



DAYLIGHT, SUNLIGHT & OVERSHADOWING

Prestwich Village

The Prestwich Regeneration LLP

13 December 2023

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1 EXECUTIVE SUMMARY

GIA have assessed the scheme (the “Proposed Development”) for Prestwich Village to understand the potential changes in light to the relevant sensitive receptors.

- 1.1 GIA have been instructed by The Prestwich Regeneration LLP to undertake detailed technical assessments to understand the potential daylight and sunlight changes that the proposed redevelopment of Prestwich Village, will have upon the surrounding residential properties.
- 1.2 The surrounding daylight and sunlight review within this report considers residential properties only as they are recognised by the Building Research Establishment (BRE 2022) as having the highest expectation for natural light when compared to other uses, such as commercial. The criteria suggested within the BRE have been used to understand and compare the existing levels of light, and the light achieved subsequent to the construction of the Proposed Development..
- 1.3 We have completed technical analyses using the methodologies set out within the Building Research Establishment Guidelines entitled ‘Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2022)’.
- 1.4 It is inevitable when constructing buildings in an urban environment that alterations in daylight and sunlight to surrounding properties can occur. It is well-established and accepted that the BRE Guidelines, which set out the numerical benchmark for daylight and sunlight assessments, are predicated on a relatively low-rise suburban environment. The Planning Practice Guidance (PPG) – Making Effective Use of Land, updated on 20 July 2021, Paragraph: 007 Reference ID: 66-007-20190722 states that:
- 1.5 *“All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design. For example, in areas of high-density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings.”*
- 1.6 This is supported by paragraph F5 in Appendix F of the BRE guidelines which states:
- 1.7 *“...where an existing building has windows that are unusually close to the site boundary and taking more than their fair share of light...To ensure that new development matches the height and proportions of existing buildings, the VSC, daylight distribution, 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”*
- 1.8 Compared to the existing baseline, the analysis results show that the construction of the Proposed Development will result in either BRE compliant or isolated minor changes in daylight and sunlight amenity to the majority of the surrounding residential properties. When assessed against a more contextual baseline, which is in accordance with the BRE guidelines, the effect upon The Radius is the same.
- 1.9 In terms of overshadowing to surrounding areas of amenity space, namely the gardens serving the Highfield Road/Place properties, whilst the construction of the Proposed Development will result in some small additional shadow, these are all fully BRE compliant, which means that the users of those gardens are unlikely to notice any change in their sunlight amenity.
- 1.10 The 8 areas of amenity space within the Proposed Development, which are described in detail in section 7 of this report, will all be able to benefit from more than 2 hours sunlight over more than 50% of their individual areas. Therefore, in accordance with the BRE guidelines they will all be adequately sunlit throughout the year.
- 1.11 In view of the very limited number of impacts to surrounding properties and areas of amenity space, and with due consideration to the flexibility with which the BRE guidelines were intended to be used, the Proposed Development represents a very good scheme proposal for the Site.
- 1.12 NB – The Proposed Development has changed since the modelling and analysis which informed this report was completed as the height of the Travel Hub has decreased by 1 storey. This change will only improve the effects described in this report but will not materially alter the conclusions reached.

2 THE SITE

GIA have been instructed to review and advise on the daylight, sunlight and overshadowing impacts associated with the implementation of the proposed redevelopment of Prestwich Village.

THE SITE

- 2.1 The site is bounded by Fairfax Road to the north and south, Rectory Lane to the east and south and Bury New Road to the west.
- 2.2 Figure 01 below illustrates the existing site. Further drawings are enclosed at Appendix 02 of this report.



Figure 01: 3D model of the site and Existing Property

PROPOSED DEVELOPMENT

- 2.3 Our analysis is based on the proposed scheme massing models produced by Jon Matthews Architects received in November 2023.
- 2.4 The proposed development is a 'Hybrid application comprising: Full planning application proposing demolition of existing buildings and structures and the erection of a phased mixed use development including a Community Hub comprising flexible uses including library, offices, medical or health services (Use Classes F1 (a-f), F2(b), E(c), E(e), E(g)) and retail uses (Use Classes E(a), E(b) F2(a)) and Sui Generis (hot food takeaway and bar), a new Market Hall (Use Classes E(a), E(b) and Sui Generis (hot food takeaway and bar)), a Commercial Building comprising flexible uses including retail,

offices, gymnasium (Use Classes E(a), E(b), E(c), E(d), E(g), F2(a), a Travel Hub comprising car parking and cycle parking (Sui Generis), a public square and public realm and associated landscaping, car parking provision, cycle storage and other associated works; and part Outline planning application (with all matters reserved) proposing a phased residential led mixed use development comprising residential (Use Class C3), flexible commercial, business, service, local community and learning uses (Use Classes E, F) and Sui Generis (hot food takeaway and bar), engineering works to Rectory Lane, new public realm, associated landscaping, car parking provision, cycle storage and other associated works'.

- 2.5 GIA's understanding of the Proposed Development is illustrated in Figure 02 and further drawings are enclosed at Appendix 02.



Figure 02: 3D Perspective View of the Proposed Development

3 POLICY & THE WIDER CONTEXT

3.1 Below we have detailed sections from the following documents as they are, in our opinion, the most pertinent in relation to daylight and sunlight matters and how we have approached the effects of the Proposed Development on the relevant neighbouring properties:

- National Planning Policy Framework (2023);
- National Planning Practice Guidance (updated '2021); and
- Greater Manchester Combined Authority (GMCA) Places for Everyone
- Bury Unitary Development Plan

NATIONAL PLANNING POLICY FRAMEWORK (2023)

3.2 The NPPF (September 2023) states that local planning authorities should refuse applications which they consider fail to make efficient use of land. The discussion in relation to daylight and sunlight highlights the Government's recognition that increased flexibility is required in response to the requirement for higher density development:

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

NATIONAL PLANNING PRACTICE GUIDANCE (JUNE 2021)

- 3.3 In light of the update to the Government's Planning Practice Guidance, GIA have considered the relevant paragraphs which relate to daylight and sunlight.
- 3.4 Paragraph 6 of the NPPG (Ref ID: 66-006-20190722) acknowledges that new development may cause an impact on daylight and sunlight levels enjoyed by neighbouring occupiers. It requires local authorities to assess whether the impact to neighbouring occupiers would be "unreasonable".
- 3.5 Paragraph 7 (Ref ID: 66-007-20190722) refers to the wider planning considerations in assessing appropriate levels of daylight and sunlight. The test is whether living standards are 'acceptable' and recognises that acceptability will depend to some extent on context.

GMCA PLACES FOR EVERYONE

- 3.6 Policy JP-P1 Sustainable Places - We aim to become one of the most liveable city regions in the world, consisting of a series of beautiful, healthy and varied places, each having the following key attributes that all development, wherever appropriate, should be consistent with...Comfortable and inviting, with indoor and outdoor environments...Addressing microclimate issues such as sunlight, indoor air quality, overheating, shade, wind and shelter

BURY UNITARY DEVELOPMENT PLAN

- 3.7 Policy H2/1 - the form of New Residential Development - This policy is intended to establish a basis for assessing the impact of proposals for new residential development upon the surrounding environment. Such development will be assessed in terms of its relationship to its setting and by reference to the quality and character of the surrounding environment. In addition, it is essential that reasonable standards of privacy and residential amenity are maintained for neighbouring residents. In this way it is hoped that it will be possible to balance the continued demand for housing with the need to improve the quality of life for the Borough's residents.

4 BRE GUIDELINES & CONTEXT METHODOLOGY

The Building Research Establishment (BRE) have set out in their handbook '*Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (BR209, 2022)*', guidelines and methodology for the measurement and assessment of daylight and sunlight.

BUILDING RESEARCH ESTABLISHMENT GUIDELINES (BR209, 2022)

- 4.1 The BRE Guidelines note that the document is intended to be used in conjunction with the interior daylight recommendations found within the British Standard BS EN 17037 Daylighting in Buildings and the Chartered Institution of Building Services Engineers (CIBSE) LG 10 Daylighting – a guide for designers.
- 4.2 The BRE handbook *"is intended for use in 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."*
- 4.3 The BRE Guidelines provides two methodologies for daylight assessment of neighbouring properties, namely;
- The Vertical Sky Component (VSC); and
 - The No Sky Line (NSL).
- 4.4 There is one methodology provided by the BRE Guidelines for sunlight assessment, denoted as Annual Probable Sunlight Hours (APSH).
- 4.5 The methodology for overshadowing assessment is Sun Hours on Ground (SHOG).
- 4.6 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 planning and urban design matters to consider other than daylight and sunlight.
- 4.7 Appendix O1 of this report elaborates on the mechanics of each of the above assessment criteria, explains the appropriateness of their use and the parameters of each specific recommendation.

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

Method	BRE Criteria
VSC	A window may be adversely affected if its VSC measured at the centre of the window is less than 27% and less than 0.8 times its former value.
NSL	A room may be adversely affected if the daylight distribution (NSL) is reduced beyond 0.8 times its existing area.
APSH	A window may be adversely affected if a point at the centre of the window receives for the whole year, less than 25% of the APSH including at least 5% of the APSH during the winter months (21 September to 21 March) and less than 0.8 times its former sunlight hours during either period, and for existing neighbouring buildings, if there is a reduction in total APSH which is greater than 4%.
SHOG	An amenity area may be adversely affected if less than 50% of its area receives less than 2 hours of direct sunlight on 21st March and less than 0.8 times its former value.

- 4.9 When considering the significance of daylight, sunlight and overshadowing effects, professional judgement has been used. Consideration has been given to the proportion of rooms/windows/amenity areas affected, as well as the percentage alterations, absolute changes, retained daylight and sunlight levels and sensitivity of the receptor. This is in addition to any other relevant factors, including mitigating factors such as location and nature of the development, balconies, overhangs or design features which may also affect the determination of assigning the criteria.

5 ALTERNATIVE BASELINE



Figure 03: Alternative baseline for The Radius



Figure 04: Alternative baseline for The Radius

- 5.1 The BRE acknowledges that the published values are purely advisory, and different targets may be used based on the special requirements of the proposed development or its location. The proposed development site is currently undeveloped compared to its surroundings. It would therefore be unreasonable for the existing surrounding buildings to maintain the same levels of daylight and sunlight that they currently receive, and these represent the type of special requirements contemplated by the BRE Guide.
- 5.2 Appendix F of the BRE Guide – Setting Alternative Values for Skylight and Sunlight Access, provides alternative targets for developments in such instances. Paragraph F1 of the appendix states: *“Sections 2.1, 2.2 and 2.3 give numerical target values in assessing how much light from the sky is blocked by obstructing buildings. These values are purely advisory and different targets may be used based on the special requirements of the proposed development or its location. Such alternative targets may be generated from the layout dimensions of existing development, or they may be derived from considering the internal layout and daylighting needs of the proposed development itself.”*

- 5.3 Paragraph F5 states *“A similar approach may be adopted in cases where an existing building has windows that are unusually close to the site boundary and taking more than their fair share of light...To ensure that new development matches the height and proportions of existing buildings, the VSC, daylight distribution, 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.”*
- 5.4 As such, instead of the existing building on the site, we have used a building that matches the same height and massing as The Radius and located it the same distance from the boundary. This provides a more contextual approach to the analysis, and fully considers the specific site characteristics, history and location.
- 5.5 This assessment allows us to use the alternative benchmarks anticipated by the BRE guide to compare the impacts caused by a building that mirrors the massing of The Radius and the proposed development.

6 DAYLIGHT & SUNLIGHT IMPACTS TO NEIGHBOURING PROPERTIES

This section details the daylight and sunlight impacts in relation to the relevant properties neighbouring the Site.

- 6.1 We have created a three-dimensional computer model of the site and the surrounding properties to allow for a detailed daylight and sunlight assessment.
- 6.2 The daylight and sunlight review within this report considers existing residential properties only, as they are recognised by the Building Research Establishment (BRE 2022) as having the highest expectation for natural light when compared to other uses, such as commercial.
- 6.3 The benchmark condition of the site allows us to calculate the daylight and sunlight conditions within the neighbouring buildings. From this, we can then compare them with the conditions within these properties, assuming the current Proposed Development is in place.

RELEVANT SENSITIVE RECEPTORS

- 6.4 GIA have identified the following properties as relevant for daylight and sunlight assessment:

- The Radius
- 162-185 Rectory Green
- 150-161 Rectory Green
 - 464 Bury New Road
 - 451 Bury New Road
 - 440-444 Bury New Road
 - 477 Bury New Road

- 6.5 The properties which are highlighted in teal in paragraph 6.4 also have one or more rooms which are material for sunlight assessment on the basis that they are orientated to within 90 degrees of due south.
- 6.6 The location of the above properties relevant to the Site can be seen on the drawings within Appendix 02.
- 6.7 GIA have also undertaken preliminary analysis of the properties along Highfield Road, whose rear elevations face the site using the 25 degree section methodology outlined within the BRE guidelines. This was to determine whether they have potential to be impacted by the Proposed Development.

- 6.8 This BRE recommended assessment subtends a 25 degree angle from the centre of the lowest site facing window in order to establish whether the Proposed Development falls above or beneath it. Detailed analysis is only required if the Proposed Development protrudes through that 25 degree section. If it falls within it, the diffuse skylight of the property is unlikely to be noticeably affected.
- 6.9 Our assessment indicates that these properties are sufficient distance from the site for the proposed development to fall beneath the 25 degree line and so not be impacted. No further technical analysis of these properties is therefore required.
- 6.10 1-2 Highfield Place have also not been assessed as they do not directly face the site and so the diffuse skylight is unlikely to be noticeably affected.
- 6.11 The effect of the Proposed Development upon the daylight and, where relevant, sunlight amenity to the following properties will be fully BRE compliant. This means that the occupants of these properties will not notice a change in their levels of daylight and, where relevant, sunlight amenity. These properties are not discussed in any further detail within this report:
- 150-161 Rectory Green
 - 464 Bury New Road
 - 451 Bury New Road
 - 440-444 Bury New Road
 - 477 Bury New Road
- 6.12 Where potentially noticeable changes in daylight and sunlight occur, the impacts are fully discussed in the following sections. All results can be found in Appendix 03.

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THE RADIUS



Figure 05: The Radius

- 6.13 318 windows serving 150 site facing rooms have been modelled and analysed.

DAYLIGHT

- 6.14 Compared to the BRE permitted mirror baseline massing on the Site as shown in Section 5 above, any changes in daylight amenity (VSC & NSL) to 149 of the 150 rooms will be BRE compliant.
- 6.15 The VSC changes to both of the windows serving the remaining room (a bedroom) will only breach BRE guidance by very marginal 0.1% to 0.7%. The windows will retain reasonable in context VSC levels of 16.5% to 16.7% and the room will be fully BRE compliant in NSL terms and retain daylight distribution to 95.8% of the rooms area.
- 6.16 Compared the mirror baseline, 127 of the windows would see improvements in their levels of VSC and 79 rooms would see improvements in their levels of NSL with the Proposed Development in place. Figure 06 shows the windows and rooms assessed with the rooms that meet the VSC & NSL target shown in green, and the room that falls marginally short of the VSC target shown in orange.

SUNLIGHT

- 6.17 All 65 rooms material for consideration in sunlight terms will retain well in excess of the BRE recommended levels of sunlight amenity with the Proposed Development in place.



Figure 06: Location of the bedroom which marginally breaches BRE guidance with the Proposed Development in place

VERTICAL SKY COMPONENT					NO SKY LINE				
WINDOW					ROOM				
TOTAL	PASS	LOSS			TOTAL	PASS	LOSS		
		20-30	30-40	40+			20-30	30-40	40+
318	316	2	0	0	150	150	0	0	0

Table 01: VSC & NSL - The Radius

ANNUAL PROBABLE SUNLIGHT HOURS							
ROOM							
TOTAL	PASS	ANNUAL (%)			WINTER (%)		
		20-30	30-40	40+	20-30	30-40	40+
65	65	0	0	0	0	0	0

Table 02: APSH - The Radius

162-185 RECTORY GREEN

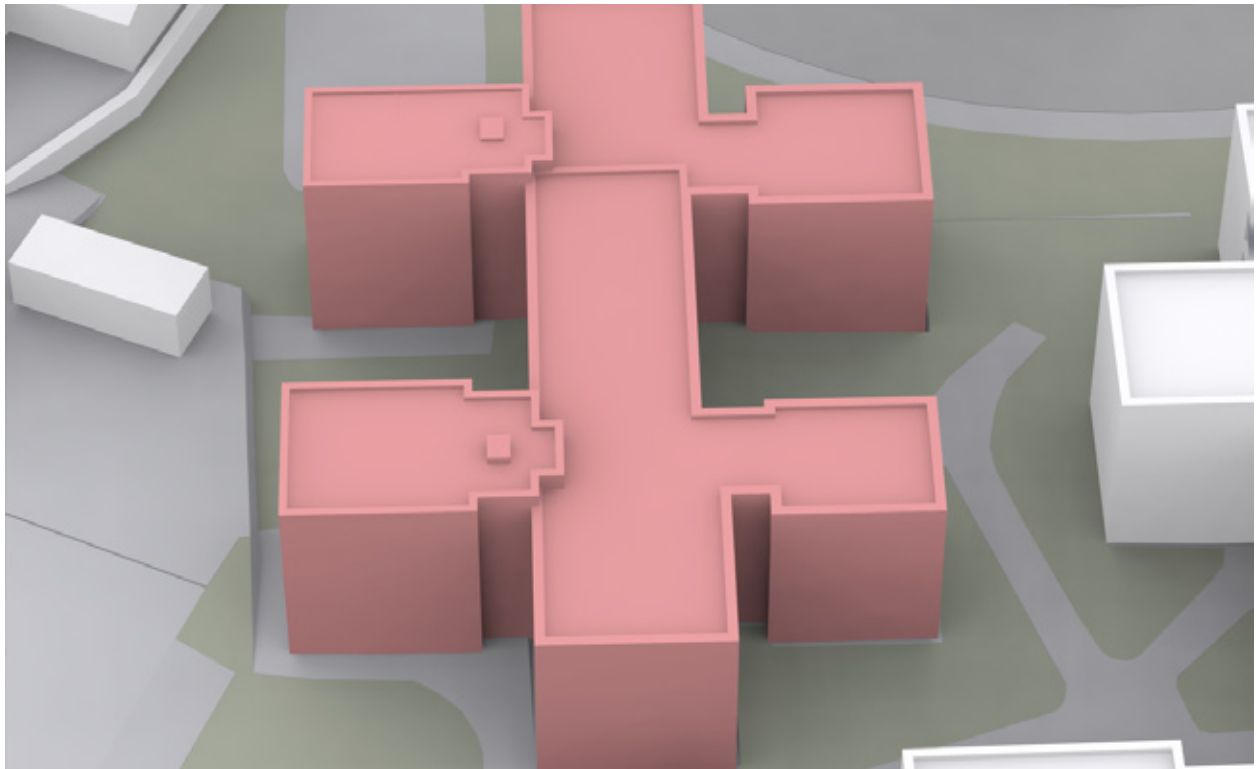


Figure 07: 162-185 Rectory Green

- 6.18 24 windows serving 24 site facing rooms have been modelled and analysed.

DAYLIGHT

- 6.19 Compared to the existing baseline massing on the Site, any changes in daylight amenity (VSC & NSL) to 23 of the 24 rooms will be BRE compliant.
- 6.20 The VSC change to the window serving the remaining room will breach BRE guidance by 4.7% but the window will retain a very reasonable in context 21% VSC, the room will be fully BRE compliant in NSL terms and retain daylight distribution to 82.2% of its area.
- 6.21 Figure 08 shows the windows and rooms assessed with the rooms that meet the VSC & NSL target shown in green, and the room that falls short of the VSC target shown in orange.

