Daylight and Sunlight

Fortess Grove

Prepared by: Vincent Lutz

Reference: 12073

Date: 01/09/2021

DATE / REF

01/09/2021
VL/12073

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Dear Jo,

Re: Fortess Grove, London, NW5 2HB ("the Site") – Daylight and Sunlight Addendum

GIA recently compiled an addendum dated 21st June 2021 which sought to review a discrepancy in how the parapet height on the east elevation was assessed and the change in impacts to neighbouring properties. It also provided clarification on how the neighbouring ground levels do not affect our assessments. However, it has been noted that massing of the second floor extension in our model did not align with the plans. This has now been corrected and it has been found that this change does not materially change the daylight and sunlight results experienced by the neighbouring properties, as detailed below.

This addendum report should be read in conjunction with GIA's daylight and sunlight report dated 30 November 2017. The full assumptions and methodologies set out within that full report are applied to the additional considerations within this addendum.

Proposed Development

GIA have been provided with updated scheme information since the aforementioned report and have updated their technical analyses accordingly. The scheme has been reviewed to take into account the revised BGY drawings and the affect upon daylight and sunlight amenity to neighbouring properties has been assessed by comparing light levels experienced in the existing and proposed scenarios. The existing and proposed Site conditions tested are shown below in Figure 01 below.

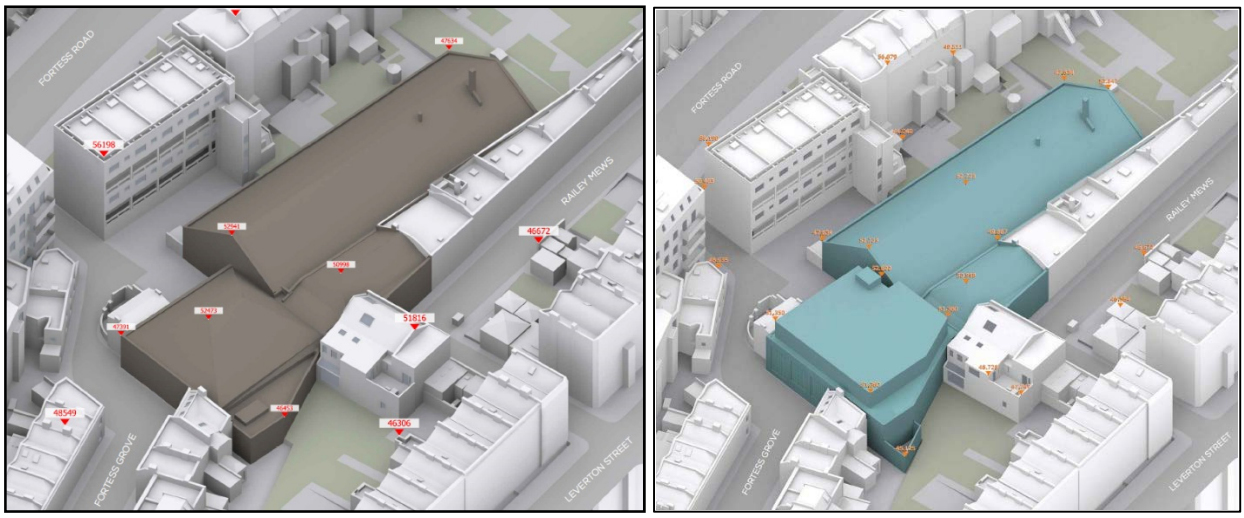

Figure 01 - Existing Site condition shown in brown and Proposed Scheme shown in teal

Table 01 below summarises the change in daylight and sunlight impacts to neighbours as a result of 2018 assessment and the updated assessment. The BRE recommended assessment criteria tested are as follows:

- Vertical Sky Component ("VSC");
- No Sky Line ("NSL"); and,
- Annual probable Sunlight Hours ("APSH")

A copy of the daylight and sunlight principles is located within Appendix 01 of this letter which elaborates on the mechanics of each of the assessment criteria applied, explains the appropriateness of their use and the parameters of each specific recommendation.

Property	***VSC Compliance (daylight)***		***NSL Compliance (daylight)***		***APSH Compliance (sunlight)***	
	2018 Scheme	***Updated Scheme***	***2018 Scheme***	***Updated Scheme***	***2018 Scheme***	***Updated Scheme***
1 Fortess Grove	100%	100%	100%	100%	-	-
19 Fortess Grove	100%	100%	100%	100%	100%	100%
21 Fortess Grove	100%	100%	0%	25%	-	-
22 Fortess Grove	100%	100%	100%	100%	-	-
1-12 Eleanor House	100%	100%	100%	100%	100%	100%
28-34 Piano Works	100%	100%	100%	100%	100%	100%
1 Railey Mews	96%	83%	100%	100%	100%	100%
41-49 Leverton Street	100%	100%	60%	100%	100%	100%
Total	***99%***	***96%***	***90%***	***95%***	***100%***	***100%***

Table 01 – Summary of Results

The results show that the following properties do not experience a material loss of daylight and sunlight amenity as a result of implementing either the previous or updated proposed scheme as all windows and rooms tested meet the BRE recommended target values:

- 1 Fortess Grove;
- 19 Fortess Grove;
- 22 Fortess Grove;
- 1-12 Eleanor House;
- 41-49 Leverton Street; and,
- Piano Works, 28-34 Fortess Grove.

Where there is no value included in Table 01 for APSH criteria for nos. 1, 21 & 22 Fortess Grove, this is due to these properties having no windows facing within 90 degrees of due south and therefore they are not relevant for sunlight assessment, as per the BRE guidelines.

Both the previous and updated proposed schemes result in breaches of the BRE guidelines to 21 Fortess Grove and 1 Railey Mews. The increase in height has not changed the results materially.

21 Fortess Grove

All windows tested within this property meet the target values for daylight to the window (VSC) and sunlight (APSH) recommended in the BRE. Of the four rooms tested for daylight to the room (NSL) one will remain BRE compliant. The remaining three rooms will experience what GIA consider minor breaches of between 25-29%. This is a marginal increase when compared to the 2018 assessment. All three rooms will retain in excess of 64% sky visibility from within the entire room, which is widely considered to ensure adequate amenity, especially considering the compliance in VSC.

1 Railey Mews

All windows and rooms tested within this property meet the target values for NSL and APSH recommended in the BRE. Of the 23 windows tested for VSC, 19 meet the recommended target value. Of the remaining four windows one is located on the ground floor and experiences a marginal breach of 20.4% against the 20% target. This window however serves a room which benefits from another mitigating window. As a result of the mitigating window the room will remain BRE compliant against the supplementary VSC to the room assessment.

The remaining three windows experience minor and moderate changes of between 22-39%. These windows will retain VSC values of between 19-26%. Furthermore, these windows serve an LKD which benefits from a number of other mitigating windows. As a result of these mitigating windows the room will remain BRE compliant against the supplementary VSC to the room assessment. In conclusion this property would remain compliant against the supplementary VSC to the room assessment.

In consideration of the above it is clear that the amendments do not materially change the daylight and sunlight results experienced by the neighbouring properties.

A full copy of the updated results is located in Appendix 03 of this letter report.

We trust that the above information is clear, however please let us know should there be any further queries and we will be happy to assist.

Yours sincerely

For and on behalf of GIA

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Cc. Oliver Nicholson, Associate Partner – GIA

Encl. Appendix 01 – Principles of Daylight, Sunlight & Overshadowing
Appendix 02 – Existing and Proposed Drawings
Appendix 03 – Daylight and Sunlight Results

N.B This report has been prepared for Buckley Gray Yeoman by GIA as their appointed Daylight & Sunlight consultants. It is accurate as at the time of publication and based upon the information we have been provided with as set out in the report. It does not take into account changes that have taken place since the report was written nor does it take into account private information on internal layouts and room uses of adjoining properties unless this information is publicly available.

APPENDIX 01

PRINCIPLES OF DAYLIGHT, SUNLIGHT & OVERSHADOWING

The Building Research Establishment (BRE) have set out in their handbook 'Site Layout Planning for Daylight & Sunlight: A Guide to Good Practice 2nd edition (2011)', guidelines and methodology for the measurement and assessment of daylight and sunlight.

BACKGROUND & CONTEXT

A 2.1 The quality of amenity and open spaces is often stipulated within planning policy for protection or enhancement and is often a concern for adjoining owners and other interested parties.

A 2.2 The BRE Guidelines provide advice on site layout planning to determine the quality of Daylight and Sunlight within open spaces between buildings.

A 2.3 The BRE Guidelines note that the document is intended to be used in conjunction with the interior Daylight recommendations found within the British Standard BS8206-2:2008 and The Applications Manual on Window Design of the Chartered Institution of Building Services Engineers (CIBSE).

A 2.4 The BRE Guidelines are typically referred to for daylight and sunlight amenity issues, however, they were not intended to be used as an instrument of planning policy, nor were the figures intended to be fixedly applied to all locations.

A 2.5 In the introduction of 'Site Layout Planning for Daylight and Sunlight (2011)', section 1.6 (page 1), states that:-

> *"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design (see Section 5). In special circumstances the developer or Planning Authority may wish to use different target values. For example, in an 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".*[1]

A 2.6 Paragraph 2.2.3 (page 7) of the document 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".*[2]

A 2.7 The numerical criteria suggested by the BRE are therefore designed to provide industry advice/ guidance to plan/design with daylight in mind. Alternative values may be appropriate in certain circumstances such as highly dense urban areas around London. The BRE approach to creating alternative criteria is detailed within Appendix F of the Document.

A 2.8 The BRE Guidelines state that they 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."*[3]

A 2.9 They are therefore primarily designed to be used for residential properties however, the BRE Guidelines continue to state that they may be applied to any existing non-residential buildings where there may be a reasonable expectation of daylight including; schools, hospitals, hostels, small workshop and some offices.

A 2.10 It is important to note, however, that this document is a guide and states that its aim *"is to help rather than constrain the designer"*[4].

A 2.11 The document provides advice, but also clearly states that *"it is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location."*[5]

A 2.12 Many Local Planning Authorities consider daylight and sunlight an important factor for determining planning applications. Policies refer to both the protection of daylight and sunlight amenity within existing properties as well as the creation of proposed dwellings with high levels of daylight and sunlight amenity.

A 2.13 In terms of considering what is a material deterioration in light, Local Authorities typically refer to the BRE Guide. Although Local Authorities will look to the BRE Guide to understand impacts it is their Planning Policies that will determine whether the changes in light should be a reason for refusal at planning.

A 2.14 It is an inevitable consequence of the built up urban environment that Daylight and Sunlight will be more limited in dense urban areas. It is well acknowledged

that in such situations there may be many other conflicting and potentially more important planning and urban design matters to consider other than just the provision of ideal levels of Daylight and Sunlight.

A 2.15 The following sections extract relevant sections from the Guide.

