AVISON YOUNG

Daylight, Sunlight and Overshadowing Report

Epsom Hospital, Dorking Road

January 2021

Contents

Appendices

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Draft Date: January 2021

For and on behalf of GVA Grimley Limited

1. Introduction & Scope of Report

1.1 Avison Young ('AY') is instructed by Guild Living to advise on daylight, sunlight and overshadowing matters in relation to the proposed redevelopment of land at Epsom Hospital, Dorking Road, Surrey ('the Site'). The Site is located within Epsom and Ewell Borough Council ('EEBC') and shown outlined on Figure 01 below.

1.2 AY have considered the potential effect of the proposals upon the daylight and sunlight amenity within existing neighbouring residential properties; the provision of daylight and sunlight amenity within the proposed accommodation; and the potential levels of overshadowing to existing neighbouring amenity space and proposed amenity areas within the scheme itself.

1.3 The proposals under consideration have been prepared by project architects Marchese Partners (MP), which seek: Demolition of the existing hospital buildings, accommodation block and associated structures and redevelopment of the site to provide a new care community for older people arranged in two buildings, comprising 267 care residences, 10 care apartments and 28 care suites proving transitional care, together with ancillary communal and support services Use Class C2, 24 key worker units Use Class C3, children's nursery Use Class E, as well as associated back of house and service areas, car and cycle parking, altered vehicular and pedestrian access, landscaping, private amenity space and public open space ('the Proposed Development').

1.4 This planning application is a resubmission of a previous application (ref: 19/01722/FUL) submitted to EEBC, for which AY carried out daylight and sunlight assessments. AY worked closely with MP at the early design stage to ensure the potential effect on the light to neighbouring residential properties and amenity space was minimised, while also ensuring the light available within the development were maximised. Whilst committee members ultimately resolved to refuse the proposals on 23 November 2020 – the grounds cited included potential impacts "*by means of overbearing, loss of privacy and loss of outlook, failing to comply with Policy DM10 of the Development Management*" – no mention was made in relation to concerns over natural light. Therefore, it is understood that the original planning submission was found to be acceptable in relation to daylight, sunlight and overshadowing.

1.5 Nevertheless, this latest report supersedes the previous version submitted and is based on the latest Marchese Partners scheme received December 2020. Compared to the original application scheme, this represents a material reduction in massing to proposed Buildings A and B and therefore, the potential effects on surrounding light levels will be reduced.

1.6 The daylight, sunlight and overshadowing assessments have been undertaken by reference to the Building Research Establishment (BRE) Guidelines – '*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*' (2011) ('the BRE Guidelines'). It is important to understand that the BRE Guidelines are not mandatory and are aimed at helping rather than constraining the designer. Although they give numerical guidelines, they should be interpreted flexibly because natural lighting is only one of many factors in site layout design. Furthermore, policy context is also important in establishing acceptable/comparable levels of daylight, sunlight and overshadowing for a site. The appropriateness of the proposed development should therefore be considered not only against the BRE Guidelines and its suggested numerical values but also key planning policy documents, which seek to encourage more efficient use of land.

2. Sources of Information & Assumptions

2.1 In order to undertake the daylight, sunlight and overshadowing assessments, a 3D computer model of the existing site, the Proposed Development, and the surrounding context has been used by AY. This is based upon the following sources of information:

- Google Map and Bing Map aerial and street view imagery;
- Site visits and photography undertaken by AY in June, September and October 2019;
- AccuCities 3D photogrammetry context model of the existing site and neighbouring properties (received on 25th July 2019);
- Marchese Partners 3D model / 2D drawings of the Proposed Development (received 11 December 2020 and 4 and 5 January 2021, respectively); and
- Floor plans for a number of neighbouring properties obtained from online/public records.

2.2 The scope of neighbouring buildings tested has been determined as a reasonable zone in consideration of their proximity/orientation relative to the Proposed Development.

2.3 Best estimates have been made as to the building uses which are carried out legally within the adjoining properties in terms of commercial and residential usage. These have been estimated from Valuation Office Agency (VOA) council tax band searches, external observation from our site visits and online planning records where available.

2.4 As is standard practice when assessing daylight and sunlight effects, AY have not sought access to any of the existing neighbouring properties. However, full and partial floor plans were sourced for nos. 44 and 46 Woodcote Green Road and nos. 10, 14, 20-24 (evens) Digdens Rise, which have been incorporated into our computer modelling.

2.5 Where internal layouts have not been acquired, assumptions as to the internal layouts of the rooms behind the fenestration have been made. Unless the building form dictates otherwise, we have assumed a 4m deep room for residential properties. Internal layouts are only relevant for the No Sky Line (daylight distribution) impact assessment; the other daylight (Vertical Sky Component) and sunlight (Annual Probable Sunlight Hours) impact assessments are calculated at the window face and therefore, not dependent upon floor plans. Please refer to Guidance under section 3 for a description of the key daylight tests.

2.6 Where neighbouring elevations are not visible, but it is deemed likely that apertures may be present, we have inserted 'test' windows or estimated the position of apertures. The actual position may differ if closer access becomes possible and therefore, the technical analysis may differ from that confirmed herein.

2.7 Floor levels have been assumed for those adjoining properties where drawing information was not obtained. This dictates the level of the working plane which is relevant for the No Sky Line assessment.

2.8 Surrounding trees and any other foliage have not been considered as part of the assessments as their size, shape, and density are impossible to accurately predict. However, the BRE recognise that trees can be obstructive in allowing light penetration, particularly dense belts of evergreens. There are mixture of large

trees and thick shrubbery along the site boundary to the west, which appear to be predominantly deciduous (thus lose their leaves during the winter months), intermixed with some evergreens. These will inevitably block the view of the Site and Proposed Development to varying degrees, such that the alterations recorded in the analysis will be more than experienced in reality. Without the trees' inclusion, the assessment results presented within this report therefore represent a 'worst case'.

