Yes	-	No	18	5
Block B Proposed																			
Ground	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		*1.27*		*6*	*0*							
								1.0		1.27			6	0	Yes	-	No	19	5
	Plan(s)	R2	Residential	LKD	W2	246°	↙		*0.64*		*7*	*4*							
					W3	156°	↘		*0.31*		*5*	*4*							
					W4	211°	↙		*0.38*		*14*	*5*							
					W5	156°	↘		*0.94*		*26*	*4*							
								2.0		2.26			34	8	Yes	-	Yes	-9	-3
	Plan(s)	R3	Residential	Bedroom	W6	156°	↘		*0.60*		*3*	*2*							
								1.0		0.60			3	2	No	0.40	No	22	3
		R4	Residential	LD	W7	211°	↙		*0.51*		*15*	*6*							
					W8	156°	↘		*1.21*		*23*	*3*							
								1.5		1.71			27	6	Yes	-	Yes	-2	-1
First	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		*1.27*		*3*	*0*							
								1.0		1.27			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		*1.50*		*3*	*0*							
								1.0		1.50			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		*0.48*		*1*	*0*							
					W4	291°N	←		*1.34*		*15*	*2*							
								2.0		1.81			15	2	No*	0.19	No	10	3
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		*1.11*		*12*	*0*							
					W6	246°	↙		*0.69*		*6*	*0*							
								1.0		1.80			12	0	Yes	-	No	13	5
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		*1.39*		*10*	*3*							
								1.0		1.39			10	3	Yes	-	No	15	2
	Plan(s)	R6	Residential	LKD	W8	246°	↙		*0.65*		*7*	*4*							
					W9	156°	↘		*0.24*		*2*	*2*							
					W10	211°	↙		*0.24*		*9*	*8*							
					W11	156°	↘		*0.90*		*33*	*8*							
								2.0		2.02			37	9	Yes	-	Yes	-12	-4
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		*0.42*		*2*	*2*							
								1.0		0.42			2	2	No	0.58	No	23	3
		R8	Residential	LD	W13	211°	↙		*0.45*		*13*	*10*							
					W14	156°	↘		*1.15*		*30*	*7*							
								1.5		1.61			33	10	Yes	-	Yes	-8	-5
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		*0.30*		*1*	*1*							
								1.0		0.30			1	1	No	0.70	No	24	4
		R10	Residential	LD	W16	211°	↙		*0.43*		*12*	*9*							
					W17	156°	↘		*1.06*		*24*	*6*							
								1.5		1.50			27	9	Yes	-	Yes	-2	-4
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		*0.20*		*0*	*0*							
								1.0		0.20			0	0	No	0.80	No	25	5
		R12	Residential	LD	W19	211°	↙		*0.41*		*10*	*7*							
					W20	156°	↘		*0.98*		*19*	*3*							
								1.5		1.39			23	7	No	0.11	Win only	2	-2
	Plan(s)	R13	Residential	LKD	W21	156°	↘		*0.70*		*18*	*3*							
					W22	101°	→		*0.19*		*5*	*0*							
					W23	156°	↘		*0.24*		*3*	*0*							
					W24	66°N	↗		*1.08*		*14*	*0*							
								2.0		2.21			31	3	Yes	-	Ann only	-6	2
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		*2.19*		*18*	*2*							
								1.0		2.19			18	2	Yes	-	No	7	3

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Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF window	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.04		11	0							
					W27	21°N	↑		0.90		0	0							
								1.0		1.94			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.09		4	0							
					W29	336°N	↖		0.31		0	0							
								2.0		1.40			4	0	No	0.60	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.08		1	0							
								1.0		1.08			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		0.94		2	0							
								1.0		0.94			2	0	No	0.06	No	23	5
Second	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.33		3	0							
								1.0		1.33			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.58		3	0							
								1.0		1.58			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.50		1	0							
					W4	291°N	←		1.43		16	2							
								2.0		1.94			16	2	No*	0.06	No	9	3
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.17		12	0							
					W6	246°	↙		0.77		11	0							
								1.0		1.94			15	0	Yes	-	No	10	5
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		1.57		12	3							
								1.0		1.57			12	3	Yes	-	No	13	2
	Plan(s)	R6	Residential	LKD	W8	246°	↙		0.73		8	5							
					W9	156°	↘		0.33		3	3							
					W10	211°	↙		0.28		11	10							
					W11	156°	↘		1.00		37	10							
								2.0		2.34			44	14	Yes	-	Yes	-19	-9
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		0.71		4	4							
								1.0		0.71			4	4	No	0.29	No	21	1
		R8	Residential	LD	W13	211°	↙		0.51		14	11							
					W14	156°	↘		1.28		34	11							
								1.5		1.78			37	14	Yes	-	Yes	-12	-9
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		0.60		3	3							
								1.0		0.60			3	3	No	0.40	No	22	2
		R10	Residential	LD	W16	211°	↙		0.49		14	11							
					W17	156°	↘		1.18		29	10							
								1.5		1.67			32	13	Yes	-	Yes	-7	-8
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.49		2	2							
								1.0		0.49			2	2	No	0.51	No	23	3
		R12	Residential	LD	W19	211°	↙		0.47		14	11							
					W20	156°	↘		1.08		24	8							
								1.5		1.56			28	12	Yes	-	Yes	-3	-7
	Plan(s)	R13	Residential	LKD	W21	156°	↘		0.77		23	7							
					W22	101°	→		0.19		5	0							
					W23	156°	↘		0.28		5	2							
					W24	66°N	↗		1.10		14	0							
								2.0		2.34			38	9	Yes	-	Yes	-13	-4
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.24		18	2							
								1.0		2.24			18	2	Yes	-	No	7	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.06		11	0							
					W27	21°N	↑		0.92		0	0							
								1.0		1.98			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.10		4	0							
					W29	336°N	↖		0.32		0	0							
								2.0		1.42			4	0	No	0.58	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.10		1	0							
								1.0		1.10			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		0.97		2	0							
								1.0		0.97			2	0	No	0.03	No	23	5
Third	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.38		3	0							
								1.0		1.38			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.66		3	0							

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Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								1.0		1.66			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.53		1	0							
					W4	291°N	←		1.53		18	2							
								2.0		2.07			18	2	Yes	-	No	7	3
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.23		12	0							
					W6	246°	↙		0.89		19	0							
								1.0		2.11			21	0	Yes	-	No	4	5
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		1.81		20	3							
								1.0		1.81			20	3	Yes	-	No	5	2
	Plan(s)	R6	Residential	LKD	W8	246°	↙		0.85		15	5							
					W9	156°	↘		0.43		6	6							
					W10	211°	↙		0.32		12	11							
					W11	156°	↘		1.09		43	16							
								2.0		2.70			54	18	Yes	-	Yes	-29	-13
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		0.92		8	8							
								1.0		0.92			8	8	No	0.08	Win only	17	-3
		R8	Residential	LD	W13	211°	↙		0.56		18	15							
					W14	156°	↘		1.41		40	16							
								1.5		1.97			43	19	Yes	-	Yes	-18	-14
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		0.82		6	6							
								1.0		0.82			6	6	No	0.18	Win only	19	-1
		R10	Residential	LD	W16	211°	↙		0.55		17	14							
					W17	156°	↘		1.30		32	12							
								1.5		1.85			36	16	Yes	-	Yes	-11	-11
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.70		5	5							
								1.0		0.70			5	5	No	0.30	Win only	20	0
		R12	Residential	LD	W19	211°	↙		0.53		17	14							
					W20	156°	↘		1.19		27	10							
								1.5		1.72			32	15	Yes	-	Yes	-7	-10
	Plan(s)	R13	Residential	LKD	W21	156°	↘		0.85		25	9							
					W22	101°	→		0.19		5	0							
					W23	156°	↘		0.35		6	3							
					W24	66°N	↗		1.12		14	0							
								2.0		2.51			39	10	Yes	-	Yes	-14	-5
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.28		18	2							
								1.0		2.28			18	2	Yes	-	No	7	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.08		11	0							
					W27	21°N	↑		0.94		0	0							
								1.0		2.02			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.12		4	0							
					W29	336°N	↖		0.33		0	0							
								2.0		1.45			4	0	No	0.55	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.14		1	0							
								1.0		1.14			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		1.01		2	0							
								1.0		1.01			2	0	Yes	-	No	23	5
Fourth	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.45		3	0							
								1.0		1.45			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.75		3	0							
								1.0		1.75			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.56		1	0							
					W4	291°N	←		1.61		20	4							
								2.0		2.17			20	4	Yes	-	No	5	1
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.27		13	0							
					W6	246°	↙		1.04		27	3							
								1.0		2.31			30	3	Yes	-	Ann only	-5	2
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		2.17		31	5							
								1.0		2.17			31	5	Yes	-	Yes	-6	0
	Plan(s)	R6	Residential	LKD	W8	246°	↙		1.03		29	7							
					W9	156°	↘		0.51		8	8							
					W10	211°	↙		0.36		13	12							
					W11	156°	↘		1.19		49	20							

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								2.0		3.09			69	20	Yes	-	Yes	-44	-15
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		1.09		11	11							
								1.0		1.09			11	11	Yes	-	Win only	14	-6
		R8	Residential	LD	W13	211°	↙		0.61		19	16							
					W14	156°	↘		1.54		45	20							
								1.5		2.15			48	23	Yes	-	Yes	-23	-18
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		0.98		10	10							
								1.0		0.98			10	10	No	0.02	Win only	15	-5
		R10	Residential	LD	W16	211°	↙		0.60		19	16							
					W17	156°	↘		1.43		38	18							
								1.5		2.03			41	21	Yes	-	Yes	-16	-16
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.86		8	8							
								1.0		0.86			8	8	No	0.14	Win only	17	-3
		R12	Residential	LD	W19	211°	↙		0.59		19	16							
					W20	156°	↘		1.30		31	14							
								1.5		1.89			34	17	Yes	-	Yes	-9	-12
	Plan(s)	R13	Residential	LKD	W21	156°	↘		0.92		30	13							
					W22	101°	→		0.20		5	0							
					W23	156°	↘		0.41		9	6							
					W24	66°N	↗		1.14		14	0							
								2.0		2.67			44	14	Yes	-	Yes	-19	-9
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.32		19	2							
								1.0		2.32			19	2	Yes	-	No	6	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.10		11	0							
					W27	21°N	↑		0.96		0	0							
								1.0		2.06			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.13		4	0							
					W29	336°N	↖		0.35		0	0							
								2.0		1.49			4	0	No	0.51	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.20		1	0							
								1.0		1.20			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		1.06		2	0							
								1.0		1.06			2	0	Yes	-	No	23	5
Fifth	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.54		3	0							
								1.0		1.54			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.86		3	0							
								1.0		1.86			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.60		1	0							
					W4	291°N	←		1.66		21	5							
								2.0		2.26			21	5	Yes	-	Win only	4	0
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.31		14	1							
					W6	246°	↙		1.21		33	8							
								1.0		2.52			35	8	Yes	-	Yes	-10	-3
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		2.62		39	12							
								1.0		2.62			39	12	Yes	-	Yes	-14	-7
	Plan(s)	R6	Residential	LKD	W8	246°	↙		1.28		39	12							
					W9	156°	↘		0.58		9	9							
					W10	211°	↙		0.41		13	12							
					W11	156°	↘		1.28		50	20							
								2.0		3.55			81	26	Yes	-	Yes	-56	-21
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		1.22		12	12							
								1.0		1.22			12	12	Yes	-	Win only	13	-7
		R8	Residential	LD	W13	211°	↙		0.64		19	16							
					W14	156°	↘		1.66		49	20							
								1.5		2.30			52	23	Yes	-	Yes	-27	-18
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		1.11		10	10							
								1.0		1.11			10	10	Yes	-	Win only	15	-5
		R10	Residential	LD	W16	211°	↙		0.64		19	16							
					W17	156°	↘		1.55		41	18							
								1.5		2.18			44	21	Yes	-	Yes	-19	-16
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.99		8	8							
								1.0		0.99			8	8	No	0.01	Win only	17	-3

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Property, room & window attributes									Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation				ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
		R12	Residential	LD	W19	211°	↙			0.63		19	16							
					W20	156°	↘			1.42		35	15							
									1.5		2.05			38	18	Yes	-	Yes	-13	-13
	Plan(s)	R13	Residential	LKD	W21	156°	↘			1.00		33	14							
					W22	101°	→			0.20		5	0							
					W23	156°	↘			0.45		9	6							
					W24	66°N	↗			1.16		15	0							
									2.0		2.81			47	14	Yes	-	Yes	-22	-9
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗			2.36		20	2							
									1.0		2.36			20	2	Yes	-	No	5	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗			1.11		11	0							
					W27	21°N	↑			0.98		0	0							
									1.0		2.10			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑			1.14		4	0							
					W29	336°N	↖			0.39		0	0							
									2.0		1.52			4	0	No*	0.48	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖			1.30		1	0							
									1.0		1.30			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖			1.14		2	0							
									1.0		1.14			2	0	Yes	-	No	23	5
Sixth	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖			1.67		3	0							
									1.0		1.67			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖			2.00		3	0							
									1.0		2.00			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖			0.64		1	0							
					W4	291°N	←			2.51		25	5							
									2.0		3.14			25	5	Yes	-	Yes	0	0
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←			1.35		14	1							
					W6	246°	↙			1.25		34	9							
									1.0		2.60			36	9	Yes	-	Yes	-11	-4
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙			2.75		41	14							
									1.0		2.75			41	14	Yes	-	Yes	-16	-9
	Plan(s)	R6	Residential	LKD	W8	246°	↙			1.36		41	14							
					W9	156°	↘			0.53		6	6							
					W10	211°	↙			0.38		11	11							
					W11	156°	↘			1.33		54	21							
									2.0		3.60			86	28	Yes	-	Yes	-61	-23
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘			1.13		9	9							
									1.0		1.13			9	9	Yes	-	Win only	16	-4
		R8	Residential	LD	W13	211°	↙			0.60		17	15							
					W14	156°	↘			1.74		49	20							
									1.5		2.34			51	22	Yes	-	Yes	-26	-17
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘			1.18		10	10							
									1.0		1.18			10	10	Yes	-	Win only	15	-5
		R10	Residential	LD	W16	211°	↙			0.66		19	16							
					W17	156°	↘			1.63		45	18							
									1.5		2.29			48	21	Yes	-	Yes	-23	-16
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘			1.06		8	8							
									1.0		1.06			8	8	Yes	-	Win only	17	-3
		R12	Residential	LD	W19	211°	↙			0.66		19	16							
					W20	156°	↘			1.50		38	15							
									1.5		2.16			41	18	Yes	-	Yes	-16	-13
	Plan(s)	R13	Residential	LKD	W21	156°	↘			1.06		37	14							
					W22	101°	→			0.20		5	0							
					W23	156°	↘			0.48		9	6							
					W24	66°N	↗			1.18		17	0							
									2.0		2.93			51	14	Yes	-	Yes	-26	-9
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗			2.41		20	2							
									1.0		2.41			20	2	Yes	-	No	5	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗			1.13		11	0							
					W27	21°N	↑			1.00		0	0							
									1.0		2.14			11	0	Yes	-	No	14	5

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Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.15		4	0							
					W29	336°N	↖		0.44		0	0							
								2.0		1.59			4	0	No*	0.41	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.46		1	0							
								1.0		1.46			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		1.29		2	0							
								1.0		1.29			2	0	Yes	-	No	23	5
Seventl	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.39		34	9							
					W2	156°	↘		1.23		10	10							
								1.0		2.62			44	19	Yes	-	Yes	-19	-14
		R2	Residential	LD	W3	211°	↙		0.68		20	17							
					W4	156°	↘		1.68		48	18							
								1.5		2.36			52	22	Yes	-	Yes	-27	-17
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.07		8	8							
								1.0		1.07			8	8	Yes	-	Win only	17	-3
		R4	Residential	LD	W6	211°	↙		0.66		19	16							
					W7	156°	↘		1.56		42	15							
								1.5		2.22			45	18	Yes	-	Yes	-20	-13
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.11		41	14							
					W9	101°	→		0.21		6	0							
					W10	156°	↘		0.48		9	6							
					W11	66°N	↗		1.20		18	0							
								2.0		3.00			54	14	Yes	-	Yes	-29	-9
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.45		21	2							
								1.0		2.45			21	2	Yes	-	No	4	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.15		11	0							
					W14	21°N	↑		1.03		0	0							
								1.0		2.17			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		1.17		4	0							
					W16	336°N	↖		0.52		0	0							
								2.0		1.68			4	0	No*	0.32	No	21	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		1.71		1	0							
								1.0		1.71			1	0	Yes	-	No	24	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		1.52		2	0							
								1.0		1.52			2	0	Yes	-	No	23	5
Eighth	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.50		34	9							
					W2	156°	↘		1.25		10	10							
								1.0		2.75			44	19	Yes	-	Yes	-19	-14
		R2	Residential	LD	W3	211°	↙		0.68		20	17							
					W4	156°	↘		1.73		50	18							
								1.5		2.41			54	22	Yes	-	Yes	-29	-17
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.09		8	8							
								1.0		1.09			8	8	Yes	-	Win only	17	-3
		R4	Residential	LD	W6	211°	↙		0.66		19	16							
					W7	156°	↘		1.62		48	17							
								1.5		2.29			51	20	Yes	-	Yes	-26	-15
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.16		45	14							
					W9	101°	→		0.23		8	0							
					W10	156°	↘		0.48		9	6							
					W11	66°N	↗		1.23		19	0							
								2.0		3.10			57	14	Yes	-	Yes	-32	-9
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.50		22	2							
								1.0		2.50			22	2	Yes	-	No	3	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.16		11	0							
					W14	21°N	↑		1.06		0	0							
								1.0		2.22			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		1.26		4	0							
					W16	336°N	↖		0.62		0	0							
								2.0		1.88			4	0	No*	0.12	No	21	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		2.06		1	0							
								1.0		2.06			1	0	Yes	-	No	24	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		1.87		2	0							

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Property, room & window attributes									Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								1.0		1.87			2	0	Yes	-	No	23	5
Ninth	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.50		34	9							
					W2	156°	↘		1.30		11	11							
								1.0		2.81			45	20	Yes	-	Yes	-20	-15
		R2	Residential	LD	W3	211°	↙		0.68		20	17							
					W4	156°	↘		1.78		52	18							
								1.5		2.46			56	22	Yes	-	Yes	-31	-17
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.17		8	8							
								1.0		1.17			8	8	Yes	-	Win only	17	-3
		R4	Residential	LD	W6	211°	↙		0.66		19	16							
					W7	156°	↘		1.70		51	17							
								1.5		2.36			54	20	Yes	-	Yes	-29	-15
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.22		52	17							
					W9	101°	→		0.28		10	0							
					W10	156°	↘		0.50		9	6							
					W11	66°N	↗		1.26		20	0							
								2.0		3.26			61	17	Yes	-	Yes	-36	-12
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.56		22	2							
								1.0		2.56			22	2	Yes	-	No	3	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.18		11	0							
					W14	21°N	↑		1.09		0	0							
								1.0		2.27			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		1.37		4	0							
					W16	336°N	↖		0.73		1	0							
								2.0		2.10			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		2.47		3	0							
								1.0		2.47			3	0	Yes	-	No	22	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		2.28		3	0							
								1.0		2.28			3	0	Yes	-	No	22	5
Tenth	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.50		34	9							
					W2	156°	↘		1.17		10	9							
								1.0		2.67			44	18	Yes	-	Yes	-19	-13
		R2	Residential	LD	W3	211°	↙		0.62		18	16							
					W4	156°	↘		1.84		56	20							
								1.5		2.46			59	23	Yes	-	Yes	-34	-18
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.07		9	8							
								1.0		1.07			9	8	Yes	-	Win only	16	-3
		R4	Residential	LD	W6	211°	↙		0.61		18	15							
					W7	156°	↘		1.78		53	18							
								1.5		2.39			55	20	Yes	-	Yes	-30	-15
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.29		52	17							
					W9	101°	→		0.27		9	2							
					W10	156°	↘		0.45		7	4							
					W11	66°N	↗		1.30		21	1							
								2.0		3.31			63	19	Yes	-	Yes	-38	-14
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.62		22	2							
								1.0		2.62			22	2	Yes	-	No	3	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.20		11	0							
					W14	21°N	↑		1.14		0	0							
								1.0		2.34			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		2.20		4	0							
					W16	336°N	↖		0.75		1	0							
								2.0		2.95			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		2.51		3	0							
								1.0		2.51			3	0	Yes	-	No	22	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		2.31		3	0							
								1.0		2.31			3	0	Yes	-	No	22	5
Block C Proposed																			
Ground	Plan(s)	R1	Residential	Bedroom	W1	271°N	←		0.84		13	0							
					W2	226°	↙		0.87		30	9							
								1.0		1.71			32	9	Yes	-	Yes	-7	-4