DAYLIGHT

A 2.16 The BRE Guidelines provide three methodologies for daylight assessment, namely;

1. The Vertical Sky Component (VSC);
2. The No Sky Line (NSL); and
3. The Average Daylight Factor (ADF).

Vertical Sky Component (VSC)

A 2.17 The Vertical Sky Component (VSC) method is described in the BRE Guidelines as the;

> *"Ratio of that part of illuminance, at a point on a given vertical plane, that is received directly from a CIE standard overcast sky, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. Usually the 'given vertical plane' is the outside of a window wall. The VSC does not include reflected light, either from the ground or from other buildings"*[6]

A 2.18 Put simply, the VSC provides an assessment of the amount of skylight falling on a vertical plane (generally a window) directly from the sky, in the circumstance of an overcast sky (CIE standard).

A 2.19 The national numerical value target "ideal" for VSC is 27%. The BRE Guidelines advise that upon implementation of a development, a window should retain a VSC value of 27% or at least 0.8 of its former value (i.e. no more than a 20% change).[7]

A 2.20 This form of assessment does not take account of window size, room use, room size, window number or dual aspect rooms. The assessment also assumes that all obstructions to the sky are 100% non-reflective.

A 2.21 The VSC calculation has been undertaken in both the existing and proposed scenarios so as to make a comparison.

A 2.22 The image in Figure 01 depicts a waldram diagram which is used to calculate the VSC. The existing buildings are solidly pictured with the proposed scheme semi-transparent in the foreground.

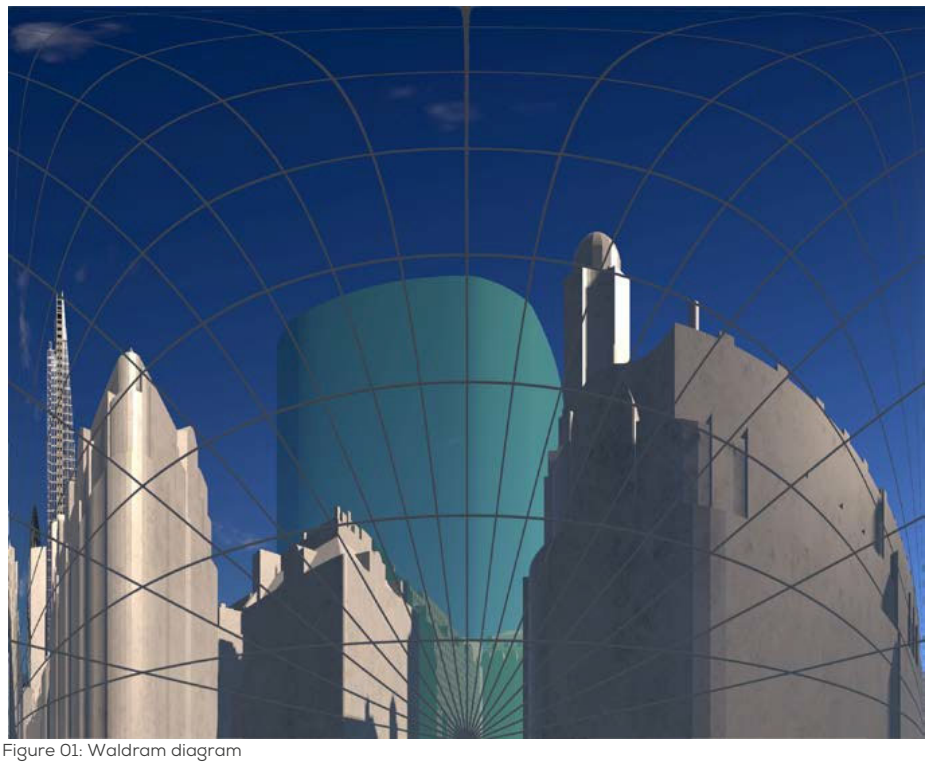

Figure 01: Waldram diagram

No Sky Line (NSL)

A 2.23 The BRE recommends the No Sky Line (NSL) method where internal layouts are known.

A 2.24 The No Sky Line (NSL) method is described as *"the outline on the working plane of the area from which no sky can be seen."*[8]

A 2.25 In summary, the NSL calculation assesses where the sky can and cannot be seen from inside a room at the working plane, *"in houses the working plane is assumed to be horizontal and 0.85m high".*[9]

A 2.26 The change in position of the NSL between the existing and proposed scenario is then calculated. This change can be illustrated on a contour plot, an example of which can be found in Figure 02.

A 2.27 The BRE Guidelines state at paragraph 2.2.9 that;

> *"If, following construction of a new development, the no sky line moves so that the area of the existing room, which does receive direct skylight, is 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."*[10]

A 2.28 If the NSL experiences more than a 20% change from the existing situation then, in accordance with the strict application of the national numerical values, the change in daylight would be noticeable to the occupants.

A 2.29 This assessment takes the number and size of windows serving a room into account however, there is no qualitative assessment of the light in the room, only where sky can or cannot be seen.

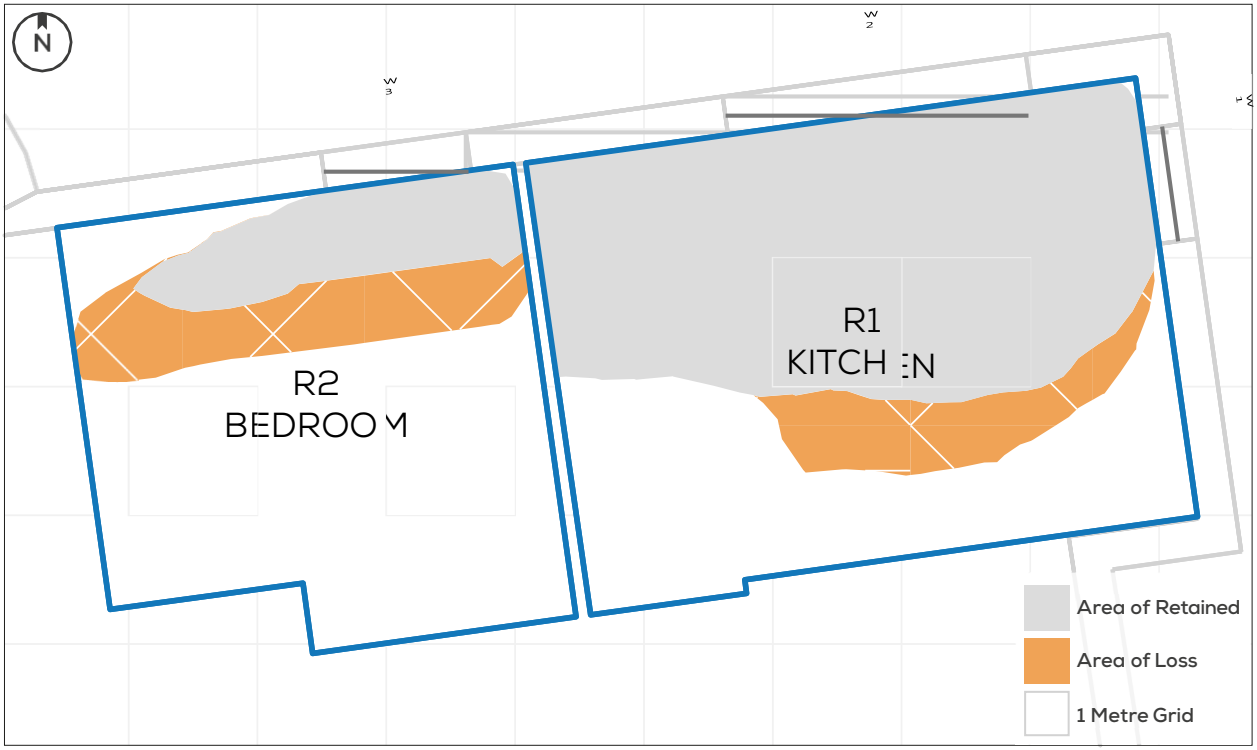

Figure 02: Example NSL diagram

Decision Chart (Figure 20 of the BRE Guide)

A 2.30 The flowchart in Figure 03 illustrates the steps and criteria outlined within the BRE Guidelines to understand whether the daylighting (VSC and NSL) may be *significantly affected*.

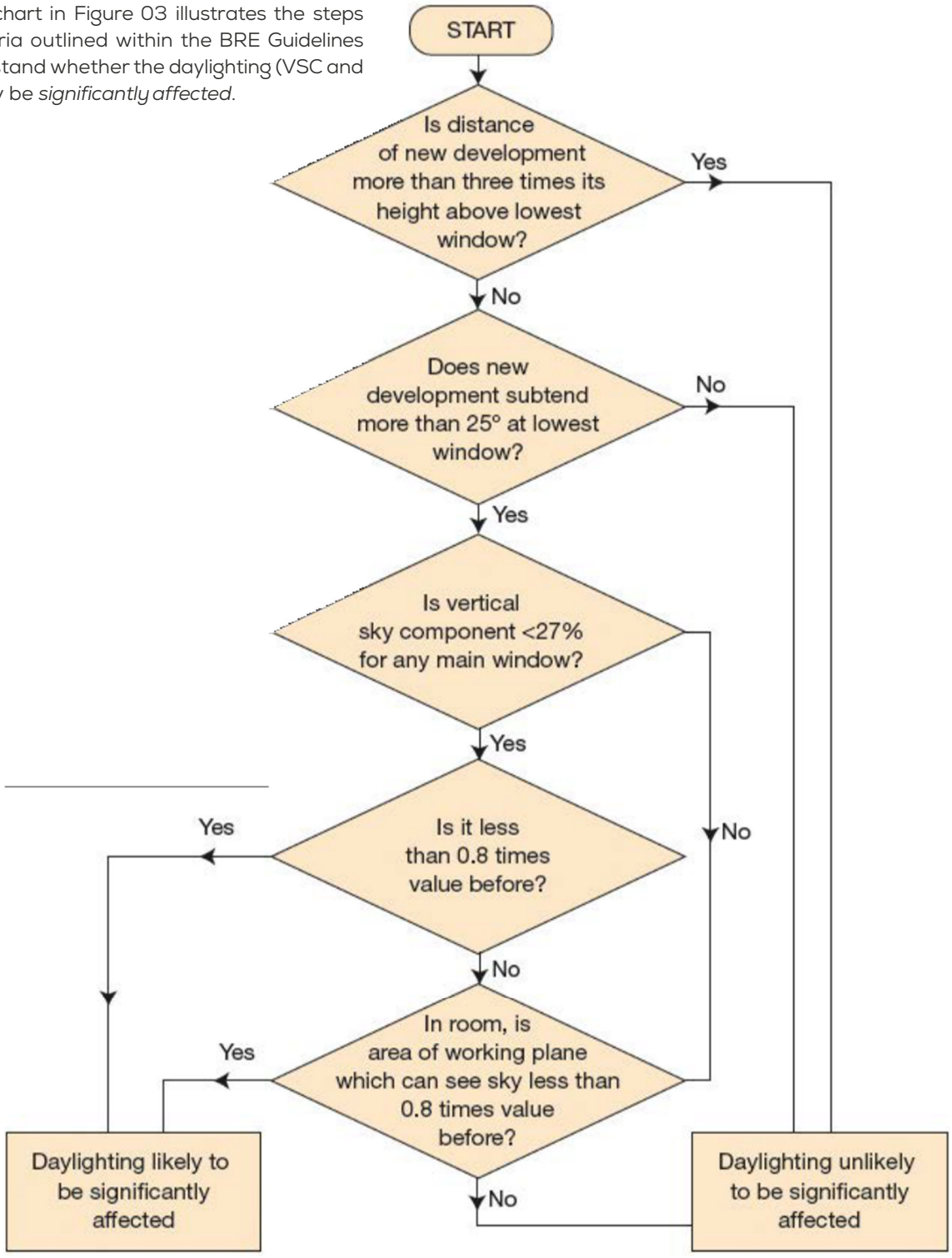

Figure 03: BRE Decision Chart (Figure 20): *diffuse daylight in existing buildings. This does not include an assessment of rights to light issues, which a developer may need to consider separately*

Average Daylight Factor (ADF)

A 2.31 The Average Daylight Factor (ADF) is defined within the 2011 BRE Guidelines as the *'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'*.[11]

A 2.32 This calculation considers not only the amount of skylight falling on the vertical face of the window, but also the glazing size, transmittance value, average reflectance, room area and room use. It is therefore a more detailed analysis of the daylight levels within a room.