2.9 For the assessment of accommodation within the Proposed Development, the lowest floors (from ground to third floor level) have been assessed, which presents a robust worst-case as the light levels will naturally be higher towards the top of the buildings.

2.10 Where there are large open plan living spaces, this inevitably reduces the ADF and the kitchen/dressing areas located at the rear of these rooms will have a lower expectation for natural light, being supplemented by additional task lighting. The BRE states that non-daylit internal kitchens should be avoided, but if the layout makes this inevitable, they should be directly linked to a well daylit living room. For the proposed kitchen/dressing areas located at the rear of the accommodation, these have therefore been notionally internalised and the principal living area assessed with a target ADF for its use (1.5%) to ensure it has sufficient daylight. Non-habitable areas such as bathrooms, circulation areas and utility space have also been excluded.

2.11 The following surface reflectance values have been applied for the assessment of accommodation within the Proposed Development: 0.85 (white painted ceilings), 0.85 (pale cream painted walls), 0.4 (light wood flooring). A glazing transmission value of 0.68% (clear double glazing with a low emissivity coating) has also been used.

2.12 For sunlight, the BRE acknowledges that windows facing significantly north are unlikely to satisfy its targets (see Guidance in section 3 further below). Therefore, our sunlight assessment focusses on the windows facing within 90° of due south only.

3. Planning Policy & Guidance

EEBC – Householder Applications: Supplementary Planning Guidance (2004):

3.1 At G5 under General Points, it notes:

> *"In addition to providing extra space for the householder, a good scheme will be well related to the original building; it will also protect the daylighting/privacy/amenity etc. of neighbouring properties, and respect the character of the road and local area".*

EEBC – Development Management Policies (2015):

3.2 At Policy DM 10, 'Design Requirements for New Developments (including House Extensions)', it states:

> *"Development proposals should also… (ix) have regard to the amenities of occupants and neighbours, including in terms of privacy, outlook, sunlight/daylight, and noise and disturbance".*

3.3 Its Policy DM 12, 'Housing Standards', notes that:

> *"All new housing developments, including conversions, are required to comply with external and internal space standards*.*
>
> *The Council will only grant planning permission for new dwellings that provide adequate internal space and appropriate external private and/or communal amenity space to meet the needs generated by the development. Development must comply with the space standards set out in the Council's Design Quality SPD.*
>
> *Amenity space for all new dwellings should be… iii) orientated to take account of the need for sunlight and shading…"*

EEBC – Local Requirements List for Planning Applications (2015)

3.4 At section 4.8, under 'Daylight / Sunlight Assessment', it states that:

> *"Where there is a potential adverse impact upon the current levels of sunlight/daylight enjoyed by adjoining properties or building(s), including associated gardens or amenity space then applications should be accompanied by a daylight/sunlight assessment."*

National Planning Policy Framework (2019)

3.5 The National Planning Policy Framework (NPPF) gives guidance at government level and is a material consideration in planning decisions.

3.6 Chapter 11 of the NPPF relates to making effective use of land. Paragraph 117 states:

"Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or 'brownfield' land."

3.7 Paragraph 122 goes on to state:

"Planning policies and decisions should support development that makes efficient use of land, taking into account:

a) the identified need for different types of housing and other forms of development, and the availability of land suitable for accommodating it; …

d) the desirability of … promoting regeneration and change."

3.8 The NPPF recommends that local planning authorities take a 'flexible approach' when applying daylight and sunlight guidance to planning applications for new housing. Paragraph 123, section c) states that:

"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)."

3.9 It aims to ensure that daylight and sunlight matters are not limited to an overly simplistic technical exercise against the default BRE Guidelines recommendations without due regard for the current and future physical and planning context.

The BRE Guidelines

3.10 The daylight, sunlight and overshadowing assessments undertaken in support of this report are based upon the methodologies set out in the 2011 Building Research Establishment (BRE) – '*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*' ('the BRE Guidelines'). It provide methods for calculating the impact on light received by neighbouring buildings and amenity space, as well as the provision of light amenity provided within new development.

3.11 The BRE Guidelines are not fixed standards but should be applied flexibly to take account of the specific circumstances of each case. Its introduction notes:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design… In special circumstances the developer or planning authority may wish to use different target values."

3.12 The flexibility it advocates should reflect the particular characteristics of each case under consideration. It is important to bear in mind that the default numerical targets within the BRE Guidelines are largely based on a low density suburban housing model. Therefore, it may be entirely appropriate to apply different values, especially where the general scale of obstruction will inevitably be greater. For example, when dealing with large-scale developments in dense urban environments, or where there is a planning aspiration to deliver increased densities in areas with low levels of existing obstruction. In such circumstances, achieving the initial BRE values would be very challenging and conflict with other beneficial factors in site layout design.

3.13 This does not mean that the recommendations and targets within the guidance should be disregarded, but instead applied with careful consideration of each site and its specific constraints. Otherwise, rigid adherence to the BRE recommendations could easily result in an inappropriate form of development. This is acknowledged at section 2.2 of the guidance, under 'Existing Buildings':

> *"Note that numerical values given here are purely advisory. Different criteria may be used based upon the requirements for daylighting in an area viewed against other site constraints…'*
>
> *Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light."*

3.14 Suggested approaches for using alternative target values are provided within Appendix F of the BRE guidelines, where it states that *"different targets may be used, based on the special requirements of the proposed development or its location"*.

3.15 The above in mind, it is also important to consider the effect on daylight, sunlight and overshadowing in terms of the quantum of light that will be left, rather than simply focusing on percentage alterations in the existing levels; a 'noticeable' alteration may nonetheless be considered acceptable.