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R2	Residential	LKD	W3	226°	↙		1.14		36	9							
					W4	136°	↘		0.07		0	0							
					W5	191°	↓		0.16		4	2							
					W6	136°	↘		0.91		21	0							
								2.0		2.27			55	9	Yes	-	Yes	-30	-4
	Plan(s)	R3	Residential	Bedroom	W7	136°	↘		0.00		0	0							
								1.0		0.00			0	0	No	1.00	No	25	5
		R4	Residential	LD	W8	191°	↓		0.21		3	1							
					W9	136°	↘		1.28		22	2							
								1.5		1.49			22	2	No	0.01	No	3	3
	Plan(s)	R5	Residential	Bedroom	W10	136°	↘		0.00		0	0							
								1.0		0.00			0	0	No	1.00	No	25	5
		R6	Residential	LD	W11	191°	↓		0.27		5	2							
					W12	136°	↘		1.32		22	2							
								1.5		1.59			23	2	Yes	-	No	2	3
	Plan(s)	R7	Residential	LKD	W13	136°	↘		0.96		21	2							
					W14	81°N	→		0.19		7	0							
					W15	136°	↘		0.14		1	0							
					W16	46°N	↗		0.46		0	0							
								2.0		1.75			24	2	No*	0.25	No	1	3
	Plan(s)	R8	Residential	Bedroom	W17	46°N	↗		0.91		0	0							
								1.0		0.91			0	0	No	0.09	No	25	5
First	Plan(s)	R1	Residential	Bedroom	W1	316°N	↖		2.01		7	0							
								1.0		2.01			7	0	Yes	-	No	18	5
	Plan(s)	R2	Residential	Bedroom	W2	316°N	↖		2.19		8	0							
								1.0		2.19			8	0	Yes	-	No	17	5
	Plan(s)	R3	Residential	LKD	W3	316°N	↖		0.66		3	0							
					W4	271°N	←		1.37		22	7							
								2.0		2.03			23	7	Yes	-	Win only	2	-2
	Plan(s)	R4	Residential	Bedroom	W5	271°N	←		1.14		15	0							
					W6	226°	↙		1.17		36	11							
								1.0		2.31			40	11	Yes	-	Yes	-15	-6
	Plan(s)	R5	Residential	Bedroom	W7	226°	↙		2.49		46	12							
								1.0		2.49			46	12	Yes	-	Yes	-21	-7
	Plan(s)	R6	Residential	LKD	W8	226°	↙		1.22		46	12							
					W9	136°	↘		0.15		1	1							
					W10	191°	↓		0.17		6	5							
					W11	136°	↘		0.86		29	3							
								2.0		2.40			68	13	Yes	-	Yes	-43	-8
	Plan(s)	R7	Residential	Bedroom	W12	136°	↘		0.26		1	1							
								1.0		0.26			1	1	No	0.74	No	24	4
		R8	Residential	LD	W13	191°	↓		0.33		6	3							
					W14	136°	↘		1.19		32	5							
								1.5		1.52			32	5	Yes	-	Yes	-7	0
	Plan(s)	R9	Residential	Bedroom	W15	136°	↘		0.28		1	1							
								1.0		0.28			1	1	No	0.72	No	24	4
		R10	Residential	LD	W16	191°	↓		0.35		6	3							
					W17	136°	↘		1.20		29	3							
								1.5		1.55			29	3	Yes	-	Ann only	-4	2
	Plan(s)	R11	Residential	Bedroom	W18	136°	↘		0.32		0	0							
								1.0		0.32			0	0	No	0.68	No	25	5
		R12	Residential	LD	W19	191°	↓		0.37		8	5							
					W20	136°	↘		1.21		29	4							
								1.5		1.58			30	5	Yes	-	Yes	-5	0
	Plan(s)	R13	Residential	LKD	W21	136°	↘		0.89		27	4							
					W22	81°N	→		0.13		3	0							
					W23	136°	↘		0.16		1	0							
					W24	46°N	↗		0.43		1	0							
								2.0		1.61			29	4	No*	0.39	Ann only	-4	1
	Plan(s)	R14	Residential	Bedroom	W25	46°N	↗		0.92		0	0							
								1.0		0.92			0	0	No	0.08	No	25	5
	Plan(s)	R15	Residential	Bedroom	W26	46°N	↗		0.43		0	0							

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Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
					W27	1°N	↑		0.88		0	0							
								1.0		1.31			0	0	Yes	-	No	25	5
	Plan(s)	R16	Residential	LKD	W28	1°N	↑		1.02		0	0							
					W29	316°N	↖		0.68		3	0							
								2.0		1.70			3	0	No*	0.30	No	22	5
	Plan(s)	R17	Residential	Bedroom	W30	316°N	↖		2.23		7	0							
								1.0		2.23			7	0	Yes	-	No	18	5
	Plan(s)	R18	Residential	Bedroom	W31	316°N	↖		2.03		6	0							
								1.0		2.03			6	0	Yes	-	No	19	5
Second	Plan(s)	R1	Residential	Bedroom	W1	316°N	↖		2.17		9	0							
								1.0		2.17			9	0	Yes	-	No	16	5
	Plan(s)	R2	Residential	Bedroom	W2	316°N	↖		2.38		9	0							
								1.0		2.38			9	0	Yes	-	No	16	5
	Plan(s)	R3	Residential	LKD	W3	316°N	↖		0.72		4	0							
					W4	271°N	←		1.56		26	9							
								2.0		2.28			26	9	Yes	-	Yes	-1	-4
	Plan(s)	R4	Residential	Bedroom	W5	271°N	←		1.24		21	2							
					W6	226°	↙		1.24		39	14							
								1.0		2.48			47	14	Yes	-	Yes	-22	-9
	Plan(s)	R5	Residential	Bedroom	W7	226°	↙		2.66		51	17							
								1.0		2.66			51	17	Yes	-	Yes	-26	-12
	Plan(s)	R6	Residential	LKD	W8	226°	↙		1.30		49	15							
					W9	136°	↘		0.24		1	1							
					W10	191°	↓		0.24		9	8							
					W11	136°	↘		0.97		36	6							
								2.0		2.75			76	17	Yes	-	Yes	-51	-12
	Plan(s)	R7	Residential	Bedroom	W12	136°	↘		0.65		3	1							
								1.0		0.65			3	1	No	0.35	No	22	4
		R8	Residential	LD	W13	191°	↓		0.42		12	9							
					W14	136°	↘		1.34		36	6							
								1.5		1.76			39	9	Yes	-	Yes	-14	-4
	Plan(s)	R9	Residential	Bedroom	W15	136°	↘		0.65		4	2							
								1.0		0.65			4	2	No	0.35	No	21	3
		R10	Residential	LD	W16	191°	↓		0.43		12	9							
					W17	136°	↘		1.35		37	7							
								1.5		1.77			40	10	Yes	-	Yes	-15	-5
	Plan(s)	R11	Residential	Bedroom	W18	136°	↘		0.65		4	2							
								1.0		0.65			4	2	No	0.35	No	21	3
		R12	Residential	LD	W19	191°	↓		0.45		12	9							
					W20	136°	↘		1.35		32	6							
								1.5		1.79			35	9	Yes	-	Yes	-10	-4
	Plan(s)	R13	Residential	LKD	W21	136°	↘		0.98		31	6							
					W22	81°N	→		0.17		5	0							
					W23	136°	↘		0.24		2	1							
					W24	46°N	↗		0.47		1	0							
								2.0		1.87			35	7	No*	0.13	Yes	-10	-2
	Plan(s)	R14	Residential	Bedroom	W25	46°N	↗		1.01		0	0							
								1.0		1.01			0	0	Yes	-	No	25	5
	Plan(s)	R15	Residential	Bedroom	W26	46°N	↗		0.48		0	0							
					W27	1°N	↑		0.94		0	0							
								1.0		1.42			0	0	Yes	-	No	25	5
	Plan(s)	R16	Residential	LKD	W28	1°N	↑		1.11		1	0							
					W29	316°N	↖		0.72		4	0							
								2.0		1.83			5	0	No*	0.17	No	20	5
	Plan(s)	R17	Residential	Bedroom	W30	316°N	↖		2.38		9	0							
								1.0		2.38			9	0	Yes	-	No	16	5
	Plan(s)	R18	Residential	Bedroom	W31	316°N	↖		2.18		8	0							
								1.0		2.18			8	0	Yes	-	No	17	5
Third	Plan(s)	R1	Residential	Bedroom	W1	316°N	↖		2.32		10	0							
								1.0		2.32			10	0	Yes	-	No	15	5
	Plan(s)	R2	Residential	Bedroom	W2	316°N	↖		2.55		10	0							
								1.0		2.55			10	0	Yes	-	No	15	5

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Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R3	Residential	LKD	W3	316°N	↖		0.77		5	0							
					W4	271°N	←		2.51		36	9							
								2.0		3.28			36	9	Yes	-	Yes	-11	-4
	Plan(s)	R4	Residential	Bedroom	W5	271°N	←		1.33		22	3							
					W6	226°	↙		1.30		40	15							
								1.0		2.62			48	15	Yes	-	Yes	-23	-10
	Plan(s)	R5	Residential	Bedroom	W7	226°	↙		2.80		53	19							
								1.0		2.80			53	19	Yes	-	Yes	-28	-14
	Plan(s)	R6	Residential	LKD	W8	226°	↙		1.37		53	19							
					W9	136°	↘		0.28		4	4							
					W10	191°	↓		0.25		8	8							
					W11	136°	↘		1.10		42	10							
								2.0		2.99			85	24	Yes	-	Yes	-60	-19
	Plan(s)	R7	Residential	Bedroom	W12	136°	↘		0.69		4	2							
								1.0		0.69			4	2	No	0.31	No	21	3
		R8	Residential	LD	W13	191°	↓		0.43		12	9							
					W14	136°	↘		1.50		41	10							
								1.5		1.93			43	12	Yes	-	Yes	-18	-7
	Plan(s)	R9	Residential	Bedroom	W15	136°	↘		0.92		8	5							
								1.0		0.92			8	5	No	0.08	Win only	17	0
		R10	Residential	LD	W16	191°	↓		0.50		15	12							
					W17	136°	↘		1.50		43	12							
								1.5		2.00			45	14	Yes	-	Yes	-20	-9
	Plan(s)	R11	Residential	Bedroom	W18	136°	↘		0.90		7	4							
								1.0		0.90			7	4	No	0.10	No	18	1
		R12	Residential	LD	W19	191°	↓		0.52		15	12							
					W20	136°	↘		1.49		41	13							
								1.5		2.01			43	15	Yes	-	Yes	-18	-10
	Plan(s)	R13	Residential	LKD	W21	136°	↘		1.08		39	12							
					W22	81°N	→		0.21		6	0							
					W23	136°	↘		0.37		3	2							
					W24	46°N	↗		0.53		2	0							
								2.0		2.20			42	13	Yes	-	Yes	-17	-8
	Plan(s)	R14	Residential	Bedroom	W25	46°N	↗		1.14		0	0							
								1.0		1.14			0	0	Yes	-	No	25	5
	Plan(s)	R15	Residential	Bedroom	W26	46°N	↗		0.55		0	0							
					W27	1°N	↑		0.99		0	0							
								1.0		1.54			0	0	Yes	-	No	25	5
	Plan(s)	R16	Residential	LKD	W28	1°N	↑		1.20		1	0							
					W29	316°N	↖		0.76		5	0							
								2.0		1.96			5	0	No*	0.04	No	20	5
	Plan(s)	R17	Residential	Bedroom	W30	316°N	↖		2.52		10	0							
								1.0		2.52			10	0	Yes	-	No	15	5
	Plan(s)	R18	Residential	Bedroom	W31	316°N	↖		2.31		10	0							
								1.0		2.31			10	0	Yes	-	No	15	5
Fourth	Plan(s)	R1	Residential	Bedroom	W1	226°	↙		1.34		37	15							
					W2	136°	↘		1.16		12	8							
								1.0		2.50			49	23	Yes	-	Yes	-24	-18
		R2	Residential	LD	W3	191°	↓		0.59		20	17							
					W4	136°	↘		1.65		49	16							
								1.5		2.24			53	20	Yes	-	Yes	-28	-15
	Plan(s)	R3	Residential	Bedroom	W5	136°	↘		1.09		12	8							
								1.0		1.09			12	8	Yes	-	Win only	13	-3
		R4	Residential	LD	W6	191°	↓		0.58		18	15							
					W7	136°	↘		1.63		46	16							
								1.5		2.22			48	18	Yes	-	Yes	-23	-13
	Plan(s)	R5	Residential	LKD	W8	136°	↘		1.19		45	17							
					W9	81°N	→		0.25		8	1							
					W10	136°	↘		0.47		7	6							
					W11	46°N	↗		0.61		3	0							
								2.0		2.51			48	17	Yes	-	Yes	-23	-12
	Plan(s)	R6	Residential	Bedroom	W12	46°N	↗		1.31		0	0							

Orange or Red = Below guidelines (Orange = within 20% of guideline or LKD/LK/KD/Studio>1.5% ADF)
Grey APSH = not a main living room

Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								1.0		1.31			0	0	Yes	-	No	25	5
	Plan(s)	R7	Residential	Bedroom	W13	46°N	↗		*0.64*		*0*	*0*							
					W14	1°N	↑		*1.05*		*0*	*0*							
								1.0		1.69			0	0	Yes	-	No	25	5
	Plan(s)	R8	Residential	LKD	W15	1°N	↑		*1.29*		*1*	*0*							
					W16	316°N	↖		*0.78*		*5*	*0*							
								2.0		2.07			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	316°N	↖		*2.60*		*10*	*0*							
								1.0		2.60			10	0	Yes	-	No	15	5
	Plan(s)	R10	Residential	Bedroom	W18	316°N	↖		*2.38*		*10*	*0*							
								1.0		2.38			10	0	Yes	-	No	15	5
Fifth	Plan(s)	R1	Residential	Bedroom	W1	226°	↙		*1.48*		*40*	*15*							
					W2	136°	↘		*1.14*		*9*	*7*							
								1.0		2.62			49	22	Yes	-	Yes	-24	-17
		R2	Residential	LD	W3	191°	↓		*0.59*		*18*	*15*							
					W4	136°	↘		*1.79*		*50*	*17*							
								1.5		2.38			53	20	Yes	-	Yes	-28	-15
	Plan(s)	R3	Residential	Bedroom	W5	136°	↘		*1.07*		*9*	*7*							
								1.0		1.07			9	7	Yes	-	Win only	16	-2
		R4	Residential	LD	W6	191°	↓		*0.57*		*17*	*14*							
					W7	136°	↘		*1.77*		*50*	*18*							
								1.5		2.34			52	20	Yes	-	Yes	-27	-15
	Plan(s)	R5	Residential	LKD	W8	136°	↘		*1.28*		*48*	*18*							
					W9	81°N	→		*0.24*		*7*	*2*							
					W10	136°	↘		*0.45*		*6*	*5*							
					W11	46°N	↗		*0.71*		*5*	*0*							
								2.0		2.69			51	18	Yes	-	Yes	-26	-13
	Plan(s)	R6	Residential	Bedroom	W12	46°N	↗		*1.53*		*0*	*0*							
								1.0		1.53			0	0	Yes	-	No	25	5
	Plan(s)	R7	Residential	Bedroom	W13	46°N	↗		*0.75*		*0*	*0*							
					W14	1°N	↑		*1.12*		*0*	*0*							
								1.0		1.86			0	0	Yes	-	No	25	5
	Plan(s)	R8	Residential	LKD	W15	1°N	↑		*2.15*		*1*	*0*							
					W16	316°N	↖		*0.79*		*5*	*0*							
								2.0		2.94			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	316°N	↖		*2.63*		*10*	*0*							
								1.0		2.63			10	0	Yes	-	No	15	5
	Plan(s)	R10	Residential	Bedroom	W18	316°N	↖		*2.41*		*10*	*0*							
								1.0		2.41			10	0	Yes	-	No	15	5

Property, room & window attributes									Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation				ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
Block A Proposed																				
Ground	Plan(s)	R1	Residential	KD	W1	40°N	↗			0.73		2	0							
					W2	40°N	↗			0.26		2	0							
					W3	310°N	↖			1.51		4	0							
									2.0		2.50			6	0	Yes	-	No	19	5
	Plan(s)	R2	Residential	Bedroom	W4	310°N	↖			1.94		4	0							
									1.0		1.94			4	0	Yes	-	No	21	5
	Plan(s)	R3	Residential	Bedroom	W5	310°N	↖			1.77		4	0							
									1.0		1.77			4	0	Yes	-	No	21	5
	Plan(s)	R4	Residential	Bedroom	W6	265°	←			1.82		20	5							
									1.0		1.82			20	5	Yes	-	Win only	5	0
	Plan(s)	R5	Residential	Living Room	W7	265°	←			1.43		25	5							
					W8	220°	↙			1.44		35	13							
									1.5		2.87			36	13	Yes	-	Yes	-11	-8
	Plan(s)	R6	Residential	Bedroom	W9	220°	↙			0.83		8	7							
									1.0		0.83			8	7	No	0.17	Win only	17	-2
	Plan(s)	R7	Residential	LKD	W10	275°N	←			0.43		14	0							
					W11	220°	↙			1.25		33	9							
									2.0		1.67			34	9	No*	0.33	Yes	-9	-4
First	Plan(s)	R1	Residential	Bedroom	W1	220°	↙			1.26		15	8							
									1.0		1.26			15	8	Yes	-	Win only	10	-3
	Plan(s)	R2	Residential	Living Room	W2	220°	↙			1.70		21	6							
									1.5		1.70			21	6	Yes	-	Win only	4	-1
	Plan(s)	R3	Residential	KD	W3	175°	↓			0.81		6	3							
									2.0		0.81			6	3	No	1.19	No	19	2
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓			0.35		0	0							
									1.0		0.35			0	0	No	0.65	No	25	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘			0.99		13	1							
									1.0		0.99			13	1	No	0.01	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘			1.15		18	2							
									2.0		1.15			18	2	No	0.85	No	7	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘			1.32		22	2							
					W8	40°N	↗			0.99		0	0							
									1.5		2.30			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗			0.69		0	0							
									1.0		0.69			0	0	No	0.31	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→			0.51		7	2							
					W11	40°N	↗			1.75		3	0							
									1.0		2.26			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗			1.81		3	0							
									1.0		1.81			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗			0.95		1	0							
									1.0		0.95			1	0	No	0.05	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95°	→			0.36		7	0							
					W15	40°N	↗			0.96		4	0							
									2.0		1.32			7	0	No	0.68	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗			1.34		3	0							
									1.0		1.34			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗			1.11		1	0							
									1.0		1.11			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→			0.32		6	0							
					W19	40°N	↗			0.92		2	0							
									2.0		1.24			6	0	No	0.76	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗			1.52		2	0							
					W21	345°N	↑			0.50		0	0							
									1.0		2.02			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗			0.91		1	0							
									1.0		0.91			1	0	No	0.09	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗			0.48		2	0							
					W24	310°N	↖			1.34		6	0							
					W25	310°N	↖			1.22		6	0							

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Grey APSH = not a main living room

Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								2.0		3.05			8	0	Yes	-	No	17	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.03		5	0							
								1.0		2.03			5	0	Yes	-	No	20	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.02		25	6							
								1.0		2.02			25	6	Yes	-	Yes	0	-1
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.68		19	2							
					W29	220°	↙		1.54		27	13							
								2.0		2.22			32	13	Yes	-	Yes	-7	-8
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		1.90		41	16							
								1.0		1.90			41	16	Yes	-	Yes	-16	-11
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.52		39	12							
								1.0		2.52			39	12	Yes	-	Yes	-14	-7
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.23		28	14							
								2.0		1.23			28	14	No	0.77	Yes	-3	-9
Second	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.35		17	10							
								1.0		1.35			17	10	Yes	-	Win only	8	-5
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		1.83		22	7							
								1.5		1.83			22	7	Yes	-	Win only	3	-2
	Plan(s)	R3	Residential	KD	W3	175°	↓		0.88		6	3							
								2.0		0.88			6	3	No	1.12	No	19	2
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.39		0	0							
								1.0		0.39			0	0	No	0.61	No	25	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.00		13	1							
								1.0		1.00			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.17		18	2							
								2.0		1.17			18	2	No	0.83	No	7	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.34		22	2							
					W8	40°N	↗		1.01		0	0							
								1.5		2.35			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.71		0	0							
								1.0		0.71			0	0	No	0.29	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.52		7	2							
					W11	40°N	↗		1.79		3	0							
								1.0		2.31			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.85		3	0							
								1.0		1.85			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.96		1	0							
								1.0		0.96			1	0	No	0.04	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95°	→		0.37		7	0							
					W15	40°N	↗		0.98		4	0							
								2.0		1.35			7	0	No	0.65	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.37		3	0							
								1.0		1.37			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.13		1	0							
								1.0		1.13			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.33		6	0							
					W19	40°N	↗		0.94		2	0							
								2.0		1.27			6	0	No	0.73	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.56		2	0							
					W21	345°N	↑		0.52		0	0							
								1.0		2.08			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.95		1	0							
								1.0		0.95			1	0	No	0.05	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.50		2	0							
					W24	310°N	↖		1.46		9	0							
					W25	310°N	↖		1.34		10	0							
								2.0		3.29			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.24		8	0							
								1.0		2.24			8	0	Yes	-	No	17	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.24		29	7							
								1.0		2.24			29	7	Yes	-	Yes	-4	-2
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.74		24	4							

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
					W29	220°	↙		1.68		34	17							
								2.0		2.42			39	17	Yes	-	Yes	-14	-12
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.02		46	20							
								1.0		2.02			46	20	Yes	-	Yes	-21	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.66		44	16							
								1.0		2.66			44	16	Yes	-	Yes	-19	-11
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.33		32	17							
								2.0		1.33			32	17	No	0.67	Yes	-7	-12
Third	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.42		19	12							
								1.0		1.42			19	12	Yes	-	Win only	6	-7
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		1.94		24	9							
								1.5		1.94			24	9	Yes	-	Win only	1	-4
	Plan(s)	R3	Residential	KD	W3	175°	↓		0.97		11	4							
								2.0		0.97			11	4	No	1.03	No	14	1
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.44		0	0							
								1.0		0.44			0	0	No	0.56	No	25	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.01		13	1							
								1.0		1.01			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.19		18	2							
								2.0		1.19			18	2	No	0.81	No	7	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.37		22	2							
					W8	40°N	↗		1.03		0	0							
								1.5		2.40			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.72		0	0							
								1.0		0.72			0	0	No	0.28	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.53		7	2							
					W11	40°N	↗		1.83		3	0							
								1.0		2.36			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.89		3	0							
								1.0		1.89			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.98		1	0							
								1.0		0.98			1	0	No	0.02	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95°	→		0.38		7	0							
					W15	40°N	↗		1.00		4	0							
								2.0		1.38			7	0	No	0.62	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.40		3	0							
								1.0		1.40			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.15		1	0							
								1.0		1.15			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.34		6	0							
					W19	40°N	↗		0.96		2	0							
								2.0		1.30			6	0	No	0.70	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.59		2	0							
					W21	345°N	↑		0.54		0	0							
								1.0		2.13			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.98		1	0							
								1.0		0.98			1	0	No	0.02	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.51		2	0							
					W24	310°N	↖		1.55		10	0							
					W25	310°N	↖		1.43		10	0							
								2.0		3.50			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.41		10	0							
								1.0		2.41			10	0	Yes	-	No	15	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.42		31	8							
								1.0		2.42			31	8	Yes	-	Yes	-6	-3
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.79		26	5							
					W29	220°	↙		1.80		35	18							
								2.0		2.59			41	18	Yes	-	Yes	-16	-13
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.12		46	20							
								1.0		2.12			46	20	Yes	-	Yes	-21	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.78		44	16							
								1.0		2.78			44	16	Yes	-	Yes	-19	-11

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Grey APSH = not a main living room

Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.43		35	20							
								2.0		1.43			35	20	No	0.57	Yes	-10	-15
Fourth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.48		20	13							
								1.0		1.48			20	13	Yes	-	Win only	5	-8
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.04		25	10							
								1.5		2.04			25	10	Yes	-	Yes	0	-5
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.09		14	5							
								2.0		1.09			14	5	No	0.91	Win only	11	0
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.50		2	0							
								1.0		0.50			2	0	No	0.50	No	23	5
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.03		13	1							
								1.0		1.03			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.21		19	2							
								2.0		1.21			19	2	No	0.79	No	6	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.40		22	2							
					W8	40°N	↗		1.04		0	0							
								1.5		2.44			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.54		7	2							
					W11	40°N	↗		1.86		3	0							
								1.0		2.41			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.92		3	0							
								1.0		1.92			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95°	→		0.39		7	0							
					W15	40°N	↗		1.02		4	0							
								2.0		1.40			7	0	No	0.60	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.43		3	0							
								1.0		1.43			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.16		1	0							
								1.0		1.16			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.34		6	0							
					W19	40°N	↗		0.98		2	0							
								2.0		1.32			6	0	No	0.68	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.63		2	0							
					W21	345°N	↑		0.55		0	0							
								1.0		2.18			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.52		2	0							
					W24	310°N	↖		1.60		10	0							
					W25	310°N	↖		1.48		10	0							
								2.0		3.60			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.49		10	0							
								1.0		2.49			10	0	Yes	-	No	15	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.46		31	8							
								1.0		2.46			31	8	Yes	-	Yes	-6	-3
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.80		26	5							
					W29	220°	↙		1.85		37	20							
								2.0		2.65			43	20	Yes	-	Yes	-18	-15
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.17		46	20							
								1.0		2.17			46	20	Yes	-	Yes	-21	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		2.85		44	16							
								1.0		2.85			44	16	Yes	-	Yes	-19	-11
	Plan(s)	R24	Residential	LKD	W32	220°	↙		1.49		36	21							
								2.0		1.49			36	21	No	0.51	Yes	-11	-16
Fifth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.55		20	13							
								1.0		1.55			20	13	Yes	-	Win only	5	-8
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.21		30	15							
								1.5		2.21			30	15	Yes	-	Yes	-5	-10

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.25		19	8							
								2.0		1.25			19	8	No	0.75	Win only	6	-3
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.58		4	1							
								1.0		0.58			4	1	No	0.42	No	21	4
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.06		13	1							
								1.0		1.06			13	1	Yes	-	No	12	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.24		19	2							
								2.0		1.24			19	2	No	0.76	No	6	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.45		22	2							
					W8	40°N	↗		1.04		0	0							
								1.5		2.49			22	2	Yes	-	No	3	3
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.56		7	2							
					W11	40°N	↗		1.90		3	0							
								1.0		2.45			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		1.96		3	0							
								1.0		1.96			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95°	→		0.39		7	0							
					W15	40°N	↗		1.04		4	0							
								2.0		1.43			7	0	No	0.57	No	18	5
	Plan(s)	R13	Residential	Bedroom	W16	40°N	↗		1.45		3	0							
								1.0		1.45			3	0	Yes	-	No	22	5
	Plan(s)	R14	Residential	Bedroom	W17	40°N	↗		1.03		1	0							
								1.0		1.03			1	0	Yes	-	No	24	5
	Plan(s)	R15	Residential	LKD	W18	95°	→		0.31		5	0							
					W19	40°N	↗		0.99		3	0							
								2.0		1.31			6	0	No	0.69	No	19	5
	Plan(s)	R16	Residential	Bedroom	W20	40°N	↗		1.65		2	0							
					W21	345°N	↑		0.51		0	0							
								1.0		2.16			2	0	Yes	-	No	23	5
	Plan(s)	R17	Residential	Bedroom	W22	40°N	↗		0.88		1	0							
								1.0		0.88			1	0	No	0.12	No	24	5
	Plan(s)	R18	Residential	LKD	W23	40°N	↗		0.47		2	0							
					W24	310°N	↖		1.61		10	0							
					W25	310°N	↖		1.49		10	0							
								2.0		3.57			12	0	Yes	-	No	13	5
	Plan(s)	R19	Residential	Bedroom	W26	310°N	↖		2.50		10	0							
								1.0		2.50			10	0	Yes	-	No	15	5
	Plan(s)	R20	Residential	Bedroom	W27	265°	←		2.47		31	8							
								1.0		2.47			31	8	Yes	-	Yes	-6	-3
	Plan(s)	R21	Residential	LKD	W28	265°	←		0.81		26	5							
					W29	220°	↙		2.77		61	24							
								2.0		3.58			62	24	Yes	-	Yes	-37	-19
	Plan(s)	R22	Residential	Bedroom	W30	220°	↙		2.40		50	20							
								1.0		2.40			50	20	Yes	-	Yes	-25	-15
	Plan(s)	R23	Residential	Bedroom	W31	220°	↙		3.19		50	20							
								1.0		3.19			50	20	Yes	-	Yes	-25	-15
	Plan(s)	R24	Residential	LKD	W32	220°	↙		2.29		61	24							
								2.0		2.29			61	24	Yes	-	Yes	-36	-19
Sixth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.63		23	16							
								1.0		1.63			23	16	Yes	-	Win only	2	-11
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.40		34	19							
								1.5		2.40			34	19	Yes	-	Yes	-9	-14
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.44		22	11							
								2.0		1.44			22	11	No	0.56	Win only	3	-6
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.67		6	3							
								1.0		0.67			6	3	No	0.33	No	19	2
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.10		13	1							
								1.0		1.10			13	1	Yes	-	No	12	4

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Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.29		19	2							
								2.0		1.29			19	2	No	0.71	No	6	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.51		25	3							
					W8	40°N	↗		1.04		0	0							
								1.5		2.56			25	3	Yes	-	Ann only	0	2
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.57		7	2							
					W11	40°N	↗		1.93		3	0							
								1.0		2.50			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		2.00		3	0							
								1.0		2.00			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95°	→		0.40		7	0							
					W15	40°N	↗		1.06		4	0							
								2.0		1.46			7	0	No	0.54	No	18	5
Seventl	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		1.69		23	16							
								1.0		1.69			23	16	Yes	-	Win only	2	-11
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		2.54		36	21							
								1.5		2.54			36	21	Yes	-	Yes	-11	-16
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.62		24	13							
								2.0		1.62			24	13	No*	0.38	Win only	1	-8
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.76		7	4							
								1.0		0.76			7	4	No	0.24	No	18	1
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.18		14	1							
								1.0		1.18			14	1	Yes	-	No	11	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.36		23	2							
								2.0		1.36			23	2	No	0.64	No	2	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.60		28	3							
					W8	40°N	↗		1.05		0	0							
								1.5		2.65			28	3	Yes	-	Ann only	-3	2
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.73		0	0							
								1.0		0.73			0	0	No	0.27	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.58		7	2							
					W11	40°N	↗		1.97		3	0							
								1.0		2.55			8	2	Yes	-	No	17	3
	Plan(s)	R10	Residential	Bedroom	W12	40°N	↗		2.03		3	0							
								1.0		2.03			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N	↗		0.99		1	0							
								1.0		0.99			1	0	No	0.01	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95°	→		0.41		7	0							
					W15	40°N	↗		1.08		4	0							
								2.0		1.49			7	0	No	0.51	No	18	5
Eighth	Plan(s)	R1	Residential	Bedroom	W1	220°	↙		2.44		47	20							
								1.0		2.44			47	20	Yes	-	Yes	-22	-15
	Plan(s)	R2	Residential	Living Room	W2	220°	↙		3.76		57	21							
								1.5		3.76			57	21	Yes	-	Yes	-32	-16
	Plan(s)	R3	Residential	KD	W3	175°	↓		1.74		27	13							
								2.0		1.74			27	13	No*	0.26	Yes	-2	-8
	Plan(s)	R4	Residential	Bedroom	W4	175°	↓		0.87		10	4							
								1.0		0.87			10	4	No	0.13	No	15	1
	Plan(s)	R5	Residential	Bedroom	W5	130°	↘		1.32		20	1							
								1.0		1.32			20	1	Yes	-	No	5	4
	Plan(s)	R6	Residential	KD	W6	130°	↘		1.50		28	2							
								2.0		1.50			28	2	No*	0.50	Ann only	-3	3
	Plan(s)	R7	Residential	Living Room	W7	130°	↘		1.73		33	3							
					W8	40°N	↗		0.94		0	0							
								1.5		2.67			33	3	Yes	-	Ann only	-8	2
	Plan(s)	R8	Residential	Bedroom	W9	40°N	↗		0.65		0	0							
								1.0		0.65			0	0	No	0.35	No	25	5
	Plan(s)	R9	Residential	Bedroom	W10	95°	→		0.52		3	1							

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation		ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
					W11	40°N ↗		2.01		3	0							
							1.0		2.53			6	1	Yes	-	No	19	4
	Plan(s)	R10	Residential	Bedroom	W12	40°N ↗		2.08		3	0							
							1.0		2.08			3	0	Yes	-	No	22	5
	Plan(s)	R11	Residential	Bedroom	W13	40°N ↗		0.88		1	0							
							1.0		0.88			1	0	No	0.12	No	24	5
	Plan(s)	R12	Residential	LKD	W14	95° →		0.37		6	0							
					W15	40°N ↗		1.10		4	0							
							2.0		1.47			7	0	No	0.53	No	18	5
Block B Proposed																		
Ground	Plan(s)	R1	Residential	Bedroom	W1	246° ↙		1.27		6	0							
							1.0		1.27			6	0	Yes	-	No	19	5
	Plan(s)	R2	Residential	LKD	W2	246° ↙		0.64		7	4							
					W3	156° ↘		0.31		5	4							
					W4	211° ↙		0.38		14	5							
					W5	156° ↘		0.94		26	4							
							2.0		2.26			34	8	Yes	-	Yes	-9	-3
	Plan(s)	R3	Residential	Bedroom	W6	156° ↘		0.60		3	2							
							1.0		0.60			3	2	No	0.40	No	22	3
	Plan(s)	R4	Residential	LKD	W7	211° ↙		0.38		15	6							
					W8	156° ↘		0.90		23	3							
							2.0		1.27			27	6	No	0.73	Yes	-2	-1
First	Plan(s)	R1	Residential	Bedroom	W1	336°N ↖		1.27		3	0							
							1.0		1.27			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N ↖		1.50		3	0							
							1.0		1.50			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N ↖		0.48		1	0							
					W4	291°N ←		1.34		15	2							
							2.0		1.81			15	2	No*	0.19	No	10	3
	Plan(s)	R4	Residential	Bedroom	W5	291°N ←		1.11		12	0							
					W6	246° ↙		0.69		6	0							
							1.0		1.80			12	0	Yes	-	No	13	5
	Plan(s)	R5	Residential	Bedroom	W7	246° ↙		1.39		10	3							
							1.0		1.39			10	3	Yes	-	No	15	2
	Plan(s)	R6	Residential	LKD	W8	246° ↙		0.65		7	4							
					W9	156° ↘		0.24		2	2							
					W10	211° ↙		0.24		9	8							
					W11	156° ↘		0.90		33	8							
							2.0		2.02			37	9	Yes	-	Yes	-12	-4
	Plan(s)	R7	Residential	Bedroom	W12	156° ↘		0.42		2	2							
							1.0		0.42			2	2	No	0.58	No	23	3
	Plan(s)	R8	Residential	LKD	W13	211° ↙		0.34		13	10							
					W14	156° ↘		0.86		30	7							
							2.0		1.19			33	10	No	0.81	Yes	-8	-5
	Plan(s)	R9	Residential	Bedroom	W15	156° ↘		0.30		1	1							
							1.0		0.30			1	1	No	0.70	No	24	4
	Plan(s)	R10	Residential	LKD	W16	211° ↙		0.32		12	9							
					W17	156° ↘		0.79		24	6							
							2.0		1.11			27	9	No	0.89	Yes	-2	-4
	Plan(s)	R11	Residential	Bedroom	W18	156° ↘		0.20		0	0							
							1.0		0.20			0	0	No	0.80	No	25	5
	Plan(s)	R12	Residential	LKD	W19	211° ↙		0.31		10	7							
					W20	156° ↘		0.73		19	3							
							2.0		1.04			23	7	No	0.96	Win only	2	-2
	Plan(s)	R13	Residential	LKD	W21	156° ↘		0.70		18	3							
					W22	101° →		0.19		5	0							
					W23	156° ↘		0.24		3	0							
					W24	66°N ↗		1.08		14	0							
							2.0		2.21			31	3	Yes	-	Ann only	-6	2
	Plan(s)	R14	Residential	Bedroom	W25	66°N ↗		2.19		18	2							
							1.0		2.19			18	2	Yes	-	No	7	3

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Grey APSH = not a main living room

Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.04		11	0							
					W27	21°N	↑		0.90		0	0							
								1.0		1.94			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.09		4	0							
					W29	336°N	↖		0.31		0	0							
								2.0		1.40			4	0	No	0.60	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.08		1	0							
								1.0		1.08			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		0.94		2	0							
								1.0		0.94			2	0	No	0.06	No	23	5
Second	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.33		3	0							
								1.0		1.33			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.58		3	0							
								1.0		1.58			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.50		1	0							
					W4	291°N	←		1.43		16	2							
								2.0		1.94			16	2	No*	0.06	No	9	3
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.17		12	0							
					W6	246°	↙		0.77		11	0							
								1.0		1.94			15	0	Yes	-	No	10	5
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		1.57		12	3							
								1.0		1.57			12	3	Yes	-	No	13	2
	Plan(s)	R6	Residential	LKD	W8	246°	↙		0.73		8	5							
					W9	156°	↘		0.33		3	3							
					W10	211°	↙		0.28		11	10							
					W11	156°	↘		1.00		37	10							
								2.0		2.34			44	14	Yes	-	Yes	-19	-9
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		0.71		4	4							
								1.0		0.71			4	4	No	0.29	No	21	1
	Plan(s)	R8	Residential	LKD	W13	211°	↙		0.38		14	11							
					W14	156°	↘		0.95		34	11							
								2.0		1.33			37	14	No	0.67	Yes	-12	-9
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		0.60		3	3							
								1.0		0.60			3	3	No	0.40	No	22	2
	Plan(s)	R10	Residential	LKD	W16	211°	↙		0.36		14	11							
					W17	156°	↘		0.88		29	10							
								2.0		1.24			32	13	No	0.76	Yes	-7	-8
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.49		2	2							
								1.0		0.49			2	2	No	0.51	No	23	3
	Plan(s)	R12	Residential	LKD	W19	211°	↙		0.35		14	11							
					W20	156°	↘		0.81		24	8							
								2.0		1.16			28	12	No	0.84	Yes	-3	-7
	Plan(s)	R13	Residential	LKD	W21	156°	↘		0.77		23	7							
					W22	101°	→		0.19		5	0							
					W23	156°	↘		0.28		5	2							
					W24	66°N	↗		1.10		14	0							
								2.0		2.34			38	9	Yes	-	Yes	-13	-4
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.24		18	2							
								1.0		2.24			18	2	Yes	-	No	7	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.06		11	0							
					W27	21°N	↑		0.92		0	0							
								1.0		1.98			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.10		4	0							
					W29	336°N	↖		0.32		0	0							
								2.0		1.42			4	0	No	0.58	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.10		1	0							
								1.0		1.10			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		0.97		2	0							
								1.0		0.97			2	0	No	0.03	No	23	5
Third	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.38		3	0							
								1.0		1.38			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.66		3	0							

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Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								1.0		1.66			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.53		1	0							
					W4	291°N	←		1.53		18	2							
								2.0		2.07			18	2	Yes	-	No	7	3
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.23		12	0							
					W6	246°	↙		0.89		19	0							
								1.0		2.11			21	0	Yes	-	No	4	5
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		1.81		20	3							
								1.0		1.81			20	3	Yes	-	No	5	2
	Plan(s)	R6	Residential	LKD	W8	246°	↙		0.85		15	5							
					W9	156°	↘		0.43		6	6							
					W10	211°	↙		0.32		12	11							
					W11	156°	↘		1.09		43	16							
								2.0		2.70			54	18	Yes	-	Yes	-29	-13
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		0.92		8	8							
								1.0		0.92			8	8	No	0.08	Win only	17	-3
	Plan(s)	R8	Residential	LKD	W13	211°	↙		0.42		18	15							
					W14	156°	↘		1.05		40	16							
								2.0		1.46			43	19	No	0.54	Yes	-18	-14
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		0.82		6	6							
								1.0		0.82			6	6	No	0.18	Win only	19	-1
	Plan(s)	R10	Residential	LKD	W16	211°	↙		0.41		17	14							
					W17	156°	↘		0.97		32	12							
								2.0		1.37			36	16	No	0.63	Yes	-11	-11
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.70		5	5							
								1.0		0.70			5	5	No	0.30	Win only	20	0
	Plan(s)	R12	Residential	LKD	W19	211°	↙		0.40		17	14							
					W20	156°	↘		0.89		27	10							
								2.0		1.28			32	15	No	0.72	Yes	-7	-10
	Plan(s)	R13	Residential	LKD	W21	156°	↘		0.85		25	9							
					W22	101°	→		0.19		5	0							
					W23	156°	↘		0.35		6	3							
					W24	66°N	↗		1.12		14	0							
								2.0		2.51			39	10	Yes	-	Yes	-14	-5
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.28		18	2							
								1.0		2.28			18	2	Yes	-	No	7	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.08		11	0							
					W27	21°N	↑		0.94		0	0							
								1.0		2.02			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.12		4	0							
					W29	336°N	↖		0.33		0	0							
								2.0		1.45			4	0	No	0.55	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.14		1	0							
								1.0		1.14			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		1.01		2	0							
								1.0		1.01			2	0	Yes	-	No	23	5
Fourth	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.45		3	0							
								1.0		1.45			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.75		3	0							
								1.0		1.75			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.56		1	0							
					W4	291°N	←		1.61		20	4							
								2.0		2.17			20	4	Yes	-	No	5	1
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.27		13	0							
					W6	246°	↙		1.04		27	3							
								1.0		2.31			30	3	Yes	-	Ann only	-5	2
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		2.17		31	5							
								1.0		2.17			31	5	Yes	-	Yes	-6	0
	Plan(s)	R6	Residential	LKD	W8	246°	↙		1.03		29	7							
					W9	156°	↘		0.51		8	8							
					W10	211°	↙		0.36		13	12							
					W11	156°	↘		1.19		49	20							

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Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								2.0		3.09			69	20	Yes	-	Yes	-44	-15
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		1.09		11	11							
								1.0		1.09			11	11	Yes	-	Win only	14	-6
	Plan(s)	R8	Residential	LKD	W13	211°	↙		0.45		19	16							
					W14	156°	↘		1.15		45	20							
								2.0		1.60			48	23	No*	0.40	Yes	-23	-18
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		0.98		10	10							
								1.0		0.98			10	10	No	0.02	Win only	15	-5
	Plan(s)	R10	Residential	LKD	W16	211°	↙		0.44		19	16							
					W17	156°	↘		1.06		38	18							
								2.0		1.51			41	21	No*	0.49	Yes	-16	-16
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.86		8	8							
								1.0		0.86			8	8	No	0.14	Win only	17	-3
	Plan(s)	R12	Residential	LKD	W19	211°	↙		0.44		19	16							
					W20	156°	↘		0.97		31	14							
								2.0		1.41			34	17	No	0.59	Yes	-9	-12
	Plan(s)	R13	Residential	LKD	W21	156°	↘		0.92		30	13							
					W22	101°	→		0.20		5	0							
					W23	156°	↘		0.41		9	6							
					W24	66°N	↗		1.14		14	0							
								2.0		2.67			44	14	Yes	-	Yes	-19	-9
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.32		19	2							
								1.0		2.32			19	2	Yes	-	No	6	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.10		11	0							
					W27	21°N	↑		0.96		0	0							
								1.0		2.06			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.13		4	0							
					W29	336°N	↖		0.35		0	0							
								2.0		1.49			4	0	No	0.51	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.20		1	0							
								1.0		1.20			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		1.06		2	0							
								1.0		1.06			2	0	Yes	-	No	23	5
Fifth	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.54		3	0							
								1.0		1.54			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		1.86		3	0							
								1.0		1.86			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.60		1	0							
					W4	291°N	←		1.66		21	5							
								2.0		2.26			21	5	Yes	-	Win only	4	0
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.31		14	1							
					W6	246°	↙		1.21		33	8							
								1.0		2.52			35	8	Yes	-	Yes	-10	-3
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		2.62		39	12							
								1.0		2.62			39	12	Yes	-	Yes	-14	-7
	Plan(s)	R6	Residential	LKD	W8	246°	↙		1.28		39	12							
					W9	156°	↘		0.58		9	9							
					W10	211°	↙		0.41		13	12							
					W11	156°	↘		1.28		50	20							
								2.0		3.55			81	26	Yes	-	Yes	-56	-21
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		1.22		12	12							
								1.0		1.22			12	12	Yes	-	Win only	13	-7
	Plan(s)	R8	Residential	LKD	W13	211°	↙		0.48		19	16							
					W14	156°	↘		1.23		49	20							
								2.0		1.71			52	23	No*	0.29	Yes	-27	-18
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		1.11		10	10							
								1.0		1.11			10	10	Yes	-	Win only	15	-5
	Plan(s)	R10	Residential	LKD	W16	211°	↙		0.48		19	16							
					W17	156°	↘		1.15		41	18							
								2.0		1.62			44	21	No*	0.38	Yes	-19	-16
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		0.99		8	8							
								1.0		0.99			8	8	No	0.01	Win only	17	-3