A 2.33 British Standard 8206-2 quotes a number of recommended ADF levels based on room use. The ADF criteria is the prescribed methodology for evaluating the Daylight within proposed accommodation and the values referenced by the BRE Guidelines can be found in the British Standard document BS8206 Part II. The values for those rooms that are most relevant for our assessments are:

- Bedrooms 1% ADF
- Living rooms 1.5% ADF
- Kitchens 2% ADF[12]

A 2.34 Where one room serves more than one purpose, the minimum ADF should be that for the room type with the highest value.

A 2.35 As per the *British Standard Lighting for buildings - Part 2: Code of practice for daylighting* the ADF value should be 5%+ for a well daylit space:

> *"It is considered good practice to ensure that rooms in dwellings and in most other buildings have a predominantly daylit appearance. In order to achieve this the average daylight factor should be at least 2%. If the average daylight factor in a space is at least 5% then electric lighting is not normally needed during the daytime, provided the uniformity is satisfactory. If the average daylight factor in a space is between 2% and 5% supplementary electric lighting is usually required."*[13]

A 2.36 Appendix F of the BRE guidance states that, though not being generally recommended, the use of the ADF for loss of light to existing buildings can be appropriate in some situations:

- where the existing building is one of a series of new buildings that are being built one after another;
- where the existing building is proposed (i.e. consented) but not built;
- where the developer of the new building also owns the existing nearby building and proposes to carry out improvements to the existing building;
- where the developer also owns the existing nearby building and the affected rooms are either unoccupied or would be occupied by different people following construction of the new building.[14]

SUNLIGHT

Annual Probable Sunlight Hours (APSH)

A 2.37 The BRE Guidance suggests that to understand sunlight impacts to a property an assessment

A 2.38 of Annual Probable Sunlight Hours (APSH) is undertaken. The APSH is defined as:

> *"the long-term average of the total number of hours during a year in which direct sunlight reaches the unobstructed ground (when clouds are taken into account)"*[15]

A 2.39 In interpreting the results, the BRE Guidance states that the Sunlight to a window may be adversely affected if a point at the centre of a window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March, and
- receives less than 0.8 times its former sunlight hours during either period, and
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours."[16]

A 2.40 To understand the potential sunlight impacts therefore, all windows facing within 90 degrees of due south and overlooking the development have been assessed for APSH.

A 2.41 The image in Figure 04 depicts the APSH sun spots on a waldram diagram. The existing buildings are solidly pictured with the proposed scheme semi-transparent in the foreground. The yellow spots indicate summer sun and the blue spots indicate winter sun.

A 2.42 The number of sun spots is calculated for both the whole year and during the winter period (21 September to 21 March), prior to an obstruction and after the obstruction is put in place. This provides a percentage of APSH for each of the time periods for each window assessed.

A 2.43 The BRE Guidelines note that:

> *"all main living rooms of dwellings…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:* and
>
> *"If the main living room to a dwelling has a main window facing within 90° of due north, but a secondary window facing within 90° of due south, sunlight to the secondary window should be checked."*[17]

A 2.44 The BRE Guidelines set out the overall methodology and criteria for the assessment of Sunlight in Chapter 3. The BRE Guidelines state:

> *"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 degrees 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.*
>
> *If this window reference point can receive more than one quarter of Annual Probable Sunlight Hours [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. If the available sunlight hours are both less than the amount above and less than 0.8 times their former value, either over the whole year or just during the winter months (21 September - 21 March), then the occupants of the existing 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."*[18]

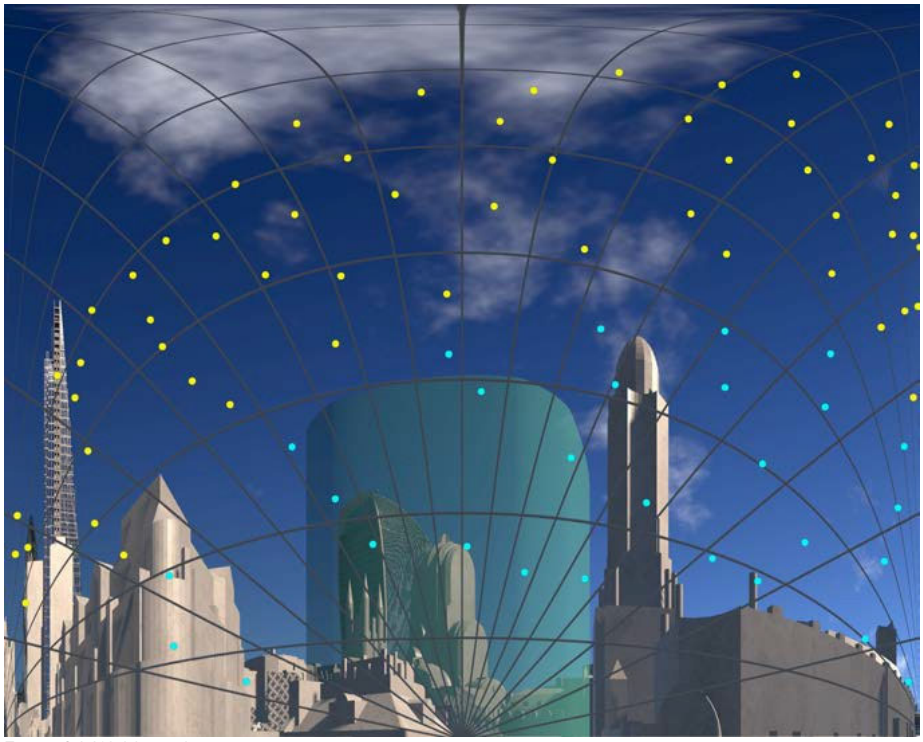

Figure 04: Waldram diagram

OVERSHADOWING

A 2.45 The BRE guidance in respect of overshadowing of amenity spaces is set out in section 3.3 of the handbook. Here it states as follows:

> *"Sunlight in the spaces between buildings has an important impact on the overall appearance and ambiance of a development. It is valuable for a number of reasons:*
>
> - *To provide attractive sunlit views (all year)*
> - *To make outdoor activities, like sitting out and children's play more pleasant (mainly during the warmer months)*
> - *To encourage plant growth (mainly in spring and summer)*
> - *To dry out the ground, reducing moss and slime (mainly during the colder months)*
> - *To melt frost, ice and snow (in winter)*
> - *To dry clothes (all year)"*[19]

A 2.46 It must be acknowledged that in urban areas the availability of sunlight on the ground is a factor which is significantly controlled by the existing urban fabric around the site in question and so may have very little to do with the form of the development itself. Likewise, there may be many other urban design, planning and site constraints which determine and run contrary to the best form, siting and location of a proposed development in terms of availability of sun on the ground.

Sun Hours on Ground & Transient Overshadowing

A 2.47 The Sun Hours on Ground (SHOG) method of overshadowing assessment uses a simulation software to determine the areas which receive direct Sunlight and those which do not.

A 2.48 The BRE Guidelines suggest that the Spring Equinox (21 March) is a suitable date for the assessment as this is the midpoint of the sun's position throughout the year. Using specialist software, the path of the sun is tracked to determine where the sun would reach the ground and where it would not.

> *"It is recommended that for it [an amenity space] to appear adequately sunlit throughout the year at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable."*[20]

A 2.49 The Transient Overshadowing study is recommended where large buildings are proposed which may affect a number of gardens or open spaces. For the purpose of this assessment, the shadow is mapped at hourly intervals (from sun rise to sun set) on the following dates:

- 21 March (Spring equinox)
- 21 June (Summer solstice)
- 21 December (Winter solstice)

A 2.50 The September equinox is not assessed as this would provide the same results as those for 21 March.

A 2.51 The BRE guidelines do not provide any criteria for Transient Overshadowing.

BRE GUIDELINES: ADDITIONAL DAYLIGHT AND SUNLIGHT TESTS

Daylight - VSC and APSH to Rooms

A 2.52 As outlined within the BRE Guidelines the VSC value is calculated for each window; however -

> *"If a room has two or more windows of equal size, the mean of their VSC's may be taken".*[21]

A 2.53 Although not strictly in accordance with the BRE methodology, where a room is served by two or more windows of the same or different sizes, the VSC value to the room can be calculated by applying an average weighting calculation to understand the VSC value to the room. The formula used is as follows;

Σ(Vn*An) / ΣAn

Where:

V = window VSC
A = window area
n = the number of windows

A 2.54 The BRE provide a methodology to calculate APSH in relation to the room and window.

> *"If a room has multiple windows on the same walls or adjacent walls, the highest value of ASPH should be taken. If a room has two windows on opposite walls, the ASPH due to each can be added together."*[22]

A 2.55 The above extract of the BRE is in relation to proposed units rather than existing buildings. It does, however, make sense to apply this methodology to existing rooms. A room served by multiple windows could receive the benefit of Sunlight entering from all of them and not just one.

A 2.56 GIA calculate the APSH room assessment in the following way:

1 The sunlight hours (both winter and annual) are calculated for each window. Instead of simply returning the overall per cent pass rate, i.e. one figure for winter, and one for the whole year, the yes/no result of each of the 100 sun spots is tracked. For this accounting to work, each sun dot needs to be assigned a unique identifier, e.g. from 1 to 100;

2 The sets of 100 sun spots are combined for each room using Boolean logic, i.e. conjunctions of yes/no values. The outcome of this step is a set of 100 yes/no values corresponding to the 100 sun spots, but on a per-room basis. Each per-room dot is counted if it is unobstructed for at least one of its windows; and

3 The unobstructed sun dots for the room are summed up and expressed as a percentage of the total number of annual and winter spots. This returns the per-room pass rate consistent with Section 3.1.10 of BR 209.