3.16 Furthermore, the inherent design constraints of surrounding buildings can also be a key factor, making windows and rooms particularly sensitive and exaggerating the effect of new development. For example, where rooms are greater than 5m in depth and lit from only one side, the guidance recognises that *"a greater movement of the no sky line may be unavoidable"* (paragraph 2.2.10). And if windows are set beneath balconies, are recessed or located adjacent to projecting wings, the BRE acknowledges that *"even a modest obstruction opposite may result in a large relative impact"* (page 8, paragraph 2.2.11).

Daylight and Sunlight Assessments – Existing Property

3.17 The BRE Guidelines recommend two key methods for assessing daylight to neighbouring properties: the Vertical Sky Component (VSC) and No Sky Line (NSL) tests. There is one assessment methodology recommended for sunlight, both for existing and new buildings, which is the Annual Probable Sunlight Hours (APSH) test.

Daylight

3.18 The VSC assessment measures the amount of skylight received on a vertical wall or window, following consideration of any visible obstructions e.g. other buildings and boundary walls. It is calculated from the

centre of a window on the outside face. The maximum VSC value is almost 40% for a completely unobstructed vertical wall or window. One of the inevitable shortcomings of the VSC is that it does not take account of the size of the window or the size or use of the room served by the window.

3.19 The NSL assessment measures the distribution of daylight within a room at the horizontal 'working plane' i.e. desktop height (BRE guidance suggests using a working plane height of 0.85m for residential properties). The NSL plots those areas of the working plane which receive direct sky light from those which cannot. This therefore represents those parts within the room where the sky can be seen through the window. This second methodology takes account of both the number and size of windows serving a room. It also takes account of the dimensions of the room and therefore, is most reliable when the actual internal layouts are known.

3.20 For the above daylight tests, the BRE Guidelines suggest that existing daylight may be noticeable/adversely affected if either: windows achieve a VSC below 27% and are reduced to less than 0.8 times their former value; or the existing levels of NSL within the rooms are reduced to less than 0.8 times their former values.

3.21 As noted, the above criteria should be applied flexibly and in view of the specific site constraints. For example, where existing light levels are low, even very small light losses can translate into large relative or 'percentage' alterations; however the perceptible change in daylight may in reality be negligible to the occupants. Equally, where there are low levels of existing obstruction and planning aspirations for increased levels of development, greater effects on daylight and sunlight may be inevitable. This does not mean that retained light levels will necessarily be unacceptable, or out of character, with prevailing levels experienced around such development.

Sunlight

3.22 For sunlight, the APSH test calculates the percentage of probable hours of sunlight received by a window or room over the course of a year. With regard to existing adjacent properties, only those windows orientated within 90° of due south and which overlook the site require assessment. The main focus is on living rooms, with bedrooms and kitchens deemed less important.

3.23 The guide suggests that the sunlight to existing dwellings may be adversely affected if the APSH to main living rooms is less than 25% annually, or less than 5% during winter, and reduced to less than 0.8 times its former value; with a loss of sunlight over the whole year greater than 4% APSH in real terms.

Overshadowing

3.24 The BRE Guidelines note that good site layout planning for daylight and sunlight should not be limited to providing good natural lighting within buildings and makes recommendations concerning sunlight received by amenity spaces between buildings. Amenity spaces relevant for considerations may include main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views, such as a group of monuments or fountains.

3.25 Where sunlight to neighbouring amenity spaces may be affected by new development, the BRE Guidelines recommend that an overshadowing assessment is conducted. The key analysis is the '2hrs sun contour' test,

which compares the proportion of an amenity area (e.g. rear gardens, parks and playing fields, public squares etc.) receiving at least 2hrs of sun on the 21st of March in the existing and proposed condition.

3.26 The BRE recognises that different types of amenity space may have different sunlighting requirements and therefore, it is hard to provide a definitive rule. However, the guidelines suggest that a check may be undertaken, to see if at least 50% of an amenity area should receive 2hrs of sun after the development is in place; or if below this level, whether it retains at least 0.8 times the former value (i.e. no more than 20% loss of the existing level). If these are not met, the loss of sunlight is likely to be noticeable and the "*amenity area will tend to look more heavily overshadowed*".

3.27 Where a large building is proposed, the BRE Guidelines also notes that "*it is often illustrative to plot a shadow plan showing the location of shadows at different times of day and year*". This is often referred to as 'transient shadow' and involves producing shadow plots to show the difference that the proposed building will make, compared against the existing levels of overshadowing on the surrounding environment. There is no quantitative criteria given, but when considering the shadowing effects the guidance notes that "*it must be borne in mind that nearly all structures will create areas of shadow, and some degree of transient overshadowing is to be expected*".

3.28 The BRE advises that 21st March (equinox) is the best date for which to prepare 'transient shadow' plots as it gives an average level of shadowing. It notes that as an optional addition, plots for 21st June (summer solstice) may be helpful as they show the reduced shadowing levels, although this represents the best case. Conversely, if shadows on 21st December (winter solstice) are plotted "*even low buildings will cast long shadows. In a built up area, it is common for large areas of the ground to be in shadow in December*".

Daylight and Sunlight Assessments – New Development

3.29 The BRE Guidelines recommend the use of its Average Daylight Factor (ADF) test for proposed accommodation within new buildings; the APSH methodology used for assessing the impact for existing buildings is also used for new buildings.

Daylight

3.30 The ADF method calculates the average illuminance within rooms and is the most detailed of the daylight calculations because it takes into account multiple factors, including not just the physical nature/use of the space behind the window, but also the window transmittance, internal surface reflectivity etc.

3.31 The following minimum ADF targets for habitable room uses are suggested: 1% for Bedrooms; 1.5% for Living Rooms; and 2.0% for Kitchens. Where a room is served by more than one purpose, it is suggested that the minimum ADF target should be set by the use with the highest value e.g. 2% for Living/Kitchen/ Dining rooms (LKDs).