SUNLIGHT

- 6.22 All 6 rooms material for consideration in sunlight terms will retain well in excess of the BRE recommended levels of sunlight amenity with the Proposed Development in place.

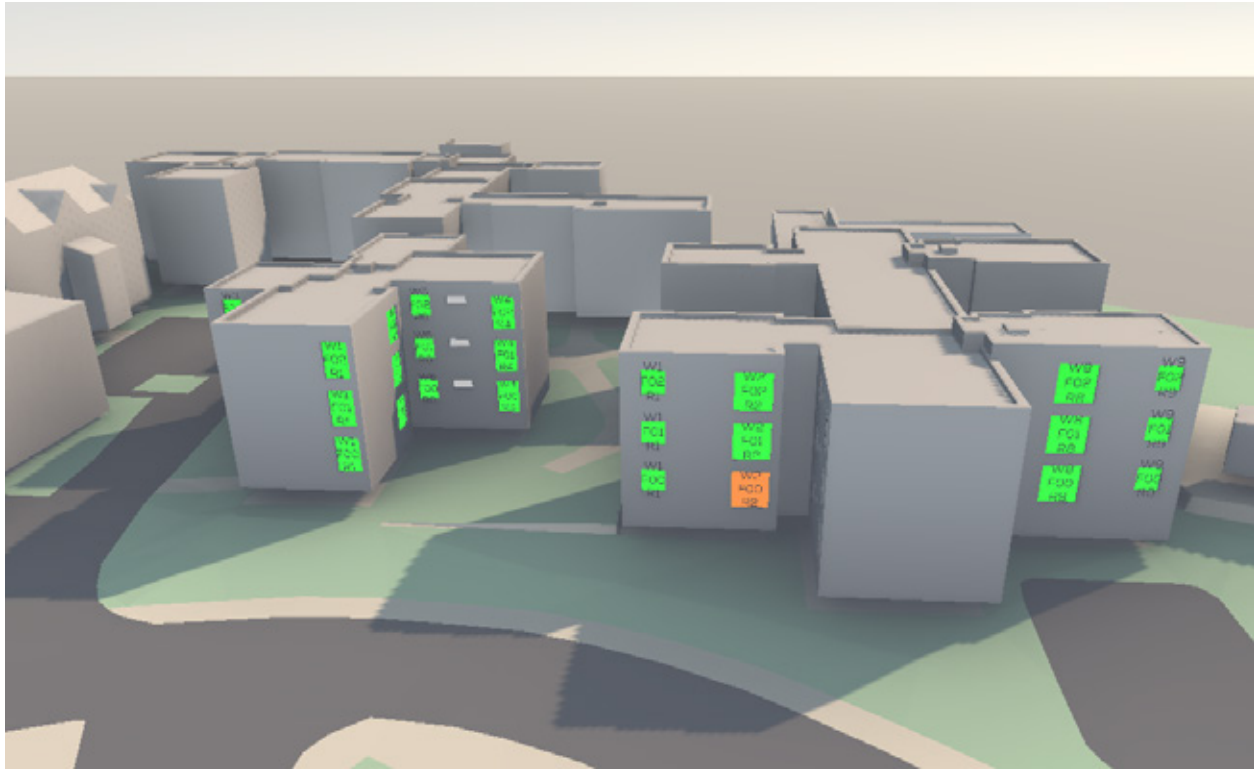


Figure 08: Location of the window which does not meet BRE guidance with the Proposed Development in place

RELATIVE IMPACT SUMMARY (EX. VS PR.)									
VERTICAL SKY COMPONENT					NO SKY LINE				
WINDOW		LOSS			ROOM				
TOTAL	PASS	20-30	30-40	40+	TOTAL	PASS	20%-30%	30%-40%	40%+
24	23	1	0	0	24	24	0	0	0

Table 03: VSC & NSL - 162-185 Rectory Green

ANNUAL PROBABLE SUNLIGHT HOURS							
ROOM							
TOTAL	PASS	ANNUAL (%)			WINTER (%)		
		20-30	30-40	40+	20-30	30-40	40+
6	6	0	0	0	0	0	0

Table 04: APSH - 162-185 Rectory Green

7 OVERSHADOWING

GIA have undertaken overshadowing (SHOG) assessments of the shadow cast by the Proposed Development upon the surrounding areas of existing amenity space and the areas of amenity space within the Prestwich Village proposal. The technical analysis has been undertaken in accordance with the BRE handbook.

SURROUNDING SHOG

7.1 Assessments have been completed upon the gardens serving the following surrounding properties:-

- 2 Highfield Road
- 4 Highfield Road
- 6 Highfield Road
- 8 Highfield Road
- 10 Highfield Road
- 12 Highfield Road
- 14 Highfield Road
- 16 Highfield Road
- 18 Highfield Road
- 20 Highfield Road
- 1 Highfield Place
- 2 Highfield Place

7.2 The location of these areas can be seen below and in Appendix 04 where the detailed analysis results can also be found.

7.3 In summary, whilst the construction of the Proposed Development will result in very small amounts of additional shadow falling upon some of the above areas of amenity space, the changes are all less than 1% of the existing levels and so are, therefore, fully BRE compliant.

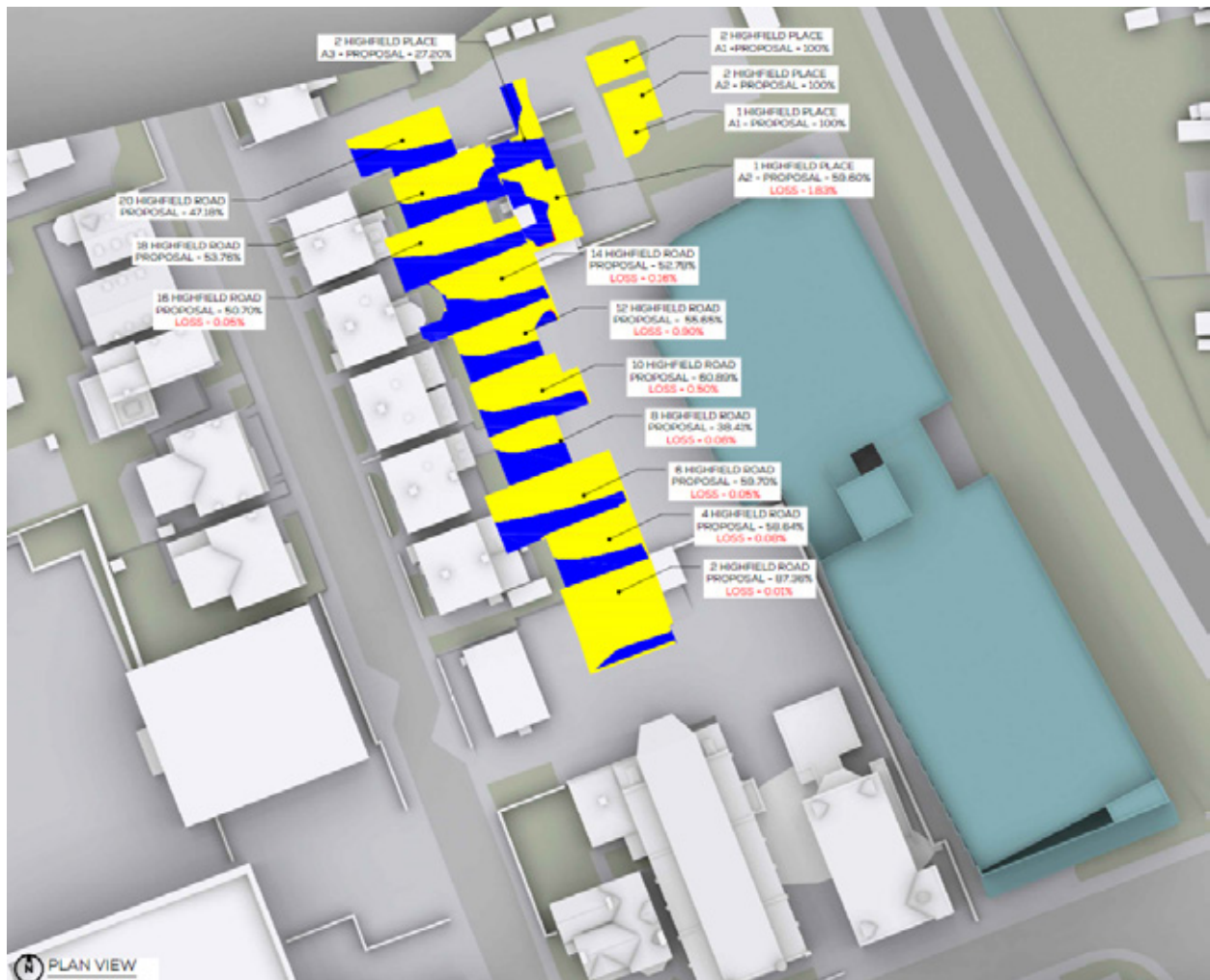


Figure 09: Surrounding SHOG

INTERNAL SHOG

7.4 Assessments have been completed upon the following 8 individual areas of amenity space within the Proposed Development:-

- A1 - Market Hall & Village Square
- A2 - Clayton Street
- A3 - Rectory Lane
- A4 - Rectory Lane
- A5 - Poppythorn Lane
- A6 - Fairfax Road
- A7 - Poppythorn Lane
- A8 - Clayton Street

7.5 The location of these areas can be seen below and in Appendix 04 where the detailed analysis results can also be found.

7.6 In summary, all 8 of the proposed areas of amenity spaces will be able to benefit from in excess of 2 hours of sunlight to over 50% of their individual areas on 21st March. Therefore, in accordance with the BRE guidelines, this means that they will all be adequately sunlit throughout the year.



Figure 10: Internal SHOG

8 CONCLUSIONS

GIA have undertaken a daylight and sunlight assessment in relation to the Proposed Development known as Prestwich Village. The technical analysis has been undertaken in accordance with the BRE handbook.

- 8.1 Compared to the existing baseline, the analysis results show that the construction of the Proposed Development will result in either BRE compliant or isolated minor changes in daylight and sunlight amenity to the majority of the surrounding residential properties.
- 8.2 When assessed against a more contextual baseline, which is in accordance with the BRE guidelines, the effect upon The Radius is the same.
- 8.3 In terms of overshadowing, whilst the construction of the Proposed Development will result in some small additional shadow upon some the surrounding gardens described and shown in section 7, these are all fully BRE compliant, which means that the users of those gardens are unlikely to notice any change in their sunlight amenity
- 8.4 The 8 areas of amenity space within the Proposed Development, which are described and shown in section 7, will all be able to benefit from more than 2 hours sunlight over more than 50% of their individual areas. Therefore, in accordance with the BRE guidelines they will all be adequately sunlit throughout the year.
- 8.5 In view of the very limited number of impacts to surrounding properties and areas of amenity space as described above, and with due consideration to the flexibility with which the BRE guidelines were intended to be used, the Proposed Development represents a very good scheme proposal for the Site.
- 8.6 NB – The Proposed Development has changed since the modelling and analysis which informed this report was completed as the height of the Travel Hub has decreased by 1 storey. This change will only improve the effects described in this report but will not materially alter the conclusions reached.

APPENDIX 01

PRINCIPLES OF DAYLIGHT, SUNLIGHT & OVERSHADOWING

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 3rd edition (2022)', guidelines and methodology for the measurement and assessment of daylight, sunlight and overshadowing.

BACKGROUND & CONTEXT

A 2.1 The quality of daylight and sunlight amenity as well as the overshadowing of open spaces is often stipulated within planning policy for protection or enhancement and 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 both within buildings and reaching open spaces.

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 Daylight in buildings, BS EN 17037 and the CIBSE Publication LG 10 Daylighting – a guide for designers.

A 2.4 Whilst the BRE Guidelines are typically referred to for daylight sunlight and overshadowing matters within the planning process, 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 (2022)', section 1.6 (page 7), 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 since 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 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".

A 2.6 Paragraph 2.2.3 (page 14) 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".

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. The BRE approach to creating alternative criteria is detailed within Appendix F of the Document.

A 2.8 Paragraph 2.2.2 (page 14) of the BRE Guidelines states:

"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."

A 2.9 Although primarily designed to be used for residential properties, 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, hotels and hostels, small workshops, and some offices.

A 2.10 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 and areas of amenity as well as the creation of proposed dwellings and spaces with high levels of daylight and sunlight amenity.

A 2.11 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 2.12 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 2.13 The following sections extract relevant sections from the Guide.

EFFECTS TO DAYLIGHT

A 2.14 The BRE Guidelines provide two methodologies for daylight impact assessment, namely;

- 1 The Vertical Sky Component (VSC); and
- 2 The No Sky Line (NSL).

Vertical Sky Component (VSC)

A 2.15 The Vertical Sky Component (VSC) method is described in the Glossary of 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”

A 2.16 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 2.17 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) as per paragraph 2.2.23 of the Guide.

A 2.18 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 thereby omitting the consideration of reflection and considering only the light coming directly from the sky.

A 2.19 The VSC calculation is undertaken in both the existing and proposed scenarios so as to make a comparison.

A 2.20 The image in Figure 01 depicts a Waldram Diagram which can be used to calculate the VSC. The existing buildings are solidly pictured with the proposed scheme semi-transparent in the foreground.

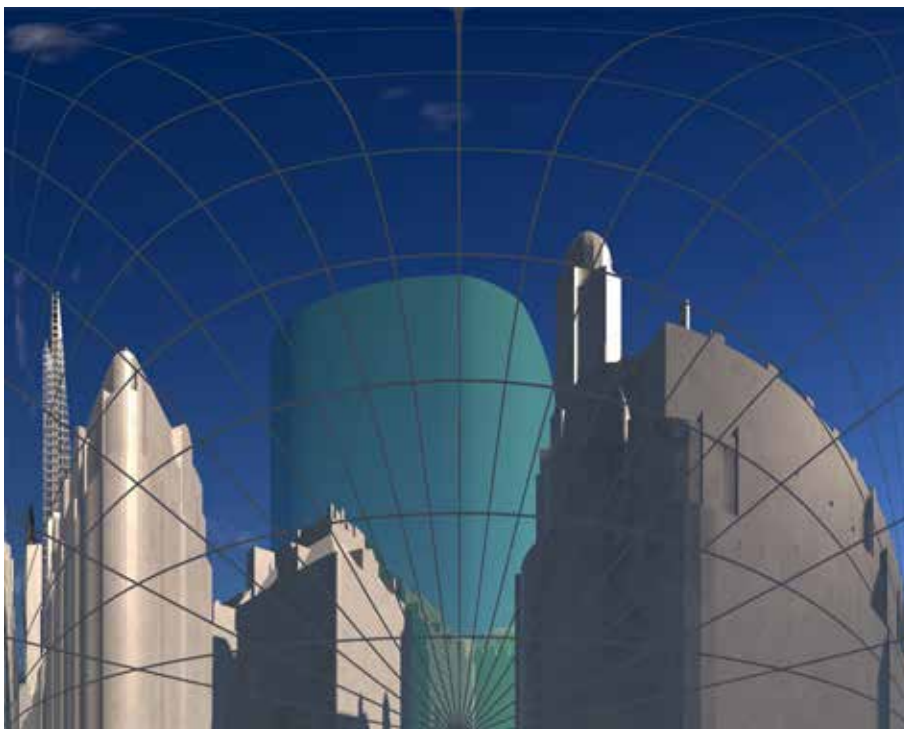


Figure 01: Waldram diagram

No Sky Line (NSL)

A 2.21 In addition to the VSC, the BRE recommends the NSL method of assessment where internal layouts are known. Whilst the VSC provides information on the quantum of light reaching a window, the NSL seeks to provide information on how well this light is distributed within the room. The NSL is sometimes also referred to as 'Daylight Distribution' for this reason.

A 2.22 The NSL is defined in the Glossary of the Guide as "the outline on the working plane of the area from which no sky can be seen." and so the NSL is effectively an assessment of sky visibility within a room. As stated already, the calculation is undertaken across the working plane which in accordance with paragraph 2.2.10 "in houses [...] is assumed to be horizontal and 0.85m high".

A 2.23 Again, both the existing and proposed positions are calculated and presented alongside any change in position of the NSL. The results can then be presented in table format or else illustrated on a contour plot if required, an example of which can be found in Figure 02 below.

A 2.24 The BRE Guidelines state at paragraph 2.211 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."

A 2.25 In accordance with the strict application of the national numerical values, therefore the change in daylight would be noticeable to the occupants should the NSL experience a loss of NSL greater than 20%.

A 2.26 It is relevant to note that this assessment takes the number and size of windows serving a room into account as well as the shape of the room but, being concerned only with sky visibility and the distribution of light, does not consider the quantum of light reaching the room.

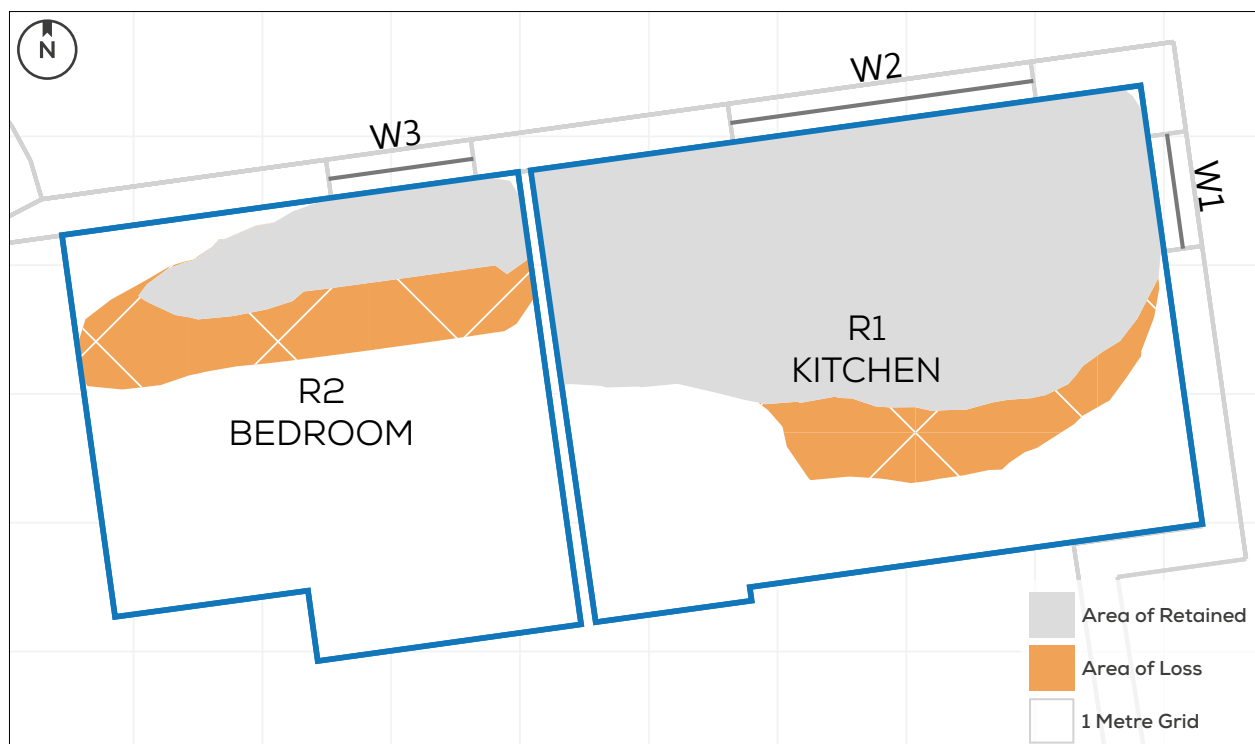


Figure 02: Example NSL diagram

Decision Chart (Figure 20 of the BRE Guide)

A 2.27 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.