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R12	Residential	LKD	W19	211°	↙		0.47		19	16							
					W20	156°	↘		1.05		35	15							
								2.0		1.52			38	18	No*	0.48	Yes	-13	-13
	Plan(s)	R13	Residential	LKD	W21	156°	↘		1.00		33	14							
					W22	101°	→		0.20		5	0							
					W23	156°	↘		0.45		9	6							
					W24	66°N	↗		1.16		15	0							
								2.0		2.81			47	14	Yes	-	Yes	-22	-9
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.36		20	2							
								1.0		2.36			20	2	Yes	-	No	5	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.11		11	0							
					W27	21°N	↑		0.98		0	0							
								1.0		2.10			11	0	Yes	-	No	14	5
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.14		4	0							
					W29	336°N	↖		0.39		0	0							
								2.0		1.52			4	0	No*	0.48	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.30		1	0							
								1.0		1.30			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		1.14		2	0							
								1.0		1.14			2	0	Yes	-	No	23	5
Sixth	Plan(s)	R1	Residential	Bedroom	W1	336°N	↖		1.67		3	0							
								1.0		1.67			3	0	Yes	-	No	22	5
	Plan(s)	R2	Residential	Bedroom	W2	336°N	↖		2.00		3	0							
								1.0		2.00			3	0	Yes	-	No	22	5
	Plan(s)	R3	Residential	LKD	W3	336°N	↖		0.64		1	0							
					W4	291°N	←		2.51		25	5							
								2.0		3.14			25	5	Yes	-	Yes	0	0
	Plan(s)	R4	Residential	Bedroom	W5	291°N	←		1.35		14	1							
					W6	246°	↙		1.25		34	9							
								1.0		2.60			36	9	Yes	-	Yes	-11	-4
	Plan(s)	R5	Residential	Bedroom	W7	246°	↙		2.75		41	14							
								1.0		2.75			41	14	Yes	-	Yes	-16	-9
	Plan(s)	R6	Residential	LKD	W8	246°	↙		1.36		41	14							
					W9	156°	↘		0.53		6	6							
					W10	211°	↙		0.38		11	11							
					W11	156°	↘		1.33		54	21							
								2.0		3.60			86	28	Yes	-	Yes	-61	-23
	Plan(s)	R7	Residential	Bedroom	W12	156°	↘		1.13		9	9							
								1.0		1.13			9	9	Yes	-	Win only	16	-4
	Plan(s)	R8	Residential	LKD	W13	211°	↙		0.45		17	15							
					W14	156°	↘		1.29		49	20							
								2.0		1.74			51	22	No*	0.26	Yes	-26	-17
	Plan(s)	R9	Residential	Bedroom	W15	156°	↘		1.18		10	10							
								1.0		1.18			10	10	Yes	-	Win only	15	-5
	Plan(s)	R10	Residential	LKD	W16	211°	↙		0.49		19	16							
					W17	156°	↘		1.21		45	18							
								2.0		1.70			48	21	No*	0.30	Yes	-23	-16
	Plan(s)	R11	Residential	Bedroom	W18	156°	↘		1.06		8	8							
								1.0		1.06			8	8	Yes	-	Win only	17	-3
	Plan(s)	R12	Residential	LKD	W19	211°	↙		0.49		19	16							
					W20	156°	↘		1.12		38	15							
								2.0		1.61			41	18	No*	0.39	Yes	-16	-13
	Plan(s)	R13	Residential	LKD	W21	156°	↘		1.06		37	14							
					W22	101°	→		0.20		5	0							
					W23	156°	↘		0.48		9	6							
					W24	66°N	↗		1.18		17	0							
								2.0		2.93			51	14	Yes	-	Yes	-26	-9
	Plan(s)	R14	Residential	Bedroom	W25	66°N	↗		2.41		20	2							
								1.0		2.41			20	2	Yes	-	No	5	3
	Plan(s)	R15	Residential	Bedroom	W26	66°N	↗		1.13		11	0							
					W27	21°N	↑		1.00		0	0							
								1.0		2.14			11	0	Yes	-	No	14	5

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Grey APSH = not a main living room

Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R16	Residential	LKD	W28	21°N	↑		1.15		4	0							
					W29	336°N	↖		0.44		0	0							
								2.0		1.59			4	0	No*	0.41	No	21	5
	Plan(s)	R17	Residential	Bedroom	W30	336°N	↖		1.46		1	0							
								1.0		1.46			1	0	Yes	-	No	24	5
	Plan(s)	R18	Residential	Bedroom	W31	336°N	↖		1.29		2	0							
								1.0		1.29			2	0	Yes	-	No	23	5
Seventl	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.39		34	9							
					W2	156°	↘		1.23		10	10							
								1.0		2.62			44	19	Yes	-	Yes	-19	-14
	Plan(s)	R2	Residential	LKD	W3	211°	↙		0.51		20	17							
					W4	156°	↘		1.25		48	18							
								2.0		1.75			52	22	No*	0.25	Yes	-27	-17
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.07		8	8							
								1.0		1.07			8	8	Yes	-	Win only	17	-3
	Plan(s)	R4	Residential	LKD	W6	211°	↙		0.49		19	16							
					W7	156°	↘		1.16		42	15							
								2.0		1.65			45	18	No*	0.35	Yes	-20	-13
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.11		41	14							
					W9	101°	→		0.21		6	0							
					W10	156°	↘		0.48		9	6							
					W11	66°N	↗		1.20		18	0							
								2.0		3.00			54	14	Yes	-	Yes	-29	-9
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.45		21	2							
								1.0		2.45			21	2	Yes	-	No	4	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.15		11	0							
					W14	21°N	↑		1.03		0	0							
								1.0		2.17			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		1.17		4	0							
					W16	336°N	↖		0.52		0	0							
								2.0		1.68			4	0	No*	0.32	No	21	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		1.71		1	0							
								1.0		1.71			1	0	Yes	-	No	24	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		1.52		2	0							
								1.0		1.52			2	0	Yes	-	No	23	5
Eighth	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.50		34	9							
					W2	156°	↘		1.25		10	10							
								1.0		2.75			44	19	Yes	-	Yes	-19	-14
	Plan(s)	R2	Residential	LKD	W3	211°	↙		0.51		20	17							
					W4	156°	↘		1.28		50	18							
								2.0		1.79			54	22	No*	0.21	Yes	-29	-17
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.09		8	8							
								1.0		1.09			8	8	Yes	-	Win only	17	-3
	Plan(s)	R4	Residential	LKD	W6	211°	↙		0.49		19	16							
					W7	156°	↘		1.21		48	17							
								2.0		1.70			51	20	No*	0.30	Yes	-26	-15
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.16		45	14							
					W9	101°	→		0.23		8	0							
					W10	156°	↘		0.48		9	6							
					W11	66°N	↗		1.23		19	0							
								2.0		3.10			57	14	Yes	-	Yes	-32	-9
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.50		22	2							
								1.0		2.50			22	2	Yes	-	No	3	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.16		11	0							
					W14	21°N	↑		1.06		0	0							
								1.0		2.22			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		1.26		4	0							
					W16	336°N	↖		0.62		0	0							
								2.0		1.88			4	0	No*	0.12	No	21	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		2.06		1	0							
								1.0		2.06			1	0	Yes	-	No	24	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		1.87		2	0							

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Property, room & window attributes									Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								1.0		1.87			2	0	Yes	-	No	23	5
Ninth	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.50		34	9							
					W2	156°	↘		1.30		11	11							
								1.0		2.81			45	20	Yes	-	Yes	-20	-15
	Plan(s)	R2	Residential	LKD	W3	211°	↙		0.51		20	17							
					W4	156°	↘		1.33		52	18							
								2.0		1.83			56	22	No*	0.17	Yes	-31	-17
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.17		8	8							
								1.0		1.17			8	8	Yes	-	Win only	17	-3
	Plan(s)	R4	Residential	LKD	W6	211°	↙		0.49		19	16							
					W7	156°	↘		1.26		51	17							
								2.0		1.76			54	20	No*	0.24	Yes	-29	-15
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.22		52	17							
					W9	101°	→		0.28		10	0							
					W10	156°	↘		0.50		9	6							
					W11	66°N	↗		1.26		20	0							
								2.0		3.26			61	17	Yes	-	Yes	-36	-12
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.56		22	2							
								1.0		2.56			22	2	Yes	-	No	3	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.18		11	0							
					W14	21°N	↑		1.09		0	0							
								1.0		2.27			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		1.37		4	0							
					W16	336°N	↖		0.73		1	0							
								2.0		2.10			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		2.47		3	0							
								1.0		2.47			3	0	Yes	-	No	22	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		2.28		3	0							
								1.0		2.28			3	0	Yes	-	No	22	5
Tenth	Plan(s)	R1	Residential	Bedroom	W1	246°	↙		1.50		34	9							
					W2	156°	↘		1.17		10	9							
								1.0		2.67			44	18	Yes	-	Yes	-19	-13
	Plan(s)	R2	Residential	LKD	W3	211°	↙		0.46		18	16							
					W4	156°	↘		1.37		56	20							
								2.0		1.83			59	23	No*	0.17	Yes	-34	-18
	Plan(s)	R3	Residential	Bedroom	W5	156°	↘		1.07		9	8							
								1.0		1.07			9	8	Yes	-	Win only	16	-3
	Plan(s)	R4	Residential	LKD	W6	211°	↙		0.45		18	15							
					W7	156°	↘		1.33		53	18							
								2.0		1.78			55	20	No*	0.22	Yes	-30	-15
	Plan(s)	R5	Residential	LKD	W8	156°	↘		1.29		52	17							
					W9	101°	→		0.27		9	2							
					W10	156°	↘		0.45		7	4							
					W11	66°N	↗		1.30		21	1							
								2.0		3.31			63	19	Yes	-	Yes	-38	-14
	Plan(s)	R6	Residential	Bedroom	W12	66°N	↗		2.62		22	2							
								1.0		2.62			22	2	Yes	-	No	3	3
	Plan(s)	R7	Residential	Bedroom	W13	66°N	↗		1.20		11	0							
					W14	21°N	↑		1.14		0	0							
								1.0		2.34			11	0	Yes	-	No	14	5
	Plan(s)	R8	Residential	LKD	W15	21°N	↑		2.20		4	0							
					W16	336°N	↖		0.75		1	0							
								2.0		2.95			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	336°N	↖		2.51		3	0							
								1.0		2.51			3	0	Yes	-	No	22	5
	Plan(s)	R10	Residential	Bedroom	W18	336°N	↖		2.31		3	0							
								1.0		2.31			3	0	Yes	-	No	22	5
Block C Proposed																			
Ground	Plan(s)	R1	Residential	Bedroom	W1	271°N	←		0.84		13	0							
					W2	226°	↙		0.87		30	9							
								1.0		1.71			32	9	Yes	-	Yes	-7	-4

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Property, room & window attributes								Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R2	Residential	LKD	W3	226°	↙		1.14		36	9							
					W4	136°	↘		0.07		0	0							
					W5	191°	↓		0.16		4	2							
					W6	136°	↘		0.91		21	0							
								2.0		2.27			55	9	Yes	-	Yes	-30	-4
	Plan(s)	R3	Residential	Bedroom	W7	136°	↘		0.00		0	0							
								1.0		0.00			0	0	No	1.00	No	25	5
	Plan(s)	R4	Residential	LKD	W8	191°	↓		0.16		3	1							
					W9	136°	↘		0.95		22	2							
								2.0		1.11			22	2	No	0.89	No	3	3
	Plan(s)	R5	Residential	Bedroom	W10	136°	↘		0.00		0	0							
								1.0		0.00			0	0	No	1.00	No	25	5
	Plan(s)	R6	Residential	LKD	W11	191°	↓		0.20		5	2							
					W12	136°	↘		0.98		22	2							
								2.0		1.18			23	2	No	0.82	No	2	3
	Plan(s)	R7	Residential	LKD	W13	136°	↘		0.96		21	2							
					W14	81°N	→		0.19		7	0							
					W15	136°	↘		0.14		1	0							
					W16	46°N	↗		0.46		0	0							
								2.0		1.75			24	2	No*	0.25	No	1	3
	Plan(s)	R8	Residential	Bedroom	W17	46°N	↗		0.91		0	0							
								1.0		0.91			0	0	No	0.09	No	25	5
First	Plan(s)	R1	Residential	Bedroom	W1	316°N	↖		2.01		7	0							
								1.0		2.01			7	0	Yes	-	No	18	5
	Plan(s)	R2	Residential	Bedroom	W2	316°N	↖		2.19		8	0							
								1.0		2.19			8	0	Yes	-	No	17	5
	Plan(s)	R3	Residential	LKD	W3	316°N	↖		0.66		3	0							
					W4	271°N	←		1.37		22	7							
								2.0		2.03			23	7	Yes	-	Win only	2	-2
	Plan(s)	R4	Residential	Bedroom	W5	271°N	←		1.14		15	0							
					W6	226°	↙		1.17		36	11							
								1.0		2.31			40	11	Yes	-	Yes	-15	-6
	Plan(s)	R5	Residential	Bedroom	W7	226°	↙		2.49		46	12							
								1.0		2.49			46	12	Yes	-	Yes	-21	-7
	Plan(s)	R6	Residential	LKD	W8	226°	↙		1.22		46	12							
					W9	136°	↘		0.15		1	1							
					W10	191°	↓		0.17		6	5							
					W11	136°	↘		0.86		29	3							
								2.0		2.40			68	13	Yes	-	Yes	-43	-8
	Plan(s)	R7	Residential	Bedroom	W12	136°	↘		0.26		1	1							
								1.0		0.26			1	1	No	0.74	No	24	4
	Plan(s)	R8	Residential	LKD	W13	191°	↓		0.24		6	3							
					W14	136°	↘		0.89		32	5							
								2.0		1.13			32	5	No	0.87	Yes	-7	0
	Plan(s)	R9	Residential	Bedroom	W15	136°	↘		0.28		1	1							
								1.0		0.28			1	1	No	0.72	No	24	4
	Plan(s)	R10	Residential	LKD	W16	191°	↓		0.26		6	3							
					W17	136°	↘		0.90		29	3							
								2.0		1.15			29	3	No	0.85	Ann only	-4	2
	Plan(s)	R11	Residential	Bedroom	W18	136°	↘		0.32		0	0							
								1.0		0.32			0	0	No	0.68	No	25	5
	Plan(s)	R12	Residential	LKD	W19	191°	↓		0.28		8	5							
					W20	136°	↘		0.90		29	4							
								2.0		1.18			30	5	No	0.82	Yes	-5	0
	Plan(s)	R13	Residential	LKD	W21	136°	↘		0.89		27	4							
					W22	81°N	→		0.13		3	0							
					W23	136°	↘		0.16		1	0							
					W24	46°N	↗		0.43		1	0							
								2.0		1.61			29	4	No*	0.39	Ann only	-4	1
	Plan(s)	R14	Residential	Bedroom	W25	46°N	↗		0.92		0	0							
								1.0		0.92			0	0	No	0.08	No	25	5
	Plan(s)	R15	Residential	Bedroom	W26	46°N	↗		0.43		0	0							

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Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
					W27	1°N	↑		0.88		0	0							
								1.0		1.31			0	0	Yes	-	No	25	5
	Plan(s)	R16	Residential	LKD	W28	1°N	↑		1.02		0	0							
					W29	316°N	↖		0.68		3	0							
								2.0		1.70			3	0	No*	0.30	No	22	5
	Plan(s)	R17	Residential	Bedroom	W30	316°N	↖		2.23		7	0							
								1.0		2.23			7	0	Yes	-	No	18	5
	Plan(s)	R18	Residential	Bedroom	W31	316°N	↖		2.03		6	0							
								1.0		2.03			6	0	Yes	-	No	19	5
Second	Plan(s)	R1	Residential	Bedroom	W1	316°N	↖		2.17		9	0							
								1.0		2.17			9	0	Yes	-	No	16	5
	Plan(s)	R2	Residential	Bedroom	W2	316°N	↖		2.38		9	0							
								1.0		2.38			9	0	Yes	-	No	16	5
	Plan(s)	R3	Residential	LKD	W3	316°N	↖		0.72		4	0							
					W4	271°N	←		1.56		26	9							
								2.0		2.28			26	9	Yes	-	Yes	-1	-4
	Plan(s)	R4	Residential	Bedroom	W5	271°N	←		1.24		21	2							
					W6	226°	↙		1.24		39	14							
								1.0		2.48			47	14	Yes	-	Yes	-22	-9
	Plan(s)	R5	Residential	Bedroom	W7	226°	↙		2.66		51	17							
								1.0		2.66			51	17	Yes	-	Yes	-26	-12
	Plan(s)	R6	Residential	LKD	W8	226°	↙		1.30		49	15							
					W9	136°	↘		0.24		1	1							
					W10	191°	↓		0.24		9	8							
					W11	136°	↘		0.97		36	6							
								2.0		2.75			76	17	Yes	-	Yes	-51	-12
	Plan(s)	R7	Residential	Bedroom	W12	136°	↘		0.65		3	1							
								1.0		0.65			3	1	No	0.35	No	22	4
	Plan(s)	R8	Residential	LKD	W13	191°	↓		0.31		12	9							
					W14	136°	↘		1.00		36	6							
								2.0		1.31			39	9	No	0.69	Yes	-14	-4
	Plan(s)	R9	Residential	Bedroom	W15	136°	↘		0.65		4	2							
								1.0		0.65			4	2	No	0.35	No	21	3
	Plan(s)	R10	Residential	LKD	W16	191°	↓		0.32		12	9							
					W17	136°	↘		1.00		37	7							
								2.0		1.32			40	10	No	0.68	Yes	-15	-5
	Plan(s)	R11	Residential	Bedroom	W18	136°	↘		0.65		4	2							
								1.0		0.65			4	2	No	0.35	No	21	3
	Plan(s)	R12	Residential	LKD	W19	191°	↓		0.33		12	9							
					W20	136°	↘		1.00		32	6							
								2.0		1.33			35	9	No	0.67	Yes	-10	-4
	Plan(s)	R13	Residential	LKD	W21	136°	↘		0.98		31	6							
					W22	81°N	→		0.17		5	0							
					W23	136°	↘		0.24		2	1							
					W24	46°N	↗		0.47		1	0							
								2.0		1.87			35	7	No*	0.13	Yes	-10	-2
	Plan(s)	R14	Residential	Bedroom	W25	46°N	↗		1.01		0	0							
								1.0		1.01			0	0	Yes	-	No	25	5
	Plan(s)	R15	Residential	Bedroom	W26	46°N	↗		0.48		0	0							
					W27	1°N	↑		0.94		0	0							
								1.0		1.42			0	0	Yes	-	No	25	5
	Plan(s)	R16	Residential	LKD	W28	1°N	↑		1.11		1	0							
					W29	316°N	↖		0.72		4	0							
								2.0		1.83			5	0	No*	0.17	No	20	5
	Plan(s)	R17	Residential	Bedroom	W30	316°N	↖		2.38		9	0							
								1.0		2.38			9	0	Yes	-	No	16	5
	Plan(s)	R18	Residential	Bedroom	W31	316°N	↖		2.18		8	0							
								1.0		2.18			8	0	Yes	-	No	17	5
Third	Plan(s)	R1	Residential	Bedroom	W1	316°N	↖		2.32		10	0							
								1.0		2.32			10	0	Yes	-	No	15	5
	Plan(s)	R2	Residential	Bedroom	W2	316°N	↖		2.55		10	0							
								1.0		2.55			10	0	Yes	-	No	15	5

Orange or Red = Below guidelines (Orange = within 20% of guideline or LKD/LK/KD/Studio>1.5% ADF)
Grey APSH = not a main living room

Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Short-fall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
	Plan(s)	R3	Residential	LKD	W3	316°N	↖		0.77		5	0							
					W4	271°N	←		2.51		36	9							
								2.0		3.28			36	9	Yes	-	Yes	-11	-4
	Plan(s)	R4	Residential	Bedroom	W5	271°N	←		1.33		22	3							
					W6	226°	↙		1.30		40	15							
								1.0		2.62			48	15	Yes	-	Yes	-23	-10
	Plan(s)	R5	Residential	Bedroom	W7	226°	↙		2.80		53	19							
								1.0		2.80			53	19	Yes	-	Yes	-28	-14
	Plan(s)	R6	Residential	LKD	W8	226°	↙		1.37		53	19							
					W9	136°	↘		0.28		4	4							
					W10	191°	↓		0.25		8	8							
					W11	136°	↘		1.10		42	10							
								2.0		2.99			85	24	Yes	-	Yes	-60	-19
	Plan(s)	R7	Residential	Bedroom	W12	136°	↘		0.69		4	2							
								1.0		0.69			4	2	No	0.31	No	21	3
	Plan(s)	R8	Residential	LKD	W13	191°	↓		0.32		12	9							
					W14	136°	↘		1.12		41	10							
								2.0		1.44			43	12	No	0.56	Yes	-18	-7
	Plan(s)	R9	Residential	Bedroom	W15	136°	↘		0.92		8	5							
								1.0		0.92			8	5	No	0.08	Win only	17	0
	Plan(s)	R10	Residential	LKD	W16	191°	↓		0.37		15	12							
					W17	136°	↘		1.11		43	12							
								2.0		1.49			45	14	No	0.51	Yes	-20	-9
	Plan(s)	R11	Residential	Bedroom	W18	136°	↘		0.90		7	4							
								1.0		0.90			7	4	No	0.10	No	18	1
	Plan(s)	R12	Residential	LKD	W19	191°	↓		0.39		15	12							
					W20	136°	↘		1.11		41	13							
								2.0		1.49			43	15	No	0.51	Yes	-18	-10
	Plan(s)	R13	Residential	LKD	W21	136°	↘		1.08		39	12							
					W22	81°N	→		0.21		6	0							
					W23	136°	↘		0.37		3	2							
					W24	46°N	↗		0.53		2	0							
								2.0		2.20			42	13	Yes	-	Yes	-17	-8
	Plan(s)	R14	Residential	Bedroom	W25	46°N	↗		1.14		0	0							
								1.0		1.14			0	0	Yes	-	No	25	5
	Plan(s)	R15	Residential	Bedroom	W26	46°N	↗		0.55		0	0							
					W27	1°N	↑		0.99		0	0							
								1.0		1.54			0	0	Yes	-	No	25	5
	Plan(s)	R16	Residential	LKD	W28	1°N	↑		1.20		1	0							
					W29	316°N	↖		0.76		5	0							
								2.0		1.96			5	0	No*	0.04	No	20	5
	Plan(s)	R17	Residential	Bedroom	W30	316°N	↖		2.52		10	0							
								1.0		2.52			10	0	Yes	-	No	15	5
	Plan(s)	R18	Residential	Bedroom	W31	316°N	↖		2.31		10	0							
								1.0		2.31			10	0	Yes	-	No	15	5
Fourth	Plan(s)	R1	Residential	Bedroom	W1	226°	↙		1.34		37	15							
					W2	136°	↘		1.16		12	8							
								1.0		2.50			49	23	Yes	-	Yes	-24	-18
	Plan(s)	R2	Residential	LKD	W3	191°	↓		0.44		20	17							
					W4	136°	↘		1.23		49	16							
								2.0		1.67			53	20	No*	0.33	Yes	-28	-15
	Plan(s)	R3	Residential	Bedroom	W5	136°	↘		1.09		12	8							
								1.0		1.09			12	8	Yes	-	Win only	13	-3
	Plan(s)	R4	Residential	LKD	W6	191°	↓		0.43		18	15							
					W7	136°	↘		1.22		46	16							
								2.0		1.65			48	18	No*	0.35	Yes	-23	-13
	Plan(s)	R5	Residential	LKD	W8	136°	↘		1.19		45	17							
					W9	81°N	→		0.25		8	1							
					W10	136°	↘		0.47		7	6							
					W11	46°N	↗		0.61		3	0							
								2.0		2.51			48	17	Yes	-	Yes	-23	-12
	Plan(s)	R6	Residential	Bedroom	W12	46°N	↗		1.31		0	0							