Balconies/Overhangs

A 2.57 The BRE recognises that existing architectural features on neighbouring buildings such as balconies and overhangs inherently restrict the quantum of skylight to a window. The BRE Guidelines note on page 5, paragraph 2.1.17 and page 8, paragraph 2.2.11:

> *"This is a particular problem if there are large obstructions opposite; with the combined effect of the overhang and the obstruction, it may be impossible to see the sky from inside the room, and hence to receive any direct skylight or sunlight at all."*

> *"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 the area receiving direct skylight, for both the existing and proposed situations, without the balcony in place."*[23]

A 2.58 As noted by the BRE Guidelines, where there are existing overhanging features larger reductions in skylight and sunlight may be unavoidable and alternative criteria can be used. The guidance suggests that in such situations a calculation is carried out that excludes the balcony or the obstruction.

DAYLIGHT - MIRROR MASSING & ADJOINING DEVELOPMENT LAND

Alternative target Values for Skylight and Sunlight Access "Mirror Massing"

A 2.59 The BRE Guidelines provide a calculation for the VSC and APSH analysis to quantify an appropriate alternative value based on the context of an environment. This approach is known as the 'mirror image' analysis (see Figure 05).

A 2.60 The BRE notes:

> *"where an existing building has windows that are unusually close to the site boundary and taking more than their fair share of light. Figure 3 shows an example where side windows of an existing building are close to the boundary. To ensure that new development matches the height and proportions 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."*[24]

A 2.61 This analysis is used to understand the levels of Daylight (VSC) and Sunlight (APSH) that would be experienced by an extant neighbouring property if there were a building of the same height and extent opposite.

A 2.62 The mirror image assessment is fairly simplistic and is not, therefore, easily applied to large and complex site footprints which are not all built at equal distances from the site boundary or of the same footprint.

Adjoining Development Land

A 2.63 The *"Adjoining Development Land"* analysis provided within the BRE Guidelines is a simple test to ensure that a proposal is a reasonable distance from the boundary so as to *"enable future nearby developments to enjoy a similar access to daylight."*

A 2.64 The BRE comments that:

> *"The diffuse daylight coming over the boundary may be quantified in the following way. As a first check, draw a section in a plane perpendicular to the boundary (Figure 21). If a road separates the two sites then the centre line of the road should be taken. Measure the angle to the horizontal subtended at a point 1.6 m. above the boundary by the proposed new buildings. If this angle is less than 43 ° then there will normally still be the potential for good daylighting on the adjoining development site (but see Sections 2.3.6 and 2.3.7)."*[25]
>
> *"The guidelines above should not be applied too rigidly. A particularly important exception occurs when the two sites are very unequal in size and the proposed new building is larger in scale than the likely future development nearby. This is because the numerical values above are derived by assuming the future development will be exactly the same size as the ·proposed new building (Figure 22). If the adjoining sites for development are a lot smaller, a better approach is to make a rough prediction of where the nearest window wall of the future development may be; then to carry out the 'new building' analysis in Section 2.1 for this window wall."*[26]
>
> *"The 43° angle should not be used as a form generator, to produce a building which slopes or steps down towards the boundary. Compare Figure 23 with Figure 22 to see how this can result in a higher than anticipated obstruction to daylight. In Figure 23 the proposed building subtends 34° at its mirror image, rather than the maximum of 25° suggested here. In cases of doubt, the best approach is again to carry out a new building analysis for the most likely location of a window wall of a future development."*[27]

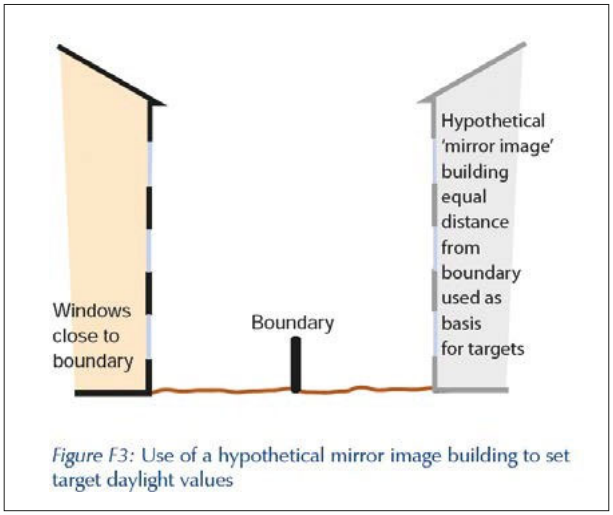

Figure 05: Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 64 Figure F3

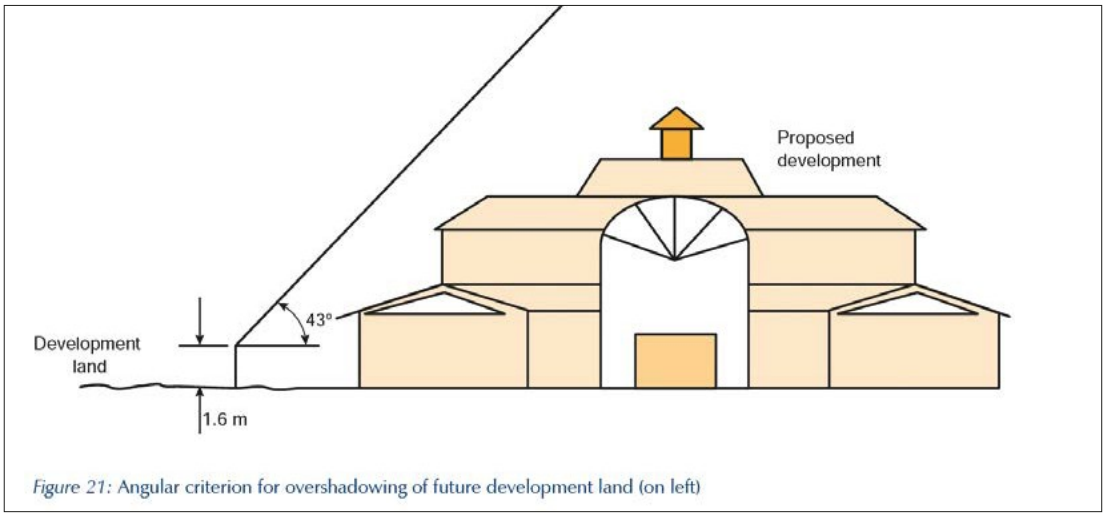

Figure 21: Angular criterion for overshadowing of future development land (on left)

Figure 06: Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 11 Figure F21

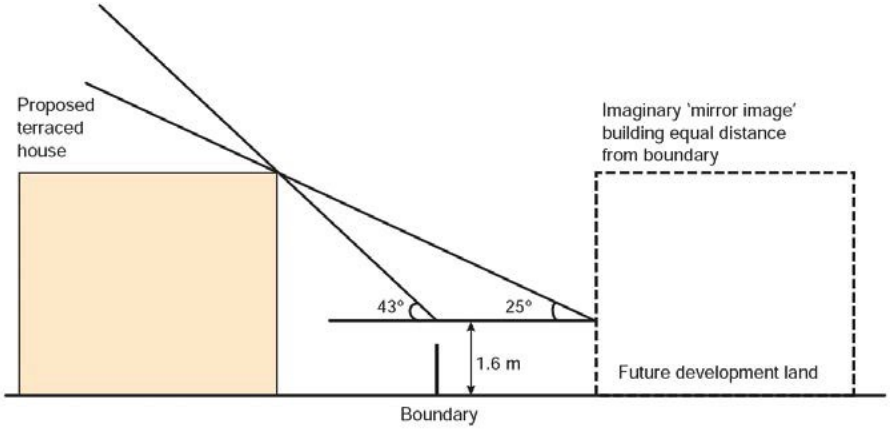

Figure 22: Derivation of an angular boundary criterion to safeguard future development of adjoining land

Figure 07: Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 12 Figure 22

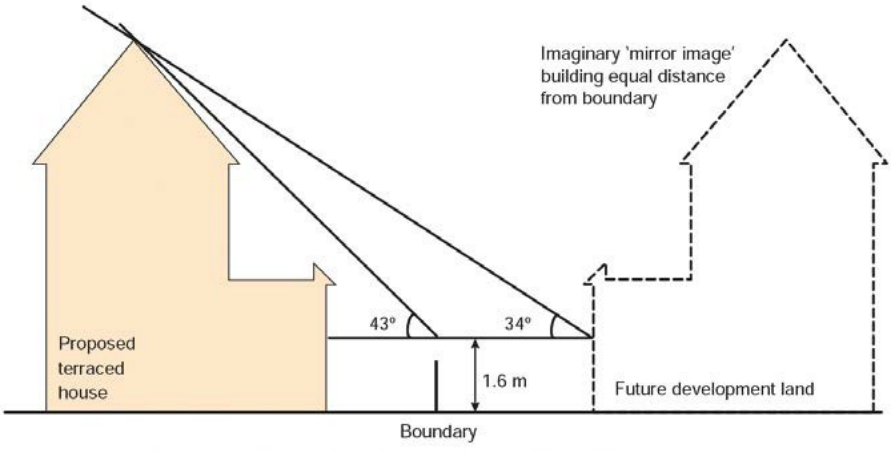

Figure 23: Problems with the boundary criterion can occur when a stepped façade overlooks adjoining land

Figure 08: Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 12 Figure 23

A 2.65 As is outlined above the Adjoining Development Land analysis is predicated on ensuring that a proposal next to future development land is not negatively impacting the ability to develop in consideration of light matters.

Other Amenity Considerations

A 2.66 Daylight and sunlight is one factor among many under the heading of residential amenity considerations for any given development design or planning application; others include:

- outlook;
- sense of enclosure;
- privacy;
- access to outdoor space e.g. balconies or communal garden/courtyard.

CONTEXT METHODOLOGY

A 2.67 In May 2019 the British Standard (BS8206-2:2008) was superseded by the new European Standard on daylight *"BS EN 17037:2018 Daylight in buildings"* but this standard is only applicable for assessing the levels of light within proposed developments. Until and unless it is revised, therefore, BR209 remains the basis for assessing impacts to neighbours and the new European Standard is not relevant for this report.

ENDNOTES

1 Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 1, paragraph 1.6

2 Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 7, paragraph 2.2.3

3 Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 7 paragraph 2.2.