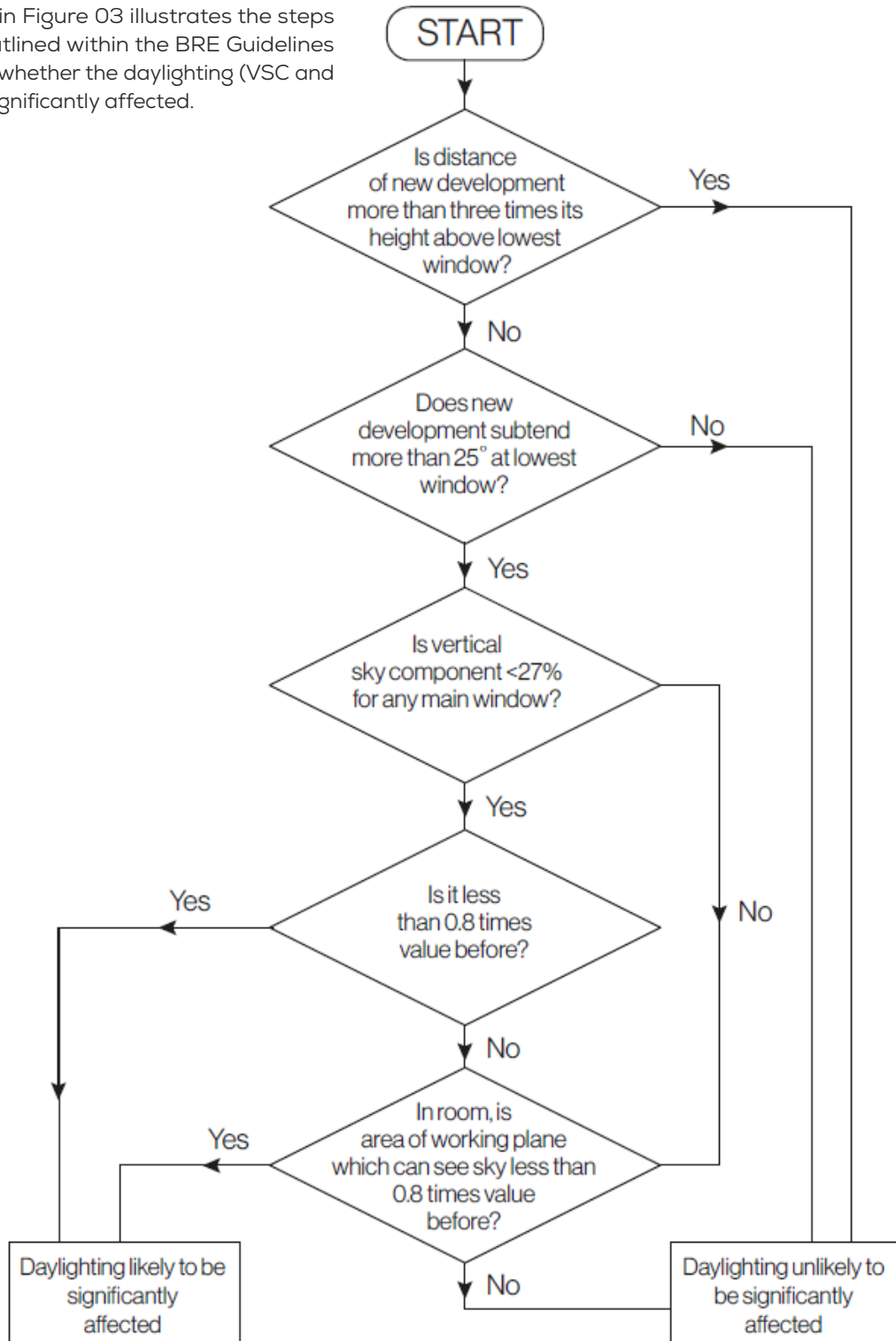


Figure 03: BRE Decision Chart (Figure 20): diffuse daylight in existing buildings. This does not include an assessment of rights to light issues, which a developer may need to consider separately

EFFECTS TO SUNLIGHT

Annual Probable Sunlight Hours (APSH)

A 2.28 The BRE Guidance suggests that to understand sunlight impacts to a property, an assessment of Annual Probable Sunlight Hours (APSH) is undertaken. The APSH is defined in the Glossary 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)”

A 2.29 Expanding on the above within the Guidance, long-term averages were used to position 100 spots in the sky, representative of sunlight over the whole year. Correlating to the probability of the sun to shine, the majority of these (70) are at times to the six-months containing summer (from spring equinox to autumn equinox) which 30 are the ‘winter’ months from autumn equinox to spring. The APSH is calculated though calculating how many of these ‘spots’ can be seen from a location (normally a window) both overall and how many of these are during the winter months.

A 2.30 To understand the potential sunlight impacts therefore, all windows facing within 90 degrees of due south and overlooking the development are generally assessed for APSH.

A 2.31 The BRE Guidelines set out the overall methodology and criteria for the assessment of Sunlight in Chapter 3. The BRE Guidelines state in paragraph 3.2.3 and 3.2.5:

“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.”

A 2.32 In interpreting the results, the BRE Guidance states in summary 3.2.13 that:

“If a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the 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.”*

A 2.33 The image in Figure 04 depicts the APSH sun spots overlaid 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.



Figure 04: Waldram diagram

EFFECTS TO OVERSHADOWING

A 2.34 The BRE guidance in respect of overshadowing of amenity spaces is set out in section 3.3.1 of the handbook. Here it states as follows:

"Sunlight in the spaces between and around 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)*
- *make outdoor activities like sitting out and children's play more pleasant (mainly warmer months)*
- *encourage plant growth (mainly spring and summer)*
- *dry out the ground, reducing moss and slime (mainly in colder months)*
- *melt frost, ice and snow (in winter)*
- *dry clothes (all year)."*

A 2.35 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 2.36 The Sun Hours on Ground method of overshadowing assessment uses specialist software to determine the sunlight exposure across an area of amenity.

A 2.37 The BRE Guidelines suggest that the Spring Equinox (21 March), being the year's midpoint, is a suitable date for the assessment. Paragraph 3.3.17 states:

"It is recommended that for it 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."

A 2.38 The Transient Overshadowing study is recommended where large buildings are proposed which may affect a number of gardens or open spaces or where an area is particularly sensitive at certain times of day or year. For the purpose of this assessment, the additional shadow cast is mapped and highlighted at hourly intervals from sunrise to sunset on the following dates:

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

A 2.39 The BRE guidelines do not provide any suggested criteria for Transient Overshadowing, rather it is a qualitative assessment to aid understanding.

BRE GUIDELINES: ADDITIONAL DAYLIGHT AND SUNLIGHT TESTS

Daylight - VSC and APSH to Rooms

A 2.40 As outlined within the BRE Guidelines (paragraph 2.2.6), the VSC value is calculated for each window; however:

"If a room has two or more windows of equal size, the mean of their VSCs may be taken".

A 2.41 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;

$$\Sigma(V_n \cdot A_n) / \Sigma A_n$$

Where:

V = window VSC

A = window area

n = the number of windows

A 2.42 The BRE provide a methodology to calculate APSH in relation to the room and window, paragraph 3.1.12 states:

"If a room has multiple windows, the amount of sunlight received by each can be added together provided they occur at different times and sunlight hours are not double counted."

A 2.43 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 as well, when room layouts are known as a room served by multiple windows could receive the benefit of sunlight from all windows and not just one.

A 2.44 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.

Balconies/Overhangs

A 2.45 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 11, paragraph 2.1.17 and page 16, paragraph 2.2.13:

"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."

A 2.46 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 2.47 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 2.48 The BRE notes in paragraph F5:

"where an existing building has windows that are unusually close to the site boundary and taking more than their fair share of light. Figure F3 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."

A 2.49 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 2.50 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 2.51 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." (2.3.1)

A 2.52 The BRE comments in paragraphs 2.3.3, 2.3.6 and 2.3.7 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

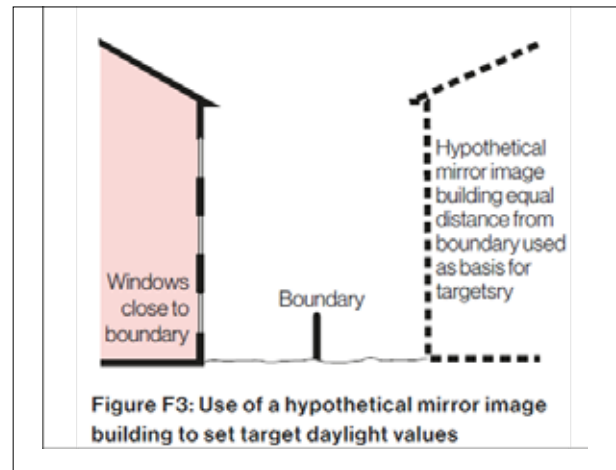


Figure 05: Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 87
Figure F3

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 metres 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)."

"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."

"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."

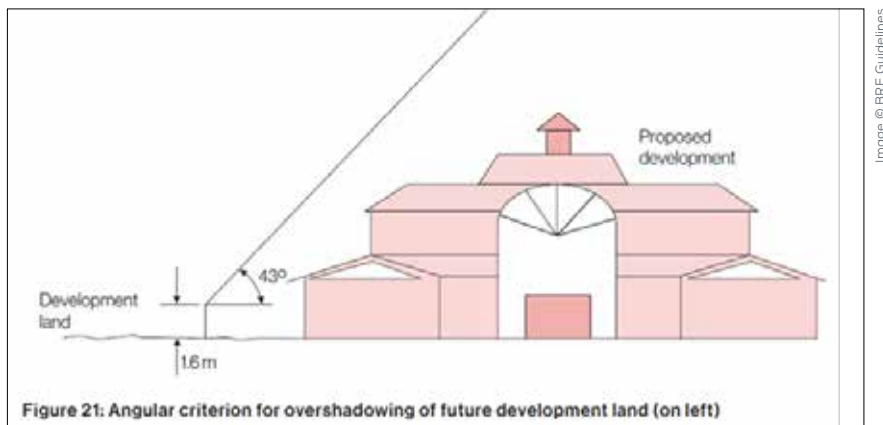


Figure 06: Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 19 Figure 21

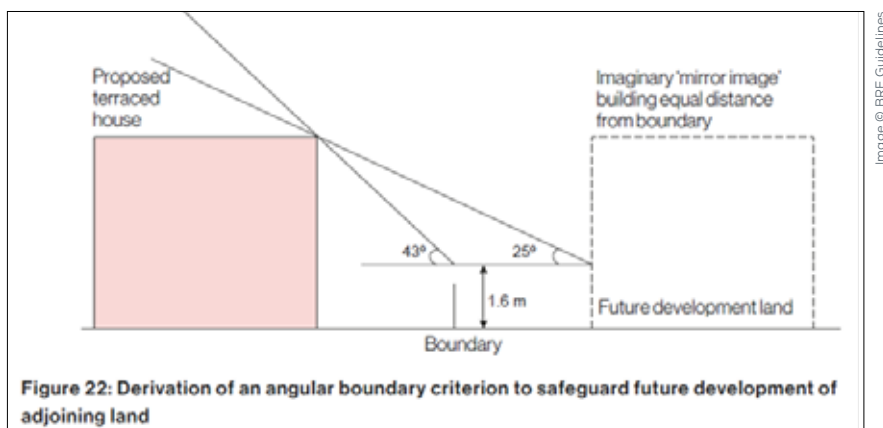


Figure 07: Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 20 Figure 22

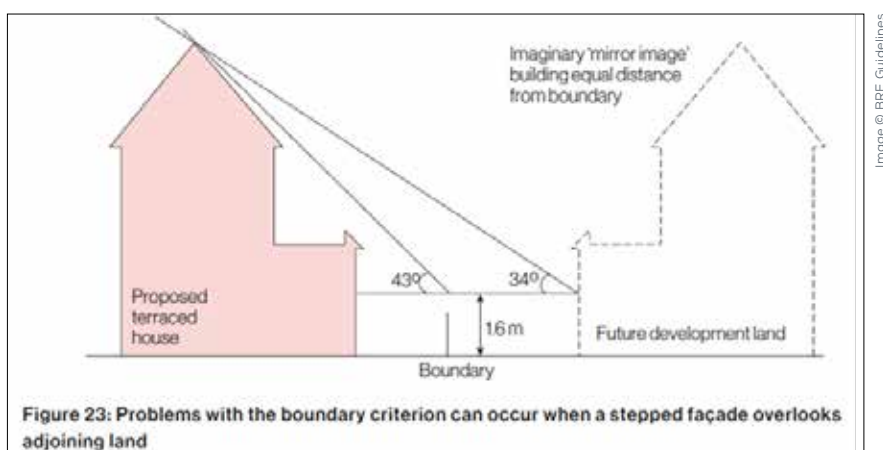


Figure 08: Littlefair, P. (2022). Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice. Hertfordshire: HIS BRE Press p 20 Figure 23

A 2.53 As 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.

PHOTOVOLTAICS

- A 2.54 Paragraph 4.5.2 states that “where a proposed development may result in loss of radiation to existing solar panels (either photovoltaic or solar thermal), an assessment should be carried out.”
- A 2.55 Paragraph 4.5.8 states that “Where the annual probable sunlight hours received by a solar panel with the new development in place is less than 0.90 times the value before, a more detailed calculation of the loss of solar radiation should be undertaken. This is a specialist type of assessment and expert advice should be sought. The assessment should include both direct solar and diffuse sky radiation; over a whole year, around 60% of the radiation received on a horizontal roof comes from the sky. However, reflected radiation from the ground and obstructions need not be included. The modelling should take account of the effects of cloud in reducing direct solar radiation at different times of year, and include a realistic simulation of the way that incoming solar radiation varies from different parts of the sky.”
- A 2.56 Paragraph 4.5.9 states that “if over the whole year the ratio of total solar radiation received with the new development, to the existing value is less than the values given in Table 2, then the loss of radiation is significant.”

Table 2. Recommended minimum ratios of solar radiation received.

Slope of solar panel in degrees to horizontal	Recommended minimum ratio of radiation received after/before
0-30	0.90
30.01-59.99	0.85
60-90	0.80

Figure 09: Table 2 from BRE Guidance Section 4, page 36

OTHER AMENITY CONSIDERATIONS

- A 2.58 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:
- View;
 - Privacy;
 - Security;
 - Access;
 - Enclosure;
 - Microclimate;
 - Solar Dazzle; and
 - Solar Convergence.

- A 2.57 Finally, paragraph 4.5.10 notes that “numerical values given are purely advisory. Different criteria may be used based on the requirements for solar energy in an area viewed against other site layout constraints. Another important issue is whether the existing solar panels are reasonably sited, at a sensible height and distance from the boundary. A greater loss of solar radiation may be inevitable if panels are mounted close to the ground and near to the site boundary.”

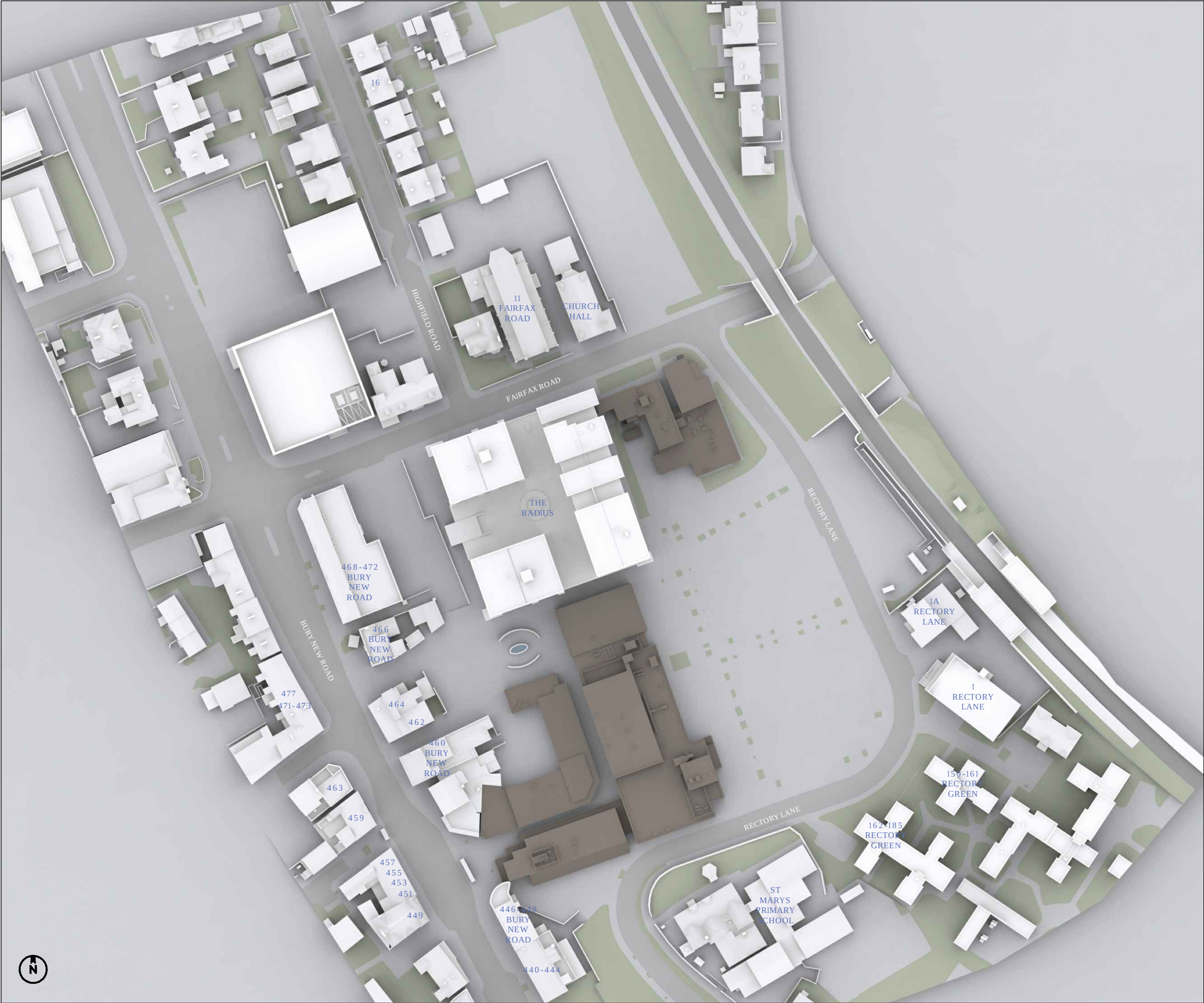
Image © BRE Guidelines

APPENDIX 02

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APPENDIX 03
RESULTS & CONTOURS