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Property, room & window attributes					Daylight (BRE)			Sunlight (BRE)				ADF		APSH		
Floor	Flat no.	Room ref.	Property type	Room use	Window Ref. & Orientation			ADF Target (%)	ADF win (%)	ADF (%)	APSH window Annual (%)	APSH window Winter (%)	APSH room Annual (%)	APSH room Winter (%)	Satisfies BRE?	Shortfall (ADF%)	Satisfies BRE?	Shortfall Annual (%)	Shortfall Winter (%)
								1.0		1.31			0	0	Yes	-	No	25	5
	Plan(s)	R7	Residential	Bedroom	W13	46°N	↗		0.64		0	0							
					W14	1°N	↑		1.05		0	0							
								1.0		1.69			0	0	Yes	-	No	25	5
	Plan(s)	R8	Residential	LKD	W15	1°N	↑		1.29		1	0							
					W16	316°N	↖		0.78		5	0							
								2.0		2.07			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	316°N	↖		2.60		10	0							
								1.0		2.60			10	0	Yes	-	No	15	5
	Plan(s)	R10	Residential	Bedroom	W18	316°N	↖		2.38		10	0							
								1.0		2.38			10	0	Yes	-	No	15	5
Fifth	Plan(s)	R1	Residential	Bedroom	W1	226°	↙		1.48		40	15							
					W2	136°	↘		1.14		9	7							
								1.0		2.62			49	22	Yes	-	Yes	-24	-17
	Plan(s)	R2	Residential	LKD	W3	191°	↓		0.44		18	15							
					W4	136°	↘		1.33		50	17							
								2.0		1.77			53	20	No*	0.23	Yes	-28	-15
	Plan(s)	R3	Residential	Bedroom	W5	136°	↘		1.07		9	7							
								1.0		1.07			9	7	Yes	-	Win only	16	-2
	Plan(s)	R4	Residential	LKD	W6	191°	↓		0.43		17	14							
					W7	136°	↘		1.31		50	18							
								2.0		1.74			52	20	No*	0.26	Yes	-27	-15
	Plan(s)	R5	Residential	LKD	W8	136°	↘		1.28		48	18							
					W9	81°N	→		0.24		7	2							
					W10	136°	↘		0.45		6	5							
					W11	46°N	↗		0.71		5	0							
								2.0		2.69			51	18	Yes	-	Yes	-26	-13
	Plan(s)	R6	Residential	Bedroom	W12	46°N	↗		1.53		0	0							
								1.0		1.53			0	0	Yes	-	No	25	5
	Plan(s)	R7	Residential	Bedroom	W13	46°N	↗		0.75		0	0							
					W14	1°N	↑		1.12		0	0							
								1.0		1.86			0	0	Yes	-	No	25	5
	Plan(s)	R8	Residential	LKD	W15	1°N	↑		2.15		1	0							
					W16	316°N	↖		0.79		5	0							
								2.0		2.94			5	0	Yes	-	No	20	5
	Plan(s)	R9	Residential	Bedroom	W17	316°N	↖		2.63		10	0							
								1.0		2.63			10	0	Yes	-	No	15	5
	Plan(s)	R10	Residential	Bedroom	W18	316°N	↖		2.41		10	0							
								1.0		2.41			10	0	Yes	-	No	15	5

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Grey APSH = not a main living room

Appendix 4
Daylight and sunlight results for neighbouring buildings

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
2 Priory Terrace																		
Second	R1	Bedroom	W1 ↓	35.8	35.8	N/A	N/A											
		Bedroom	W2 →	29.0	28.7	N/A	N/A	98%	98%	0.01	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
4 Priory Terrace																		
First	R1	Bedroom	W1 →	27.6	27.0	N/A	N/A	94%	94%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Second	R1	Bedroom	W1 →	29.8	29.4	N/A	N/A	96%	96%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
6 Priory Terrace																		
Ger Grc	R1	Bedroom	W1 →	18.5	17.8	0.6	0.97											
		Bedroom	W2 →	17.1	17.1	0.0	1.00	78%	78%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Living Room	W3 ↓	12.6	12.6	0.0	1.00											
		Living Room	W4 →	22.3	20.5	1.8	0.92											
		Living Room	W5 ↑	22.2	20.2	2.0	0.91											
		Living Room	W6 Inc	75.5	74.0	N/A	N/A	100%	100%	0.00	1.00	50	50	N/A	N/A	7	7	N/A
Ground	R1	LK	W5 →	27.0	26.0	1.1	0.96	76%	76%	0.09	0.99	40	40	N/A	N/A	6	6	N/A
	R2	Living Room	W1 ↓	13.9	13.9	0.0	1.00											
		Living Room	W2 →	25.8	24.8	1.0	0.96											
		Living Room	W3 ↑	18.0	16.9	1.0	0.94											
		Living Room	W4 Inc	63.1	62.6	N/A	N/A	100%	100%	0.00	1.00	51	51	N/A	N/A	11	11	N/A
First	R2	Bedroom	W3 →	29.9	29.1	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Second	R1	Bedroom	W1 →	31.7	31.0	N/A	N/A											
		Bedroom	W2 →	31.8	31.1	N/A	N/A											
		Bedroom	W3 ↓	35.0	35.0	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
8 Priory Terrace																		
Ger Grc	R1	Living Room	W1 →	25.0	22.7	2.3	0.91											

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		Living Room	W2 →	25.3	22.5	2.8	0.89	92%	71%	3.48	0.78	39	39	N/A	N/A	6	6	N/A
Ground	R1	KD	W1 →	28.0	26.5	1.5	0.95	89%	88%	0.27	0.98	45	45	N/A	N/A	11	11	N/A
First	R1	Bedroom	W1 →	30.3	29.3	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Second	R1	Bedroom	W1 →	32.0	31.2	N/A	N/A											
		Bedroom	W2 ↑	32.2	31.5	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
10 Priory Terrace																		
Lower Ground	R1	Living Room	W1 →	15.6	15.1	0.4	0.97	46%	40%	0.79	0.88	36	34	N/A	N/A	4	4	1.00
	R2	Living Room	W2 →	26.2	21.1	5.1	0.80											
		Living Room	W3 →	26.1	20.2	5.9	0.77	77%	53%	5.61	0.69	45	39	N/A	N/A	11	11	N/A
Ground	R2	KD	W2 →	28.8	25.4	3.4	0.88	80%	52%	5.48	0.65	50	44	N/A	N/A	13	13	N/A
First	R2	Bedroom	W2 →	30.9	28.5	N/A	N/A	95%	93%	0.20	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Second	R1	Bedroom	W1 ↓	34.3	34.3	N/A	N/A											
		Bedroom	W2 →	32.3	30.7	N/A	N/A	99%	98%	0.17	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
12 Priory Terrace																		
Lower Ground	R1	LD	W1 →	23.9	17.8	6.1	0.74											
		LD	W2 →	26.5	20.0	6.5	0.76											
		LD	W3 ↑	14.8	13.7	1.1	0.93											
		LD	W4 →	16.4	12.3	4.1	0.75	58%	48%	3.58	0.83	45	35	N/A	N/A	10	10	N/A
Ground	R1	KD	W1 →	28.9	24.8	4.1	0.86	97%	72%	4.44	0.75	50	43	N/A	N/A	13	13	N/A
First	R1	Bedroom	W1 →	30.9	27.9	N/A	N/A	96%	86%	1.82	0.90	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Second	R1	Bedroom	W1 →	32.3	30.2	N/A	N/A	94%	73%	3.86	0.78	N/R	N/R	N/R	N/R	N/R	N/R	N/R
14 Priory Terrace																		
Basement	Room 1	Living Room	WB_01 →	27.0	21.4	5.6	0.79	98%	54%	4.04	0.56	47	36	N/A	N/A	13	12	N/A
	Room 2	Living Room	WB_02 →	26.8	21.2	5.6	0.79											
		Living Room	WB_03 →	26.3	21.1	5.3	0.80	98%	70%	5.31	0.72	48	36	N/A	N/A	13	11	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
Ground	Room 1	Living Room	WG_01 →	29.1	24.1	5.0	0.83	99%	87%	1.10	0.88	53	45	N/A	N/A	18	16	N/A
	Room 2	Living Room	WG_02 →	28.8	23.6	5.2	0.82											
		Living Room	WG_03 →	28.5	23.5	5.1	0.82	99%	92%	1.26	0.93	53	43	N/A	N/A	18	15	N/A
First	Room 1	Living Room	W1_01 →	31.1	27.3	N/A	N/A	99%	95%	0.37	0.96	56	48	N/A	N/A	18	17	N/A
	Room 2	Living Room	W1_02 →	30.9	27.0	N/A	N/A											
		Living Room	W1_03 →	30.7	26.8	4.0	0.87	99%	97%	0.36	0.98	56	49	N/A	N/A	18	17	N/A
Second	Room 1	Living Room	W2_01 →	32.8	30.2	N/A	N/A	98%	98%	0.01	1.00	58	51	N/A	N/A	19	18	N/A
	Room 2	Living Room	W2_02 →	32.7	29.9	N/A	N/A											
		Living Room	W2_03 →	32.5	29.6	N/A	N/A	98%	98%	0.00	1.00	58	50	N/A	N/A	19	17	N/A
16 Priory Terrace																		
Basement	Room 1	Living Room	WB_01 →	25.5	21.1	4.4	0.83											
		Living Room	WB_02 →	24.7	21.0	3.6	0.85	95%	73%	4.43	0.76	47	37	N/A	N/A	15	12	N/A
	Room 2	Living Room	WB_03 →	23.8	20.9	2.9	0.88	82%	63%	1.66	0.77	46	38	N/A	N/A	16	12	N/A
Ground	Room 1	Living Room	WG_01 →	28.1	23.4	4.7	0.83											
		Living Room	WG_02 →	27.6	23.3	4.3	0.84	99%	93%	1.01	0.95	52	43	N/A	N/A	18	14	N/A
	Room 2	Living Room	WG_03 →	27.1	23.3	3.8	0.86	99%	89%	0.89	0.90	50	43	N/A	N/A	17	14	N/A
First	Room 1	Living Room	W1_01 →	30.4	26.6	3.8	0.87											
		Living Room	W1_02 →	30.1	26.5	3.6	0.88	98%	98%	0.07	1.00	52	49	N/A	N/A	18	17	N/A
	Room 2	Living Room	W1_03 →	29.6	26.3	3.4	0.89	99%	95%	0.32	0.96	52	49	N/A	N/A	18	17	N/A
Second	Room 1	Living Room	W2_01 →	32.2	29.4	N/A	N/A											
		Living Room	W2_02 →	32.0	29.3	N/A	N/A	98%	98%	0.00	1.00	56	50	N/A	N/A	18	17	N/A
	Room 2	Living Room	W2_03 →	31.6	29.0	N/A	N/A	99%	99%	0.00	1.00	56	50	N/A	N/A	19	17	N/A
18 Priory Terrace																		
Basement	Kitchen	Kitchen	WB_02 →	22.6	21.5	1.1	0.95	55%	63%	-0.52	1.14	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Bedroom	Bedroom	WB_01 →	22.9	21.5	1.4	0.94	68%	71%	-0.48	1.04	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Ground	Kitchen	Kitchen	WG_02 →	26.1	23.6	2.5	0.90	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
											Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
Bedroor	Bedroom	WG_01 →	26.6	23.7	2.8	0.89	96%	95%	0.03	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
First Bedroom	Bedroom	W1_01 →	29.5	26.6	2.9	0.90	95%	94%	0.15	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Bedroom	Bedroom	W1_02 →	29.2	26.4	2.8	0.90											
	Bedroom	W1_03 →	29.2	26.4	2.8	0.90	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Seconedroom	Bedroom	W2_01 →	31.7	29.1	N/A	N/A	95%	94%	0.22	0.98	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Bedroom	Bedroom	W2_02 →	31.3	28.7	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
20 Priory Terrace																	
Baseme Bedroom	Bedroom	WB_01 →	22.5	21.5	0.9	0.96	65%	61%	0.48	0.93	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Bedroom	Bedroom	WB_02 →	22.1	21.3	0.8	0.96	63%	66%	-0.47	1.05	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Groune Bedroom	Bedroom	WG_01 →	25.7	23.5	2.1	0.92	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Bedroom	Bedroom	WG_02 →	25.5	23.4	2.0	0.92	97%	90%	0.92	0.93	N/R	N/R	N/R	N/R	N/R	N/R	N/R
First Bedroom	Bedroom	W1_01 →	29.1	26.4	2.7	0.91											
	Bedroom	W1_02 →	28.8	26.1	2.6	0.91	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Bedroom	Bedroom	W1_03 →	28.5	26.0	2.5	0.91	96%	96%	0.03	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Seconedroom	Bedroom	W2_01 →	31.1	28.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Bedroom	Bedroom	W2_02 →	30.7	28.3	N/A	N/A	96%	95%	0.12	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
22 Priory Terrace																	
Baseme Kitchen_Di	Kitchen	WB_01 →	22.1	21.3	0.8	0.96											
	Kitchen	WB_02 →	22.6	21.5	1.1	0.95	89%	85%	0.85	0.96	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Groun Room 1	Living Room	WG_01 →	25.4	23.5	1.9	0.93											
	Living Room	WG_02 →	25.2	23.3	1.8	0.93	98%	98%	0.01	1.00	50	43	N/A	N/A	16	13	N/A
First Room 1	Bedroom	W1_03 →	28.5	26.1	2.4	0.91	97%	97%	0.01	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Room 2	Bedroom	W1_01 →	28.1	25.9	2.2	0.92	91%	81%	0.81	0.89	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Secon Room 1	Bedroom	W2_01 →	30.6	28.2	N/A	N/A	98%	96%	0.17	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Room 2	Bedroom	W2_02 →	30.3	27.9	N/A	N/A	99%	97%	0.13	0.98	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
											Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
24 Priory Terrace																	
aseme Room 1	Living Room	WB_01 →	22.5	21.4	1.2	0.95	81%	70%	0.99	0.86	45	41	N/A	N/A	14	11	N/A
Room 2	Living Room	WB_02 →	21.8	20.8	1.0	0.95	84%	68%	2.26	0.80	44	42	N/A	N/A	12	12	N/A
Groun Room 1	Living Room	WG_01 →	24.8	23.1	1.7	0.93	98%	94%	0.38	0.97	48	44	N/A	N/A	14	13	N/A
Room 2	Living Room	WG_02 →	24.4	22.8	1.6	0.93	98%	98%	0.09	0.99	48	44	N/A	N/A	14	13	N/A
First Room 1	Living Room	W1_01 →	27.9	25.8	2.1	0.92											
	Living Room	W1_02 →	27.6	25.5	2.0	0.93	96%	95%	0.17	0.99	51	46	N/A	N/A	17	14	N/A
Room 2	Living Room	W1_03 →	27.1	25.2	1.9	0.93	98%	97%	0.14	0.99	50	46	N/A	N/A	16	14	N/A
Secon Room 1	Living Room	W2_01 →	29.9	27.7	N/A	N/A	97%	92%	0.66	0.94	52	49	N/A	N/A	17	17	N/A
Room 2	Living Room	W2_02 →	29.4	27.2	N/A	N/A	98%	85%	1.36	0.87	51	49	N/A	N/A	17	17	N/A
26 Priory Terrace																	
aseme Room 1	Living Room	WB_01 →	21.2	20.2	1.0	0.95	75%	56%	2.66	0.76	43	39	N/A	N/A	13	12	N/A
Room 2	Living Room	WB_02 →	21.0	20.0	0.9	0.95	61%	45%	1.28	0.73	41	38	N/A	N/A	12	12	N/A
Groun Room 1	Living Room	WG_01 →	23.7	22.2	1.5	0.94	89%	76%	1.51	0.86	47	43	N/A	N/A	14	14	N/A
Room 2	Living Room	WG_02 →	23.2	21.9	1.3	0.94	98%	83%	1.54	0.85	44	43	N/A	N/A	14	14	N/A
First Room 1	Living Room	W1_01 →	26.4	24.7	1.8	0.93	95%	87%	0.91	0.92	52	46	N/A	N/A	17	16	N/A
Room 2	Living Room	W1_02 →	25.9	24.3	1.6	0.94											
	Living Room	W1_03 →	25.7	24.3	1.4	0.94	94%	81%	1.36	0.86	49	45	N/A	N/A	15	15	N/A
Secon Room 1	Living Room	W2_01 →	28.7	26.7	2.0	0.93	94%	79%	1.88	0.84	52	50	N/A	N/A	17	17	N/A
Room 2	Living Room	W2_02 →	28.0	26.3	1.6	0.94	94%	77%	1.57	0.83	51	48	N/A	N/A	17	17	N/A
28 Priory Terrace																	
aseme Room 1	Living Room	WB_01 →	20.8	19.9	0.9	0.96	80%	61%	1.45	0.76	41	35	N/A	N/A	12	10	N/A
Room 2	Living Room	WB_02 →	20.2	19.0	1.1	0.94	78%	56%	3.35	0.71	40	35	N/A	N/A	12	10	N/A
Groun Room 1	Living Room	WG_01 →	22.6	21.4	1.1	0.95	79%	73%	0.55	0.93	41	39	N/A	N/A	12	12	N/A
Room 2	Living Room	WG_02 →	22.4	21.0	1.4	0.94	84%	80%	0.57	0.94	41	38	N/A	N/A	13	12	N/A
First Room 1	Living Room	W1_01 →	25.4	24.2	1.2	0.95											

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
											Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	Living Room	W1_02 →	24.9	23.7	1.2	0.95	97%	95%	0.15	0.99	45	44	N/A	N/A	15	15	N/A
Room 2	Living Room	W1_03 →	24.8	23.5	1.3	0.95	88%	91%	-0.45	1.04	43	44	N/A	1.02	15	15	N/A
SeconRoom 3	Living Room	W2_01 →	27.4	26.1	1.3	0.95	97%	89%	0.73	0.92	47	46	N/A	N/A	15	15	N/A
Room 4	Living Room	W2_02 →	27.0	25.7	1.3	0.95	87%	85%	0.18	0.98	44	46	N/A	1.05	15	15	N/A
30 Priory Terrace																	
asemedroom	Bedroom	WB_01 →	20.4	18.5	1.9	0.91	71%	42%	3.89	0.59	N/R	N/R	N/R	N/R	N/R	N/R	N/R
edroom	Bedroom	WB_02 →	20.3	18.3	2.1	0.90	77%	59%	1.33	0.76	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Grounedroom	Bedroom	WG_01 →	22.6	20.5	2.0	0.91	70%	63%	0.87	0.90	N/R	N/R	N/R	N/R	N/R	N/R	N/R
edroom	Bedroom	WG_02 →	22.1	20.0	2.0	0.91	91%	90%	0.09	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
First Room 1	Living Room	W1_01 →	24.9	23.1	1.7	0.93	79%	77%	0.32	0.96	45	46	N/A	1.02	17	17	N/A
Room 2	Living Room	W1_02 →	24.4	22.7	1.7	0.93											
	Living Room	W1_03 →	24.3	22.5	1.8	0.93	82%	64%	1.99	0.78	44	45	N/A	1.02	17	17	N/A
SeconRoom 1	Living Room	W2_01 →	26.9	25.4	1.5	0.94	78%	72%	0.67	0.92	46	49	N/A	1.07	17	17	N/A
Room 2	Living Room	W2_02 →	26.4	24.9	1.5	0.94	75%	70%	0.60	0.93	45	48	N/A	1.07	17	17	N/A
32 Priory Terrace																	
asemeRoom 1	Living Room	WB_01 →	20.1	18.0	2.1	0.89	56%	44%	0.97	0.79	38	34	N/A	N/A	14	11	N/A
Room 2	Living Room	WB_02 →	19.5	17.4	2.1	0.89	87%	56%	4.33	0.65	36	33	N/A	N/A	15	11	N/A
GrounRoom 1	Living Room	WG_01 →	21.6	19.6	2.0	0.91	82%	73%	1.08	0.88	40	35	N/A	N/A	16	12	N/A
Room 2	Living Room	WG_02 →	21.4	19.5	1.9	0.91	83%	76%	0.85	0.91	41	37	N/A	N/A	17	14	N/A
First Room 1	Living Room	W1_01 →	24.2	22.6	1.7	0.93											
	Living Room	W1_02 →	23.7	22.1	1.6	0.93	83%	69%	1.64	0.83	43	44	N/A	1.02	17	17	N/A
Room 2	Living Room	W1_03 →	23.7	22.1	1.5	0.94	79%	62%	1.86	0.78	44	40	N/A	N/A	17	16	N/A
SeconRoom 1	Living Room	W2_01 →	26.1	24.8	1.4	0.95	78%	73%	0.57	0.94	45	46	N/A	1.02	17	17	N/A
Room 2	Living Room	W2_02 →	25.8	24.5	1.2	0.95	83%	71%	1.32	0.85	48	46	N/A	N/A	17	17	N/A
34 Priory Terrace																	