3.32 For large open-plan, multi-purpose living spaces, the 2% 'kitchen' target can be difficult to achieve due to the depth of the space relative to the surrounding levels of obstruction, especially in more dense built environments.

3.33 The NSL can also be used when considering daylight distribution levels within new development. This shows the extent of light penetration into the room at working plane level i.e. 850mm above floor level. If a substantial part of the room falls behind the NSL, the distribution of light within the room may appear poor.

Sunlight

3.34 For sunlight in new development, the BRE guidelines suggest that a window or room should receive at least 25% APSH and 5% APSH during the winter period. In theory these guidelines may be applied anywhere, although they are often difficult to meet in more urban setting.

3.35 The BRE notes that "*if a room has multiple windows on the same wall or on adjacent walls, the highest value of APSH can be taken. If a room has two windows on opposite walls, the APSH due to each can be added together*".

3.36 The above criteria can also theoretically be applied to rooms of all orientations and types; however, the BRE guidelines' principal focus for sunlight is living rooms, rather than bedrooms and kitchens, and it is recognised that "*if a room faces significantly north of due east or west [the sunlight criterion] is unlikely to be met*".

Overshadowing

3.37 For sunlight to proposed amenity spaces within new development, the BRE guidelines recommend the use of the '2hrs sun contour' test on 21st of March.

The guidelines suggest that if at least 50% of an amenity area receives at least 2hrs of sun then it is likely to be adequately lit throughout the year, but acknowledges that this a rough guide rather than a .rigid rule; different types of amenity space will have differing requirements.

4. Existing Site & Proposed Development

Existing Site

4.1 The Site is located at Epsom Hospital, Dorking Road, within the southwest corner of the wider hospital grounds and occupies approximately 1.5 hectares. It is bounded by: existing hospital buildings to the north, including the generator house, the Wells & Langley Wings and the Day Surgery Unit; the Woodcote Wing and car parking to the east; Woodcote Green Road to the south; and various residential properties/rear gardens to the west. The Site is currently occupied by a mixture of 1, 2, 3, 4- storey hospital buildings, including H & K Blocks, the boiler house and associated chimney stack, interspersed with surface car parking.

4.2 Figure 01 below shows the indicative boundary of the Site in red, while our modelling for the existing context is illustrated on Figure 02. Full drawings are provided within Appendix 2.

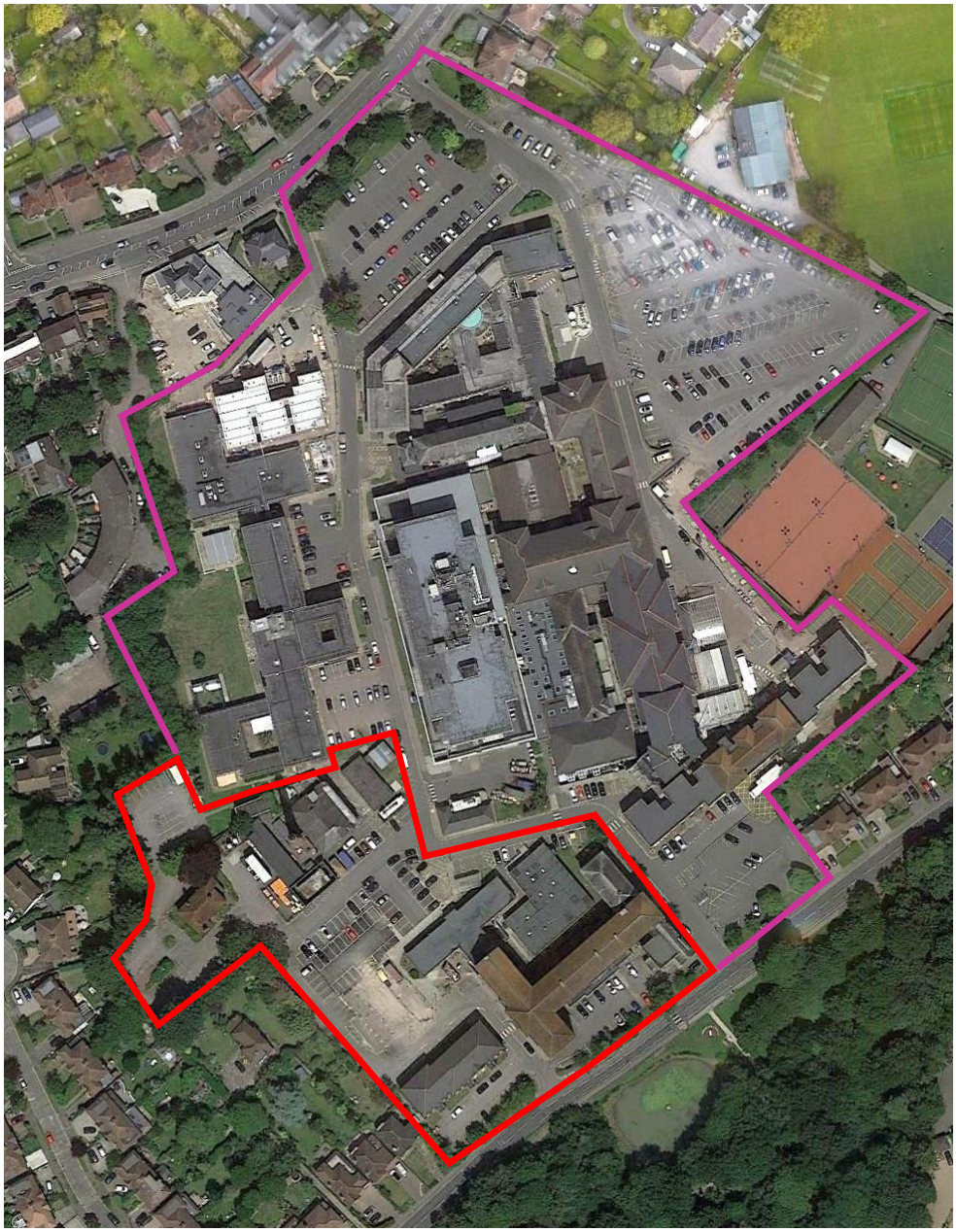

Figure 01: *indicative Site boundary outlined in red; wider Epsom Hospital site outlined purple.*