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	EX.	PR.	LOSS	%	MEETS
		TYPE	USE						CRITERIA
162-185 RECTORY GREEN									
F00	R1	RESIDENTIAL	ASSUMED BEDROOM	W1/F00 / INC (2)	34.9	27	7.9	22.6%	YES
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	W2/F00 / INC (2)	27.9	21	6.9	24.7%	NO
	R3	RESIDENTIAL	KITCHEN (1)	W3/F00 / INC (2)	21.2	17.5	3.7	17.5%	YES
	R5	RESIDENTIAL	ASSUMED BEDROOM	W5/F00 / INC (2)	30	24.7	5.3	17.7%	YES
	R6	RESIDENTIAL	ASSUMED BEDROOM	W6/F00 / INC (2)	28.9	28.4	0.5	1.7%	YES
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	W7/F00 / INC (2)	21.2	20.8	0.4	1.9%	YES
	R8	RESIDENTIAL	ASSUMED LIVING ROOM	W8/F00 / INC (2)	29.1	26.5	2.6	8.9%	YES
	R9	RESIDENTIAL	KITCHEN (1)	W9/F00 / INC (2)	34.3	30.8	3.5	10.2%	YES
F01	R1	RESIDENTIAL	ASSUMED BEDROOM	W1/F01 / INC (2)	36.5	29.5	7	19.2%	YES
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	W2/F01 / INC (2)	30	24	6	20.0%	YES
	R3	RESIDENTIAL	KITCHEN (1)	W3/F01 / INC (2)	23	19.8	3.2	13.9%	YES
	R5	RESIDENTIAL	ASSUMED BEDROOM	W5/F01 / INC (2)	33.1	28.4	4.7	14.2%	YES
	R6	RESIDENTIAL	ASSUMED BEDROOM	W6/F01 / INC (2)	32.7	32.2	0.5	1.5%	YES
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	W7/F01 / INC (2)	23.5	23.1	0.4	1.7%	YES
	R8	RESIDENTIAL	ASSUMED LIVING ROOM	W8/F01 / INC (2)	32.3	30.2	2.1	6.5%	YES
	R9	RESIDENTIAL	KITCHEN (1)	W9/F01 / INC (2)	36.8	33.7	3.1	8.4%	YES
F02	R1	RESIDENTIAL	ASSUMED BEDROOM	W1/F02 / INC (2)	38.1	32.3	5.8	15.2%	YES
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	W2/F02 / INC (2)	34.4	29.5	4.9	14.2%	YES
	R3	RESIDENTIAL	KITCHEN (1)	W3/F02 / INC (2)	30.1	27.5	2.6	8.6%	YES
	R5	RESIDENTIAL	ASSUMED BEDROOM	W5/F02 / INC (2)	36.9	33	3.9	10.6%	YES
	R6	RESIDENTIAL	ASSUMED BEDROOM	W6/F02 / INC (2)	36.6	36.2	0.4	1.1%	YES
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	W7/F02 / INC (2)	27.3	26.9	0.4	1.5%	YES
	R8	RESIDENTIAL	ASSUMED LIVING ROOM	W8/F02 / INC (2)	36.9	34.8	2.1	5.7%	YES
	R9	RESIDENTIAL	KITCHEN (1)	W9/F02 / INC (2)	38.6	35.6	3	7.8%	YES
150-161 RECTORY GREEN									
F00	R1	RESIDENTIAL	ASSUMED BEDROOM	W1/F00 / INC (2)	37	28.4	8.6	23.2%	YES
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	W2/F00 / INC (2)	19.5	17.5	2	10.3%	YES
	R3	RESIDENTIAL	KITCHEN (1)	W3/F00 / INC (2)	25.9	22.3	3.6	13.9%	YES
	R4	RESIDENTIAL	ASSUMED BEDROOM	W4/F00 / INC (2)	27.3	22.3	5	18.3%	YES
	R6	RESIDENTIAL	KITCHEN (1)	W6/F00 / INC (2)	19.4	16.3	3.1	16.0%	YES
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	W7/F00 / INC (2)	23.2	22.3	0.9	3.9%	YES
F01	R1	RESIDENTIAL	ASSUMED BEDROOM	W1/F01 / INC (2)	37.9	30.4	7.5	19.8%	YES
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	W2/F01 / INC (2)	21.5	19.9	1.6	7.4%	YES
	R3	RESIDENTIAL	KITCHEN (1)	W3/F01 / INC (2)	29.7	26.7	3	10.1%	YES
	R4	RESIDENTIAL	ASSUMED BEDROOM	W4/F01 / INC (2)	31.2	26.9	4.3	13.8%	YES
	R6	RESIDENTIAL	KITCHEN (1)	W6/F01 / INC (2)	21.7	18.9	2.8	12.9%	YES
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	W7/F01 / INC (2)	27.5	26.7	0.8	2.9%	YES
F02	R1	RESIDENTIAL	ASSUMED BEDROOM	W1/F02 / INC (2)	38.6	32.3	6.3	16.3%	YES
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	W2/F02 / INC (2)	25.8	24.4	1.4	5.4%	YES
	R3	RESIDENTIAL	KITCHEN (1)	W3/F02 / INC (2)	34.7	32.1	2.6	7.5%	YES
	R4	RESIDENTIAL	ASSUMED BEDROOM	W4/F02 / INC (2)	36	32.5	3.5	9.7%	YES
	R6	RESIDENTIAL	KITCHEN (1)	W6/F02 / INC (2)	28.8	26.3	2.5	8.7%	YES
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	W7/F02 / INC (2)	34.1	33.4	0.7	2.1%	YES
464 BURY NEW ROAD									
F01	R1	RESIDENTIAL	UNKNOWN	W1/F01 / INC (2)	20	19.4	0.6	3.0%	YES
451 BURY NEW ROAD									
F01	R1	RESIDENTIAL	UNKNOWN	W1/F01 / INC (2)	21.4	20.6	0.8	3.7%	YES
			UNKNOWN	W2/F01 / INC (2)	20.9	20	0.9	4.3%	YES
440-444 BURY NEW ROAD									
F01	R2	RESIDENTIAL	UNKNOWN	W2/F01 / INC (2)	29.4	28.8	0.6	2.0%	YES
	R3	RESIDENTIAL	UNKNOWN	W3/F01 / INC (2)	34.1	33.2	0.9	2.6%	YES
	R4	RESIDENTIAL	UNKNOWN	W4/F01 / INC (2)	37.5	36.1	1.4	3.7%	YES
			UNKNOWN	W5/F01 / INC (2)	37.5	36	1.5	4.0%	YES
440-444 BURY NEW ROAD									
F01	R1	RESIDENTIAL	UNKNOWN	W1/F01 / INC (2)	32.4	30.9	1.5	4.6%	YES
477 BURY NEW ROAD									
F01	R1	RESIDENTIAL	LIVING ROOM	W1/F01 / INC (2)	35	34.7	0.3	0.9%	YES

FLOOR	ROOM	PROPERTY	ROOM	ROOM	EX.	PR.	LOSS (sqm)	LOSS	MEETS	WINDOWS ATTACHED
		TYPE	USE	AREA (sqm)	%	%		%	CRITERIA	TO THE ROOM
162-185 RECTORY GREEN										
F00	R1	RESIDENTIAL	ASSUMED BEDROOM	10.0	95.9	83.4	1.2	13.0%	YES	W1/F00
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	10.0	82.3	82.2	0.0	0.1%	YES	W2/F00
	R3	RESIDENTIAL	KITCHEN (1)	8.3	87.5	87.4	0.0	0.0%	YES	W3/F00
	R5	RESIDENTIAL	ASSUMED BEDROOM	8.3	98.1	94.8	0.3	3.3%	YES	W5/F00
	R6	RESIDENTIAL	ASSUMED BEDROOM	9.7	93	93	0.0	0.0%	YES	W6/F00
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.7	71.3	71.2	0.0	0.0%	YES	W7/F00
	R8	RESIDENTIAL	ASSUMED LIVING ROOM	13.4	94.5	94.5	0.0	0.0%	YES	W8/F00
	R9	RESIDENTIAL	KITCHEN (1)	9.3	95.2	95.2	0.0	0.0%	YES	W9/F00
F01	R1	RESIDENTIAL	ASSUMED BEDROOM	10.0	96.1	84.7	1.1	11.8%	YES	W1/F01
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	10.0	85.8	85.7	0.0	0.1%	YES	W2/F01
	R3	RESIDENTIAL	KITCHEN (1)	8.3	90	90	0.0	0.0%	YES	W3/F01
	R5	RESIDENTIAL	ASSUMED BEDROOM	8.3	98.1	97.2	0.1	1.0%	YES	W5/F01
	R6	RESIDENTIAL	ASSUMED BEDROOM	9.7	96.5	96.5	0.0	0.0%	YES	W6/F01
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.7	73.2	73.2	0.0	0.0%	YES	W7/F01
	R8	RESIDENTIAL	ASSUMED LIVING ROOM	13.4	95.4	95.4	0.0	0.0%	YES	W8/F01
	R9	RESIDENTIAL	KITCHEN (1)	9.3	95.4	95.4	0.0	0.0%	YES	W9/F01
F02	R1	RESIDENTIAL	ASSUMED BEDROOM	10.0	96	87.6	0.8	8.7%	YES	W1/F02
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	10.0	97.8	97.8	0.0	0.0%	YES	W2/F02
	R3	RESIDENTIAL	KITCHEN (1)	8.3	98.2	98.2	0.0	0.0%	YES	W3/F02
	R5	RESIDENTIAL	ASSUMED BEDROOM	8.3	98.1	98.1	0.0	0.0%	YES	W5/F02
	R6	RESIDENTIAL	ASSUMED BEDROOM	9.7	97.6	97.6	0.0	0.0%	YES	W6/F02
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.7	89.4	89.4	0.0	0.0%	YES	W7/F02
	R8	RESIDENTIAL	ASSUMED LIVING ROOM	13.4	95.6	95.6	0.0	0.0%	YES	W8/F02
	R9	RESIDENTIAL	KITCHEN (1)	9.3	95.3	95.3	0.0	0.0%	YES	W9/F02
150-161 RECTORY GREEN										
F00	R1	RESIDENTIAL	ASSUMED BEDROOM	9.5	97.8	78.4	1.8	19.8%	YES	W1/F00
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	7.7	91.9	88.8	0.2	3.4%	YES	W2/F00
	R3	RESIDENTIAL	KITCHEN (1)	7.5	94.2	89.3	0.4	5.2%	YES	W3/F00
	R4	RESIDENTIAL	ASSUMED BEDROOM	8.3	97.8	94.3	0.3	3.6%	YES	W4/F00
	R6	RESIDENTIAL	KITCHEN (1)	8.3	84.6	70.9	1.1	16.2%	YES	W6/F00
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.5	78.7	78.7	0.0	0.0%	YES	W7/F00
F01	R1	RESIDENTIAL	ASSUMED BEDROOM	9.5	97.9	81.5	1.6	16.8%	YES	W1/F01
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	7.7	94.8	94	0.1	0.9%	YES	W2/F01
	R3	RESIDENTIAL	KITCHEN (1)	7.5	97.4	96.5	0.1	1.0%	YES	W3/F01
	R4	RESIDENTIAL	ASSUMED BEDROOM	8.3	97.9	96.7	0.1	1.2%	YES	W4/F01
	R6	RESIDENTIAL	KITCHEN (1)	8.3	87.2	78.9	0.7	9.5%	YES	W6/F01
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.5	83.2	83.2	0.0	0.0%	YES	W7/F01
F02	R1	RESIDENTIAL	ASSUMED BEDROOM	9.5	97.9	86.9	1.1	11.3%	YES	W1/F02
	R2	RESIDENTIAL	ASSUMED LIVING ROOM	7.7	99.4	99.4	0.0	0.0%	YES	W2/F02
	R3	RESIDENTIAL	KITCHEN (1)	7.5	98.1	98.1	0.0	0.0%	YES	W3/F02
	R4	RESIDENTIAL	ASSUMED BEDROOM	8.3	98	98	0.0	0.0%	YES	W4/F02
	R6	RESIDENTIAL	KITCHEN (1)	8.3	98.3	98.3	0.0	0.0%	YES	W6/F02
	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.5	97.6	97.6	0.0	0.0%	YES	W7/F02
464 BURY NEW ROAD										
F01	R1	RESIDENTIAL	UNKNOWN	3.3	94.5	94.5	0.0	0.0%	YES	W1/F01
451 BURY NEW ROAD										
F01	R1	RESIDENTIAL	UNKNOWN	15.1	93.5	93.5	0.0	0.0%	YES	W1-W2/F01
440-444 BURY NEW ROAD										
F01	R2	RESIDENTIAL	UNKNOWN	8.2	99.3	99.3	0.0	0.0%	YES	W2/F01
	R3	RESIDENTIAL	UNKNOWN	25.1	95.7	95.7	0.0	0.0%	YES	W3/F01
	R4	RESIDENTIAL	UNKNOWN	7.3	96	96	0.0	0.0%	YES	W4-W5/F01
440-444 BURY NEW ROAD										
F01	R1	RESIDENTIAL	UNKNOWN	19.0	98.1	98.1	0.0	0.0%	YES	W1/F01
477 BURY NEW ROAD										
F01	R1	RESIDENTIAL	LIVING ROOM	18.6	98.7	98.7	0.0	0.0%	YES	W1/F01

PROJECT: 2397 - PRESTWICH REGENERATION, MA
 REPORT TITLE: EXISTING VS. PROPOSED
 ADDRESS: 162-185 RECTORY GREEN
 DATE: 28/11/2023
 SCHEME IR: IR19
 DRAWING No.: 2397-REL06-IS01-NSL30

KEY:
 GAIN
 LOSS
 MAINTAINED LIT AREA
 1 METRE GRID



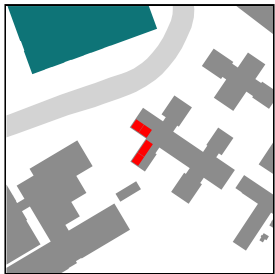
F00

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
162-185 RECTORY GREEN								
F00	R1	RESIDENTIAL	ASSUMED BEDROOM	10.0	95.9	83.4	1.2	13
F00	R2	RESIDENTIAL	ASSUMED LIVING ROOM	10.0	82.3	82.2	0.0	0.1
F00	R3	RESIDENTIAL	KITCHEN	8.3	87.5	87.4	0.0	0
F00	R5	RESIDENTIAL	ASSUMED BEDROOM	8.3	98.1	94.8	0.3	3.3

PROJECT: 2397 - PRESTWICH REGENERATION, MA
 REPORT TITLE: EXISTING VS. PROPOSED
 ADDRESS: 162-185 RECTORY GREEN
 DATE: 28/11/2023
 SCHEME IR: IR19
 DRAWING No.: 2397-REL06-IS01-NSL31

KEY:

- GAIN
- LOSS
- MAINTAINED LIT AREA
- 1 METRE GRID

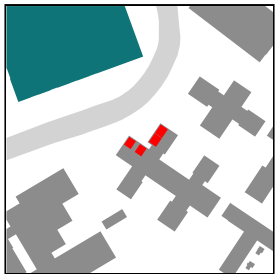


F00

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
162-185 RECTORY GREEN								
F00	R6	RESIDENTIAL	ASSUMED BEDROOM	9.7	93	93	0.0	0
F00	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.7	71.3	71.2	0.0	0
F00	R8	RESIDENTIAL	ASSUMED LIVING ROOM	13.4	94.5	94.5	0.0	0
F00	R9	RESIDENTIAL	KITCHEN	9.3	95.2	95.2	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
 REPORT TITLE: EXISTING VS. PROPOSED
 ADDRESS: 162-185 RECTORY GREEN
 DATE: 28/11/2023
 SCHEME IR: IR19
 DRAWING No.: 2397-REL06-IS01-NSL32

KEY:
 GAIN
 LOSS
 MAINTAINED LIT AREA
 1 METRE GRID



F01

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
162-185 RECTORY GREEN								
F01	R1	RESIDENTIAL	ASSUMED BEDROOM	10.0	96.1	84.7	1.1	11.8
F01	R2	RESIDENTIAL	ASSUMED LIVING ROOM	10.0	85.8	85.7	0.0	0.1
F01	R3	RESIDENTIAL	KITCHEN	8.3	90	90	0.0	0
F01	R5	RESIDENTIAL	ASSUMED BEDROOM	8.3	98.1	97.2	0.1	1

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 162-185 RECTORY GREEN
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL33

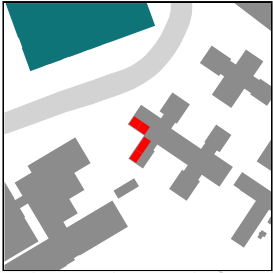
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GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID

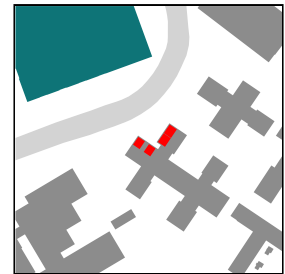


F01

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
162-185 RECTORY GREEN								
F01	R6	RESIDENTIAL	ASSUMED BEDROOM	9.7	96.5	96.5	0.0	0
F01	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.7	73.2	73.2	0.0	0
F01	R8	RESIDENTIAL	ASSUMED LIVING ROOM	13.4	95.4	95.4	0.0	0
F01	R9	RESIDENTIAL	KITCHEN	9.3	95.4	95.4	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 162-185 RECTORY GREEN
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL34

KEY:
 GAIN
 LOSS
 MAINTAINED LIT AREA
 1 METRE GRID



F02

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
162-185 RECTORY GREEN								
F02	R1	RESIDENTIAL	ASSUMED BEDROOM	10.0	96	87.6	0.8	8.7
F02	R2	RESIDENTIAL	ASSUMED LIVING ROOM	10.0	97.8	97.8	0.0	0
F02	R3	RESIDENTIAL	KITCHEN	8.3	98.2	98.2	0.0	0
F02	R5	RESIDENTIAL	ASSUMED BEDROOM	8.3	98.1	98.1	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 162-185 RECTORY GREEN
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL35

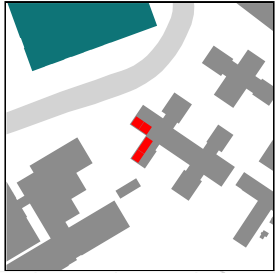
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



F02

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
162-185 RECTORY GREEN								
F02	R6	RESIDENTIAL	ASSUMED BEDROOM	9.7	97.6	97.6	0.0	0
F02	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.7	89.4	89.4	0.0	0
F02	R8	RESIDENTIAL	ASSUMED LIVING ROOM	13.4	95.6	95.6	0.0	0
F02	R9	RESIDENTIAL	KITCHEN	9.3	95.3	95.3	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 150-161 RECTORY GREEN
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL36