Property, room & window attributes			VSC				NSL				APSH (room)						
											Annual *(%APSH)*				Winter *(%APSH)*		
Floor Room	Room use	Window Ref./Orientation	Exis. *(% VSC)*	Prop. *(% VSC)*	Loss *(% VSC)*	Pro./Ex. ratio	Exis. *(% rm)*	Prop. *(% rm)*	Loss (m^2)	Pro./Ex. ratio	Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
aseme Room 1	Living Room	WB_01 →	19.7	17.3	2.4	0.88	89%	62%	2.96	0.70	38	34	N/A	N/A	13	12	N/A
Room 2	Living Room	WB_02 →	20.1	16.9	3.2	0.84	91%	57%	2.98	0.62	41	35	N/A	N/A	13	12	N/A
Groun Room 1	Living Room	WG_01 →	22.0	19.6	2.4	0.89											
	Living Room	WG_02 →	22.1	19.0	3.1	0.86	98%	92%	1.16	0.95	49	40	N/A	N/A	16	14	N/A
First Room 1	Living Room	W1_01 →	24.2	22.4	1.9	0.92	80%	64%	2.76	0.79	46	41	N/A	N/A	15	15	N/A
Room 2	Bedroom	W1_02 →	24.4	21.9	2.5	0.90											
	Bedroom	W1_03 →	24.4	21.6	2.9	0.88	95%	95%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Secon Room 1	Living Room	W2_01 →	26.3	24.8	1.5	0.94	88%	72%	1.89	0.81	50	49	N/A	N/A	15	17	1.13
Room 2	Living Room	W2_02 →	26.3	24.0	2.2	0.91	92%	71%	2.32	0.77	52	48	N/A	N/A	16	15	N/A
36 Priory Terrace																	
aseme Room 1	Living Room	WB_01 →	19.9	15.8	4.1	0.79	89%	41%	4.00	0.46	44	32	N/A	N/A	14	12	N/A
Room 2	Living Room	WB_02 →	18.0	13.8	4.2	0.77	90%	75%	2.20	0.83	39	32	N/A	N/A	12	13	1.08
Groun Room 1	Living Room	WG_01 →	21.0	16.8	4.1	0.80	92%	76%	1.85	0.82	48	37	N/A	N/A	16	14	N/A
Room 2	Living Room	WG_02 →	19.6	15.4	4.2	0.79	96%	80%	1.88	0.83	44	40	N/A	N/A	14	14	N/A
First Room 1	Living Room	W1_01 →	23.1	19.6	3.5	0.85	93%	75%	1.99	0.81	51	43	N/A	N/A	16	14	N/A
Room 2	Living Room	W1_02 →	21.3	17.7	3.5	0.83	95%	80%	1.76	0.84	48	44	N/A	N/A	15	14	N/A
Secon Room 1	Living Room	W2_01 →	25.8	23.0	2.8	0.89	95%	76%	2.25	0.79	52	47	N/A	N/A	16	15	N/A
Room 2	Living Room	W2_02 →	23.8	21.0	2.8	0.88	96%	84%	1.41	0.87	49	46	N/A	N/A	15	14	N/A
143 Abbey Road																	
Groun Kitcher	Kitchen	WG_04 →	17.7	15.3	2.4	0.86	88%	88%	0.02	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
ing Ro	Living Room	WG_01 →	17.6	13.8	3.8	0.79											
	Living Room	WG_02 →	16.8	13.4	3.4	0.80											
	Living Room	WG_03 →	14.9	11.9	3.0	0.80	98%	98%	0.00	1.00	40	32	N/A	N/A	11	11	N/A
First Kitcher	Kitchen	W1_04 →	22.2	19.9	2.3	0.90	89%	89%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
ing Ro	Living Room	W1_01 →	19.7	15.7	3.9	0.80											
	Living Room	W1_02 →	18.7	15.2	3.5	0.81											

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		Living Room	W1_03 →	16.5	13.4	3.1	0.81	98%	98%	0.00	1.00	43	39	N/A	N/A	13	13	N/A
	Second	Kitchen	W2_02 →	23.5	21.6	1.9	0.92	87%	87%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		ing Ro	W2_01 →	20.2	17.3	2.9	0.86	95%	93%	0.35	0.98	45	40	N/A	N/A	13	12	N/A
	Third	Kitchen	W3_02 →	24.8	23.3	1.5	0.94	86%	86%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		ing Ro	W3_01 →	22.1	19.9	2.3	0.90	95%	93%	0.46	0.98	49	44	N/A	N/A	16	12	N/A
	Fourth	hen_Li	W4_01 →	29.1	28.1	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
126 Abbey Road																		
		asemeing Ro	WB_01 ↙	24.6	24.8	-0.2	1.01	97%	97%	0.00	1.00	45	45	N/A	N/A	13	13	N/A
	Ground	edroor	WG_01 ↙	28.2	28.4	N/A	1.01	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		edroom	WG_02 ↙	25.0	24.9	0.1	1.00											
			WG_03 ↙	25.5	25.7	-0.2	1.01											
			WG_04 ↙	13.4	13.4	0.0	1.00	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	First	Kitchen	W1_02 ↙	34.3	34.2	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		ing Ro	W1_01 ↙	33.8	33.8	N/A	N/A	98%	98%	0.00	1.00	72	71	N/A	N/A	24	23	N/A
	Second	Kitchen	W2_02 ↙	36.5	36.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		ing Ro	W2_01 ↙	36.3	36.2	N/A	N/A	99%	99%	0.00	1.00	74	74	N/A	N/A	26	26	N/A
124 Abbey Road																		
		asemeing Ro	WB_01 ↙	23.8	24.0	-0.2	1.01	97%	97%	0.00	1.00	41	42	N/A	1.02	9	10	1.11
	Ground	edroor	WG_01 ↙	27.5	27.8	N/A	1.01	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		edroom	WG_02 ↙	23.9	23.7	0.2	0.99											
			WG_03 ↙	24.2	24.5	-0.2	1.01											
			WG_04 ↙	11.3	11.4	0.0	1.00	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	First	edroor	W1_01 ↙	34.2	34.0	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		Room 1	W1_02 ↙	34.0	33.8	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Second	edroor	W2_01 ↙	36.4	36.2	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
		Room 1	W2_02 ↙	36.2	36.0	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
Flat 1 to 102 Snowman House																		
Third	R1	Bedroom	W1 ←	37.3	37.0	N/A	N/A											
		Bedroom	W2 ↓	31.8	27.6	N/A	N/A	99%	99%	0.03	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	31.7	27.1	N/A	N/A	89%	55%	4.50	0.61	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	31.6	26.9	4.7	0.85	90%	53%	3.90	0.58	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	31.4	26.5	4.9	0.84	97%	52%	4.81	0.54	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	31.3	26.3	4.9	0.84	96%	55%	5.40	0.57	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	31.1	26.2	4.9	0.84											
		Bedroom	W9 →	28.9	28.6	N/A	N/A	100%	99%	0.18	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Fourth	R1	Bedroom	W1 ←	38.4	38.1	N/A	N/A											
		Bedroom	W2 ↓	33.3	29.6	N/A	N/A	100%	99%	0.16	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	33.2	29.0	N/A	N/A	98%	67%	4.17	0.68	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	33.1	28.7	N/A	N/A	98%	64%	3.49	0.65	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	32.8	28.2	N/A	N/A	97%	57%	4.25	0.59	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	32.7	28.1	N/A	N/A	97%	61%	4.70	0.63	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	32.5	27.9	N/A	N/A											
		Bedroom	W9 →	29.4	29.2	N/A	N/A	100%	99%	0.23	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Fifth	R1	Bedroom	W1 ←	39.0	38.8	N/A	N/A											
		Bedroom	W2 ↓	34.7	31.3	N/A	N/A	100%	99%	0.13	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	34.5	30.9	N/A	N/A	98%	86%	1.62	0.87	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	34.4	30.5	N/A	N/A	98%	78%	2.04	0.80	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	34.2	30.0	N/A	N/A	97%	64%	3.50	0.66	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	34.0	29.8	N/A	N/A	97%	68%	3.82	0.70	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	33.8	29.5	N/A	N/A											
		Bedroom	W9 →	29.9	29.7	N/A	N/A	100%	99%	0.20	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Sixth	R1	Bedroom	W1 ←	39.3	39.2	N/A	N/A											
		Bedroom	W2 ↓	35.9	33.1	N/A	N/A	100%	99%	0.12	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R2	Bedroom	W3 ↓	35.8	32.7	N/A	N/A	98%	91%	0.93	0.93	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	35.7	32.3	N/A	N/A	98%	86%	1.24	0.88	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	35.5	31.7	N/A	N/A	97%	75%	2.36	0.77	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	35.3	31.5	N/A	N/A	97%	78%	2.51	0.80	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	35.1	31.2	N/A	N/A											
		Bedroom	W9 →	30.4	30.1	N/A	N/A	100%	99%	0.17	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Seven	R1	Bedroom	W1 ←	39.4	39.4	N/A	N/A											
		Bedroom	W2 ↓	37.1	34.8	N/A	N/A	100%	99%	0.11	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	37.0	34.4	N/A	N/A	98%	97%	0.21	0.98	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	36.9	34.1	N/A	N/A	98%	94%	0.37	0.96	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	36.7	33.4	N/A	N/A	97%	90%	0.72	0.93	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	36.5	33.1	N/A	N/A	97%	93%	0.53	0.96	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	36.2	32.8	N/A	N/A											
		Bedroom	W9 →	30.8	30.6	N/A	N/A	100%	99%	0.14	0.99	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Eighth	R1	Bedroom	W1 ←	39.5	39.5	N/A	N/A											
		Bedroom	W2 ↓	37.9	36.2	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	37.8	35.9	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	37.7	35.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	37.4	34.9	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	37.2	34.6	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	37.0	34.3	N/A	N/A											
		Bedroom	W9 →	31.3	31.1	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Ninth	R1	Bedroom	W1 ←	39.5	39.6	N/A	1.00											
		Bedroom	W2 ↓	38.2	37.0	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	38.1	36.8	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	38.0	36.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	37.7	36.0	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	37.6	35.7	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R7	Bedroom	W8 ↓	37.3	35.4	N/A	N/A											
		Bedroom	W9 →	31.8	31.6	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Tenth	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	38.5	37.8	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	38.4	37.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	38.4	37.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	38.1	36.9	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	37.9	36.7	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	37.7	36.4	N/A	N/A											
		Bedroom	W9 →	32.3	32.2	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
levent	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	38.8	38.4	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	38.7	38.3	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	38.6	38.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	38.3	37.8	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	38.2	37.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	38.0	37.3	N/A	N/A											
		Bedroom	W9 →	32.9	32.8	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Twelfh	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	38.9	38.7	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	38.9	38.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	38.8	38.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	38.5	38.2	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	38.4	38.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	38.2	37.8	N/A	N/A											
		Bedroom	W9 →	33.5	33.4	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
hirteen	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	39.1	39.0	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R2	Bedroom	W3 ↓	39.0	39.0	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	38.9	38.9	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	38.7	38.7	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	38.6	38.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	38.4	38.3	N/A	N/A											
		Bedroom	W9 →	34.1	34.1	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
urteer	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	39.2	39.2	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	39.1	39.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	39.1	39.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	38.9	38.9	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	38.7	38.7	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	38.6	38.6	N/A	N/A											
		Bedroom	W9 →	34.8	34.8	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
ifteen	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	39.3	39.3	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	39.2	39.2	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	39.2	39.2	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	39.0	39.0	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	38.9	38.9	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	38.8	38.8	N/A	N/A											
		Bedroom	W9 →	35.5	35.5	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
ixteen	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	39.4	39.4	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	39.3	39.3	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	39.3	39.3	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	39.2	39.2	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	39.1	39.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R7	Bedroom	W8 ↓	39.0	39.0	N/A	N/A											
		Bedroom	W9 →	36.2	36.2	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
ventee	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	39.4	39.4	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	39.3	39.3	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	39.2	39.2	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	39.1	39.1	N/A	N/A											
		Bedroom	W9 →	36.9	36.9	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
ghteer	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	39.5	39.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	39.3	39.3	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	39.2	39.2	N/A	N/A											
		Bedroom	W9 →	37.6	37.6	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
neteer	R1	Bedroom	W1 ←	39.6	39.6	N/A	N/A											
		Bedroom	W2 ↓	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3 ↓	39.5	39.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R3	Bedroom	W4 ↓	39.5	39.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R5	Bedroom	W6 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R6	Bedroom	W7 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R7	Bedroom	W8 ↓	39.4	39.4	N/A	N/A											
		Bedroom	W9 →	38.2	38.2	N/A	N/A	100%	100%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Flat 1 to 102 Casterbridge																		

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
Third	R1	Living Room	W1 ↑	37.0	37.0	N/A	N/A											
		Living Room	W2 ←	28.1	26.4	1.7	0.94											
		Living Room	W3 ←	28.6	26.7	1.9	0.93	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	5.3	4.4	0.8	0.84	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	28.7	26.6	2.1	0.93	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	28.9	26.5	2.4	0.92	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	5.6	4.2	1.4	0.75	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	5.8	4.2	1.5	0.74	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	29.3	26.4	2.8	0.90											
		Living Room	W10 ←	29.5	26.4	3.1	0.90											
		Living Room	W11 ↓	32.0	29.2	N/A	N/A	100%	100%	0.00	1.00	82	75	N/A	N/A	23	18	N/A
	R8	Bedroom	W12 ↓	32.4	30.0	N/A	N/A	91%	91%	0.06	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	32.7	30.6	N/A	N/A	84%	84%	0.05	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	33.4	31.8	N/A	N/A	91%	91%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	33.7	32.2	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	34.0	32.7	N/A	N/A											
		Living Room	W17 →	38.0	38.0	N/A	N/A											
		Living Room	W18 →	38.0	38.0	N/A	N/A	100%	100%	0.00	1.00	93	93	N/A	N/A	26	26	N/A
Fourth	R1	Living Room	W1 ↑	37.7	37.7	N/A	N/A											
		Living Room	W2 ←	29.0	27.4	N/A	N/A											
		Living Room	W3 ←	29.4	27.7	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	5.6	4.8	0.7	0.87	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	29.6	27.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	29.8	27.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	6.0	4.7	1.2	0.79	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	6.2	4.8	1.4	0.77	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	30.3	27.6	N/A	N/A											
		Living Room	W10 ←	30.5	27.5	N/A	N/A											

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		Living Room	W11 ↓	33.2	30.3	N/A	N/A	100%	100%	0.00	1.00	83	77	N/A	N/A	24	19	N/A
	R8	Bedroom	W12 ↓	33.5	31.1	N/A	N/A	92%	92%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	33.8	31.6	N/A	N/A	84%	84%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	34.4	32.8	N/A	N/A	91%	91%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	34.6	33.2	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	34.8	33.6	N/A	N/A											
		Living Room	W17 →	38.5	38.5	N/A	N/A											
		Living Room	W18 →	38.5	38.5	N/A	N/A	100%	100%	0.00	1.00	94	94	N/A	N/A	27	27	N/A
Fifth	R1	Living Room	W1 ↑	38.0	38.0	N/A	N/A											
		Living Room	W2 ←	29.7	28.3	N/A	N/A											
		Living Room	W3 ←	30.2	28.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	5.8	5.2	0.6	0.89	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	30.4	28.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	30.7	28.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	6.3	5.2	1.1	0.83	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	6.5	5.3	1.2	0.81	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	31.3	28.7	N/A	N/A											
		Living Room	W10 ←	31.5	28.7	N/A	N/A											
		Living Room	W11 ↓	34.3	31.5	N/A	N/A	100%	100%	0.00	1.00	84	80	N/A	N/A	25	21	N/A
	R8	Bedroom	W12 ↓	34.5	32.1	N/A	N/A	92%	92%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	34.8	32.6	N/A	N/A	84%	84%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	35.2	33.7	N/A	N/A	91%	91%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	35.4	34.0	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	35.6	34.4	N/A	N/A											
		Living Room	W17 →	38.9	38.9	N/A	N/A											
		Living Room	W18 →	38.9	38.9	N/A	N/A	100%	100%	0.00	1.00	95	95	N/A	N/A	28	28	N/A
Sixth	R1	Living Room	W1 ↑	38.1	38.1	N/A	N/A											
		Living Room	W2 ←	30.4	29.1	N/A	N/A											

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		Living Room	W3 ←	30.9	29.4	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.0	5.5	0.5	0.91	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	31.2	29.5	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	31.4	29.5	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	6.5	5.6	0.9	0.86	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	6.8	5.8	1.1	0.85	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	32.1	29.7	N/A	N/A											
		Living Room	W10 ←	32.4	29.8	N/A	N/A											
		Living Room	W11 ↓	35.4	32.7	N/A	N/A	100%	100%	0.00	1.00	86	80	N/A	N/A	27	21	N/A
	R8	Bedroom	W12 ↓	35.6	33.2	N/A	N/A	92%	92%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	35.7	33.7	N/A	N/A	85%	85%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	36.1	34.6	N/A	N/A	91%	91%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	36.2	34.9	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	36.4	35.2	N/A	N/A											
		Living Room	W17 →	39.2	39.2	N/A	N/A											
		Living Room	W18 →	39.2	39.2	N/A	N/A	100%	100%	0.00	1.00	96	95	N/A	N/A	29	28	N/A
Sevent	R1	Living Room	W1 ↑	38.1	38.1	N/A	N/A											
		Living Room	W2 ←	31.1	29.9	N/A	N/A											
		Living Room	W3 ←	31.6	30.2	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.2	5.8	0.4	0.94	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	31.9	30.3	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	32.2	30.5	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	6.8	6.0	0.8	0.89	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.1	6.2	0.9	0.88	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	32.9	30.7	N/A	N/A											
		Living Room	W10 ←	33.3	30.8	N/A	N/A											
		Living Room	W11 ↓	36.4	33.8	N/A	N/A	100%	100%	0.00	1.00	86	82	N/A	N/A	27	23	N/A
	R8	Bedroom	W12 ↓	36.5	34.3	N/A	N/A	92%	92%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R9	Bedroom	W13 ↓	36.6	34.7	N/A	N/A	85%	85%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	36.9	35.4	N/A	N/A	91%	91%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	36.9	35.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	37.0	35.9	N/A	N/A											
		Living Room	W17 →	39.4	39.4	N/A	N/A											
		Living Room	W18 →	39.4	39.4	N/A	N/A	100%	100%	0.00	1.00	96	95	N/A	N/A	29	28	N/A
Eighth	R1	Living Room	W1 ↑	38.2	38.2	N/A	N/A											
		Living Room	W2 ←	31.6	30.7	N/A	N/A											
		Living Room	W3 ←	32.1	31.0	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.3	6.0	0.3	0.96	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	32.4	31.2	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	32.8	31.4	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	6.9	6.4	0.5	0.92	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.2	6.6	0.6	0.91	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	33.5	31.7	N/A	N/A											
		Living Room	W10 ←	33.9	31.9	N/A	N/A											
		Living Room	W11 ↓	37.0	34.8	N/A	N/A	100%	100%	0.00	1.00	87	83	N/A	N/A	28	24	N/A
	R8	Bedroom	W12 ↓	37.1	35.2	N/A	N/A	92%	92%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	37.2	35.5	N/A	N/A	86%	86%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	37.3	36.1	N/A	N/A	92%	92%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	37.4	36.3	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	37.5	36.5	N/A	N/A											
		Living Room	W17 →	39.5	39.5	N/A	N/A											
		Living Room	W18 →	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	96	95	N/A	N/A	29	28	N/A
Ninth	R1	Living Room	W1 ↑	38.3	38.3	N/A	N/A											
		Living Room	W2 ←	32.1	31.4	N/A	N/A											
		Living Room	W3 ←	32.5	31.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.3	6.2	0.2	0.97	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R3	Bedroom	W5 ←	32.9	32.0	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	33.2	32.2	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	7.0	6.7	0.3	0.95	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.3	6.9	0.4	0.95	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	33.9	32.7	N/A	N/A											
		Living Room	W10 ←	34.3	32.8	N/A	N/A											
		Living Room	W11 ↓	37.4	35.7	N/A	N/A	100%	100%	0.00	1.00	87	84	N/A	N/A	28	25	N/A
	R8	Bedroom	W12 ↓	37.5	36.0	N/A	N/A	93%	93%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	37.6	36.3	N/A	N/A	89%	89%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	37.7	36.7	N/A	N/A	93%	93%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	37.7	36.9	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	37.8	37.0	N/A	N/A											
		Living Room	W17 →	39.5	39.5	N/A	N/A											
		Living Room	W18 →	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	97	96	N/A	N/A	30	29	N/A
Tenth	R1	Living Room	W1 ↑	38.4	38.4	N/A	N/A											
		Living Room	W2 ←	32.6	32.1	N/A	N/A											
		Living Room	W3 ←	33.0	32.5	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.4	6.3	0.1	0.99	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	33.3	32.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	33.7	33.0	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	7.1	6.9	0.1	0.98	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.4	7.2	0.2	0.98	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	34.4	33.6	N/A	N/A											
		Living Room	W10 ←	34.7	33.8	N/A	N/A											
		Living Room	W11 ↓	37.8	36.6	N/A	N/A	100%	100%	0.00	1.00	89	87	N/A	N/A	30	28	N/A
	R8	Bedroom	W12 ↓	37.9	36.9	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	37.9	37.0	N/A	N/A	94%	94%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	38.1	37.4	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R11	Bedroom	W15 ↓	38.1	37.5	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	38.1	37.6	N/A	N/A											
		Living Room	W17 →	39.5	39.5	N/A	N/A											
		Living Room	W18 →	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	97	96	N/A	N/A	30	29	N/A
levent	R1	Living Room	W1 ↑	38.5	38.5	N/A	N/A											
		Living Room	W2 ←	33.1	32.9	N/A	N/A											
		Living Room	W3 ←	33.5	33.3	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.4	6.4	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	33.8	33.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	34.1	33.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	7.1	7.1	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.5	7.5	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	34.8	34.4	N/A	N/A											
		Living Room	W10 ←	35.1	34.7	N/A	N/A											
		Living Room	W11 ↓	38.2	37.5	N/A	N/A	100%	100%	0.00	1.00	89	88	N/A	N/A	30	29	N/A
	R8	Bedroom	W12 ↓	38.2	37.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	38.3	37.7	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	38.4	37.9	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	38.4	38.0	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	38.4	38.1	N/A	N/A											
		Living Room	W17 →	39.5	39.5	N/A	N/A											
		Living Room	W18 →	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
Twelfth	R1	Living Room	W1 ↑	38.6	38.6	N/A	N/A											
		Living Room	W2 ←	33.6	33.5	N/A	N/A											
		Living Room	W3 ←	34.0	33.9	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.4	6.4	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	34.3	34.2	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	34.6	34.4	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R5	Kitchen	W7 ←	7.2	7.2	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.5	7.5	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	35.3	35.1	N/A	N/A											
		Living Room	W10 ←	35.6	35.3	N/A	N/A											
		Living Room	W11 ↓	38.5	38.1	N/A	N/A	100%	100%	0.00	1.00	89	89	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	38.5	38.2	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	38.6	38.3	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	38.6	38.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	38.6	38.5	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	38.7	38.5	N/A	N/A											
		Living Room	W17 →	39.5	39.5	N/A	N/A											
		Living Room	W18 →	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
hirteen	R1	Living Room	W1 ↑	38.7	38.7	N/A	N/A											
		Living Room	W2 ←	34.2	34.2	N/A	N/A											
		Living Room	W3 ←	34.6	34.5	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.4	6.4	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	34.8	34.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	35.1	35.1	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	7.2	7.2	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.6	7.6	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	35.7	35.7	N/A	N/A											
		Living Room	W10 ←	36.0	36.0	N/A	N/A											
		Living Room	W11 ↓	38.8	38.8	N/A	N/A	100%	100%	0.00	1.00	89	89	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	38.8	38.8	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	38.9	38.8	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	38.9	38.9	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	38.9	38.9	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	38.9	38.9	N/A	N/A											