***Figure 02**: existing Site conditions (in red) and neighbouring context*

Proposed Development

4.3 The Proposed Development comprises demolition of the existing hospital buildings, accommodation block and associated structures and redevelopment of the site to provide a new care community for older people arranged in two buildings, comprising 267 care residences, 10 care apartments and 28 care suites proving transitional care, together with ancillary communal and support services Use Class C2, 24 key worker units Use Class C3, children's nursery Use Class E, as well as associated back of house and service areas, car and cycle parking, altered vehicular and pedestrian access, landscaping, private amenity space and public open space.

4.4 The proposed buildings are arranged to allow through access, including a central courtyard accessed from Woodcote Green Road. Building heights are stepped and range between 2 and 8 storeys.

4.5 AY's massing model of the Proposed Development is illustrated on Figure 03 overleaf. Full drawings are provided within Appendix 2.

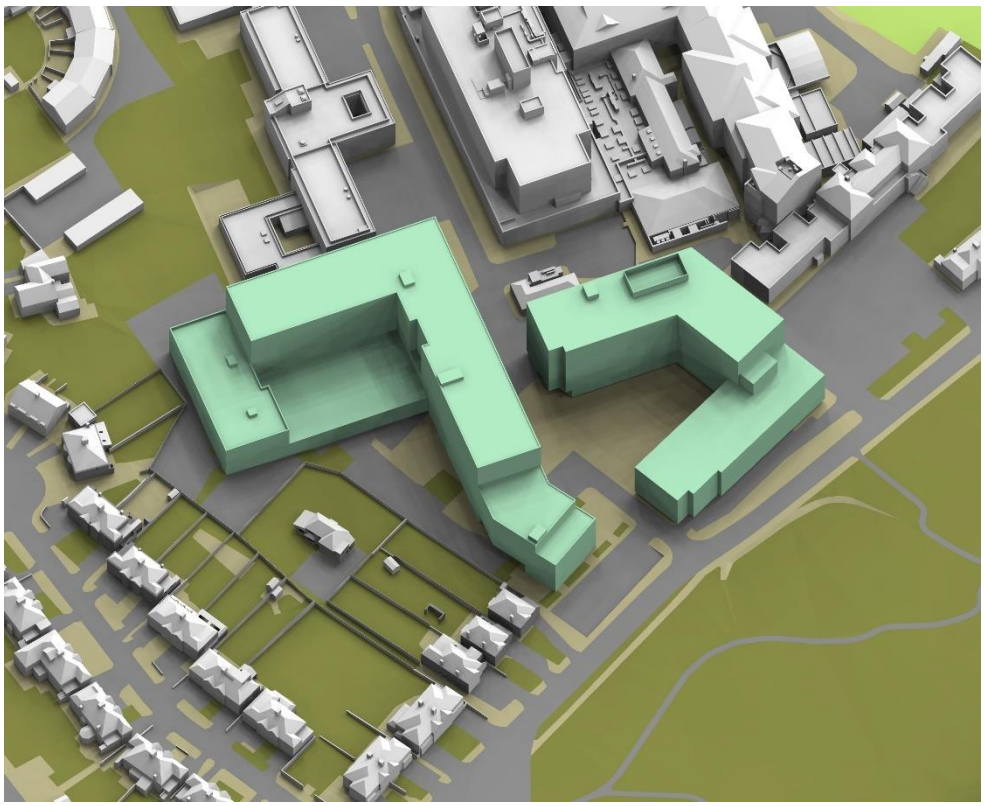

***Figure 03**: Proposed Development (in green) and neighbouring context*

5. Neighbouring Daylight & Sunlight Assessment

5.1 Full drawings illustrating the location of neighbouring existing properties and our understanding of the existing and proposed conditions on the site are attached at Appendix 2. Our full Daylight and Sunlight analysis tables and associated No Sky Line contour drawings, upon which the following report is based, are attached at Appendix 3.

5.2 The BRE guidelines are primarily focussed on habitable rooms in dwellings, although they may also be applied to non-domestic buildings where the occupants may have a reasonable expectation of daylight which could include schools, small workshops, hotels, hospitals and some offices. For dwellings, the guidance states that living rooms, dining rooms and kitchens should be assessed. Bedrooms should also be checked, although it notes that they are less important. Other rooms, such as bathrooms, toilets, storerooms, circulation areas and garages need not be assessed. For bay windows, the central window facing outwards can be taken as the key window.

5.3 Our detailed assessment has focussed on the neighbouring residential buildings in closest proximity to the Site and therefore, those dwellings most likely to be affected.

5.4 The results of our technical assessments indicate that the majority of windows and rooms within the neighbouring buildings tested will satisfy the BRE guidelines, with the following properties fully adherent with the daylight and sunlight guidance:

- 44 Woodcote Green Road;
- 6 Digdens Rise
- 8 Digdens Rise;
- 10 Digdens Rise;
- 12 Digdens Rise;
- 14 Digdens Rise
- 16 Digdens Rise;
- 18 Digdens Rise;
- 20 Digdens Rise; and
- 22 Digdens Rise.

5.5 There are four remaining properties and these are discussed in further detail below.

40 and 42 Woodcote Green Road

5.6 These residential properties are located to the southwest of the Site. They contain numerous apertures in the rear and flank walls that either face or have oblique views of the Proposed Development.