4 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 1, paragraph 1.6

5 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page v

6 Littlefair, P. (2011). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page viii

7 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 7, paragraph 2.2.7

8 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page viii

9 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 7, paragraph 2.2.8

10 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 8, paragraph 2.2.9

11 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page viii

12 British Standard 8206-2:2008, page 10, paragraph 5.6

13 British Standard 8206-2:2008, page 9-10, paragraph 5.5

14 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 64, paragraph F8

15 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page viii

16 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 17, paragraph 3.2.11

17 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 16 paragraph 3.2.3 and paragraph 3.2.4

18 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 16 paragraph 3.2.3, paragraph 3.2.4 and 3.2.5 and page 17 paragraph 3.2.6

19 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 18, paragraph 3.3.1

20 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 20, paragraph 3.3.17

21 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 7, paragraph 2.2.6

22 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 16, paragraph 3.1.12

23 Littlefair, P. (2011). Site layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 5, paragraph 2.1.17 and page 8, paragraph 2.2.11

24 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 62, paragraph F5

25 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 11, paragraph 2.3.3

26 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 11, paragraph 2.3.6

27 Littlefair, P. (2011). Site layout Planning for Daylightand Sunlight – A Guide to Good Practice. Hertfordshire: IHS BRE Press, page 11 paragraph 2.3.7

APPENDIX 02

EXISTING AND PROPOSED DRAWINGS

EXISTING

SOURCES OF INFORMATION

IR06-12073-VERTEX

IR16-17-1102-BGY

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NOTES:
EXISTING SCENARIO SHOWN IN GREY
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N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:
FORTESS GROVE
KENTISH TOWN, NW5 2HD

DRAWING NAME:
PLAN VIEW

EXISTING SCENARIO

DWN BY	SCALE	CHK BY	STATUS	DATE
BG	1:500@A3	AH	-	NOV 17
PROJ No.	REL No.	IS No.	DWG No.	REV No.
12073	02	01	01	-

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f 020 7202 1401
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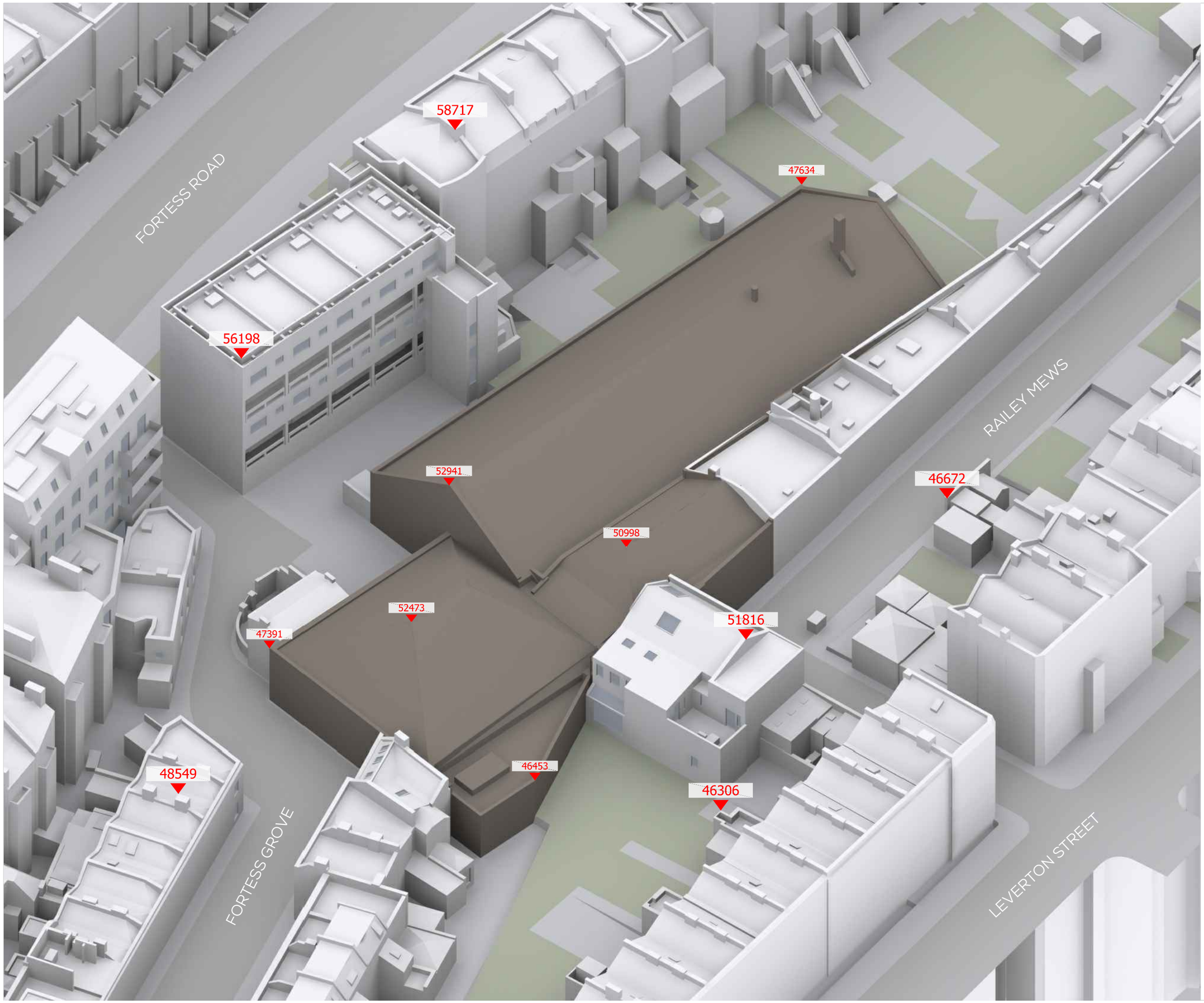

SOURCES OF INFORMATION

IR06-12073-VERTEX

IR16-17-1102-BGY

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NOTES:
EXISTING SCENARIO SHOWN IN GREY
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N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:

FORTESS GROVE

KENTISH TOWN, NW5 2HD

DRAWING NAME:

3D VIEW

EXISTING SCENARIO

DWN BY	SCALE	CHK BY	STATUS	DATE
BG	NTS	AH	-	NOV 17
PROJ No.	REL No.	IS No.	DWG No.	REV No.
12073	02	01	02	-

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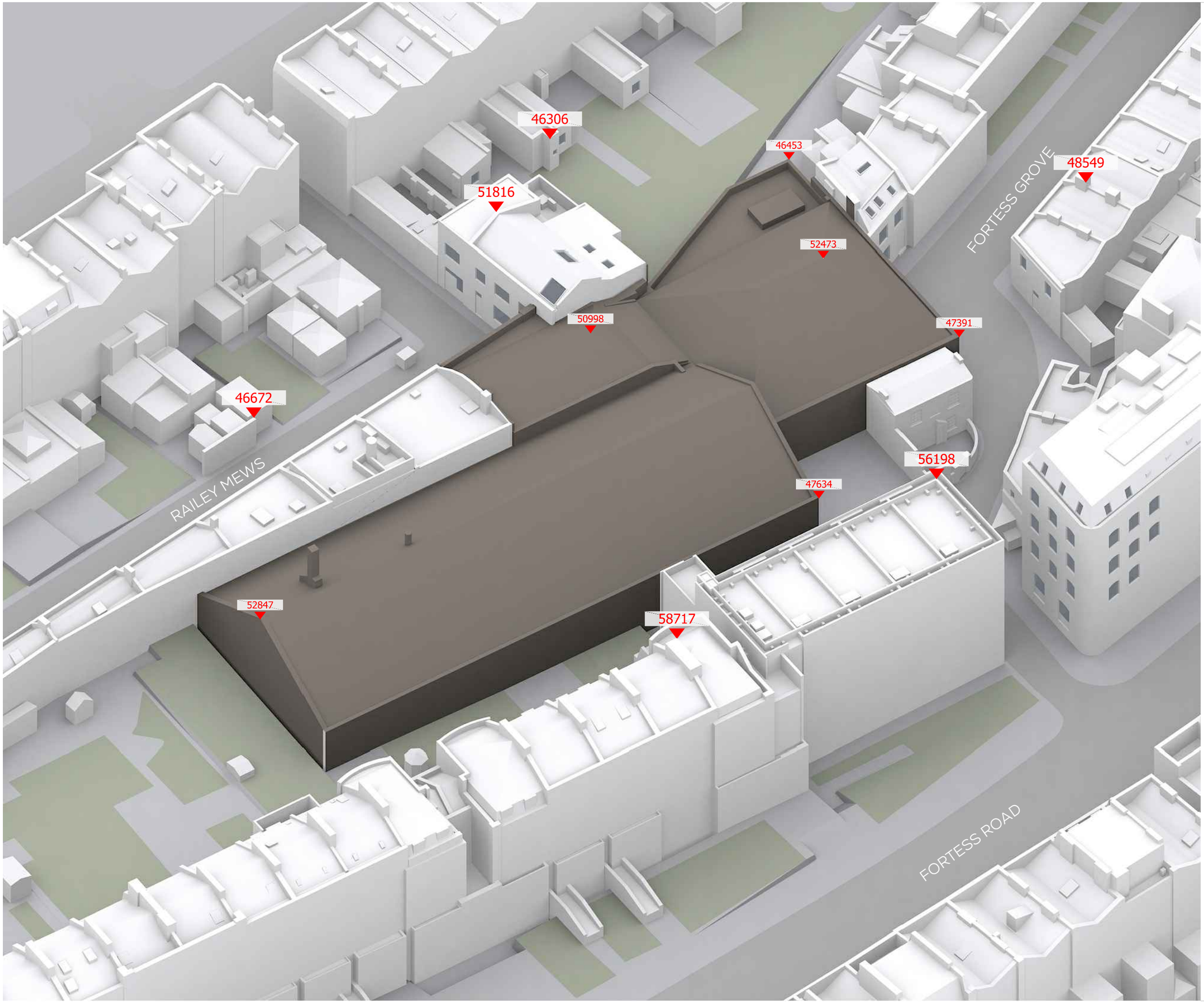

SOURCES OF INFORMATION

IR06-12073-VERTEX

IR16-17-1102-BGY

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NOTES:

EXISTING SCENARIO SHOWN IN GREY

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N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:

FORTESS GROVE

KENTISH TOWN, NW5 2HD

DRAWING NAME:

3D VIEW

EXISTING SCENARIO

DWN BY	SCALE	CHK BY	STATUS	DATE
BG	NTS	AH	-	NOV 17
PROJ No.	REL No.	IS No.	DWG No.	REV No.
12073	02	01	03	-

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PROPOSED

PLAN VIEW
SCALE 1:500

SOURCES OF INFORMATION

IR06-12073-VERTEX

IR18-12073-BGY

IR20-12073-BGY

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NOTES:
PROPOSED SCHEME SHOWN IN TEAL
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N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:
FORTESS GROVE