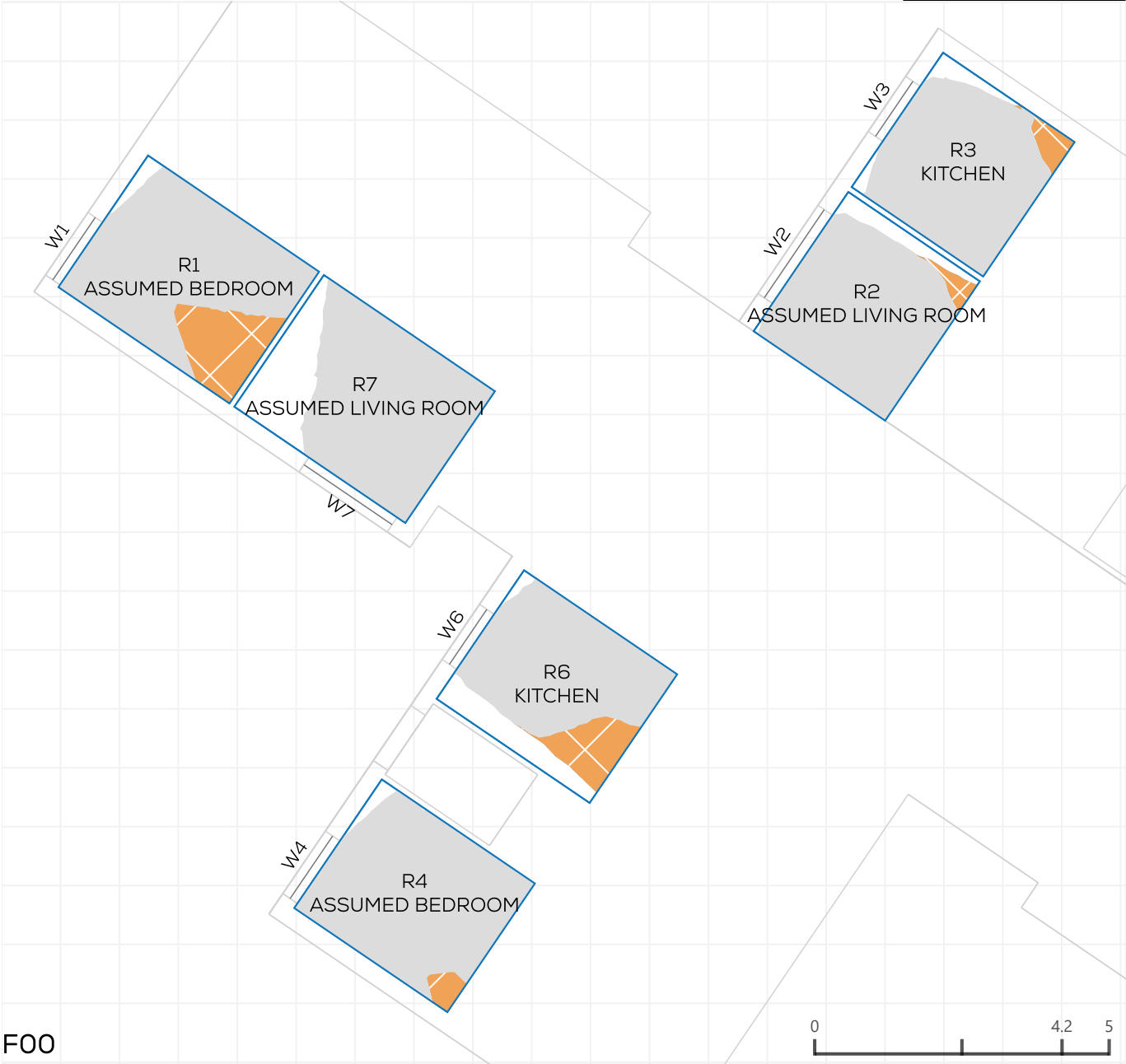
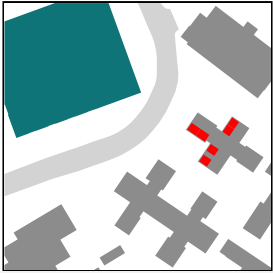
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



F00

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
150-161 RECTORY GREEN								
F00	R1	RESIDENTIAL	ASSUMED BEDROOM	9.5	97.8	78.4	1.8	19.8
F00	R2	RESIDENTIAL	ASSUMED LIVING ROOM	7.7	91.9	88.8	0.2	3.4
F00	R3	RESIDENTIAL	KITCHEN	7.5	94.2	89.3	0.4	5.2
F00	R4	RESIDENTIAL	ASSUMED BEDROOM	8.3	97.8	94.3	0.3	3.6
F00	R6	RESIDENTIAL	KITCHEN	8.3	84.6	70.9	1.1	16.2
F00	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.5	78.7	78.7	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 150-161 RECTORY GREEN
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL37

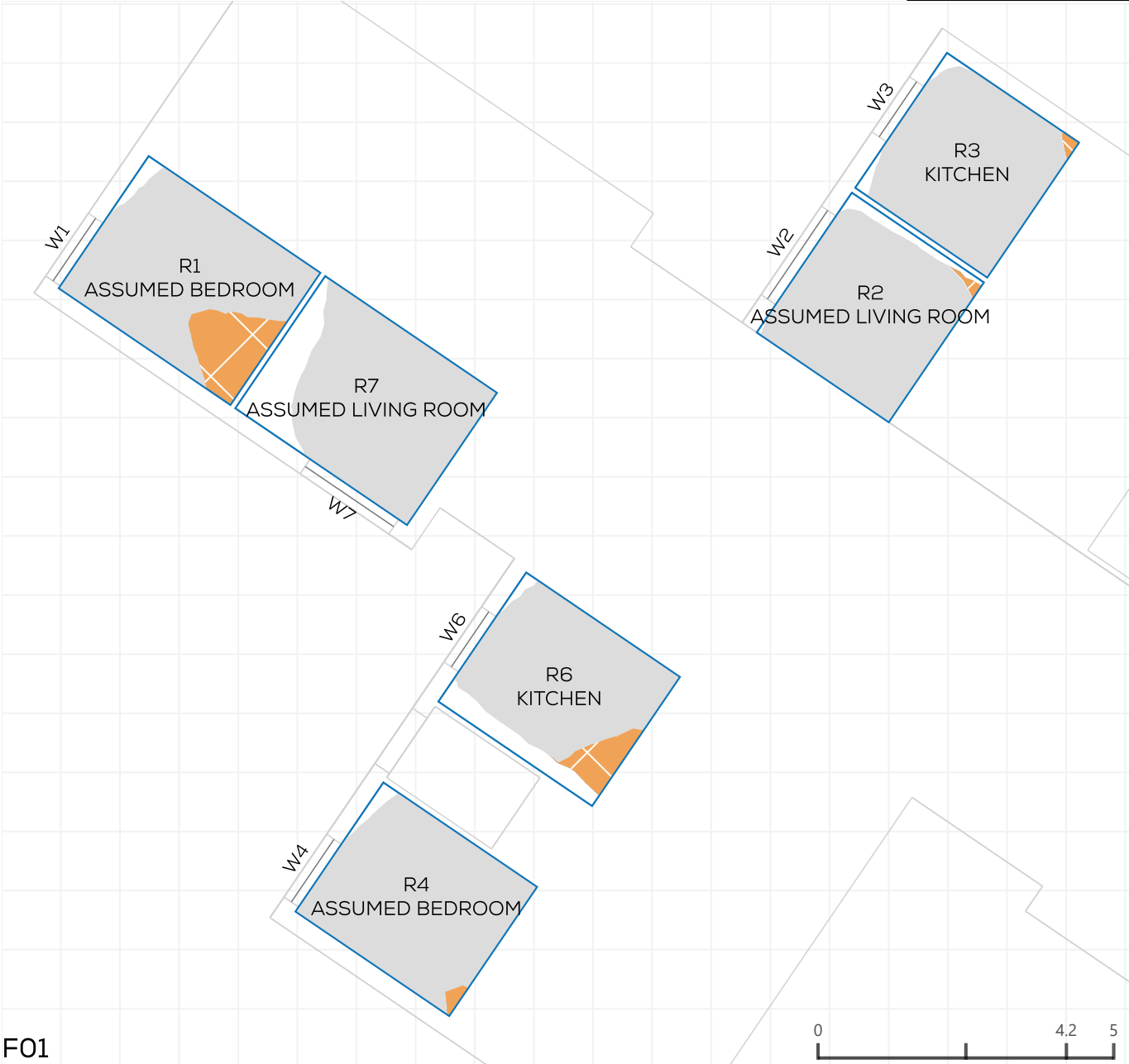
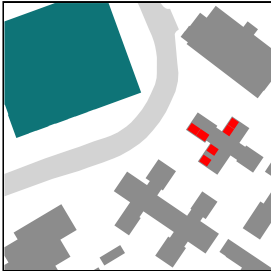
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



F01

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
150-161 RECTORY GREEN								
F01	R1	RESIDENTIAL	ASSUMED BEDROOM	9.5	97.9	81.5	1.6	16.8
F01	R2	RESIDENTIAL	ASSUMED LIVING ROOM	7.7	94.8	94	0.1	0.9
F01	R3	RESIDENTIAL	KITCHEN	7.5	97.4	96.5	0.1	1
F01	R4	RESIDENTIAL	ASSUMED BEDROOM	8.3	97.9	96.7	0.1	1.2
F01	R6	RESIDENTIAL	KITCHEN	8.3	87.2	78.9	0.7	9.5
F01	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.5	83.2	83.2	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 150-161 RECTORY GREEN
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL38

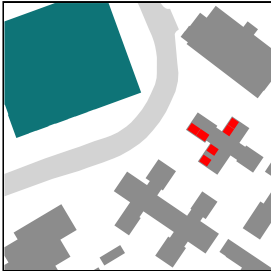
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



F02

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
150-161 RECTORY GREEN								
F02	R1	RESIDENTIAL	ASSUMED BEDROOM	9.5	97.9	86.9	1.1	11.3
F02	R2	RESIDENTIAL	ASSUMED LIVING ROOM	7.7	99.4	99.4	0.0	0
F02	R3	RESIDENTIAL	KITCHEN	7.5	98.1	98.1	0.0	0
F02	R4	RESIDENTIAL	ASSUMED BEDROOM	8.3	98	98	0.0	0
F02	R6	RESIDENTIAL	KITCHEN	8.3	98.3	98.3	0.0	0
F02	R7	RESIDENTIAL	ASSUMED LIVING ROOM	9.5	97.6	97.6	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 464 BURY NEW ROAD
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL40

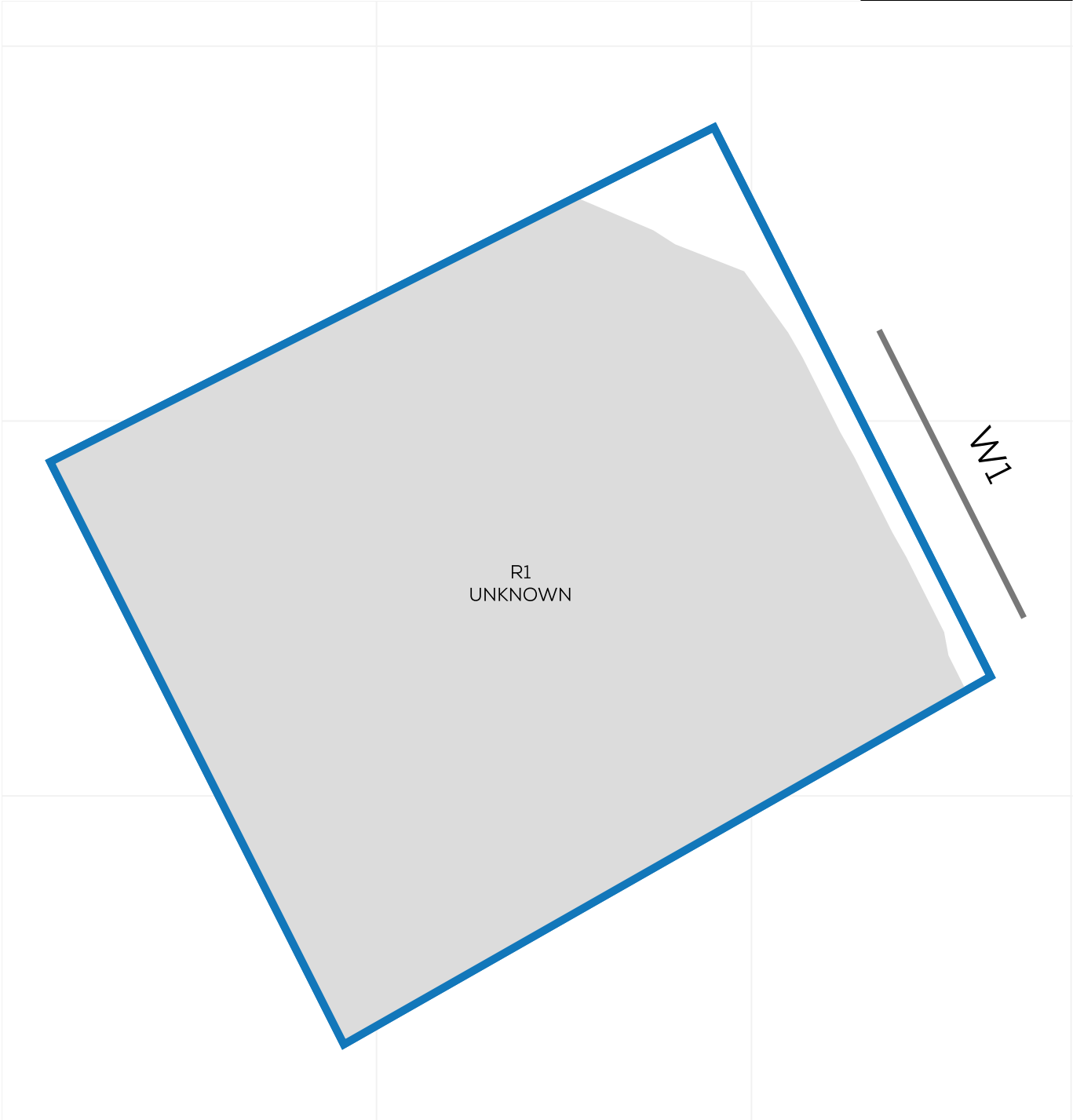
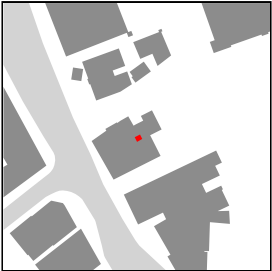
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



F01

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
464 BURY NEW ROAD								
F01	R1	RESIDENTIAL	UNKNOWN	3.3	94.5	94.5	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 451 BURY NEW ROAD
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL41

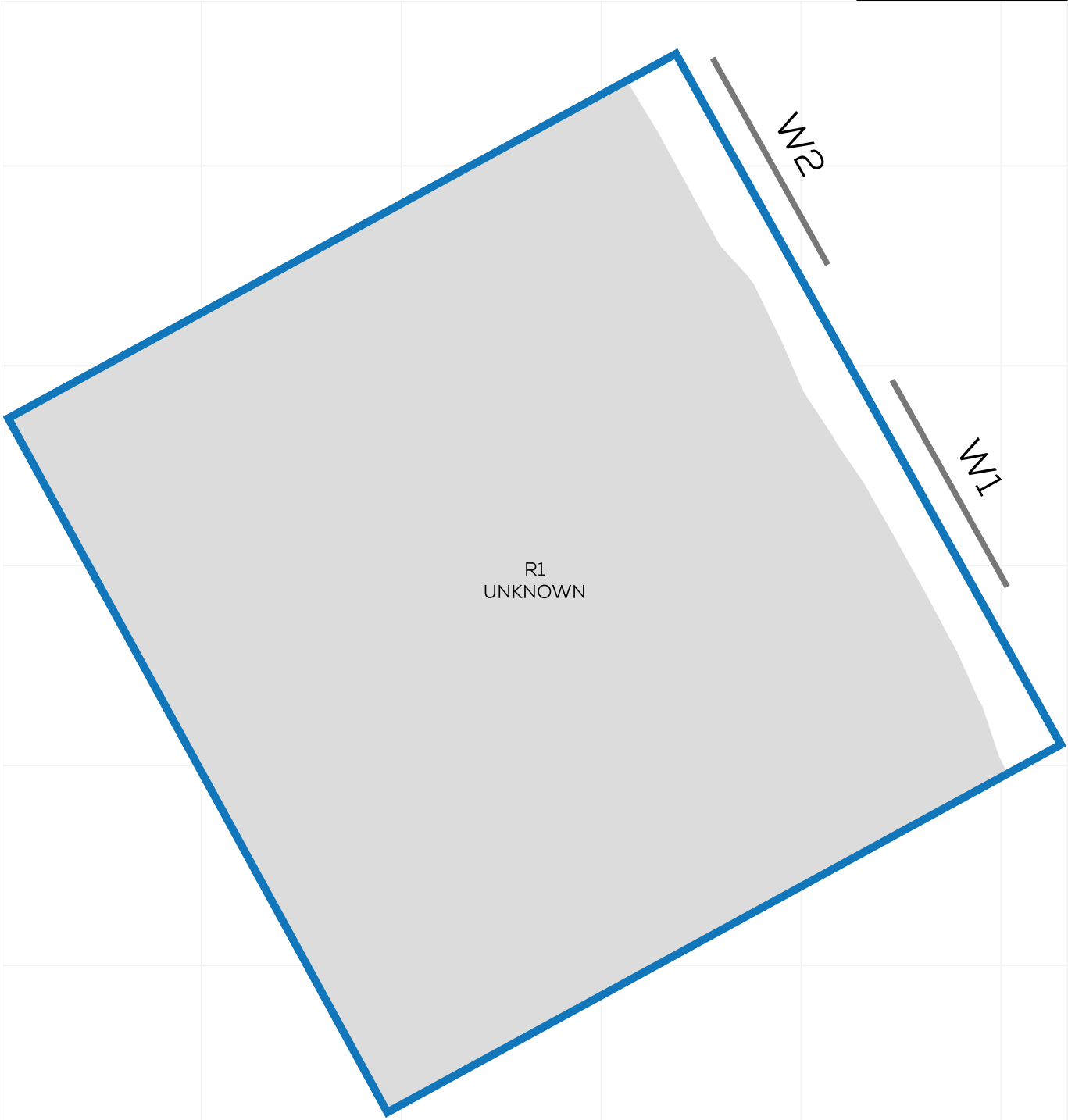
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



F01



FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
F01	R1	RESIDENTIAL	UNKNOWN	15.1	93.5	93.5	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 440-444 BURY NEW ROAD
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL43

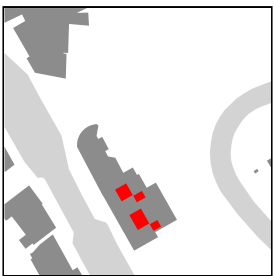
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
440-444 BURY NEW ROAD								
F01	R2	RESIDENTIAL	UNKNOWN	8.2	99.3	99.3	0.0	0
F01	R3	RESIDENTIAL	UNKNOWN	25.1	95.7	95.7	0.0	0
F01	R4	RESIDENTIAL	UNKNOWN	7.3	96	96	0.0	0
F01	R1	RESIDENTIAL	UNKNOWN	19.0	98.1	98.1	0.0	0

PROJECT: 2397 - PRESTWICH REGENERATION, MA
REPORT TITLE: EXISTING VS. PROPOSED
ADDRESS: 477 BURY NEW ROAD
DATE: 28/11/2023
SCHEME IR: IR19
DRAWING No.: 2397-REL06-IS01-NSL49

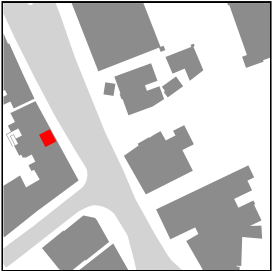
KEY:

GAIN

LOSS

MAINTAINED LIT AREA

1 METRE GRID



F01

FLOOR	ROOM	PROPERTY TYPE	ROOM USE	ROOM AREA-sqm	EXISTING %	PROPOSED %	LOSS-sqm	LOSS %
F01	R1	RESIDENTIAL	LIVING ROOM	18.6	98.7	98.7	0.0	0