5.7 Our understanding of the internal layouts and uses are informed by external inspection and floor plans obtained for a very similar (albeit recently extended) adjacent property at 44 Woodcote Green Road. This indicates that most of the windows facing the Site serve non-habitable space, assumed to be a mixture of bathrooms, garage, storage and circulation space. See Figures 04 and 05 below illustrating our assumptions of the windows in terms of habitable and non-habitable space.

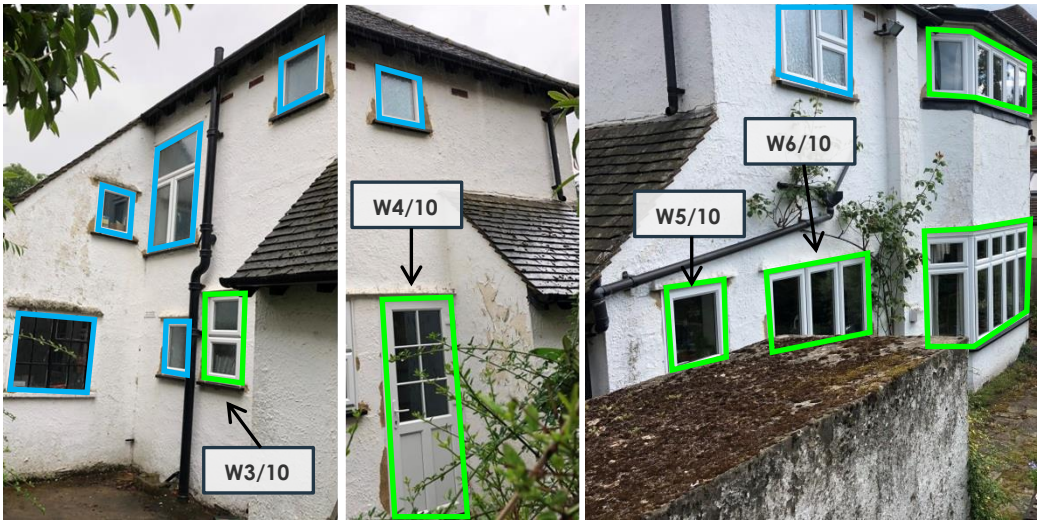

Figure 04: *40 Woodcote Green Rd, flank & rear elevations*

Figure 05: *42 Woodcote Green Rd, flank & rear elevations*

Daylight

5.8 The detailed analysis shows that the majority of windows and rooms tested within these buildings will satisfy the BRE guidelines: 24 of 33 windows and 11 of 14 rooms for VSC and NSL, respectively. Therefore, there are 9 windows and 3 rooms that do not meet the default numerical targets.

5.9 Of the 9 windows below BRE levels, alterations in existing light range between circa 26% and 40%. However, 8 appear to serve the non-habitable space, as highlighted in blue on Figures 04 and 05, or relate to secondary bay windows, where the main central window will satisfy the criteria. On that basis, these can be discounted and, for no. 42 Woodcote Green Road, the remaining windows and rooms will satisfy the BRE guidelines.

5.10 This leaves 1 aperture within no. 40 Woodcote Green Road with a VSC alteration beyond the BRE's 20% relative reduction criterion, to a glazed door within the flank wall (W3/10 on Figure 04). However, this represents a minor deviation (an alteration of just under 28%) and it is also quite possible that the window does not serve key habitable space, in which case it could also be discounted. It should be noted that the sensitivity of this aperture is exaggerated by both the hampering effect of a projecting wing (illustrated by lower light levels in the existing condition) and its close proximity to the boundary. In that context, greater effects than the BRE default targets are not surprising, where more modest absolute light losses will inevitably translate into higher percentage changes.

5.11 If the above window is linked to habitable space, it most likely serves a dual-aspect kitchen, served by further windows overlooking the rear garden (windows W5 and W6/10 on Figure 04) that will exceed the BRE's optimal 27% VSC retained target. Due to these high levels of mitigating light, no perceptible change is recorded in the distribution of light within the assumed room i.e. the NSL test would also be met and a high level of daylight amenity would remain.

5.12 Of the 3 rooms that do not satisfy the NSL test within these properties, all are believed to relate to non-habitable space and, on that basis, may be discounted. All remaining rooms tested will satisfy the BRE guidelines for NSL, including the main living spaces, where we record no perceptible changes in light.

Sunlight

5.13 For sunlight, in accordance with BRE recommendations, it has not been necessary to test these properties because the key windows facing the site are not within 90° of due south.

46 Woodcote Green Road

5.14 This is a residential property situated to the west of the Site. Its rear elevation and side elevations contain a number of windows that either face or have oblique views of the Proposed Development.

5.15 Our understanding of the internal layouts and uses are informed by external inspection and a partial floor plan obtained for the ground floor via public planning records. This indicates that around half of the windows facing the Site serve non-habitable space – a mixture of bathrooms, circulation and/or storage space. As the circulation space is shown on the partial plans obtained, these have been discounted from the analysis. See Figures 06 and 07 below illustrating our assumptions for the key windows in terms of habitable and non-habitable space.