KENTISH TOWN, NW5 2HD

DRAWING NAME:
PLAN VIEW

PROPOSED SCHEME IR-20

DWN BY	SCALE	CHK BY	STATUS	DATE
AH	1:500@A3	AH	-	AUG 21
PROJ No.	REL No.	IS No.	DWG No.	REV No.
12073	05	03	01	-

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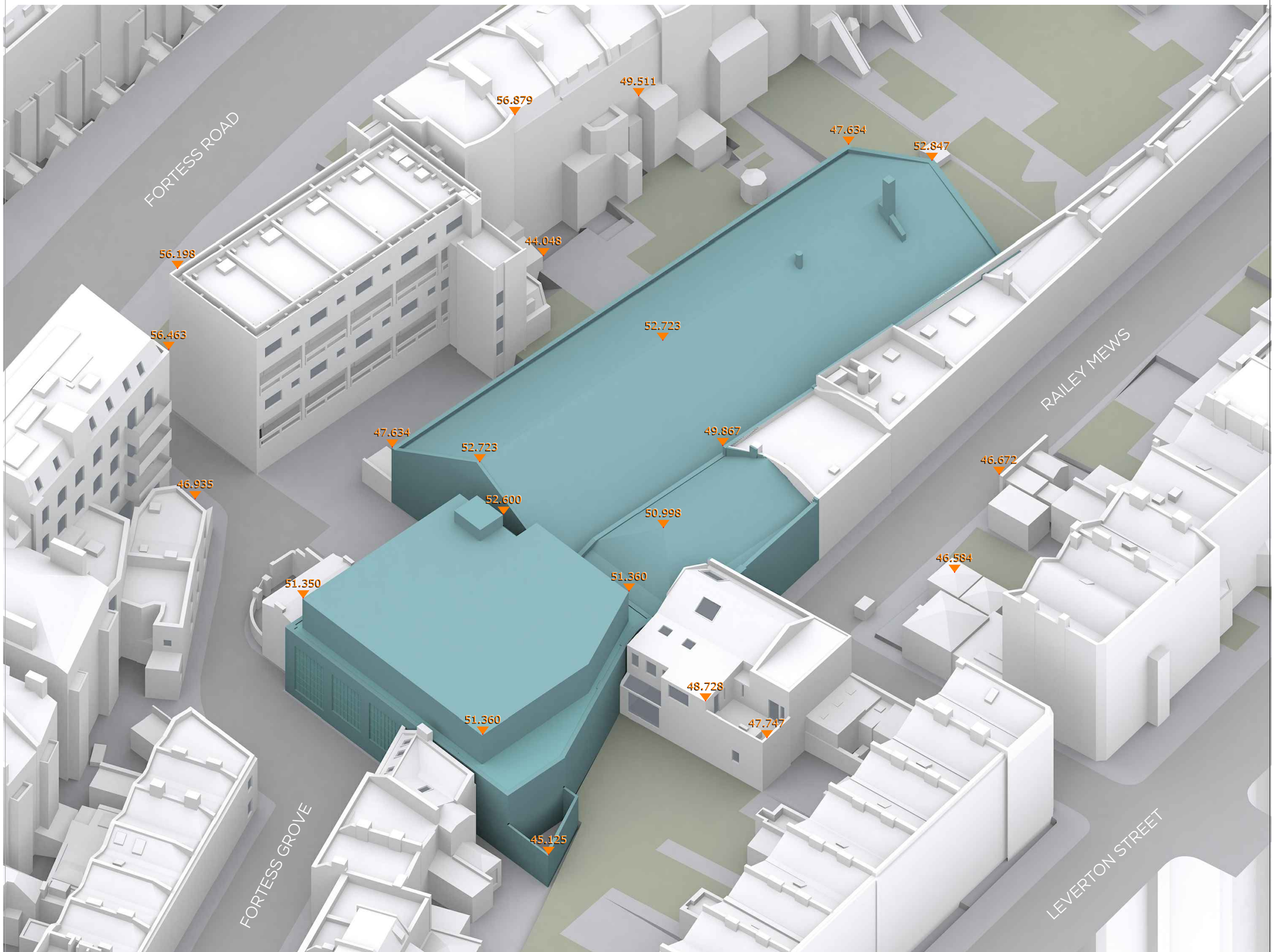

SOURCES OF INFORMATION

IR06-12073-VERTEX

IR18-12073-BGY

IR20-12073-BGY

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NOTES:
PROPOSED SCHEME SHOWN IN TEAL
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N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:

FORTESS GROVE

KENTISH TOWN, NW5 2HD

DRAWING NAME:

3D VIEW

PROPOSED SCHEME IR-20

DWN BY	SCALE	CHK BY	STATUS	DATE
AH	NTS	AH	-	AUG 21
PROJ No.	REL No.	IS No.	DWG No.	REV No.
12073	05	03	02	-

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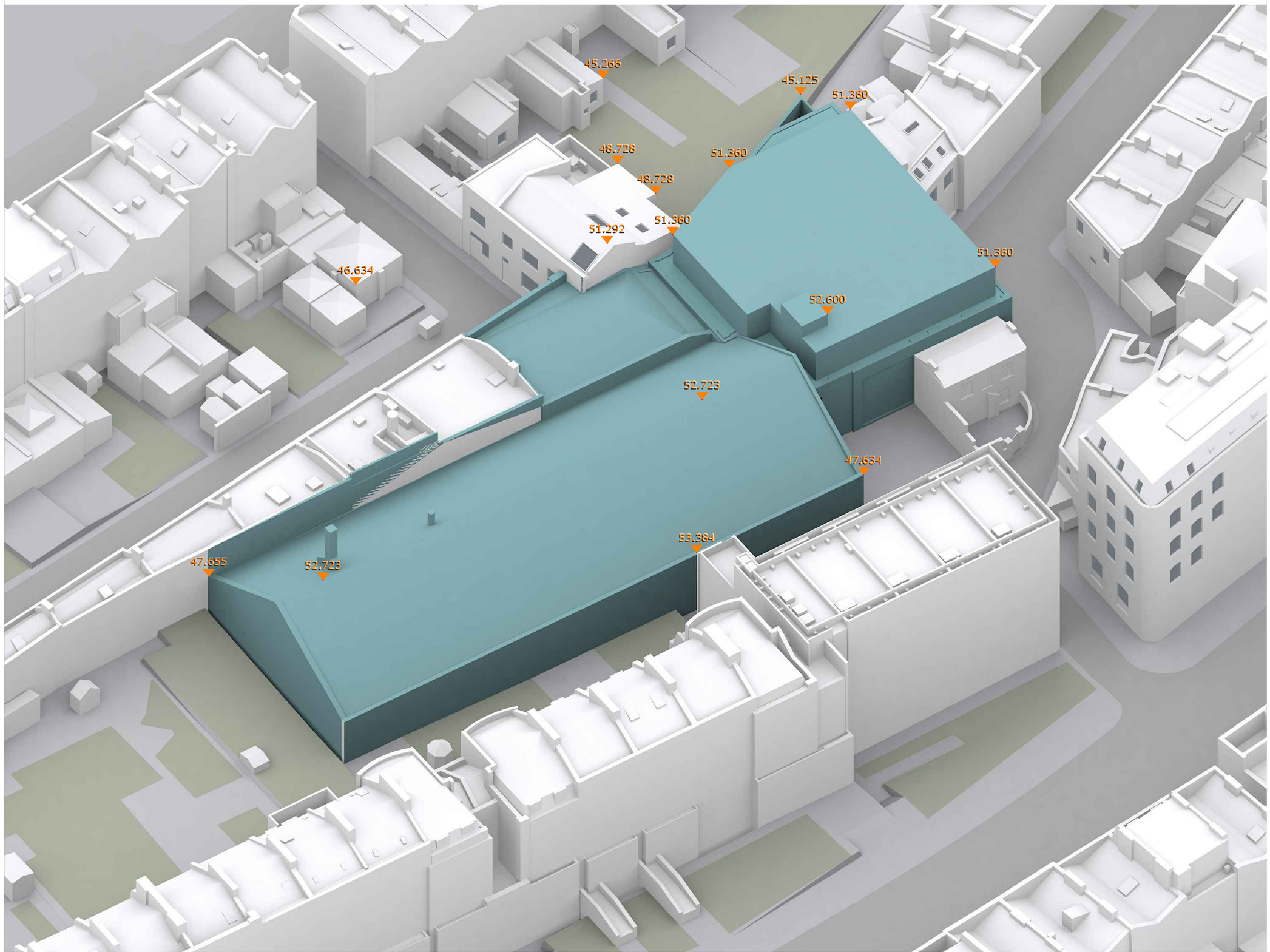

SOURCES OF INFORMATION

IR06-12073-VERTEX

IR18-12073-BGY

IR20-12073-BGY

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ALL INFORMATION DISPLAYED IS SUBJECT TO A COMPLETE VERIFIABLE SITE SURVEY BEING UNDERTAKEN. GIA TAKES NO RESPONSIBILITY ON THE ACCURACY OR RELIABILITY OF THE DISPLAYED DATA SINCE A VERIFIED SITE SURVEY WAS NOT MADE AVAILABLE PRIOR TO THE GENERATION OF SUCH INFORMATION.

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NOTES:
PROPOSED SCHEME SHOWN IN TEAL
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N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:

FORTESS GROVE

KENTISH TOWN, NW5 2HD

DRAWING NAME:

3D VIEW

PROPOSED SCHEME IR-20

DWN BY	SCALE	CHK BY	STATUS	DATE
AH	NTS	AH	-	AUG 21
PROJ No.	REL No.	IS No.	DWG No.	REV No.
12073	05	03	03	-

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APPENDIX 03

DAYLIGHT & SUNLIGHT RESULTS

PROJECT NO: 12703
PROJECT NAME: FORTESS GROVE
10/08/2021

DAYLIGHT AND SUNLIGHT
EXISTING VS. PROPOSED
RELEASE 05, ISSUE 03

ITERATION NO.: IR20
ARCHITECT: BGY

						VSC (WINDOW)				VSC (ROOM)				NSL				APSH (WINDOW)						APSH (ROOM)					
FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM NOTES	WINDOW	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS SQM	LOSS %	EX.		PR.		LOSS %		EX.		PR.		LOSS %	
																		ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER
1 FORTESS GROVE																													
F00	R1	RESIDENTIAL	UNKNOWN		W1/F00	23.4	21.9	1.5	6.4%	23.8	21.7	2.1	8.8%	91.8	91.3	0.1	0.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			UNKNOWN		W2/F00	25.1	21.1	4	15.9%									N/A	N/A	N/A	N/A	N/A	N/A						
F01	R1	RESIDENTIAL	UNKNOWN		W1/F01	30.6	29	1.6	5.2%	30	27	3	10.0%	99.1	99.1	0.0	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			UNKNOWN		W2/F01	29.5	25.3	4.2	14.2%									N/A	N/A	N/A	N/A	N/A	N/A						
	R2	RESIDENTIAL	UNKNOWN		W3/F01	29.9	26.5	3.4	11.4%	29.9	26.5	3.4	11.4%	98	89.5	1.2	8.7%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19 FORTESS GROVE																													
F00	R1	RESIDENTIAL	UNKNOWN		W1/F00	23.7	23	0.7	3.0%	23.7	23	0.7	3.0%	50.2	47.7	0.5	5.0%	39	10	39	10	0.0%	0.0%	39	10	39	10	0.0%	0.0%
F01	R1	RESIDENTIAL	UNKNOWN		W1/F01	29.2	26.8	2.4	8.2%	44.6	41.1	3.5	7.8%	99.3	99.3	0.0	0.0%	44	13	44	13	0.0%	0.0%	68	21	68	21	0.0%	0.0%
			UNKNOWN		W2/F01 / INC (2)	80.3	76.2	4.1	5.1%									66	21	66	21	0.0%	0.0%						
			UNKNOWN		W3/F01 / INC (2)	79.3	71.5	7.8	9.8%									68	21	68	21	0.0%	0.0%						
	R2	RESIDENTIAL	UNKNOWN		W4/F01	29	27.4	1.6	5.5%	37	35.4	1.6	4.3%	99.1	99	0.0	0.1%	34	7	34	7	0.0%	0.0%	60	14	60	14	0.0%	0.0%
			UNKNOWN		W5/F01 / INC (2)	79	77	2	2.5%									60	14	60	14	0.0%	0.0%						
21 FORTESS GROVE																													
F00	R1	RESIDENTIAL	UNKNOWN		W1/F00	26.4	24.8	1.6	6.1%	26.4	24.8	1.6	6.1%	85.7	64	3.0	25.3%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R2	RESIDENTIAL	UNKNOWN		W2/F00	27.3	25.1	2.2	8.1%	27.3	25.1	2.2	8.1%	86.9	63.9	5.1	26.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F01	R1	RESIDENTIAL	UNKNOWN		W1/F01	31.6	28.9	2.7	8.5%	31.6	28.9	2.7	8.5%	90.6	63.5	3.8	29.9%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R2	RESIDENTIAL	UNKNOWN		W2/F01	31.3	29.1	2.2	7.0%	29.7	27.9	1.8	6.1%	89.3	86.7	0.6	3.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			UNKNOWN		W3/F01	24.8	24.3	0.5	2.0%									N/A	N/A	N/A	N/A	N/A	N/A						
22 FORTESS GROVE																													
F00	R1	RESIDENTIAL	KITCHEN (1)		W1/F00	26	23.3	2.7	10.4%	26	23.3	2.7	10.4%	93.5	88.3	0.3	5.6%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R2	RESIDENTIAL	LIVING ROOM		W2/F00	25.7	24.7	1	3.9%	25.7	24.7	1	3.9%	75.7	66.1	1.7	12.7%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-12 ELEANOR HOUSE																													
F01	R2	RESIDENTIAL	KITCHEN (1)		W2/F01 (dup.)	1	1	0	0.0%	1	1	0	0.0%	30.3	30.3	0.0	0.0%	3	1	3	1	0.0%	0.0%	3	1	3	1	0.0%	0.0%
	R3	RESIDENTIAL	KITCHEN (1)		W3/F01	4.9	4.7	0.2	4.1%	4.9	4.7	0.2	4.1%	86.4	86.4	0.0	0.0%	11	6	11	6	0.0%	0.0%	11	6	11	6	0.0%	0.0%
	R5	RESIDENTIAL	KITCHEN (1)		W5/F01	6.5	6.1	0.4	6.2%	6.5	6.1	0.4	6.2%	89.7	89.7	0.0	0.0%	12	6	12	6	0.0%	0.0%	12	6	12	6	0.0%	0.0%
	R7	RESIDENTIAL	KITCHEN (1)		W7/F01	7.3	6.7	0.6	8.2%	7.3	6.7	0.6	8.2%	90	90	0.0	0.0%	12	6	12	6	0.0%	0.0%	12	6	12	6	0.0%	0.0%
	R9	RESIDENTIAL	KITCHEN (1)		W9/F01	8.4	7.4	1	11.9%	8.4	7.4	1	11.9%	90.1	90.1	0.0	0.0%	14	7	13	6	7.1%	14.3%	14	7	13	6	7.1%	14.3%

(1) KITCHEN SMALLER THAN 13m2

(2) INC\HZ = SKY COMPONENT (INCLINED\HORIZONTAL WINDOWS)

(3) SINGLE ASPECT ROOM DEEPER THAN 5m

						VSC (WINDOW)				VSC (ROOM)				NSL				APSH (WINDOW)						APSH (ROOM)					
FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM NOTES	WINDOW	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS SQM	LOSS %	EX.		PR.		LOSS %		EX.		PR.		LOSS %	
																		ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER
1-12 ELEANOR HOUSE (CONTINUED)																													
F02	R3	RESIDENTIAL	BEDROOM		W2/F01	17.9	17.8	0.1	0.6%	17.9	17.8	0.1	0.6%	93.4	93.4	0.0	0.0%	47	18	47	18	0.0%	0.0%	47	18	47	18	0.0%	0.0%
	R5	RESIDENTIAL	BEDROOM		W4/F01	29.2	29	0.2	0.7%	29.2	29	0.2	0.7%	99	99	0.0	0.0%	57	18	57	18	0.0%	0.0%	57	18	57	18	0.0%	0.0%
	R7	RESIDENTIAL	BEDROOM		W6/F01	33.4	33.1	0.3	0.9%	33.4	33.1	0.3	0.9%	99.4	99.4	0.0	0.0%	57	18	57	18	0.0%	0.0%	57	18	57	18	0.0%	0.0%
	R9	RESIDENTIAL	BEDROOM		W8/F01	34.7	34.2	0.5	1.4%	34.7	34.2	0.5	1.4%	99.4	99.4	0.0	0.0%	57	18	57	18	0.0%	0.0%	57	18	57	18	0.0%	0.0%
	R11	RESIDENTIAL	BEDROOM		W10/F01	35.5	34.8	0.7	2.0%	35.5	34.8	0.7	2.0%	99.6	99.6	0.0	0.0%	57	18	56	17	1.8%	5.6%	57	18	56	17	1.8%	5.6%
F03	R1	RESIDENTIAL	KITCHEN (1)		W2/F02	1.2	1.2	0	0.0%	1.2	1.2	0	0.0%	34.7	34.7	0.0	0.0%	1	1	1	1	0.0%	0.0%	1	1	1	1	0.0%	0.0%
	R2	RESIDENTIAL	KITCHEN (1)		W3/F02	10.1	10.1	0	0.0%	10.1	10.1	0	0.0%	89.1	89.1	0.0	0.0%	15	9	15	9	0.0%	0.0%	15	9	15	9	0.0%	0.0%
	R5	RESIDENTIAL	KITCHEN (1)		W5/F02	12.2	12.2	0	0.0%	12.2	12.2	0	0.0%	90.1	90.1	0.0	0.0%	19	9	19	9	0.0%	0.0%	19	9	19	9	0.0%	0.0%
	R7	RESIDENTIAL	KITCHEN (1)		W7/F02	12.7	12.7	0	0.0%	12.7	12.7	0	0.0%	90.1	90.1	0.0	0.0%	19	9	19	9	0.0%	0.0%	19	9	19	9	0.0%	0.0%
	R9	RESIDENTIAL	KITCHEN (1)		W9/F02	13	13	0	0.0%	13	13	0	0.0%	90.1	90.1	0.0	0.0%	19	9	19	9	0.0%	0.0%	19	9	19	9	0.0%	0.0%
F04	R1	RESIDENTIAL	BEDROOM		W1/F03	33.5	33.5	0	0.0%	33.5	33.5	0	0.0%	98.7	98.7	0.0	0.0%	59	20	59	20	0.0%	0.0%	59	20	59	20	0.0%	0.0%
	R3	RESIDENTIAL	BEDROOM		W3/F03	39	39	0	0.0%	39	39	0	0.0%	99.4	99.4	0.0	0.0%	60	20	60	20	0.0%	0.0%	60	20	60	20	0.0%	0.0%
	R5	RESIDENTIAL	BEDROOM		W5/F03	39.1	39.1	0	0.0%	39.1	39.1	0	0.0%	99.4	99.4	0.0	0.0%	60	20	60	20	0.0%	0.0%	60	20	60	20	0.0%	0.0%
	R7	RESIDENTIAL	BEDROOM		W7/F03	39.2	39.2	0	0.0%	39.2	39.2	0	0.0%	99.4	99.4	0.0	0.0%	60	20	60	20	0.0%	0.0%	60	20	60	20	0.0%	0.0%
	R9	RESIDENTIAL	BEDROOM		W9/F03	39.2	39.2	0	0.0%	39.2	39.2	0	0.0%	99.6	99.6	0.0	0.0%	60	20	60	20	0.0%	0.0%	60	20	60	20	0.0%	0.0%
28-34 PIANO WORKS																													
F00	R1	RESIDENTIAL	UNKNOWN		W1/F00	13.8	13.7	0.1	0.7%	16	15.5	0.5	3.1%	93.2	93.2	0.0	0.0%	11	0	11	0	0.0%	0.0%	17	0	16	0	5.9%	0.0%
			UNKNOWN		W2/F00 (dup.)	17	16.3	0.7	4.1%									16	0	13	0	18.8%	0.0%						
	R2	RESIDENTIAL	UNKNOWN		W2/F00	17	16.3	0.7	4.1%	17	16.3	0.7	4.1%	78.2	78.2	0.0	0.0%	16	0	13	0	18.8%	0.0%	16	0	13	0	18.8%	0.0%
	R3	RESIDENTIAL	UNKNOWN		W3/F00 (dup.)	5.9	5.9	0	0.0%	5.9	5.9	0	0.0%	63.1	63.1	0.0	0.0%	7	0	7	0	0.0%	0.0%	7	0	7	0	0.0%	0.0%
	R4	RESIDENTIAL	UNKNOWN		W3/F00	5.9	5.9	0	0.0%	5.9	5.9	0	0.0%	99	99	0.0	0.0%	7	0	7	0	0.0%	0.0%	7	0	7	0	0.0%	0.0%
	R5	RESIDENTIAL	UNKNOWN		W4/F00	2.8	2.8	0	0.0%	7.1	7	0.1	1.4%	85.3	85	0.1	0.3%	5	2	5	2	N/A	N/A	26	5	26	5	0.0%	0.0%
			UNKNOWN		W5/F00	19.5	19.3	0.2	1.0%									26	5	26	5	0.0%	0.0%						
F01	R1	RESIDENTIAL	BEDROOM		W1/F01	16.7	16.7	0	0.0%	20.9	20.5	0.4	1.9%	99	99	0.0	0.0%	12	3	11	3	N/A	N/A	34	11	33	10	2.9%	9.1%
			BEDROOM		W2/F01	24	23.4	0.6	2.5%									34	11	33	10	2.9%	9.1%						
	R6	RESIDENTIAL	LKD		W5/F01	17.7	17.6	0.1	0.6%	17.7	17.6	0.1	0.6%	54.8	54.8	0.0	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R7	RESIDENTIAL	BEDROOM		W6/F01	33.1	32.3	0.8	2.4%	33.1	32.3	0.8	2.4%	96.1	96.1	0.0	0.0%	33	6	33	6	0.0%	0.0%	33	6	33	6	0.0%	0.0%
	R9	RESIDENTIAL	LKD		W7/F01	34.4	34.4	0	0.0%	28	27.9	0.1	0.4%	99.9	99.9	0.0	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			LKD		W8/F01	33.8	33.8	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			LKD		W9/F01	24.1	24.1	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						