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		Living Room	W17 →	39.5	39.5	N/A	N/A											
		Living Room	W18 →	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
urteer	R1	Living Room	W1 ↑	38.8	38.8	N/A	N/A											
		Living Room	W2 ←	34.8	34.8	N/A	N/A											
		Living Room	W3 ←	35.1	35.1	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	6.9	6.9	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	35.4	35.4	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	35.6	35.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	7.6	7.6	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	7.9	7.9	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	36.2	36.2	N/A	N/A											
		Living Room	W10 ←	36.4	36.4	N/A	N/A											
		Living Room	W11 ↓	39.1	39.1	N/A	N/A	100%	100%	0.00	1.00	89	89	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	39.1	39.1	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	39.1	39.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	39.1	39.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	39.2	39.2	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	39.2	39.2	N/A	N/A											
		Living Room	W17 →	39.5	39.5	N/A	N/A											
		Living Room	W18 →	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
ifteent	R1	Living Room	W1 ↑	38.9	38.9	N/A	N/A											
		Living Room	W2 ←	35.5	35.5	N/A	N/A											
		Living Room	W3 ←	35.8	35.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	7.5	7.5	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	36.0	36.0	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	36.2	36.2	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	8.1	8.1	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	8.4	8.4	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R7	Living Room	W9 ←	36.7	36.7	N/A	N/A											
		Living Room	W10 ←	36.9	36.9	N/A	N/A											
		Living Room	W11 ↓	39.4	39.4	N/A	N/A	100%	100%	0.00	1.00	89	89	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	39.4	39.4	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	39.4	39.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	39.4	39.4	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	39.4	39.4	N/A	N/A											
		Living Room	W17 →	39.6	39.6	N/A	N/A											
		Living Room	W18 →	39.6	39.6	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
ixteen	R1	Living Room	W1 ↑	39.0	39.0	N/A	N/A											
		Living Room	W2 ←	36.2	36.2	N/A	N/A											
		Living Room	W3 ←	36.4	36.4	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	8.1	8.1	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	36.6	36.6	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	36.8	36.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	8.6	8.6	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	8.8	8.8	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	37.2	37.2	N/A	N/A											
		Living Room	W10 ←	37.3	37.3	N/A	N/A											
		Living Room	W11 ↓	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	89	89	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	39.5	39.5	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	39.5	39.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	39.5	39.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	39.5	39.5	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	39.5	39.5	N/A	N/A											
		Living Room	W17 →	39.6	39.6	N/A	N/A											
		Living Room	W18 →	39.6	39.6	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
ventee	R1	Living Room	W1 ↑	39.1	39.1	N/A	N/A											
		Living Room	W2 ←	36.8	36.8	N/A	N/A											
		Living Room	W3 ←	37.0	37.0	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	8.7	8.7	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	37.2	37.2	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	37.3	37.3	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	9.1	9.1	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	9.3	9.3	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	37.7	37.7	N/A	N/A											
		Living Room	W10 ←	37.8	37.8	N/A	N/A											
		Living Room	W11 ↓	39.5	39.5	N/A	N/A	100%	100%	0.00	1.00	89	89	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	39.5	39.5	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	39.5	39.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	39.5	39.5	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	39.5	39.5	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	39.5	39.5	N/A	N/A											
		Living Room	W17 →	39.6	39.6	N/A	N/A											
		Living Room	W18 →	39.6	39.6	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
ghteer	R1	Living Room	W1 ↑	39.3	39.3	N/A	N/A											
		Living Room	W2 ←	37.5	37.5	N/A	N/A											
		Living Room	W3 ←	37.7	37.7	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	9.3	9.3	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	37.8	37.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	37.9	37.9	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	9.6	9.6	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	9.7	9.7	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	38.2	38.2	N/A	N/A											
		Living Room	W10 ←	38.3	38.3	N/A	N/A											

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		Living Room	W11 ↓	39.6	39.6	N/A	N/A	100%	100%	0.00	1.00	90	90	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	39.6	39.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	39.6	39.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	39.6	39.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	39.6	39.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	39.6	39.6	N/A	N/A											
		Living Room	W17 →	39.6	39.6	N/A	N/A											
		Living Room	W18 →	39.6	39.6	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
neteer	R1	Living Room	W1 ↑	39.4	39.4	N/A	N/A											
		Living Room	W2 ←	38.2	38.2	N/A	N/A											
		Living Room	W3 ←	38.3	38.3	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Kitchen	W4 ←	9.8	9.8	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W5 ←	38.4	38.4	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ←	38.5	38.5	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W7 ←	10.0	10.0	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Kitchen	W8 ←	10.1	10.1	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Living Room	W9 ←	38.6	38.6	N/A	N/A											
		Living Room	W10 ←	38.7	38.7	N/A	N/A											
		Living Room	W11 ↓	39.6	39.6	N/A	N/A	100%	100%	0.00	1.00	90	90	N/A	N/A	30	30	N/A
	R8	Bedroom	W12 ↓	39.6	39.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R9	Bedroom	W13 ↓	39.6	39.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R10	Bedroom	W14 ↓	39.6	39.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R11	Bedroom	W15 ↓	39.6	39.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R12	Living Room	W16 ↓	39.6	39.6	N/A	N/A											
		Living Room	W17 →	39.6	39.6	N/A	N/A											
		Living Room	W18 →	39.6	39.6	N/A	N/A	100%	100%	0.00	1.00	97	97	N/A	N/A	30	30	N/A
123 Belsize Road																		

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
ɜsemeing Ro		Living Room	WB_01 ↑	27.9	27.4	N/A	N/A	88%	88%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
ɜedroor		Bedroom	WB_02 ↑	24.8	24.8	0.0	1.00	82%	82%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Groun	Room 1	Living Room	WG_01 ↑	28.7	28.2	N/A	N/A	91%	91%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 2	Living Room	WG_02 ↑	27.2	26.9	0.3	0.99	85%	85%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 3	Bedroom	WG_03 ↑	26.2	26.2	0.1	1.00											
		Bedroom	WG_04 ↑	23.7	23.7	0.0	1.00											
		Bedroom	WG_05 ↑	25.4	25.4	0.0	1.00	90%	90%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
First	Kitcher	Kitchen	W1_05 ↑	26.4	26.4	0.0	1.00	96%	96%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 1	Living Room	W1_01 ↑	29.8	29.4	N/A	N/A											
		Living Room	W1_02 ↑	29.6	29.2	N/A	N/A	89%	89%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 2	Living Room	W1_03 ↑	28.5	28.2	N/A	N/A											
		Living Room	W1_04 ↑	27.3	27.1	N/A	N/A	84%	84%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Secon	Room 1	Living Room	W2_01 ↑	30.3	29.9	N/A	N/A	84%	83%	0.02	1.00	North	North	N/A	N/A	North	North	N/A
	Room 2	Living Room	W2_02 ↑	29.4	29.1	N/A	N/A	76%	75%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
125 Belsize Road																		
ɜsemeing Ro		Living Room	WB_01 ↑	26.3	25.6	0.6	0.98	90%	90%	0.15	0.99	North	North	N/A	N/A	North	North	N/A
Groun	ɜedroor	Bedroom	WG_01 ↑	27.4	26.9	0.6	0.98	92%	92%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 1	Living Room	WG_02 ↑	17.8	17.1	0.7	0.96											
		Living Room	WG_03 ↑	21.5	20.8	0.7	0.97											
		Living Room	WG_04 ↑	20.2	19.5	0.7	0.97	80%	80%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
First	ɜedroor	Bedroom	W1_01 ↑	28.3	27.8	N/A	N/A											
		Bedroom	W1_02 ↑	28.3	27.8	N/A	N/A											
		Bedroom	W1_03 ↑	28.1	27.6	N/A	N/A	87%	87%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
	Room 1	Living Room	W1_04 ↑	20.9	20.3	0.7	0.97	81%	81%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Secon	ɜedroor	Bedroom	W2_01 ↑	29.1	28.6	N/A	N/A	76%	76%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
127 Belsize Road																		

Property, room & window attributes			VSC				NSL				APSH (room)						
											Annual *(%APSH)*				Winter *(%APSH)*		
Floor Room	Room use	Window Ref./Orientation	Exis. *(% VSC)*	Prop. *(% VSC)*	Loss *(% VSC)*	Pro./Ex. ratio	Exis. *(% rm)*	Prop. *(% rm)*	Loss (m^2)	Pro./Ex. ratio	Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
asemeing Ro	Living Room	WB_01 ↑	24.3	23.4	0.9	0.96	74%	74%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Bedroor	Bedroom	WB_02 ↑	21.1	21.1	0.0	1.00	73%	73%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Grounedroom	Bedroom	WG_01 ↑	25.1	24.2	0.9	0.96	82%	82%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 1	Bedroom	WG_03 ↖	23.1	22.7	0.3	0.99											
	Bedroom	WG_04 ↖	20.1	20.1	0.0	1.00											
	Bedroom	WG_05 ↖	22.2	22.0	0.2	0.99	89%	89%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
edroom	Bedroom	WG_02 ↑	23.8	23.2	0.7	0.97	84%	84%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
First Kitcher	Kitchen	W1_05 ↖	23.1	22.9	0.2	0.99	77%	77%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
ing Ro	Living Room	W1_03 ↑	25.1	24.4	0.7	0.97											
	Living Room	W1_04 ↑	24.0	23.5	0.5	0.98	73%	73%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Bedroor	Bedroom	W1_01 ↑	26.1	25.2	0.9	0.97											
	Bedroom	W1_02 ↑	26.0	25.1	0.9	0.97	87%	87%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Seconedroom	Bedroom	W2_01 ↑	26.7	25.9	0.8	0.97	71%	70%	0.10	0.98	North	North	N/A	N/A	North	North	N/A
edroom	Bedroom	W2_02 ↑	25.9	25.3	0.6	0.98	55%	54%	0.13	0.98	North	North	N/A	N/A	North	North	N/A
129 Belsize Road																	
asemeKitcher	Kitchen	WB_03 ←	13.3	13.3	0.0	1.00	87%	87%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
edroom	Bedroom	WB_01 ↑	22.7	21.6	1.1	0.95	53%	50%	0.27	0.96	North	North	N/A	N/A	North	North	N/A
edroom	Bedroom	WB_02 ↑	22.9	21.7	1.2	0.95	67%	67%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Grounedroom	Bedroom	WG_01 ↑	24.4	23.2	1.2	0.95	67%	67%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
edroom	Bedroom	WG_02 ↑	24.3	23.1	1.2	0.95											
	Bedroom	WG_03 ←	15.8	13.0	2.8	0.82	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Room 2	Bedroom	WG_04 ↑	6.6	6.6	0.0	1.00											
	Bedroom	WG_05 ↑	9.5	9.5	0.0	1.00											
	Bedroom	WG_06 ↑	3.9	3.3	0.6	0.84	89%	89%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 3	Bedroom	WG_07 ←	24.5	21.8	2.7	0.89	85%	78%	0.37	0.91	N/R	N/R	N/R	N/R	N/R	N/R	N/R
First Kitcher	Kitchen	W1_04 ↑	18.7	17.3	1.4	0.93	81%	81%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Bedroor	Bedroom	W1_01 ↑	25.3	24.2	1.1	0.96											

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
											Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	Bedroom	W1_02 ↑	25.3	24.1	1.2	0.95											
	Bedroom	W1_03 ↑	25.2	24.0	1.2	0.95	86%	85%	0.18	0.99	North	North	N/A	N/A	North	North	N/A
Second	Bedroom	W2_01 ↑	26.1	25.0	1.1	0.96	78%	78%	0.14	0.99	North	North	N/A	N/A	North	North	N/A
Wingreen																	
Ground	Room 1 Living Room	WG_01 ↑	27.6	27.6	N/A	N/A	88%	86%	0.33	0.98	North	North	N/A	N/A	North	North	N/A
	Room 2 Living Room	WG_02 ↑	28.2	28.1	N/A	N/A											
	Living Room	WG_03 ↑	28.4	28.3	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 3 Living Room	WG_04 ↑	28.6	28.5	N/A	N/A											
	Living Room	WG_05 ↑	28.8	28.7	N/A	N/A	99%	99%	0.02	1.00	North	North	N/A	N/A	North	North	N/A
	Room 4 Living Room	WG_06 ↑	29.0	28.9	N/A	N/A											
	Living Room	WG_07 ↑	29.1	29.0	N/A	N/A	97%	97%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 5 Living Room	WG_08 ↑	29.1	29.0	N/A	N/A											
	Living Room	WG_09 ↑	29.2	29.1	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 6 Living Room	WG_10 ↑	29.2	29.1	N/A	N/A											
	Living Room	WG_11 ←	25.1	25.1	0.0	1.00											
	Living Room	WG_12 ←	23.8	23.8	0.0	1.00	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 7 Living Room	WG_13 ←	19.0	19.0	0.0	1.00											
	Living Room	WG_14 ←	17.0	17.0	0.0	1.00	76%	76%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
First	Room 1 Living Room	W1_01 ↑	29.6	29.5	N/A	N/A	72%	69%	0.56	0.96	North	North	N/A	N/A	North	North	N/A
	Room 2 Living Room	W1_02 ↑	29.9	29.8	N/A	N/A											
	Living Room	W1_03 ↑	30.1	29.9	N/A	N/A	98%	98%	0.03	1.00	North	North	N/A	N/A	North	North	N/A
	Room 3 Living Room	W1_04 ↑	30.2	30.1	N/A	N/A											
	Living Room	W1_05 ↑	30.3	30.2	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 4 Living Room	W1_06 ↑	30.5	30.4	N/A	N/A											
	Living Room	W1_07 ↑	30.5	30.4	N/A	N/A	96%	96%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 5 Living Room	W1_08 ↑	30.5	30.4	N/A	N/A											
	Living Room	W1_09 ↑	30.6	30.4	N/A	N/A	97%	97%	0.00	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	Room 6	Living Room	W1_10 ↑	30.5	30.4	N/A	N/A											
		Living Room	W1_11 ←	26.9	26.8	0.0	1.00	90%	90%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 7	Living Room	W1_12 ←	21.6	21.5	0.0	1.00	74%	74%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Secon	Room 1	Living Room	W2_01 ↑	31.3	31.2	N/A	N/A	86%	83%	0.57	0.96	North	North	N/A	N/A	North	North	N/A
	Room 2	Living Room	W2_02 ↑	31.6	31.4	N/A	N/A											
		Living Room	W2_03 ↑	31.6	31.5	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 3	Living Room	W2_04 ↑	31.7	31.5	N/A	N/A											
		Living Room	W2_05 ↑	31.7	31.6	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 4	Living Room	W2_06 ↑	31.8	31.6	N/A	N/A											
		Living Room	W2_07 ↑	31.7	31.6	N/A	N/A	98%	98%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
	Room 5	Living Room	W2_08 ↑	31.7	31.6	N/A	N/A											
		Living Room	W2_09 ↑	31.8	31.6	N/A	N/A	98%	98%	0.02	1.00	North	North	N/A	N/A	North	North	N/A
	Room 6	Living Room	W2_10 ↑	31.7	31.6	N/A	N/A											
		Living Room	W2_11 ←	30.9	30.9	N/A	N/A											
		Living Room	W2_12 ←	30.2	30.1	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 7	Living Room	W2_13 ←	25.5	25.5	0.0	1.00											
		Living Room	W2_14 ←	21.7	21.7	0.0	1.00	88%	88%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Third	Room 1	Living Room	W3_01 ↑	33.1	32.9	N/A	N/A	76%	73%	0.54	0.96	North	North	N/A	N/A	North	North	N/A
	Room 2	Living Room	W3_02 ↑	33.1	33.0	N/A	N/A											
		Living Room	W3_03 ↑	33.1	32.9	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 3	Living Room	W3_04 ↑	33.1	32.9	N/A	N/A											
		Living Room	W3_05 ↑	33.1	32.9	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 4	Living Room	W3_06 ↑	33.0	32.9	N/A	N/A											
		Living Room	W3_07 ↑	33.0	32.8	N/A	N/A	98%	98%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
	Room 5	Living Room	W3_08 ↑	33.0	32.8	N/A	N/A											
		Living Room	W3_09 ↑	32.9	32.8	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 6	Living Room	W3_10 ↑	32.8	32.7	N/A	N/A											
		Living Room	W3_11 ←	33.9	33.8	N/A	N/A	97%	97%	0.00	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
											Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
Room 1	Living Room	W3_12 ←	32.1	32.0	N/A	N/A	95%	95%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Sandbourne																	
Second Room 1	Living Room	W2_01 ↑	24.7	24.6	0.1	1.00											
	Living Room	W2_02 ↑	28.0	27.9	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 2	Living Room	W2_03 ↑	29.7	29.6	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 3	Living Room	W2_04 ↑	31.0	30.9	N/A	N/A											
	Living Room	W2_05 ↑	31.3	31.1	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 4	Living Room	W2_06 ↑	31.4	31.3	N/A	N/A											
	Living Room	W2_07 ↑	31.4	31.3	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 5	Living Room	W2_08 ↑	31.3	31.2	N/A	N/A											
	Living Room	W2_09 ↑	31.2	31.1	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 6	Living Room	W2_10 ↑	33.3	33.2	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 7	Living Room	W2_11 ↑	33.1	33.0	N/A	N/A											
	Living Room	W2_12 ↑	33.0	32.9	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 8	Living Room	W2_13 ↑	32.8	32.7	N/A	N/A											
	Living Room	W2_14 ↑	32.8	32.7	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 9	Living Room	W2_15 ↑	32.7	32.6	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 10	Living Room	W2_16 ↑	32.6	32.5	N/A	N/A											
	Living Room	W2_17 ↑	32.5	32.4	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 11	Living Room	W2_18 ↑	32.5	32.4	N/A	N/A	96%	96%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Third Room 1	Living Room	W3_01 ↑	31.7	31.6	N/A	N/A											
	Living Room	W3_02 ↑	32.5	32.4	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 2	Living Room	W3_03 ↑	32.9	32.8	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 3	Living Room	W3_04 ↑	33.1	33.0	N/A	N/A											
	Living Room	W3_05 ↑	33.1	32.9	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 4	Living Room	W3_06 ↑	33.0	32.9	N/A	N/A	67%	67%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Room 5	Living Room	W3_07 ↑	32.9	32.8	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	Room 6	Living Room	W3_08 ↑	32.8	32.6	N/A	N/A											
		Living Room	W3_09 ↑	32.7	32.5	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 7	Living Room	W3_10 ↑	34.6	34.5	N/A	N/A	82%	82%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 8	Living Room	W3_11 ↑	34.5	34.4	N/A	N/A											
		Living Room	W3_12 ↑	34.5	34.4	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 9	Living Room	W3_13 ↑	34.5	34.4	N/A	N/A											
		Living Room	W3_14 ↑	34.5	34.4	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 10	Living Room	W3_15 ↑	34.5	34.4	N/A	N/A	96%	96%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 10	Living Room	W3_16 ↑	34.4	34.3	N/A	N/A											
		Living Room	W3_17 ↑	34.4	34.3	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 10	Living Room	W3_18 ↑	34.3	34.2	N/A	N/A	96%	96%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
Abbey Rd_Phase 1																		
Ground	R1	Bedroom	W1 ↖	18.2	18.0	0.2	0.99											
		Bedroom	W2 ↖	28.3	27.8	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W3 ↖	28.7	28.1	N/A	N/A	96%	96%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W4 ↖	31.1	29.9	N/A	N/A											
		Bedroom	W5 ↖	30.7	29.1	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W6 ↖	19.3	15.7	3.7	0.81											
		Bedroom	W7 ↖	29.1	24.6	4.6	0.84	97%	97%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	Kitchen	W8 ↖	29.2	23.7	5.4	0.81											
		Kitchen	W9 ↖	23.4	17.4	6.0	0.74	99%	89%	1.87	0.90	North	North	N/A	N/A	North	North	N/A
	R6	Bedroom	W10 ↖	30.2	22.6	7.6	0.75											
		Bedroom	W11 ↖	29.5	21.2	8.2	0.72	99%	82%	4.72	0.83	North	North	N/A	N/A	North	North	N/A
	R7	Bedroom	W12 ↖	16.2	9.9	6.3	0.61											
		Bedroom	W13 ↖	26.2	17.3	8.9	0.66	97%	56%	10.00	0.58	North	North	N/A	N/A	North	North	N/A
	R8	Kitchen	W14 ↖	26.0	17.6	8.4	0.68											
		Kitchen	W15 ↖	17.5	11.6	5.9	0.66	91%	72%	3.80	0.78	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
First	R1	Bedroom	W1 ↖	21.3	21.0	0.2	0.99	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W2 ↖	33.2	32.7	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W3 ↖	33.8	33.1	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	KD	W4 ↖	26.1	25.6	0.6	0.98	95%	95%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	KD	W5 ↖	34.2	33.0	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Bedroom	W6 ↖	33.9	32.4	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Bedroom	W7 ↖	21.5	21.2	0.3	0.98	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R8	Bedroom	W8 ↖	34.4	32.0	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R9	Bedroom	W9 ↖	21.8	18.3	3.5	0.84	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R10	Bedroom	W10 ↖	33.2	28.3	N/A	N/A	99%	91%	1.02	0.92	North	North	N/A	N/A	North	North	N/A
	R11	Bedroom	W11 ↖	33.5	27.8	N/A	N/A	98%	86%	1.39	0.88	North	North	N/A	N/A	North	North	N/A
	R12	KD	W12 ↖	25.8	20.0	5.7	0.78	95%	69%	3.21	0.73	North	North	N/A	N/A	North	North	N/A
	R13	KD	W13 ↖	33.2	25.7	7.6	0.77	99%	74%	3.79	0.75	North	North	N/A	N/A	North	North	N/A
	R14	Bedroom	W14 ↖	32.7	24.2	8.4	0.74	99%	62%	4.60	0.63	North	North	N/A	N/A	North	North	N/A
	R15	Bedroom	W15 ↖	21.2	14.3	6.9	0.67	99%	68%	2.67	0.69	North	North	N/A	N/A	North	North	N/A
	R16	Bedroom	W16 ↖	32.5	22.6	9.8	0.70	100%	48%	6.83	0.48	North	North	N/A	N/A	North	North	N/A
	R17	Bedroom	W17 ↖	19.0	11.9	7.1	0.63	100%	61%	3.14	0.61	North	North	N/A	N/A	North	North	N/A
	R18	Bedroom	W18 ↖	29.8	20.0	9.8	0.67	94%	48%	6.01	0.51	North	North	N/A	N/A	North	North	N/A
	R19	Bedroom	W19 ↖	29.4	20.1	9.4	0.68	92%	57%	4.26	0.62	North	North	N/A	N/A	North	North	N/A
	R20	KD	W20 ↖	19.6	13.7	5.9	0.70	79%	71%	1.03	0.89	North	North	N/A	N/A	North	North	N/A
	R21	Bedroom	W21 ↖	29.7	21.5	8.2	0.72	93%	65%	4.11	0.70	North	North	N/A	N/A	North	North	N/A
	R22	Bedroom	W22 ↖	29.1	21.3	7.8	0.73	90%	81%	1.05	0.90	North	North	N/A	N/A	North	North	N/A
	R23	Bedroom	W23 ↖	27.8	18.8	9.0	0.68	81%	76%	0.69	0.94	North	North	N/A	N/A	North	North	N/A
	R24	Bedroom	W24 ↖	27.8	17.5	10.3	0.63	93%	67%	3.89	0.72	North	North	N/A	N/A	North	North	N/A
	R25	Bedroom	W25 ↖	28.1	16.2	12.0	0.57	95%	39%	7.88	0.42	North	North	N/A	N/A	North	North	N/A
	R26	Bedroom	W26 ↖	28.2	15.5	12.8	0.55	86%	33%	6.38	0.38	North	North	N/A	N/A	North	North	N/A
	R27	Bedroom	W27 ↖	27.8	14.5	13.2	0.52	77%	27%	6.83	0.34	North	North	N/A	N/A	North	North	N/A
	R28	Bedroom	W28 ↖	27.6	15.0	12.5	0.55											