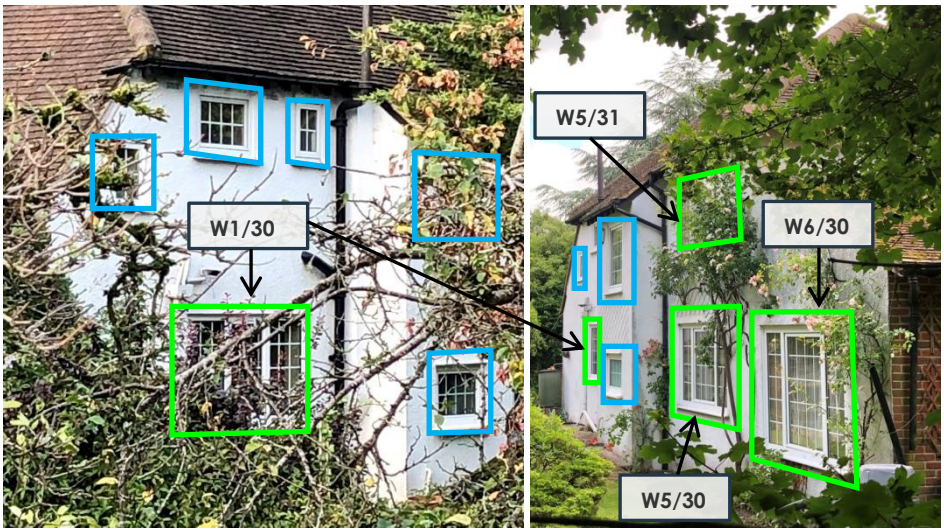

Figure 06: *46 Woodcote Green Rd, rear elevation facing the Site*

Figure 07: *46 Woodcote Green Rd, front elevation*

5.16 It is important to note that this building's rear elevation is located much closer to the Site than other neighbours' and is also oriented directly opposite the boundary. In addition, its rear windows face

comparatively low levels of existing obstruction on the Site opposite. In that context, coupled with the planning aspiration and increased levels of development necessary for a scheme of this nature, it is inevitable that some effects will go beyond the default levels suggested in the BRE guidance. However, this is not without precedent and the BRE itself acknowledges that its numerical targets are not mandatory, should be applied sensibly, flexibly and with careful consideration of specific local constraints. Otherwise, rigid adherence to the BRE recommendations would easily result in an underutilised site and inappropriate form of development. Therefore, the flexibility advocated in the guidelines is key in this context.

5.17 Furthermore, the boundary opposite this property is heavily enclosed by thick bushes and numerous tall trees. As highlighted earlier, our assessment has not taken this dense foliage into account it is impossible to accurately predict, especially as there appears to be a broad mix of deciduous and evergreen vegetation. However, these will undoubtedly camouflage a significant proportion of the view across the Site and of the Proposed Development. As such, the 'real world' effect on this building will be less than the results of our analysis show.

Daylight

5.18 The results of the detailed analysis indicates that the majority of windows and rooms tested within these buildings will satisfy the BRE guidelines: 10 of 18 windows and 6 of 8 rooms for VSC and NSL, respectively (including unaffected windows facing away from the Site, which is important as they provide mitigating light from other directions to a number of dual-aspect spaces). Therefore, there are 8 windows and 2 rooms that do not meet the default numerical targets. However, we believe that 3 of these windows and 2 of these rooms serve secondary/non-habitable space e.g. bathrooms and storage. That being the case, this leaves 5 habitable windows (windows W1, W4, W5 and W6/30 and W5/31) and 1 habitable room (R1/30) below the default guidance values, with alterations in existing light of varying degrees, ranging between 23% and 35%.

5.19 Of the above 5 windows, 1 appears to be a single-aspect kitchen (W1/30) and will retain a VSC of around 23% in real terms; and where the NSL test will be satisfied and also indicates that the room will continue to receive a direct view of sky to over 80% of its total area. Given the Site constraints highlighted above, and the masking effect the foliage along the boundary will inevitably have, this is considered entirely reasonable. Of the remaining 4 windows, they appear to serve an assumed bedroom (less important than other uses) and living/dining areas, with all but one retaining VSC of 22% in real terms i.e. not unreasonable levels of direct skylight. More importantly, each is understood to serve dual-aspect rooms, where additional light is received from main windows facing away from the Site. These key apertures are within the front elevations (see Figure 07) and completely unaffected, showing very high levels of daylight – circa 34%-35% VSC in real terms. As a result, the NSL test for the associated rooms indicates full BRE compliance, with little or no perceptible change and virtually full daylight depth penetration in the proposed condition i.e. a very good level of daylight amenity.

Sunlight

5.20 For sunlight, in accordance with BRE recommendations, we have focussed on 4 key windows both facing the Site and within 90° of due south. The results of the analysis for these windows show full BRE adherence for the winter and annual period, with very high levels of APSH retained in the proposed condition (2-5 times the suggested levels).

24 Digdens Rise

5.21 This is a residential property located further to the west of the Site. Its rear elevation contains a number of windows that face towards the Proposed Development.

5.22 We have obtained a full set of floor plans from online planning and estate agent records, corroborated via external inspection. This shows two windows facing the Site as non-habitable space (bathroom and utility) and therefore, these have been discounted from the analysis. See Figure 08 below illustrating our understanding of the key windows within the rear elevation in terms of habitable and non-habitable space.

Figure 08: *24 Digdens Rise, rear elevation*

Daylight

5.23 The detailed analysis shows that all of the habitable windows tested will satisfy the BRE guidelines for VSC, with high levels of VSC retained in the proposed condition.

5.24 The NSL test indicates that one of the two habitable rooms tested will meet the 20% relative reduction guideline. Of the one room remaining, this relates to a living/kitchen/dining room and only arises because the room is very deep (over 7 metres) and lit from one aspect. Where rooms are greater than 5 metres in depth and lit from only one side, the BRE guidelines recognise that *"a greater movement of the no sky line may be unavoidable"*. However, this represents a marginal deviation only – just under 24% reduction, indicating that the NSL criteria would be met if the room was not so deep – and direct skylight will continue to be received to around 3/4s its total area. This is considered entirely acceptable in this context.

Sunlight

5.25 For sunlight, in accordance with BRE recommendations, it has not been necessary to test this property because the key windows facing the site are not within 90° of due south.