(1) KITCHEN SMALLER THAN 13m2

(2) INC\HZ = SKY COMPONENT (INCLINED\HORIZONTAL WINDOWS)

(3) SINGLE ASPECT ROOM DEEPER THAN 5m

						VSC (WINDOW)				VSC (ROOM)				NSL				APSH (WINDOW)						APSH (ROOM)					
FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM NOTES	WINDOW	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS SQM	LOSS %	EX.		PR.		LOSS %		EX.		PR.		LOSS %	
																		ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER
28-34 PIANO WORKS (CONTINUED)																													
			LKD		W10/F01	19.6	19.5	0.1	0.5%									N/A	N/A	N/A	N/A	N/A	N/A						
F02	R1	RESIDENTIAL	BEDROOM		W1/F02	22	22	0	0.0%	24.7	24.7	0	0.0%	99.5	99.5	0.0	0.0%	14	0	14	0	0.0%	0.0%	37	12	37	12	0.0%	0.0%
			BEDROOM		W2/F02	26.7	26.7	0	0.0%									36	12	36	12	0.0%	0.0%						
	R6	RESIDENTIAL	BEDROOM		W7/F02	34.7	34.7	0	0.0%	32.4	32.4	0	0.0%	98.4	98.4	0.0	0.0%	41	7	41	7	0.0%	0.0%	42	7	42	7	0.0%	0.0%
			BEDROOM		W8/F02	30.2	30.2	0	0.0%									27	1	27	1	0.0%	0.0%						
	R7	RESIDENTIAL	LKD		W9/F02	37.1	37.1	0	0.0%	32.7	32.7	0	0.0%	99.9	99.9	0.0	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			LKD		W10/F02	36.9	36.9	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			LKD		W11/F02	36.7	36.7	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			LKD		W12/F02	28.3	28.3	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			LKD		W13/F02	24.3	24.3	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
F03	R1	RESIDENTIAL	BEDROOM		W1/F03	31.4	31.4	0	0.0%	35.4	35.4	0	0.0%	99.5	99.5	0.0	0.0%	13	0	13	0	0.0%	0.0%	53	15	53	15	0.0%	0.0%
			BEDROOM		W2/F03	38.4	38.4	0	0.0%									52	15	52	15	0.0%	0.0%						
	R6	RESIDENTIAL	BEDROOM		W7/F03	38.1	38.1	0	0.0%	36.9	36.9	0	0.0%	98.8	98.8	0.0	0.0%	52	15	52	15	0.0%	0.0%	52	15	52	15	0.0%	0.0%
			BEDROOM		W8/F03	35.7	35.7	0	0.0%									40	7	40	7	0.0%	0.0%						
	R7	RESIDENTIAL	LKD		W10/F03	38.6	38.6	0	0.0%	36.1	36.1	0	0.0%	100	100	0.0	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			LKD		W11/F03	38.6	38.6	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			LKD		W12/F03	34.6	34.6	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			LKD		W13/F03	32.5	32.5	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
F04	R8	RESIDENTIAL	LKD		W1/F04 / INC (2)	54.6	54.6	0	0.0%	55.8	55.8	0	0.0%	99.1	99.1	0.0	0.0%	55	16	55	16	0.0%	0.0%	100	30	100	30	0.0%	0.0%
			LKD		W2/F04 / INC (2)	54.6	54.6	0	0.0%									55	16	55	16	0.0%	0.0%						
			LKD		W3/F04 / INC (2)	56.1	56.1	0	0.0%									22	1	22	1	0.0%	0.0%						
			LKD		W4/F04 / INC (2)	56.1	56.1	0	0.0%									22	1	22	1	0.0%	0.0%						
			LKD		W5/F04 / INC (2)	56.1	56.1	0	0.0%									22	1	22	1	0.0%	0.0%						
			LKD		W6/F04 / INC (2)	56.9	56.9	0	0.0%									61	18	61	18	0.0%	0.0%						
	R11	RESIDENTIAL	BEDROOM		W10/F04 / INC (2)	55.1	55.1	0	0.0%	55.8	55.8	0	0.0%	97	97	0.0	0.0%	60	17	60	17	0.0%	0.0%	60	17	60	17	0.0%	0.0%
			BEDROOM		W11/F04 / INC (2)	56.5	56.5	0	0.0%									56	15	56	15	0.0%	0.0%						
1 RAILEY MEWS																													
F00	R2 (3)	RESIDENTIAL	BEDROOM		W1/F00	27.6	27.6	0	0.0%	28.4	28.4	0	0.0%	99.2	99.2	0.0	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			BEDROOM		W2/F00	28.9	28.9	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
	R3	RESIDENTIAL	BEDROOM		W4/F00	25	25	0	0.0%	22.9	22.9	0	0.0%	99.4	99.4	0.0	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) KITCHEN SMALLER THAN 13m2

(2) INC\HZ = SKY COMPONENT (INCLINED\HORIZONTAL WINDOWS)

(3) SINGLE ASPECT ROOM DEEPER THAN 5m

						VSC (WINDOW)				VSC (ROOM)				NSL				APSH (WINDOW)						APSH (ROOM)					
FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM NOTES	WINDOW	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS SQM	LOSS %	EX.		PR.		LOSS %		EX.		PR.		LOSS %	
																		ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER
1 RAILEY MEWS (CONTINUED)																													
			BEDROOM		W5/F00	19.3	19.3	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
	R4	RESIDENTIAL	BEDROOM		W6/F00	24	19.1	4.9	20.4%	37.5	28	9.5	25.3%	99.2	98.4	0.1	0.8%	54	15	45	13	16.7%	13.3%	74	23	47	15	36.5%	34.8%
			BEDROOM		W8/F00 / INC (2)	60.6	43.2	17.4	28.7%									69	23	42	15	39.1%	34.8%						
	R5	RESIDENTIAL	BEDROOM		W7/F00	31.6	29.7	1.9	6.0%	31.6	29.7	1.9	6.0%	90.5	87.8	0.2	3.0%	70	19	65	19	7.1%	0.0%	70	19	65	19	7.1%	0.0%
F01	R1	RESIDENTIAL	BEDROOM		W1/F01	32.2	32.2	0	0.0%	32.5	32.4	0.1	0.3%	96.7	96.7	0.0	0.0%	5	0	5	0	0.0%	0.0%	82	24	81	23	1.2%	4.2%
			BEDROOM		W12/F01	32.5	32.3	0.2	0.6%									75	23	75	23	0.0%	0.0%						
			BEDROOM		W13/F01	34	33.7	0.3	0.9%									76	23	75	22	1.3%	4.3%						
	R2	RESIDENTIAL	LIVING ROOM		W2/F01	32.6	32.6	0	0.0%	56.1	56.1	0	0.0%	100	100	0.0	0.0%	5	0	5	0	0.0%	0.0%	97	28	97	28	0.0%	0.0%
			LIVING ROOM		W3/F01	31.8	31.8	0	0.0%									2	0	2	0	0.0%	0.0%						
			LIVING ROOM		W4/F01	25.2	25.2	0	0.0%									5	0	5	0	0.0%	0.0%						
			LIVING ROOM		W14/F01 / INC (2)	84.5	84.5	0	0.0%									98	0	98	0	0.0%	0.0%						
			LIVING ROOM		W15/F01 / INC (2)	87.5	87.4	0.1	0.1%									96	28	96	28	0.0%	0.0%						
	R3	RESIDENTIAL	LKD		W5/F01	35.6	32.4	3.2	9.0%	41.2	36.6	4.6	11.2%	99.8	99.7	0.0	0.1%	81	25	71	21	12.3%	16.0%	95	27	90	25	5.3%	7.4%
			LKD		W6/F01	35	21.4	13.6	38.9%									78	24	47	15	39.7%	37.5%						
			LKD		W7/F01	34.6	26.3	8.3	24.0%									75	24	56	20	25.3%	16.7%						
			LKD		W8/F01	24.5	19	5.5	22.4%									46	14	31	10	32.6%	28.6%						
			LKD		W9/F01	23.8	23.8	0	0.0%									45	12	45	12	0.0%	0.0%						
			LKD		W10/F01	22.5	22.5	0	0.0%									49	15	49	15	0.0%	0.0%						
			LKD		W16/F01 / INC (2)	96.3	92.5	3.8	3.9%									94	27	81	22	13.8%	18.5%						
			LKD		W17/F01 / INC (2)	96.1	94.8	1.3	1.4%									94	27	89	25	5.3%	7.4%						
41-49 LEVERTON STREET																													
F00	R1	RESIDENTIAL	UNKNOWN		W3/F00	32.2	30.6	1.6	5.0%	32.2	30.6	1.6	5.0%	91.8	78.4	1.7	14.6%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R2	RESIDENTIAL	UNKNOWN		W4/F00	28.2	26	2.2	7.8%	22.8	22	0.8	3.5%	97.9	97	0.1	1.0%	56	11	49	10	7.5%	9.1%	50	13	48	13	4.0%	0.0%
			UNKNOWN		W12/F00	22.2	22.1	0.1	0.5%									48	12	46	12	4.2%	0.0%						
			UNKNOWN		W13/F00	19.1	19	0.1	0.5%									43	11	42	11	2.3%	0.0%						
	R3	RESIDENTIAL	UNKNOWN		W5/F00	29.8	27.4	2.4	8.1%	17.5	17.3	0.2	1.1%	94.6	87.9	0.7	7.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			UNKNOWN		W8/F00	12.2	12.2	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			UNKNOWN		W9/F00	12.5	12.5	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			UNKNOWN		W10/F00	18.3	18.3	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						
			UNKNOWN		W11/F00	19.5	19.5	0	0.0%									N/A	N/A	N/A	N/A	N/A	N/A						

(1) KITCHEN SMALLER THAN 13m2

(2) INC\HZ = SKY COMPONENT (INCLINED\HORIZONTAL WINDOWS)

(3) SINGLE ASPECT ROOM DEEPER THAN 5m

						VSC (WINDOW)				VSC (ROOM)				NSL				APSH (WINDOW)						APSH (ROOM)					
FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM NOTES	WINDOW	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS	LOSS %	EX. %	PR. %	LOSS SQM	LOSS %	EX.		PR.		LOSS %		EX.		PR.		LOSS %	
																		ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER
41-49 LEVERTON STREET (CONTINUED)																													
	R4	RESIDENTIAL	UNKNOWN		W6/F00	18.9	17.8	1.1	5.8%	18.9	17.8	1.1	5.8%	88.2	88.1	0.0	0.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R5	RESIDENTIAL	UNKNOWN		W7/F00	22.8	21.9	0.9	3.9%	22.8	21.9	0.9	3.9%	59.2	50.7	0.9	14.3%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) KITCHEN SMALLER THAN 13m2

(2) INC\HZ = SKY COMPONENT (INCLINED\HORIZONTAL WINDOWS)

(3) SINGLE ASPECT ROOM DEEPER THAN 5m

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