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	EX.		PR.		% LOSS		MEETS
		TYPE	USE		ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
162-185 RECTORY GREEN											
F00	R6	RESIDENTIAL	ASSUMED BEDROOM	W6/F00 / INC (2)	53	10	49	10	7.5%	0.0%	YES
	R7	RESIDENTIAL	ASSUMED LIVING RO	W7/F00 / INC (2)	35	6	32	6	8.6%	0.0%	YES
F01	R6	RESIDENTIAL	ASSUMED BEDROOM	W6/F01 / INC (2)	61	12	58	12	4.9%	0.0%	YES
	R7	RESIDENTIAL	ASSUMED LIVING RO	W7/F01 / INC (2)	39	7	36	7	7.7%	0.0%	YES
F02	R6	RESIDENTIAL	ASSUMED BEDROOM	W6/F02 / INC (2)	74	21	72	21	2.7%	0.0%	YES
	R7	RESIDENTIAL	ASSUMED LIVING RO	W7/F02 / INC (2)	46	8	44	8	4.3%	0.0%	YES
150-161 RECTORY GREEN											
F00	R7	RESIDENTIAL	ASSUMED LIVING RO	W7/F00 / INC (2)	40	5	37	5	7.5%	0.0%	YES
F01	R7	RESIDENTIAL	ASSUMED LIVING RO	W7/F01 / INC (2)	51	8	48	8	5.9%	0.0%	YES
F02	R7	RESIDENTIAL	ASSUMED LIVING RO	W7/F02 / INC (2)	67	15	64	15	4.5%	0.0%	YES

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	VSC (WINDOW)					NSL					APSH (ROOM)						
		TYPE	USE		EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
					%	%		%	CRITERIA	%	%	SOM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
THE RADIUS																					
F02	R1	RESIDENTIAL	ASSUMED LKD	W1/F02 / INC (2)	36.1	35.6	0.5	1.4%	YES	99.3	99.9	-0.2	-0.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W2/F02 / INC (2)	24	23.9	0.1	0.4%	YES												
			ASSUMED LKD	W3/F02 / INC (2)	13.5	13.9	-0.4	-3.0%	YES												
	R2	RESIDENTIAL	ASSUMED LKD	W4/F02 / INC (2)	18.4	18.2	0.2	1.1%	YES	77.9	84.9	-1.6	-9.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W5/F02 / INC (2)	17.8	18	-0.2	-1.1%	YES												
	R3 (3)	RESIDENTIAL	ASSUMED LKD	W6/F02 / INC (2)	14.2	18.7	-4.5	-31.7%	YES	13.8	21.4	-2.5	-54.8%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R4	RESIDENTIAL	ASSUMED BEDROOM	W7/F02 / INC (2)	13.6	19.5	-5.9	-43.4%	YES	25.9	27.3	-0.2	-5.4%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R5	RESIDENTIAL	ASSUMED BEDROOM	W8/F02 / INC (2)	13	20.2	-7.2	-55.4%	YES	33.4	43.9	-1.2	-31.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W9/F02 / INC (2)	12.8	20.4	-7.6	-59.4%	YES												
	R6	RESIDENTIAL	ASSUMED BEDROOM	W10/F02 / INC (2)	12.3	20.9	-8.6	-69.9%	YES	27.6	50.6	-2.8	-82.9%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W11/F02 / INC (2)	12.2	21.1	-8.9	-73.0%	YES												
	R7	RESIDENTIAL	ASSUMED BEDROOM	W12/F02 / INC (2)	11.9	21.5	-9.6	-80.7%	YES	25.2	54.5	-3.5	-115.8%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R8 (3)	RESIDENTIAL	ASSUMED LKD	W13/F02 / INC (2)	11.6	21.9	-10.3	-88.8%	YES	9.7	25	-4.3	-157.9%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R9	RESIDENTIAL	ASSUMED BEDROOM	W14/F02 / INC (2)	11.4	22	-10.6	-93.0%	YES	22.5	55.2	-3.2	-144.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W15/F02 / INC (2)	11.4	22	-10.6	-93.0%	YES												
	R10	RESIDENTIAL	ASSUMED BEDROOM	W16/F02 / INC (2)	11.3	22	-10.7	-94.7%	YES	24	53.4	-4.1	-122.4%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W17/F02 / INC (2)	11.4	22	-10.6	-93.0%	YES												
	R11	RESIDENTIAL	ASSUMED BEDROOM	W18/F02 / INC (2)	11.5	22.1	-10.6	-92.2%	YES	14.3	44.3	-3.6	-210.4%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R12 (3)	RESIDENTIAL	ASSUMED LKD	W19/F02 / INC (2)	11.8	22.2	-10.4	-88.1%	YES	9.6	24.4	-4.8	-153.9%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R13	RESIDENTIAL	ASSUMED LKD	W20/F02 / INC (2)	14.3	23.8	-9.5	-66.4%	YES	40.2	70.2	-7.0	-74.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R14	RESIDENTIAL	ASSUMED LKD	W21/F02 / INC (2)	7.6	19.6	-12	-157.9%	YES	99.8	98.3	0.4	16%	YES	84	29	71	25	15.5%	13.8%	YES
			ASSUMED LKD	W22/F02 / INC (2)	21.6	25.6	-4	-18.5%	YES												
			ASSUMED LKD	W23/F02 / INC (2)	38.9	31.3	7.6	19.5%	YES												
	R15	RESIDENTIAL	ASSUMED BEDROOM	W24/F02 / INC (2)	18.7	15.6	3.1	16.6%	YES	96.3	95.7	0.1	0.7%	YES	33	27	29	23	12.1%	14.8%	YES
			ASSUMED BEDROOM	W25/F02 / INC (2)	19.9	16.1	3.8	19.1%	YES												
	R16	RESIDENTIAL	ASSUMED BEDROOM	W26/F02 / INC (2)	20.8	16.5	4.3	20.7%	NO	97.5	95.8	0.3	1.8%	YES	35	27	31	24	11.4%	11.1%	YES
			ASSUMED BEDROOM	W27/F02 / INC (2)	20.9	16.7	4.2	20.1%	NO												
	R17	RESIDENTIAL	ASSUMED LKD	W28/F02 / INC (2)	20.6	16.7	3.9	18.9%	YES	98.8	98.8	0.0	0.0%	YES	64	29	60	27	6.3%	6.9%	YES
			ASSUMED LKD	W29/F02 / INC (2)	20.5	16.7	3.8	18.5%	YES												
			ASSUMED LKD	W30/F02 / INC (2)	21.8	18	3.8	17.4%	YES												
			ASSUMED LKD	W31/F02 / INC (2)	25.5	21.8	3.7	14.5%	YES												
			ASSUMED LKD	W32/F02 / INC (2)	23.3	22.6	0.7	3.0%	YES												
			ASSUMED LKD	W33/F02 / INC (2)	21.9	21.2	0.7	3.2%	YES												
	R18	RESIDENTIAL	ASSUMED LKD	W34/F02 / INC (2)	21.3	18.7	2.6	12.2%	YES	99.1	99	0.0	0.0%	YES	84	29	79	26	6.0%	10.3%	YES

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	VSC (WINDOW)					NSL					APSH (ROOM)						
					EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
					%	%		%	CRITERIA	%	%	SOM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
			ASSUMED LKD	W35/F02 / INC (2)	18.3	16.3	2	10.9%	YES												
			ASSUMED LKD	W36/F02 / INC (2)	31.9	28.2	3.7	11.6%	YES												
			ASSUMED LKD	W37/F02 / INC (2)	31.9	28.1	3.8	11.9%	YES												
			ASSUMED LKD	W38/F02 / INC (2)	37.8	33.7	4.1	10.8%	YES												
	R19	RESIDENTIAL	ASSUMED BEDROOM	W39/F02 / INC (2)	38.4	33.8	4.6	12.0%	YES	98.1	98.1	0.0	0.0%	YES	81	28	76	25	6.2%	10.7%	YES
			ASSUMED BEDROOM	W40/F02 / INC (2)	37.9	33	4.9	12.9%	YES												
	R20	RESIDENTIAL	ASSUMED BEDROOM	W41/F02 / INC (2)	32	26.4	5.6	17.5%	YES	99.4	99.4	0.0	0.0%	YES	78	29	70	23	10.3%	20.7%	YES
			ASSUMED BEDROOM	W42/F02 / INC (2)	32	26.1	5.9	18.4%	YES												
	R21	RESIDENTIAL	ASSUMED BEDROOM	W43/F02 / INC (2)	37.4	31.3	6.1	16.3%	YES	99.3	99.3	0.0	0.0%	YES	80	29	73	24	8.8%	17.2%	YES
			ASSUMED BEDROOM	W44/F02 / INC (2)	38.5	32.3	6.2	16.1%	YES												
	R22	RESIDENTIAL	ASSUMED BEDROOM	W45/F02 / INC (2)	38.7	32.5	6.2	16.0%	YES	99.1	99.1	0.0	0.1%	YES	81	29	74	24	8.6%	17.2%	YES
	R23	RESIDENTIAL	ASSUMED BEDROOM	W46/F02 / INC (2)	38.3	32	6.3	16.4%	YES	97.7	97.7	0.0	0.0%	YES	77	28	71	23	7.8%	17.9%	YES
			ASSUMED BEDROOM	W47/F02 / INC (2)	36.9	30.8	6.1	16.5%	YES												
	R24	RESIDENTIAL	ASSUMED LKD	W48/F02 / INC (2)	39.3	34.3	5	12.7%	YES	99.9	99.9	0.0	0.0%	YES	99	29	95	26	4.0%	10.3%	YES
			ASSUMED LKD	W49/F02 / INC (2)	39.3	39.3	0	0.0%	YES												
			ASSUMED LKD	W50/F02 / INC (2)	30.3	30.3	0	0.0%	YES												
F03	R1	RESIDENTIAL	ASSUMED LKD	W1/F03 / INC (2)	38.3	38	0.3	0.8%	YES	99.3	99.9	-0.2	-0.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W2/F03 / INC (2)	26.4	26	0.4	15%	YES												
			ASSUMED LKD	W3/F03 / INC (2)	15.7	15.5	0.2	1.3%	YES												
	R2	RESIDENTIAL	ASSUMED LKD	W4/F03 / INC (2)	20.9	20.4	0.5	2.4%	YES	81.6	86.5	-1.1	-6.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W5/F03 / INC (2)	20.6	20.4	0.2	1.0%	YES												
	R3 (3)	RESIDENTIAL	ASSUMED LKD	W6/F03 / INC (2)	16.9	21.4	-4.5	-26.6%	YES	18.2	24.6	-2.1	-35.4%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R4	RESIDENTIAL	ASSUMED BEDROOM	W7/F03 / INC (2)	16.1	22.3	-6.2	-38.5%	YES	37	33.6	0.4	9.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R5	RESIDENTIAL	ASSUMED BEDROOM	W8/F03 / INC (2)	15.5	23.1	-7.6	-49.0%	YES	41.3	51.5	-1.2	-24.9%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W9/F03 / INC (2)	15.3	23.3	-8	-52.3%	YES												
	R6	RESIDENTIAL	ASSUMED BEDROOM	W10/F03 / INC (2)	14.7	24.1	-9.4	-63.9%	YES	32.3	63.6	-3.8	-97.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W11/F03 / INC (2)	14.5	24.3	-9.8	-67.6%	YES												
	R7	RESIDENTIAL	ASSUMED BEDROOM	W12/F03 / INC (2)	14.1	24.8	-10.7	-75.9%	YES	30.6	69.9	-4.8	-128.3%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R8 (3)	RESIDENTIAL	ASSUMED LKD	W13/F03 / INC (2)	13.7	25.3	-11.6	-84.7%	YES	12.1	31.5	-5.5	-160.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R9	RESIDENTIAL	ASSUMED BEDROOM	W14/F03 / INC (2)	13.5	25.6	-12.1	-89.6%	YES	27.4	68.9	-4.0	-151.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W15/F03 / INC (2)	13.5	25.6	-12.1	-89.6%	YES												
	R10	RESIDENTIAL	ASSUMED BEDROOM	W16/F03 / INC (2)	13.3	25.8	-12.5	-94.0%	YES	26.9	64.1	-5.2	-138.3%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W17/F03 / INC (2)	13.3	25.8	-12.5	-94.0%	YES												
	R11	RESIDENTIAL	ASSUMED BEDROOM	W18/F03 / INC (2)	13.3	25.9	-12.6	-94.7%	YES	17.2	58.6	-5.0	-241.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R12 (3)	RESIDENTIAL	ASSUMED LKD	W19/F03 / INC (2)	13.5	26.1	-12.6	-93.3%	YES	11.2	29.1	-5.9	-159.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	VSC (WINDOW)					NSL					APSH (ROOM)						
					EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
					%	%		%	CRITERIA	%	%	SOM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
	R13	RESIDENTIAL	ASSUMED LKD	W20/F03 / INC (2)	15.8	27.4	-11.6	-73.4%	YES	42.4	81.2	-9.1	-91.4%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R14	RESIDENTIAL	ASSUMED LKD	W21/F03 / INC (2)	8.7	21.6	-12.9	-148.3%	YES	99.8	99.8	0.0	0.1%	YES	84	29	76	25	9.5%	13.8%	YES
			ASSUMED LKD	W22/F03 / INC (2)	22.7	29	-6.3	-27.8%	YES												
			ASSUMED LKD	W23/F03 / INC (2)	39.5	33.7	5.8	14.7%	YES												
	R15	RESIDENTIAL	ASSUMED BEDROOM	W24/F03 / INC (2)	19.1	16.7	2.4	12.6%	YES	96.4	96.3	0.0	0.1%	YES	33	27	31	25	6.1%	7.4%	YES
			ASSUMED BEDROOM	W25/F03 / INC (2)	20.3	17.4	2.9	14.3%	YES												
	R16	RESIDENTIAL	ASSUMED BEDROOM	W26/F03 / INC (2)	21.2	18	3.2	15.1%	YES	97.5	96.9	0.1	0.6%	YES	35	27	32	25	8.6%	7.4%	YES
			ASSUMED BEDROOM	W27/F03 / INC (2)	21.3	18.1	3.2	15.0%	YES												
	R17	RESIDENTIAL	ASSUMED LKD	W28/F03 / INC (2)	21	18	3	14.3%	YES	98.8	98.8	0.0	0.0%	YES	63	29	59	27	6.3%	6.9%	YES
			ASSUMED LKD	W29/F03 / INC (2)	20.9	18	2.9	13.9%	YES												
			ASSUMED LKD	W30/F03 / INC (2)	22.2	19.4	2.8	12.6%	YES												
			ASSUMED LKD	W31/F03 / INC (2)	26	23.2	2.8	10.8%	YES												
			ASSUMED LKD	W32/F03 / INC (2)	25.6	25.5	0.1	0.4%	YES												
			ASSUMED LKD	W33/F03 / INC (2)	24.4	24.3	0.1	0.4%	YES												
	R18	RESIDENTIAL	ASSUMED LKD	W34/F03 / INC (2)	22.4	20.3	2.1	9.4%	YES	98.9	98.9	0.0	0.0%	YES	83	29	81	28	2.4%	3.4%	YES
			ASSUMED LKD	W35/F03 / INC (2)	32.3	30.3	2	6.2%	YES												
			ASSUMED LKD	W36/F03 / INC (2)	19.5	18	1.5	7.7%	YES												
			ASSUMED LKD	W37/F03 / INC (2)	32.3	30.3	2	6.2%	YES												
			ASSUMED LKD	W38/F03 / INC (2)	38.4	36.5	1.9	4.9%	YES												
	R19	RESIDENTIAL	ASSUMED BEDROOM	W39/F03 / INC (2)	39	37.2	1.8	4.6%	YES	98	98	0.0	0.0%	YES	80	29	78	28	2.5%	3.4%	YES
			ASSUMED BEDROOM	W40/F03 / INC (2)	38.5	36.6	1.9	4.9%	YES												
	R20	RESIDENTIAL	ASSUMED BEDROOM	W41/F03 / INC (2)	32.3	30.6	1.7	5.3%	YES	99.3	99.3	0.0	0.0%	YES	76	29	73	27	3.9%	6.9%	YES
			ASSUMED BEDROOM	W42/F03 / INC (2)	32.3	30.6	1.7	5.3%	YES												
	R21	RESIDENTIAL	ASSUMED BEDROOM	W43/F03 / INC (2)	37.9	36.2	1.7	4.5%	YES	99.3	99.3	0.0	0.0%	YES	80	29	77	27	3.8%	6.9%	YES
			ASSUMED BEDROOM	W44/F03 / INC (2)	39	37.3	1.7	4.4%	YES												
	R22	RESIDENTIAL	ASSUMED BEDROOM	W45/F03 / INC (2)	39.2	37.6	1.6	4.1%	YES	99.2	99.1	0.0	0.0%	YES	81	29	78	27	3.7%	6.9%	YES
	R23	RESIDENTIAL	ASSUMED BEDROOM	W46/F03 / INC (2)	38.7	37.2	1.5	3.9%	YES	97.7	97.7	0.0	0.0%	YES	77	28	76	27	1.3%	3.6%	YES
			ASSUMED BEDROOM	W47/F03 / INC (2)	37.2	35.8	1.4	3.8%	YES												
	R24	RESIDENTIAL	ASSUMED LKD	W48/F03 / INC (2)	39.6	38.4	1.2	3.0%	YES	99.9	99.9	0.0	0.0%	YES	99	29	98	28	1.0%	3.4%	YES
			ASSUMED LKD	W49/F03 / INC (2)	39.6	39.6	0	0.0%	YES												
			ASSUMED LKD	W50/F03 / INC (2)	30.5	30.5	0	0.0%	YES												
F04	R1	RESIDENTIAL	ASSUMED LKD	W1/F04 / INC (2)	39.5	39.4	0.1	0.3%	YES	99.3	99.8	-0.2	-0.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W2/F04 / INC (2)	29.3	28.3	1	3.4%	YES												
			ASSUMED LKD	W3/F04 / INC (2)	18.1	17.3	0.8	4.4%	YES												
	R2	RESIDENTIAL	ASSUMED LKD	W4/F04 / INC (2)	23.6	22.5	1.1	4.7%	YES	90.7	88.4	0.5	2.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A