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		Bedroom	W29 ↗	10.0	9.3	0.7	0.93	91%	76%	2.40	0.83	North	North	N/A	N/A	North	North	N/A
	R29	KD	W30 ↖	15.0	9.7	5.3	0.65	50%	28%	2.64	0.56	North	North	N/A	N/A	North	North	N/A
	R30	Bedroom	W31 ↖	21.8	13.2	8.6	0.61	77%	43%	4.17	0.56	North	North	N/A	N/A	North	North	N/A
	R31	LKD	W32 ↖	27.0	18.5	8.6	0.68											
		LKD	W33 ↖	27.2	18.8	8.4	0.69											
		LKD	W34 ↑	27.4	24.2	3.2	0.88	100%	99%	0.24	0.99	North	North	N/A	N/A	North	North	N/A
	R32	Bedroom	W35 ↑	5.7	5.5	0.2	0.97	92%	92%	0.08	0.99	North	North	N/A	N/A	North	North	N/A
Secon	R1	Bedroom	W1 ↖	23.1	23.0	0.1	0.99	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W2 ↖	35.3	34.9	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W3 ↖	35.7	35.2	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	KD	W4 ↖	27.6	27.2	N/A	N/A	95%	95%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	KD	W5 ↖	35.9	35.0	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Bedroom	W6 ↖	35.5	34.5	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Bedroom	W7 ↖	22.7	22.5	0.2	0.99	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R8	Bedroom	W8 ↖	35.9	34.1	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R9	Bedroom	W9 ↖	22.8	20.2	2.6	0.89	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R10	Bedroom	W10 ↖	34.8	31.0	N/A	N/A	99%	97%	0.20	0.98	North	North	N/A	N/A	North	North	N/A
	R11	Bedroom	W11 ↖	35.1	30.5	N/A	N/A	98%	98%	0.06	1.00	North	North	N/A	N/A	North	North	N/A
	R12	KD	W12 ↖	27.0	22.5	4.5	0.83	95%	87%	0.95	0.92	North	North	N/A	N/A	North	North	N/A
	R13	KD	W13 ↖	34.8	28.7	N/A	N/A	99%	94%	0.82	0.95	North	North	N/A	N/A	North	North	N/A
	R14	Bedroom	W14 ↖	34.3	27.3	N/A	N/A	99%	90%	1.13	0.91	North	North	N/A	N/A	North	North	N/A
	R15	Bedroom	W15 ↖	22.3	16.7	5.5	0.75	99%	94%	0.46	0.95	North	North	N/A	N/A	North	North	N/A
	R16	Bedroom	W16 ↖	34.1	25.7	8.4	0.75	98%	71%	3.57	0.72	North	North	N/A	N/A	North	North	N/A
	R17	Bedroom	W17 ↖	20.5	14.2	6.4	0.69	100%	75%	2.01	0.75	North	North	N/A	N/A	North	North	N/A
	R18	Bedroom	W18 ↖	31.9	23.0	8.9	0.72	98%	55%	5.66	0.56	North	North	N/A	N/A	North	North	N/A
	R19	Bedroom	W19 ↖	31.7	22.9	8.7	0.72	98%	63%	4.23	0.64	North	North	N/A	N/A	North	North	N/A
	R20	KD	W20 ↖	21.3	15.8	5.5	0.74	92%	75%	2.07	0.82	North	North	N/A	N/A	North	North	N/A
	R21	Bedroom	W21 ↖	32.1	24.3	7.8	0.76	96%	74%	3.17	0.77	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R22	Bedroom	W22 ↖	31.5	23.9	7.7	0.76	98%	88%	1.25	0.90	North	North	N/A	N/A	North	North	N/A
	R23	Bedroom	W23 ↖	30.2	21.2	9.1	0.70	96%	82%	1.86	0.85	North	North	N/A	N/A	North	North	N/A
	R24	Bedroom	W24 ↖	30.2	19.8	10.4	0.66	98%	72%	3.99	0.73	North	North	N/A	N/A	North	North	N/A
	R25	Bedroom	W25 ↖	30.4	18.3	12.0	0.60	98%	43%	7.92	0.43	North	North	N/A	N/A	North	North	N/A
	R26	Bedroom	W26 ↖	30.4	17.5	13.0	0.57	94%	37%	6.86	0.39	North	North	N/A	N/A	North	North	N/A
	R27	Bedroom	W27 ↖	29.9	16.1	13.8	0.54	85%	29%	7.38	0.35	North	North	N/A	N/A	North	North	N/A
	R28	Bedroom	W28 ↖	29.6	16.4	13.2	0.55											
		Bedroom	W29 ↗	10.5	9.7	0.8	0.92	92%	76%	2.54	0.83	North	North	N/A	N/A	North	North	N/A
	R29	KD	W30 ↖	16.3	10.5	5.8	0.64	57%	29%	3.31	0.52	North	North	N/A	N/A	North	North	N/A
	R30	Bedroom	W31 ↖	23.6	14.6	9.0	0.62	82%	50%	3.97	0.61	North	North	N/A	N/A	North	North	N/A
	R31	LKD	W32 ↖	29.0	19.9	9.1	0.69											
		LKD	W33 ↖	29.1	20.2	8.9	0.69											
		LKD	W34 ↑	28.5	25.1	3.4	0.88	100%	99%	0.31	0.99	North	North	N/A	N/A	North	North	N/A
	R32	Bedroom	W35 ↑	5.9	5.7	0.2	0.97	92%	92%	0.08	0.99	North	North	N/A	N/A	North	North	N/A
Third	R1	Bedroom	W1 ↖	24.2	24.2	0.1	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W2 ↖	36.8	36.5	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W3 ↖	37.2	36.8	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	KD	W4 ↖	28.8	28.5	N/A	N/A	95%	95%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	KD	W5 ↖	37.2	36.6	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Bedroom	W6 ↖	36.9	36.1	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Bedroom	W7 ↖	23.5	23.4	0.1	0.99	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R8	Bedroom	W8 ↖	37.1	35.9	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R9	Bedroom	W9 ↖	23.5	21.8	1.7	0.93	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R10	Bedroom	W10 ↖	36.0	33.3	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R11	Bedroom	W11 ↖	36.3	33.0	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R12	KD	W12 ↖	27.9	24.8	3.1	0.89	95%	94%	0.12	0.99	North	North	N/A	N/A	North	North	N/A
	R13	KD	W13 ↖	36.1	31.6	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R14	Bedroom	W14 ↖	35.7	30.4	N/A	N/A	99%	99%	0.03	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	R15	Bedroom	W15 ↖	23.2	19.2	4.0	0.83	99%	98%	0.11	0.99	North	North	N/A	N/A	North	North	N/A
	R16	Bedroom	W16 ↖	35.6	29.1	N/A	N/A	98%	79%	2.46	0.81	North	North	N/A	N/A	North	North	N/A
	R17	Bedroom	W17 ↖	21.9	16.6	5.3	0.76	100%	99%	0.09	0.99	North	North	N/A	N/A	North	North	N/A
	R18	Bedroom	W18 ↖	33.8	26.3	7.5	0.78	98%	69%	3.82	0.70	North	North	N/A	N/A	North	North	N/A
	R19	Bedroom	W19 ↖	33.7	26.1	7.6	0.77	98%	78%	2.45	0.79	North	North	N/A	N/A	North	North	N/A
	R20	KD	W20 ↖	23.0	18.1	4.9	0.79	92%	83%	1.13	0.90	North	North	N/A	N/A	North	North	N/A
	R21	Bedroom	W21 ↖	34.3	27.3	N/A	N/A	96%	89%	1.09	0.92	North	North	N/A	N/A	North	North	N/A
	R22	Bedroom	W22 ↖	33.9	26.7	7.2	0.79	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R23	Bedroom	W23 ↖	32.6	23.8	8.8	0.73	96%	89%	0.93	0.93	North	North	N/A	N/A	North	North	N/A
	R24	Bedroom	W24 ↖	32.5	22.3	10.1	0.69	98%	74%	3.62	0.76	North	North	N/A	N/A	North	North	N/A
	R25	Bedroom	W25 ↖	32.4	20.8	11.6	0.64	99%	49%	7.14	0.49	North	North	N/A	N/A	North	North	N/A
	R26	Bedroom	W26 ↖	32.4	19.7	12.7	0.61	98%	43%	6.54	0.44	North	North	N/A	N/A	North	North	N/A
	R27	Bedroom	W27 ↖	32.0	17.8	14.2	0.56	95%	34%	8.17	0.36	North	North	N/A	N/A	North	North	N/A
	R28	Bedroom	W28 ↖	31.6	18.0	13.6	0.57											
		Bedroom	W29 ↗	11.0	10.1	0.9	0.92	93%	77%	2.56	0.83	North	North	N/A	N/A	North	North	N/A
	R29	KD	W30 ↖	18.1	11.9	6.2	0.66	71%	31%	4.85	0.43	North	North	N/A	N/A	North	North	N/A
	R30	Bedroom	W31 ↖	25.9	16.6	9.3	0.64	92%	58%	4.21	0.63	North	North	N/A	N/A	North	North	N/A
	R31	LKD	W32 ↖	31.1	21.5	9.6	0.69											
		LKD	W33 ↖	31.2	21.7	9.5	0.70											
		LKD	W34 ↑	29.6	26.1	3.6	0.88	100%	99%	0.32	0.99	North	North	N/A	N/A	North	North	N/A
	R32	Bedroom	W35 ↑	6.2	6.0	0.1	0.98	92%	92%	0.07	0.99	North	North	N/A	N/A	North	North	N/A
Fourth	R1	Bedroom	W1 ↖	24.8	24.7	0.0	1.00	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W2 ↖	37.6	37.4	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W3 ↖	38.0	37.7	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	KD	W4 ↖	29.5	29.3	N/A	N/A	95%	95%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R5	KD	W5 ↖	38.0	37.6	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R6	Bedroom	W6 ↖	37.6	37.1	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R7	Bedroom	W7 ↖	24.1	24.1	0.0	1.00	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
											Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
R8	Bedroom	W8 ↖	37.9	37.2	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R9	Bedroom	W9 ↖	24.1	23.3	0.8	0.97	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R10	Bedroom	W10 ↖	36.9	35.3	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R11	Bedroom	W11 ↖	37.2	35.2	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R12	KD	W12 ↖	28.7	27.0	N/A	N/A	95%	95%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R13	KD	W13 ↖	37.1	34.3	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R14	Bedroom	W14 ↖	36.6	33.4	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R15	Bedroom	W15 ↖	23.9	21.7	2.2	0.91	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R16	Bedroom	W16 ↖	36.8	32.5	N/A	N/A	98%	92%	0.83	0.94	North	North	N/A	N/A	North	North	N/A
R17	Bedroom	W17 ↖	23.0	19.1	3.9	0.83	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R18	Bedroom	W18 ↖	35.4	29.6	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R19	Bedroom	W19 ↖	35.4	29.3	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R20	KD	W20 ↖	24.6	20.6	3.9	0.84	92%	90%	0.32	0.97	North	North	N/A	N/A	North	North	N/A
R21	Bedroom	W21 ↖	36.0	30.3	N/A	N/A	96%	96%	0.03	1.00	North	North	N/A	N/A	North	North	N/A
R22	Bedroom	W22 ↖	35.6	29.5	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
R23	Bedroom	W23 ↖	34.8	26.5	8.2	0.76	96%	91%	0.63	0.95	North	North	N/A	N/A	North	North	N/A
R24	Bedroom	W24 ↖	34.5	25.1	9.4	0.73	98%	79%	2.87	0.81	North	North	N/A	N/A	North	North	N/A
R25	Bedroom	W25 ↖	34.3	23.5	10.7	0.69	99%	61%	5.36	0.62	North	North	N/A	N/A	North	North	N/A
R26	Bedroom	W26 ↖	34.1	22.2	11.9	0.65	98%	55%	5.19	0.56	North	North	N/A	N/A	North	North	N/A
R27	Bedroom	W27 ↖	33.7	19.8	13.8	0.59	98%	40%	7.81	0.41	North	North	N/A	N/A	North	North	N/A
R28	Bedroom	W28 ↖	33.3	19.8	13.6	0.59											
	Bedroom	W29 ↗	11.4	10.5	0.9	0.92	96%	80%	2.56	0.83	North	North	N/A	N/A	North	North	N/A
R29	KD	W30 ↖	22.9	15.7	7.2	0.69	87%	34%	6.39	0.39	North	North	N/A	N/A	North	North	N/A
R30	Bedroom	W31 ↖	28.9	19.5	9.4	0.68	97%	61%	4.36	0.63	North	North	N/A	N/A	North	North	N/A
R31	LKD	W32 ↖	33.4	23.3	10.1	0.70											
	LKD	W33 ↖	33.3	23.4	10.0	0.70											
	LKD	W34 ↑	30.7	27.0	3.7	0.88	100%	99%	0.32	0.99	North	North	N/A	N/A	North	North	N/A
R32	Bedroom	W35 ↑	6.5	6.4	0.1	0.98	92%	92%	0.04	1.00	North	North	N/A	N/A	North	North	N/A

Ratio: N/A or ≥0.8 = inside BRE (N/A* satisfies 4% APSH criterion); N/R = not required

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
Fifth	R1	Bedroom	W1 ↖	36.8	33.1	N/A	N/A	96%	96%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W2 ↖	36.6	32.2	N/A	N/A	98%	98%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	Bedroom	W3 ↖	36.0	29.1	N/A	N/A											
		Bedroom	W4 ↗	18.0	14.3	3.7	0.80	88%	88%	0.08	0.99	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W5 ↖	32.2	24.6	7.6	0.76	97%	82%	2.16	0.84	North	North	N/A	N/A	North	North	N/A
	R5	Bedroom	W6 ↖	35.6	26.5	9.1	0.74	98%	80%	2.40	0.82	North	North	N/A	N/A	North	North	N/A
	R6	Bedroom	W7 ↖	35.4	24.9	10.4	0.71	98%	68%	3.56	0.70	North	North	N/A	N/A	North	North	N/A
	R7	Bedroom	W8 ↖	34.8	22.0	12.8	0.63											
		Bedroom	W9 ↗	13.6	11.8	1.7	0.87	95%	61%	4.54	0.64	North	North	N/A	N/A	North	North	N/A
	R8	Kitchen	W10 ↖	22.4	15.0	7.4	0.67	94%	34%	8.81	0.36	North	North	N/A	N/A	North	North	N/A
	R9	KD	W11 ↖	30.9	21.5	9.4	0.69	89%	36%	6.42	0.41	North	North	N/A	N/A	North	North	N/A
	R10	Bedroom	W12 ↖	31.5	22.4	9.2	0.71	97%	64%	4.06	0.66	North	North	N/A	N/A	North	North	N/A
	R11	LKD	W13 ↖	35.4	25.3	10.1	0.72											
		LKD	W14 ↖	35.3	25.2	10.1	0.71											
		LKD	W15 ↑	31.7	27.9	N/A	N/A	100%	99%	0.32	0.99	North	North	N/A	N/A	North	North	N/A
	R12	Bedroom	W16 ↑	6.3	6.2	0.1	0.98	92%	92%	0.03	1.00	North	North	N/A	N/A	North	North	N/A
Sixth	R1	Living Room	W1 ↖	37.3	31.4	N/A	N/A											
		Living Room	W2 ↖	37.5	30.9	N/A	N/A	99%	96%	0.52	0.97	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W3 ↖	37.4	29.8	N/A	N/A	99%	89%	1.24	0.90	North	North	N/A	N/A	North	North	N/A
	R3	LKD	W4 ↖	37.0	27.4	N/A	N/A											
		LKD	W5 ↖	36.8	27.0	N/A	N/A											
		LKD	W6 ↑	32.5	28.9	N/A	N/A	100%	99%	0.31	0.99	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W7 ↑	6.5	6.4	0.1	0.99	92%	92%	0.02	1.00	North	North	N/A	N/A	North	North	N/A
Seventh	R1	Living Room	W1 ↖	38.3	33.5	N/A	N/A											
		Living Room	W2 ↖	38.3	32.8	N/A	N/A	99%	98%	0.16	0.99	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W3 ↖	38.1	31.6	N/A	N/A	99%	93%	0.69	0.94	North	North	N/A	N/A	North	North	N/A
	R3	LKD	W4 ↖	37.7	29.2	N/A	N/A											
		LKD	W5 ↖	37.6	28.9	N/A	N/A											

Property, room & window attributes				VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
		LKD	W6 ↑	33.2	30.0	N/A	N/A	100%	99%	0.15	0.99	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W7 ↑	6.7	6.6	0.1	0.99	92%	92%	0.02	1.00	North	North	N/A	N/A	North	North	N/A
Eighth	R1	Living Room	W1 ↖	38.5	34.9	N/A	N/A											
		Living Room	W2 ↖	38.4	34.3	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W3 ↖	38.3	33.3	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	LKD	W4 ↖	37.9	31.1	N/A	N/A											
		LKD	W5 ↖	37.8	30.8	N/A	N/A											
		LKD	W6 ↑	33.8	31.2	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W7 ↑	6.9	6.9	0.0	1.00	92%	92%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
Ninth	R1	Living Room	W1 ↖	38.7	36.2	N/A	N/A											
		Living Room	W2 ↖	38.6	35.8	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W3 ↖	38.5	34.9	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R3	LKD	W4 ↖	38.2	33.2	N/A	N/A											
		LKD	W5 ↖	38.0	33.0	N/A	N/A											
		LKD	W6 ↑	34.3	32.5	N/A	N/A	100%	100%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	R4	Bedroom	W7 ↑	8.7	8.7	0.0	1.00	92%	92%	0.01	1.00	North	North	N/A	N/A	North	North	N/A
181 Belsize Road																		
Ground	Kitcher	Kitchen	WG_01 ↘	36.8	36.8	N/A	N/A											
		Kitchen	WG_02 ↗	13.7	13.7	0.0	1.00	82%	82%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Room 1	Kitchen	WG_03 ↗	12.3	12.3	0.0	1.00											
		Kitchen	WG_04 ↖	5.9	5.9	0.0	1.00	84%	84%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
First	Room 1	Kitchen	W1_01 ↗	17.2	17.2	0.0	1.00	67%	67%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
	Room 2	Kitchen	W1_02 ↗	19.0	18.8	0.2	0.99	52%	52%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
1 Priory Terrace																		
Ground	Room 1	Living Room	WG_01 →	30.7	30.7	N/A	N/A	100%	100%	0.00	1.00	50	50	N/A	N/A	14	14	N/A
First	Room 1	Living Room	W1_01 →	33.0	33.0	N/A	N/A	99%	99%	0.00	1.00	54	54	N/A	N/A	16	16	N/A

Property, room & window attributes			VSC				NSL				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m^2)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)		
												Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
	Room 2	Living Room	W1_02 →	33.0	33.0	N/A	N/A	99%	99%	0.00	1.00	57	57	N/A	N/A	18	18	N/A
	Second Bedroom	Bedroom	W1_01 →	34.9	34.8	N/A	N/A											
		Bedroom	W1_02 →	34.8	34.7	N/A	N/A	96%	96%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
3 Priory Terrace																		
	Ground Room 1	Living Room	WG_01 →	31.3	31.3	N/A	N/A	96%	96%	0.00	1.00	52	52	N/A	N/A	16	16	N/A
	First Living Ro	Living Room	W1_01 →	33.0	33.0	N/A	N/A											
		Living Room	W1_02 →	33.0	32.9	N/A	N/A	99%	99%	0.00	1.00	55	55	N/A	N/A	17	17	N/A
	Second Bedroom	Bedroom	W1_01 →	34.7	34.6	N/A	N/A											
		Bedroom	W1_02 →	34.7	34.5	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
3a Priory Terrace																		
	Ground Room 1	Living Room	WG_01 →	31.1	31.0	N/A	N/A	88%	88%	0.02	1.00	51	51	N/A	N/A	17	17	N/A
	First Living Ro	Living Room	W1_01 →	32.9	32.9	N/A	N/A											
		Living Room	W1_02 →	32.8	32.7	N/A	N/A	99%	99%	0.00	1.00	54	54	N/A	N/A	17	17	N/A
	Second Bedroom	Bedroom	W1_01 →	34.6	34.4	N/A	N/A											
		Bedroom	W1_02 →	34.5	34.3	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
5 Priory Terrace																		
	Ground Room 1	Living Room	WG_01 →	30.7	30.7	N/A	N/A	83%	83%	0.00	1.00	51	51	N/A	N/A	16	16	N/A
	First Living Ro	Living Room	W1_01 →	32.7	32.6	N/A	N/A											
		Living Room	W1_02 →	32.5	32.4	N/A	N/A	99%	99%	0.00	1.00	54	54	N/A	N/A	16	16	N/A
	Second Bedroom	Bedroom	W1_01 →	34.4	34.2	N/A	N/A											
		Bedroom	W1_02 →	34.2	34.0	N/A	N/A	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R