					VSC (WINDOW)					NSL					APSH (ROOM)						
FLOOR	ROOM	PROPERTY	ROOM	WINDOW	EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
		TYPE	USE		%	%		%	CRITERIA	%	%	SQM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
			ASSUMED LKD	W5/F04 / INC (2)	23.7	23.2	0.5	2.1%	YES												
	R3 (3)	RESIDENTIAL	ASSUMED LKD	W6/F04 / INC (2)	19.9	24.5	-4.6	-23.1%	YES	23	30	-2.3	-30.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R4	RESIDENTIAL	ASSUMED BEDROOM	W7/F04 / INC (2)	19.1	25.4	-6.3	-33.0%	YES	44.3	44.3	0.0	-0.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R5	RESIDENTIAL	ASSUMED BEDROOM	W8/F04 / INC (2)	18.4	26.3	-7.9	-42.9%	YES	48.7	64.8	-1.8	-33.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W9/F04 / INC (2)	18.2	26.6	-8.4	-46.2%	YES												
	R6	RESIDENTIAL	ASSUMED BEDROOM	W10/F04 / INC (2)	17.6	27.4	-9.8	-55.7%	YES	40.3	80.3	-4.9	-99.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W11/F04 / INC (2)	17.4	27.6	-10.2	-58.6%	YES												
	R7	RESIDENTIAL	ASSUMED BEDROOM	W12/F04 / INC (2)	16.9	28.2	-11.3	-66.9%	YES	40.8	88.8	-5.8	-117.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R8 (3)	RESIDENTIAL	ASSUMED LKD	W13/F04 / INC (2)	16.4	28.8	-12.4	-75.6%	YES	15.4	42.7	-7.7	-176.4%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R9	RESIDENTIAL	ASSUMED BEDROOM	W14/F04 / INC (2)	16.1	29.2	-13.1	-81.4%	YES	34.1	92.2	-5.6	-170.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W15/F04 / INC (2)	16	29.3	-13.3	-83.1%	YES												
	R10	RESIDENTIAL	ASSUMED BEDROOM	W16/F04 / INC (2)	15.8	29.6	-13.8	-87.3%	YES	30.8	94.8	-8.9	-207.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W17/F04 / INC (2)	15.7	29.8	-14.1	-89.8%	YES												
	R11	RESIDENTIAL	ASSUMED BEDROOM	W18/F04 / INC (2)	15.6	30	-14.4	-92.3%	YES	21.2	92.7	-8.7	-337.3%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R12 (3)	RESIDENTIAL	ASSUMED LKD	W19/F04 / INC (2)	15.7	30.3	-14.6	-93.0%	YES	13.3	45.5	-10.5	-241.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R13	RESIDENTIAL	ASSUMED LKD	W20/F04 / INC (2)	17.6	31	-13.4	-76.1%	YES	44.9	93.1	-11.3	-107.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R14	RESIDENTIAL	ASSUMED LKD	W21/F04 / INC (2)	10.2	23.6	-13.4	-131.4%	YES	99.8	100	0.0	-0.2%	YES	84	29	81	27	3.6%	6.9%	YES
			ASSUMED LKD	W22/F04 / INC (2)	23.9	32.6	-8.7	-36.4%	YES												
			ASSUMED LKD	W23/F04 / INC (2)	39.6	35.8	3.8	9.6%	YES												
	R15	RESIDENTIAL	ASSUMED BEDROOM	W24/F04 / INC (2)	18.8	17.2	1.6	8.5%	YES	96.3	96.3	0.0	0.0%	YES	33	27	31	25	6.1%	7.4%	YES
			ASSUMED BEDROOM	W25/F04 / INC (2)	20	18	2	10.0%	YES												
	R16	RESIDENTIAL	ASSUMED BEDROOM	W26/F04 / INC (2)	20.9	18.7	2.2	10.5%	YES	97.5	97.4	0.0	0.1%	YES	35	27	32	25	8.6%	7.4%	YES
			ASSUMED BEDROOM	W27/F04 / INC (2)	21	18.8	2.2	10.5%	YES												
	R17	RESIDENTIAL	ASSUMED LKD	W28/F04 / INC (2)	20.7	18.6	2.1	10.1%	YES	98.8	98.8	0.0	0.0%	YES	65	29	62	27	4.6%	6.9%	YES
			ASSUMED LKD	W29/F04 / INC (2)	20.5	18.5	2	9.8%	YES												
			ASSUMED LKD	W30/F04 / INC (2)	21.8	19.9	1.9	8.7%	YES												
			ASSUMED LKD	W31/F04 / INC (2)	25.7	23.7	2	7.8%	YES												
			ASSUMED LKD	W32/F04 / INC (2)	28.5	28.4	0.1	0.4%	YES												
			ASSUMED LKD	W33/F04 / INC (2)	27.5	27.5	0	0.0%	YES												
	R18	RESIDENTIAL	ASSUMED LKD	W34/F04 / INC (2)	23.6	22.1	1.5	6.4%	YES	99.1	99.1	0.0	0.0%	YES	83	29	82	29	1.2%	0.0%	YES
			ASSUMED LKD	W35/F04 / INC (2)	32.1	30.6	1.5	4.7%	YES												
			ASSUMED LKD	W36/F04 / INC (2)	20.9	19.9	1	4.8%	YES												
			ASSUMED LKD	W37/F04 / INC (2)	32	30.6	1.4	4.4%	YES												
			ASSUMED LKD	W38/F04 / INC (2)	38.8	37.4	1.4	3.6%	YES												
	R19	RESIDENTIAL	ASSUMED BEDROOM	W39/F04 / INC (2)	39.3	38	1.3	3.3%	YES	98.1	98.1	0.0	0.0%	YES	81	29	80	29	1.2%	0.0%	YES

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	VSC (WINDOW)					NSL					APSH (ROOM)						
					EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
					%	%		%	CRITERIA	%	%	SOM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
			ASSUMED BEDROOM	W40/F04 / INC (2)	38.8	37.5	13	3.4%	YES												
	R20	RESIDENTIAL	ASSUMED BEDROOM	W41/F04 / INC (2)	32	30.8	12	3.7%	YES	99.4	99.4	0.0	0.0%	YES	77	29	77	29	0.0%	0.0%	YES
			ASSUMED BEDROOM	W42/F04 / INC (2)	32	30.9	11	3.4%	YES												
	R21	RESIDENTIAL	ASSUMED BEDROOM	W43/F04 / INC (2)	38.2	37.1	11	2.9%	YES	99.3	99.3	0.0	0.0%	YES	81	29	81	29	0.0%	0.0%	YES
			ASSUMED BEDROOM	W44/F04 / INC (2)	39.2	38.1	11	2.8%	YES												
	R22	RESIDENTIAL	ASSUMED BEDROOM	W45/F04 / INC (2)	39.3	38.3	1	2.5%	YES	99.1	99.1	0.0	0.0%	YES	81	29	81	29	0.0%	0.0%	YES
	R23	RESIDENTIAL	ASSUMED BEDROOM	W46/F04 / INC (2)	38.8	37.8	1	2.6%	YES	97.7	97.7	0.0	0.0%	YES	77	28	77	28	0.0%	0.0%	YES
			ASSUMED BEDROOM	W47/F04 / INC (2)	37.4	36.4	1	2.7%	YES												
	R24	RESIDENTIAL	ASSUMED LKD	W48/F04 / INC (2)	39.6	38.8	0.8	2.0%	YES	99.9	99.9	0.0	0.0%	YES	99	29	99	29	0.0%	0.0%	YES
			ASSUMED LKD	W49/F04 / INC (2)	39.6	39.6	0	0.0%	YES												
			ASSUMED LKD	W50/F04 / INC (2)	30.8	30.8	0	0.0%	YES												
F05	R1	RESIDENTIAL	ASSUMED LKD	W1/F05 / INC (2)	39.6	39.6	0	0.0%	YES	99.9	99.8	0.0	0.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W2/F05 / INC (2)	32.1	30.4	17	5.3%	YES												
			ASSUMED LKD	W3/F05 / INC (2)	18.1	16.7	14	7.7%	YES												
	R2	RESIDENTIAL	ASSUMED LKD	W4/F05 / INC (2)	24.5	23	15	61%	YES	96.3	89.4	16	7.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W5/F05 / INC (2)	27.1	26.1	1	3.7%	YES												
	R3 (3)	RESIDENTIAL	ASSUMED LKD	W6/F05 / INC (2)	23.2	27.4	-4.2	-18.1%	YES	29.2	39.3	-3.3	-34.4%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R4	RESIDENTIAL	ASSUMED BEDROOM	W7/F05 / INC (2)	22.5	28.4	-5.9	-26.2%	YES	55.8	62.2	-0.8	-11.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R5	RESIDENTIAL	ASSUMED BEDROOM	W8/F05 / INC (2)	21.9	29.4	-7.5	-34.2%	YES	64.1	86.8	-2.6	-35.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W9/F05 / INC (2)	21.7	29.7	-8	-36.9%	YES												
	R6	RESIDENTIAL	ASSUMED BEDROOM	W10/F05 / INC (2)	21	30.5	-9.5	-45.2%	YES	56.9	98.8	-5.1	-73.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W11/F05 / INC (2)	20.8	30.8	-10	-48.1%	YES												
	R7	RESIDENTIAL	ASSUMED BEDROOM	W12/F05 / INC (2)	20.1	31.4	-11.3	-56.2%	YES	57.5	99.2	-5.0	-72.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R8 (3)	RESIDENTIAL	ASSUMED LKD	W13/F05 / INC (2)	19.6	32.2	-12.6	-64.3%	YES	20.5	55.4	-9.9	-169.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R9	RESIDENTIAL	ASSUMED BEDROOM	W14/F05 / INC (2)	19.2	32.7	-13.5	-70.3%	YES	42.1	99.9	-5.6	-137.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W15/F05 / INC (2)	19.1	32.9	-13.8	-72.3%	YES												
	R10	RESIDENTIAL	ASSUMED BEDROOM	W16/F05 / INC (2)	18.8	33.2	-14.4	-76.6%	YES	37.5	98.4	-8.5	-162.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W17/F05 / INC (2)	18.7	33.4	-14.7	-78.6%	YES												
	R11	RESIDENTIAL	ASSUMED BEDROOM	W18/F05 / INC (2)	18.4	33.7	-15.3	-83.2%	YES	27.8	93.8	-8.0	-238.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R12 (3)	RESIDENTIAL	ASSUMED LKD	W19/F05 / INC (2)	18.4	33.9	-15.5	-84.2%	YES	16.8	82.1	-21.4	-389.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R13	RESIDENTIAL	ASSUMED LKD	W20/F05 / INC (2)	19.8	33.8	-14	-70.7%	YES	49	95.5	-10.9	-94.8%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R14	RESIDENTIAL	ASSUMED LKD	W21/F05 / INC (2)	12.1	25	-12.9	-106.6%	YES	99.8	99.9	0.0	-0.2%	YES	84	29	82	27	2.4%	6.9%	YES
			ASSUMED LKD	W22/F05 / INC (2)	25.5	35.4	-9.9	-38.8%	YES												
			ASSUMED LKD	W23/F05 / INC (2)	39.6	37.6	2	5.1%	YES												
	R15	RESIDENTIAL	ASSUMED BEDROOM	W24/F05 / INC (2)	19.2	18.3	0.9	4.7%	YES	96.4	96.3	0.0	0.0%	YES	33	27	32	26	3.0%	3.7%	YES

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	VSC (WINDOW)					NSL					APSH (ROOM)						
					EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
					%	%		%	CRITERIA	%	%	SOM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
			ASSUMED BEDROOM	W25/F05 / INC (2)	20.4	19.3	11	5.4%	YES												
	R16	RESIDENTIAL	ASSUMED BEDROOM	W26/F05 / INC (2)	21.3	20.1	12	5.6%	YES	97.5	97.5	0.0	0.0%	YES	35	27	34	26	2.9%	3.7%	YES
			ASSUMED BEDROOM	W27/F05 / INC (2)	21.4	20.1	13	6.1%	YES												
	R17	RESIDENTIAL	ASSUMED LKD	W28/F05 / INC (2)	21.1	19.9	12	5.7%	YES	98.8	98.8	0.0	0.0%	YES	72	29	72	29	0.0%	0.0%	YES
			ASSUMED LKD	W29/F05 / INC (2)	21	19.9	11	5.2%	YES												
			ASSUMED LKD	W30/F05 / INC (2)	22.4	21.2	12	5.4%	YES												
			ASSUMED LKD	W31/F05 / INC (2)	26.2	25	12	4.6%	YES												
			ASSUMED LKD	W32/F05 / INC (2)	31.8	31.8	0	0.0%	YES												
			ASSUMED LKD	W33/F05 / INC (2)	31.2	31.2	0	0.0%	YES												
	R18	RESIDENTIAL	ASSUMED LKD	W34/F05 / INC (2)	25	24.2	0.8	3.2%	YES	98.9	98.9	0.0	0.0%	YES	82	29	82	29	0.0%	0.0%	YES
			ASSUMED LKD	W35/F05 / INC (2)	39.2	38.4	0.8	2.0%	YES												
			ASSUMED LKD	W36/F05 / INC (2)	22.8	22.2	0.6	2.6%	YES												
			ASSUMED LKD	W37/F05 / INC (2)	39.1	38.3	0.8	2.0%	YES												
			ASSUMED LKD	W38/F05 / INC (2)	39.1	38.3	0.8	2.0%	YES												
	R19	RESIDENTIAL	ASSUMED BEDROOM	W39/F05 / INC (2)	39.1	38.3	0.8	2.0%	YES	98	98	0.0	0.0%	YES	81	29	81	29	0.0%	0.0%	YES
			ASSUMED BEDROOM	W40/F05 / INC (2)	39.1	38.4	0.7	1.8%	YES												
	R20	RESIDENTIAL	ASSUMED BEDROOM	W41/F05 / INC (2)	39.1	38.4	0.7	1.8%	YES	99.4	99.4	0.0	0.0%	YES	81	29	81	29	0.0%	0.0%	YES
			ASSUMED BEDROOM	W42/F05 / INC (2)	39.1	38.4	0.7	1.8%	YES												
	R21	RESIDENTIAL	ASSUMED BEDROOM	W43/F05 / INC (2)	39.1	38.4	0.7	1.8%	YES	99.3	99.3	0.0	0.0%	YES	81	29	81	29	0.0%	0.0%	YES
			ASSUMED BEDROOM	W44/F05 / INC (2)	39.1	38.4	0.7	1.8%	YES												
	R22	RESIDENTIAL	ASSUMED BEDROOM	W45/F05 / INC (2)	39	38.4	0.6	1.5%	YES	99.1	99.1	0.0	0.0%	YES	81	29	81	29	0.0%	0.0%	YES
	R23	RESIDENTIAL	ASSUMED BEDROOM	W46/F05 / INC (2)	38.7	38.2	0.5	1.3%	YES	97.8	97.8	0.0	0.0%	YES	79	28	79	28	0.0%	0.0%	YES
			ASSUMED BEDROOM	W47/F05 / INC (2)	37.6	37.1	0.5	1.3%	YES												
	R24	RESIDENTIAL	ASSUMED LKD	W48/F05 / INC (2)	39.6	39.1	0.5	1.3%	YES	99.9	99.9	0.0	0.0%	YES	99	29	99	29	0.0%	0.0%	YES
			ASSUMED LKD	W49/F05 / INC (2)	39.6	39.6	0	0.0%	YES												
			ASSUMED LKD	W50/F05 / INC (2)	34.7	34.7	0	0.0%	YES												
F06	R1 (3)	RESIDENTIAL	ASSUMED LKD	W1/F06 / INC (2)	26	29.6	-3.6	-13.8%	YES	41.5	56.5	-4.9	-36.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R2	RESIDENTIAL	ASSUMED BEDROOM	W2/F06 / INC (2)	26	31	-5	-19.2%	YES	76.9	83.1	-0.8	-8.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R3	RESIDENTIAL	ASSUMED BEDROOM	W3/F06 / INC (2)	25.9	32.3	-6.4	-24.7%	YES	94.5	97	-0.3	-2.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W4/F06 / INC (2)	25.7	32.6	-6.9	-26.8%	YES												
	R4	RESIDENTIAL	ASSUMED BEDROOM	W5/F06 / INC (2)	24.9	33.2	-8.3	-33.3%	YES	84.7	99.5	-1.8	-17.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W6/F06 / INC (2)	24.6	33.4	-8.8	-35.8%	YES												
	R5	RESIDENTIAL	ASSUMED BEDROOM	W7/F06 / INC (2)	23.9	33.9	-10	-41.8%	YES	80.6	99.2	-2.3	-23.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R6 (3)	RESIDENTIAL	ASSUMED LKD	W8/F06 / INC (2)	23.4	34.7	-11.3	-48.3%	YES	28.4	82.5	-15.3	-190.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R7	RESIDENTIAL	ASSUMED BEDROOM	W9/F06 / INC (2)	23.1	35.2	-12.1	-52.4%	YES	58.9	99.9	-4.0	-69.7%	YES	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

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	VSC (WINDOW)					NSL					APSH (ROOM)						
					EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
					%	%		%	CRITERIA	%	%	SOM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
			ASSUMED BEDROOM	W10/F06 / INC (2)	23	35.4	-12.4	-53.9%	YES												
	R8	RESIDENTIAL	ASSUMED BEDROOM	W11/F06 / INC (2)	22.5	35.7	-13.2	-58.7%	YES	49.6	98.4	-6.8	-98.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W12/F06 / INC (2)	22.3	35.8	-13.5	-60.5%	YES												
	R9	RESIDENTIAL	ASSUMED BEDROOM	W13/F06 / INC (2)	21.9	36.1	-14.2	-64.8%	YES	35.1	93.8	-7.1	-167.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R10 (3)	RESIDENTIAL	ASSUMED LKD	W14/F06 / INC (2)	21.8	36.3	-14.5	-66.5%	YES	22.3	95.1	-23.8	-327.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R11	RESIDENTIAL	ASSUMED LKD	W15/F06 / INC (2)	22.6	36	-13.4	-59.3%	YES	55.3	95.5	-9.4	-72.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R12	RESIDENTIAL	ASSUMED LKD	W16/F06 / INC (2)	14.5	26.2	-11.7	-80.7%	YES	99.8	100	0.0	-0.2%	YES	84	29	85	29	-12%	0.0%	YES
			ASSUMED LKD	W17/F06 / INC (2)	27.5	37.5	-10	-36.4%	YES												
			ASSUMED LKD	W18/F06 / INC (2)	39.6	38.9	0.7	18%	YES												
	R13	RESIDENTIAL	ASSUMED BEDROOM	W19/F06 / INC (2)	19	18.7	0.3	16%	YES	96.3	96.3	0.0	0.0%	YES	33	27	33	27	0.0%	0.0%	YES
			ASSUMED BEDROOM	W20/F06 / INC (2)	20.2	19.8	0.4	2.0%	YES												
	R14	RESIDENTIAL	ASSUMED BEDROOM	W21/F06 / INC (2)	21.1	20.6	0.5	2.4%	YES	97.5	97.5	0.0	0.0%	YES	35	27	35	27	0.0%	0.0%	YES
			ASSUMED BEDROOM	W22/F06 / INC (2)	21.2	20.7	0.5	2.4%	YES												
	R15	RESIDENTIAL	ASSUMED LKD	W23/F06 / INC (2)	20.9	20.5	0.4	1.9%	YES	100	100	0.0	0.0%	YES	77	29	77	29	0.0%	0.0%	YES
			ASSUMED LKD	W24/F06 / INC (2)	20.8	20.4	0.4	1.9%	YES												
			ASSUMED LKD	W25/F06 / INC (2)	22.2	21.7	0.5	2.3%	YES												
			ASSUMED LKD	W26/F06 / INC (2)	26	25.5	0.5	1.9%	YES												
			ASSUMED LKD	W27/F06 / INC (2)	35.4	35.4	0	0.0%	YES												
			ASSUMED LKD	W28/F06 / INC (2)	35	35	0	0.0%	YES												
	R16	RESIDENTIAL	ASSUMED LKD	W29/F06 / INC (2)	19.3	19	0.3	16%	YES	99.3	99.3	0.0	0.0%	YES	58	28	58	28	0.0%	0.0%	YES
			ASSUMED LKD	W30/F06 / INC (2)	18.3	18	0.3	16%	YES												
			ASSUMED LKD	W31/F06 / INC (2)	17.5	17.3	0.2	11%	YES												
			ASSUMED LKD	W32/F06 / INC (2)	17.2	16.9	0.3	1.7%	YES												
			ASSUMED LKD	W33/F06 / INC (2)	28.7	28.4	0.3	1.0%	YES												
			ASSUMED LKD	W34/F06 / INC (2)	26.5	26.3	0.2	0.8%	YES												
	R17	RESIDENTIAL	ASSUMED BEDROOM	W35/F06 / INC (2)	19.3	19.2	0.1	0.5%	YES	87.5	87.5	0.0	0.0%	YES	32	25	32	25	0.0%	0.0%	YES
	R18	RESIDENTIAL	ASSUMED BEDROOM	W36/F06 / INC (2)	22.3	22.1	0.2	0.9%	YES	99.1	99.1	0.0	0.0%	YES	38	27	38	27	0.0%	0.0%	YES
	R19	RESIDENTIAL	ASSUMED BEDROOM	W37/F06 / INC (2)	22.5	22.3	0.2	0.9%	YES	99	99	0.0	0.0%	YES	38	28	38	28	0.0%	0.0%	YES
	R20	RESIDENTIAL	ASSUMED BEDROOM	W38/F06 / INC (2)	19.6	19.5	0.1	0.5%	YES	87.6	87.6	0.0	0.0%	YES	31	27	31	27	0.0%	0.0%	YES
	R21	RESIDENTIAL	ASSUMED LKD	W39/F06 / INC (2)	26.9	26.7	0.2	0.7%	YES	98.5	98.5	0.0	0.0%	YES	60	29	60	29	0.0%	0.0%	YES
			ASSUMED LKD	W40/F06 / INC (2)	29.1	28.9	0.2	0.7%	YES												
			ASSUMED LKD	W41/F06 / INC (2)	0	0	0	-	YES												
			ASSUMED LKD	W42/F06 / INC (2)	0	0	0	-	YES												
			ASSUMED LKD	W43/F06 / INC (2)	0	0	0	-	YES												
			ASSUMED LKD	W44/F06 / INC (2)	0	0	0	-	YES												

					VSC (WINDOW)					NSL					APSH (ROOM)						
FLOOR	ROOM	PROPERTY	ROOM	WINDOW	EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
		TYPE	USE		%	%		%	CRITERIA	%	%	SQM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
F07	R1 (3)	RESIDENTIAL	ASSUMED LKD	W1/F07 / INC (2)	23.6	26.9	-3.3	-14.0%	YES	72	91.9	-6.5	-27.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R2	RESIDENTIAL	ASSUMED BEDROOM	W2/F07 / INC (2)	26.8	31	-4.2	-15.7%	YES	93	93	0.0	0.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R3	RESIDENTIAL	ASSUMED BEDROOM	W3/F07 / INC (2)	29.5	34.7	-5.2	-17.6%	YES	98.8	98.9	0.0	0.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W4/F07 / INC (2)	29.4	35	-5.6	-19.0%	YES												
	R4	RESIDENTIAL	ASSUMED BEDROOM	W5/F07 / INC (2)	28.2	34.9	-6.7	-23.8%	YES	95.6	99.3	-0.5	-3.9%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W6/F07 / INC (2)	27.8	34.9	-7.1	-25.5%	YES												
	R5	RESIDENTIAL	ASSUMED BEDROOM	W7/F07 / INC (2)	27.3	35.2	-7.9	-28.9%	YES	95.1	99	-0.5	-4.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W8/F07 / INC (2)	27.2	35.5	-8.3	-30.5%	YES												
	R6 (3)	RESIDENTIAL	ASSUMED LKD	W9/F07 / INC (2)	27.4	36.4	-9	-32.8%	YES	40.3	99	-16.6	-145.5%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W10/F07 / INC (2)	27.4	36.7	-9.3	-33.9%	YES												
	R7	RESIDENTIAL	ASSUMED BEDROOM	W11/F07 / INC (2)	27.3	37.4	-10.1	-37.0%	YES	92.2	99.8	-0.7	-8.3%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R8	RESIDENTIAL	ASSUMED BEDROOM	W12/F07 / INC (2)	26.7	37.6	-10.9	-40.8%	YES	69.1	98.2	-4.1	-42.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W13/F07 / INC (2)	26.5	37.7	-11.2	-42.3%	YES												
	R9	RESIDENTIAL	ASSUMED BEDROOM	W14/F07 / INC (2)	25.9	37.8	-11.9	-45.9%	YES	46.9	93.8	-5.7	-100.2%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R10 (3)	RESIDENTIAL	ASSUMED LKD	W15/F07 / INC (2)	25.7	37.9	-12.2	-47.5%	YES	29.5	99.5	-22.9	-236.8%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R11	RESIDENTIAL	ASSUMED LKD	W16/F07 / INC (2)	26.2	37.6	-11.4	-43.5%	YES	66.4	95.6	-6.9	-44.1%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R12	RESIDENTIAL	ASSUMED LKD	W17/F07 / INC (2)	17.5	27.2	-9.7	-55.4%	YES	99.8	100	0.0	-0.2%	YES	84	29	85	29	-1.2%	0.0%	YES
			ASSUMED LKD	W18/F07 / INC (2)	30.2	39.1	-8.9	-29.5%	YES												
			ASSUMED LKD	W19/F07 / INC (2)	39.6	39.6	0	0.0%	YES												
	R13	RESIDENTIAL	ASSUMED BEDROOM	W20/F07 / INC (2)	19.3	19.3	0	0.0%	YES	0.1	0.1	0.0	0.0%	YES	33	27	33	27	0.0%	0.0%	YES
			ASSUMED BEDROOM	W21/F07 / INC (2)	20.5	20.5	0	0.0%	YES												
	R14	RESIDENTIAL	ASSUMED BEDROOM	W22/F07 / INC (2)	21.5	21.5	0	0.0%	YES	0.1	0.1	0.0	0.0%	YES	35	27	35	27	0.0%	0.0%	YES
			ASSUMED BEDROOM	W23/F07 / INC (2)	21.6	21.6	0	0.0%	YES												
	R15	RESIDENTIAL	ASSUMED LKD	W24/F07 / INC (2)	21.3	21.3	0	0.0%	YES	99.6	99.6	0.0	0.0%	YES	80	29	80	29	0.0%	0.0%	YES
			ASSUMED LKD	W25/F07 / INC (2)	21.2	21.2	0	0.0%	YES												
			ASSUMED LKD	W26/F07 / INC (2)	22.6	22.6	0	0.0%	YES												
			ASSUMED LKD	W27/F07 / INC (2)	26.3	26.3	0	0.0%	YES												
			ASSUMED LKD	W28/F07 / INC (2)	38.3	38.3	0	0.0%	YES												
			ASSUMED LKD	W29/F07 / INC (2)	38.2	38.2	0	0.0%	YES												
F08	R1	RESIDENTIAL	ASSUMED LKD	W1/F08 / INC (2)	38.3	38.4	-0.1	-0.3%	YES	83.7	93.5	-2.4	-11.8%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W2/F08 / INC (2)	38.3	38.4	-0.1	-0.3%	YES												
			ASSUMED LKD	W3/F08 / INC (2)	38.5	38.5	0	0.0%	YES												
			ASSUMED LKD	W4/F08 / INC (2)	38.8	38.9	-0.1	-0.3%	YES												
			ASSUMED LKD	W5/F08 / INC (2)	26	31	-5	-19.2%	YES												
	R2	RESIDENTIAL	ASSUMED BEDROOM	W6/F08 / INC (2)	25.7	31.2	-5.5	-21.4%	YES	99	99	0.0	0.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FLOOR	ROOM	PROPERTY	ROOM	WINDOW	VSC (WINDOW)					NSL					APSH (ROOM)						
					EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
					%	%		%	CRITERIA	%	%	SOM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
			ASSUMED BEDROOM	W7/F08 / INC (2)	261	31.7	-5.6	-21.5%	YES												
	R3 (3)	RESIDENTIAL	ASSUMED LKD	W8/F08 / INC (2)	30	36.1	-6.1	-20.3%	YES	83.9	99.5	-4.4	-18.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W9/F08 / INC (2)	30.9	37.2	-6.3	-20.4%	YES												
	R4	RESIDENTIAL	ASSUMED BEDROOM	W10/F08 / INC (2)	31.8	38.7	-6.9	-21.7%	YES	97.4	99.3	-0.2	-2.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R5	RESIDENTIAL	ASSUMED BEDROOM	W11/F08 / INC (2)	31	38.6	-7.6	-24.5%	YES	83.6	98.3	-2.1	-17.7%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED BEDROOM	W12/F08 / INC (2)	30.8	38.5	-7.7	-25.0%	YES												
	R6	RESIDENTIAL	ASSUMED BEDROOM	W13/F08 / INC (2)	30	38.4	-8.4	-28.0%	YES	74.1	94	-2.4	-26.9%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R7 (3)	RESIDENTIAL	ASSUMED LKD	W14/F08 / INC (2)	29.7	38.4	-8.7	-29.3%	YES	38.3	99.2	-19.9	-158.8%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R8	RESIDENTIAL	ASSUMED LKD	W15/F08 / INC (2)	30.4	38	-7.6	-25.0%	YES	81.5	96.6	-3.5	-18.6%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R9	RESIDENTIAL	ASSUMED LKD	W16/F08 / INC (2)	22	28.4	-6.4	-29.1%	YES	100	100	0.0	0.0%	YES	84	29	85	29	-1.2%	0.0%	YES
			ASSUMED LKD	W17/F08 / INC (2)	33.4	39.6	-6.2	-18.6%	YES												
			ASSUMED LKD	W18/F08 / INC (2)	39.6	39.6	0	0.0%	YES												
	R10	RESIDENTIAL	ASSUMED BEDROOM	W19/F08 / INC (2)	15.9	15.9	0	0.0%	YES	96.2	96.2	0.0	0.0%	YES	27	25	27	25	0.0%	0.0%	YES
			ASSUMED BEDROOM	W20/F08 / INC (2)	16.9	16.9	0	0.0%	YES												
	R11	RESIDENTIAL	ASSUMED BEDROOM	W21/F08 / INC (2)	17.7	17.7	0	0.0%	YES	97.4	97.4	0.0	0.0%	YES	28	25	28	25	0.0%	0.0%	YES
			ASSUMED BEDROOM	W22/F08 / INC (2)	17.7	17.7	0	0.0%	YES												
	R12	RESIDENTIAL	ASSUMED LKD	W23/F08 / INC (2)	17.3	17.3	0	0.0%	YES	100	100	0.0	0.0%	YES	75	29	75	29	0.0%	0.0%	YES
			ASSUMED LKD	W24/F08 / INC (2)	17	17	0	0.0%	YES												
			ASSUMED LKD	W25/F08 / INC (2)	18.3	18.3	0	0.0%	YES												
			ASSUMED LKD	W26/F08 / INC (2)	22.4	22.4	0	0.0%	YES												
			ASSUMED LKD	W27/F08 / INC (2)	39	39	0	0.0%	YES												
			ASSUMED LKD	W28/F08 / INC (2)	39	39	0	0.0%	YES												
F09	R1	RESIDENTIAL	ASSUMED LKD	W1/F09 / INC (2)	39	39.1	-0.1	-0.3%	YES	99.8	99.9	0.0	0.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			ASSUMED LKD	W2/F09 / INC (2)	39.2	39.2	0	0.0%	YES												
			ASSUMED LKD	W3/F09 / INC (2)	27.6	30.6	-3	-10.9%	YES												
			ASSUMED LKD	W4/F09 / INC (2)	27.1	30.4	-3.3	-12.2%	YES												
	R2	RESIDENTIAL	ASSUMED BEDROOM	W5/F09 / INC (2)	26.8	30.3	-3.5	-13.1%	YES	98.7	98.7	0.0	0.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R3	RESIDENTIAL	ASSUMED BEDROOM	W6/F09 / INC (2)	27	30.4	-3.4	-12.6%	YES	98.1	98.1	0.0	0.0%	YES	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R4	RESIDENTIAL	ASSUMED BEDROOM	W7/F09 / INC (2)	25.1	27.5	-2.4	-9.6%	YES	99.5	99.5	0.0	0.0%	YES	51	27	52	27	-2.0%	0.0%	YES
			ASSUMED BEDROOM	W8/F09 / INC (2)	25.4	25.4	0	0.0%	YES												
			ASSUMED BEDROOM	W9/F09 / INC (2)	23.6	23.6	0	0.0%	YES												
			ASSUMED BEDROOM	W10/F09 / INC (2)	22.9	22.9	0	0.0%	YES												
			ASSUMED BEDROOM	W11/F09 / INC (2)	22	22	0	0.0%	YES												
	R5	RESIDENTIAL	ASSUMED BEDROOM	W12/F09 / INC (2)	19	19	0	0.0%	YES	95.2	95.2	0.0	0.0%	YES	31	26	31	26	0.0%	0.0%	YES
			ASSUMED BEDROOM	W13/F09 / INC (2)	19	19	0	0.0%	YES												

					VSC (WINDOW)					NSL					APSH (ROOM)						
FLOOR	ROOM	PROPERTY	ROOM	WINDOW	EX.	PR.	LOSS	LOSS	MEETS	EX.	PR.	LOSS	LOSS	MEETS	EX.		PR.		LOSS %		MEETS
		TYPE	USE		%	%		%	CRITERIA	%	%	SQM	%	CRITERIA	ANNUAL	WINTER	ANNUAL	WINTER	ANNUAL	WINTER	CRITERIA
	R6	RESIDENTIAL	ASSUMED LKD	W14/F09 / INC (2)	21.7	21.7	0	0.0%	YES	99.7	99.7	0.0	0.0%	YES	69	29	69	29	0.0%	0.0%	YES
			ASSUMED LKD	W15/F09 / INC (2)	24	24	0	0.0%	YES												
			ASSUMED LKD	W16/F09 / INC (2)	24.9	24.9	0	0.0%	YES												
			ASSUMED LKD	W17/F09 / INC (2)	28.4	28.4	0	0.0%	YES												

APPENDIX 04

OVERSHADOWING STUDY



 **PLAN VIEW**
SCALE 1:500 @A3

SOURCES OF INFORMATION

Vertex
IR02-20230504-VU.CITY

Proposed Scheme
IR19-20231124-JMA Frozen Scheme

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.

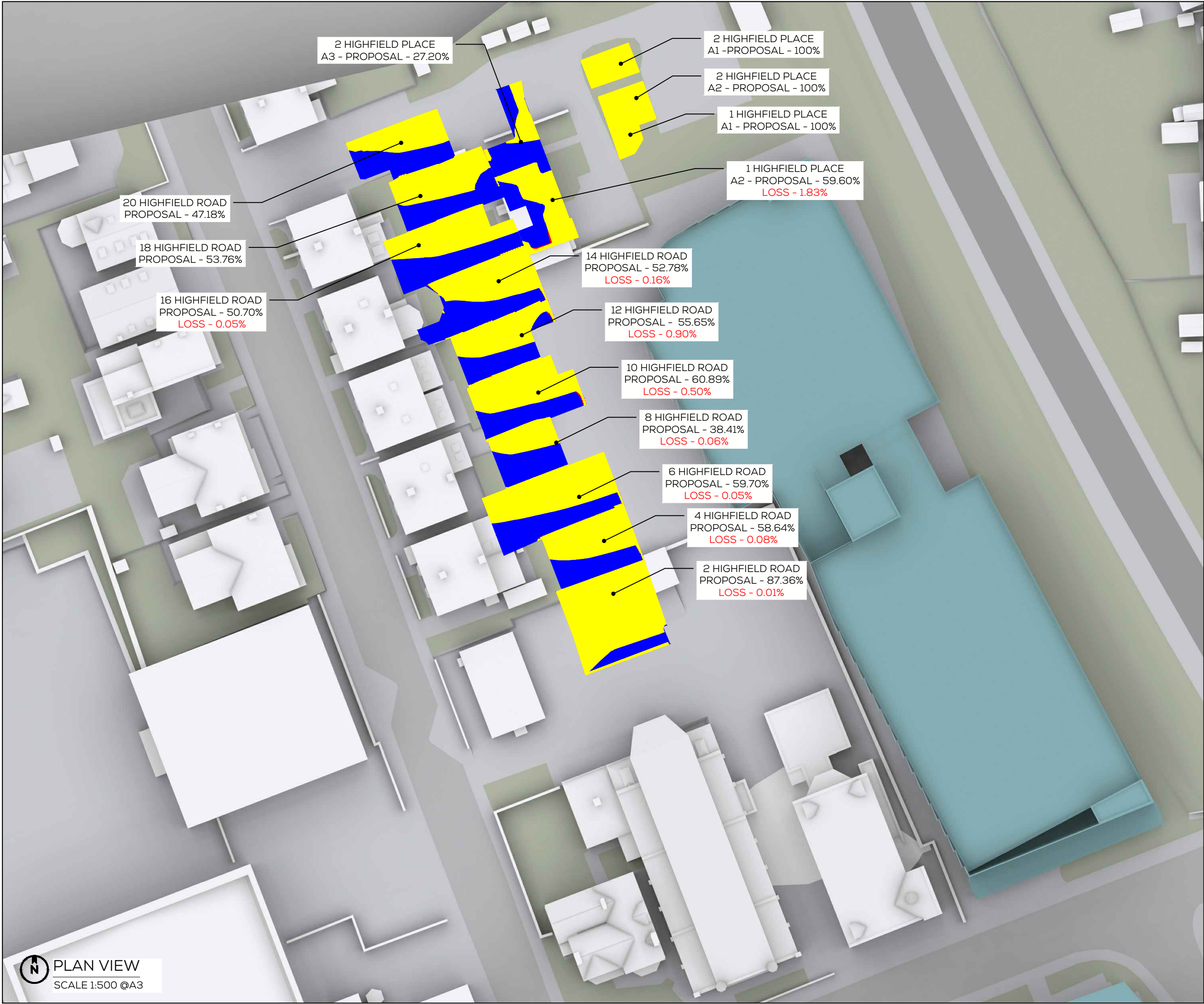
 +2 HR AREA LIT
 -2 HR AREA LIT

NOTES:

N.B. DO NOT SCALE OFF THIS DRAWING
PROJECT:
**PRESTWICH REGENERATION,
MANCHESTER**

DRAWING NAME:
PLAN VIEW PROPOSED
SUNLIGHT HOURS ON GROUND
MARCH 21ST

DWN BY	SCALE	CHK BY	STATUS	DATE
BH	1:500	AH	+	NOV 2023
PROJ No.	REL No.	IS No.	DWG No.	REV No.
2397	06	02	07	01



SOURCES OF INFORMATION

Vertex
IR02-20230504-VU.CITY

Proposed Scheme
IR19-20231124-JMA Frozen Scheme

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.

- +2 HR AREA LIT
- +2 HR AREA LIT
- 2 HR AREA LIT

NOTES:

N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:
PRESTWICH REGENERATION,
MANCHESTER

DRAWING NAME:
PLAN VIEW PROPOSED
SUNLIGHT HOURS ON GROUND
MARCH 21ST

DWN BY	SCALE	CHK BY	STATUS	DATE
BH	1:500	AH	+	NOV 2023
PROJ No.	REL No.	IS No.	DWG No.	REV No.
2397	06	02	08	01



SOURCES OF INFORMATION

IR02-20230504-VUCITY
IR19-20231124-JMA
IR20-20231205-JMA

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.

- +2 HR AREA LIT
- 2 HR AREA LIT

NOTES:

N.B. DO NOT SCALE OFF THIS DRAWING

PROJECT:
PRESTWICH REGENERATION,
MANCHESTER

DRAWING NAME:
PLAN VIEW PROPOSED

DWN BY	SCALE	CHK BY	STATUS	DATE
SP	NTS	NH	.	XX.XX.17
PRO J No.	REL No.	IS No.	DWG No.	REV No.
2397	08	01	.	DEC23





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