6. Neighbouring Overshadow Assessment

6.1 In accordance with the BRE guidelines, we have calculated the potential effect on overshadowing to the rear gardens at nos. 40 to 46 (evens) Woodcote Green Road and nos. 8 to 24 Digdens Rise (the nearest private amenity space to the Site and therefore, the most likely to be affected) that can receive 2hrs of direct sunlight on 21st March.

6.2 This has been undertaken by plotting the area receiving the requisite level of sun in the existing and proposed condition, the results of which are shown on our drawing at Appendix 5 and Figure 09 below. The areas receiving at least 2hrs of sun are shaded yellow and the adjacent table identifies the associated percentage areas.

Figure 09: *2hrs sun contour analysis – rear gardens at 40-46 Woodcote Green Rd & 8-24 Digdens Rise*

6.3 As can be seen, the overshadowing results show that all of the rear gardens considered will comfortably satisfy the BRE guidelines 50% area target and therefore, experience no significant material effects as a result of the Proposed Development.

7. Internal Daylight & Sunlight Assessment

7.1 Detailed internal daylight and sunlight amenity assessments have been undertaken for the proposed accommodation located within the Proposed Development. The Average Daylight Factor (ADF) and No Sky Line (NSL) methods can be used for daylight, and the APSH method for sunlight, in accordance with the BRE Guidelines. The ADF results are set out and summarised below, while the NSL results have been provided at Appendix 4 as supplementary information only. The full results and associated plots can be found in Appendix 4.

7.2 The lowest levels of proposed accommodation (from ground to third floors) have been assessed to present a robust 'worst-case', as light levels will naturally be higher up the buildings.

7.3 A total of 442 rooms have been analysed, of which: 20 are studios; 141 are living rooms, dining rooms and kitchens, or a combination thereof; 280 bedrooms and 1 communal space.

7.4 The results of the ADF assessment are now described and summarised below.

Building ref.	Total rooms tested	Total rooms satisfying ADF target	BRE compliance rate
Building A	231	230	99.5%
Building B	211	208	99%
TOTALS:	**442**	**438**	**99%**

Table 01: *Internal daylight results (ADF)*

7.5 For internal daylight, as shown on the summary Table 01 above, the results indicate that the vast majority (99%) of the 442 habitable rooms assessed will satisfy or exceed the ADF targets for the assigned use. There are just four room that do not quite satisfy the ADF target, comprising two living/dining areas (room refs. R58/141 and R53/151); and two LKDs (room refs. R37/151 and R37/152). However, these represent very minor deviations of only 0.1% and 0.2% for the living/dining areas and 0.1% and 0.3% for the LKDs; while all key living areas will receive a good level of daylight distribution with a direct view of sky at desktop height. In addition, the two LKDs achieve 1.7% and 1.9% and therefore exceed the suggested target for living rooms (1.5%). This is considered entirely reasonable in this context, especially bearing in mind the very high compliance across the scheme overall.

7.6 It is also worth noting that the vast majority of the rooms tested will actually receive daylight levels that are well in excess of the minimum suggested ADF values – between three and five times the suggested values in many cases, and even higher in some instances. This represents a very good performance, also taking into consideration the fact that the upper floors will receive greater levels of daylight than the lowest floors tested.

7.7 In consideration of the above, the Proposed Development clearly performs very well against the recommended guidance. Therefore, the proposed accommodation will provide high levels of daylight amenity for future occupants.

7.8 In relation to the sunlight analysis, only windows which are oriented within 90° of due south have been considered as they have a reasonable expectation of sunlight. Where a room is served by multiple windows, if one or more windows is oriented within 90° of due south the remaining windows serving the room will be considered regardless of orientation.

7.9 235 (83%) of the 283 windows tested for sunlight will meet the suggested APSH for annual sunlight. Of the 48 windows below this level: 17 will receive 15%-24% APSH (against the 25% target): 8 relate to rooms with alternative windows that will satisfy the guidance, often with APSH values well in excess of the suggested target; 5 nonetheless meet the winter target; while 12 serve bedrooms which are considered less sensitive. The BRE Guidelines acknowledge the latter in Section 3.2.3 stating in relation to sunlight; '*…kitchens and bedrooms are less important, although care should be taken not to block too much sun*'.

7.10 239 (84%) of the 283 windows tested for sunlight will meet the suggested APSH for winter sunlight. Of the 43 windows below this level: 7 will receive 3%-4% APSH (against the 5% target); 21 relate to rooms with alternative windows that will satisfy the guidance, often with APSH values well in excess of the suggested target; 4 will meet the annual target; while 12 serve bedrooms which are considered less sensitive.

7.11 Overall, the Proposed Development is considered to perform very well against the recommended guidance for sunlight. A small minority of windows tested will fall below the recommended criteria for sunlight; however, this is mainly due to their orientation (where the BRE acknowledge that low levels of sunlight are not unusual) and many relate to rooms served by alternative windows that will comfortably satisfy the BRE criteria. It is also important to note that a number of these windows will inevitably receive lower APSH levels due to the provision of balconies across the scheme, where there is a necessary trade-off of sunlight ingress in order to deliver valuable amenity space of this nature. The sunlight amenity for future occupants is therefore considered wholly acceptable.

8. Internal Overshadow Assessment

8.1 The BRE guidelines suggest that for a garden or amenity area to appear adequately sunlit throughout the year, at least half (50%) of the area should receive two or more hours of direct sunlight on 21st March.

8.2 The 2hrs sun contour analysis has been undertaken in relation to the private communal amenity space for the residents. Please refer to Appendix 5 for the technical assessment, which is also illustrated in Figure 10 below.

8.3 The result of the analysis indicates that the proposed amenity area will fully comply with the BRE criteria, achieving two or more hours of direct sunlight on 21st March to around 78% of its total area on ground level and 100% at podium/roof level.

8.4 This is significantly above the 50% recommended by the BRE Guidelines and represents a very good level of sunlight to the proposed amenity space within the Proposed Development.

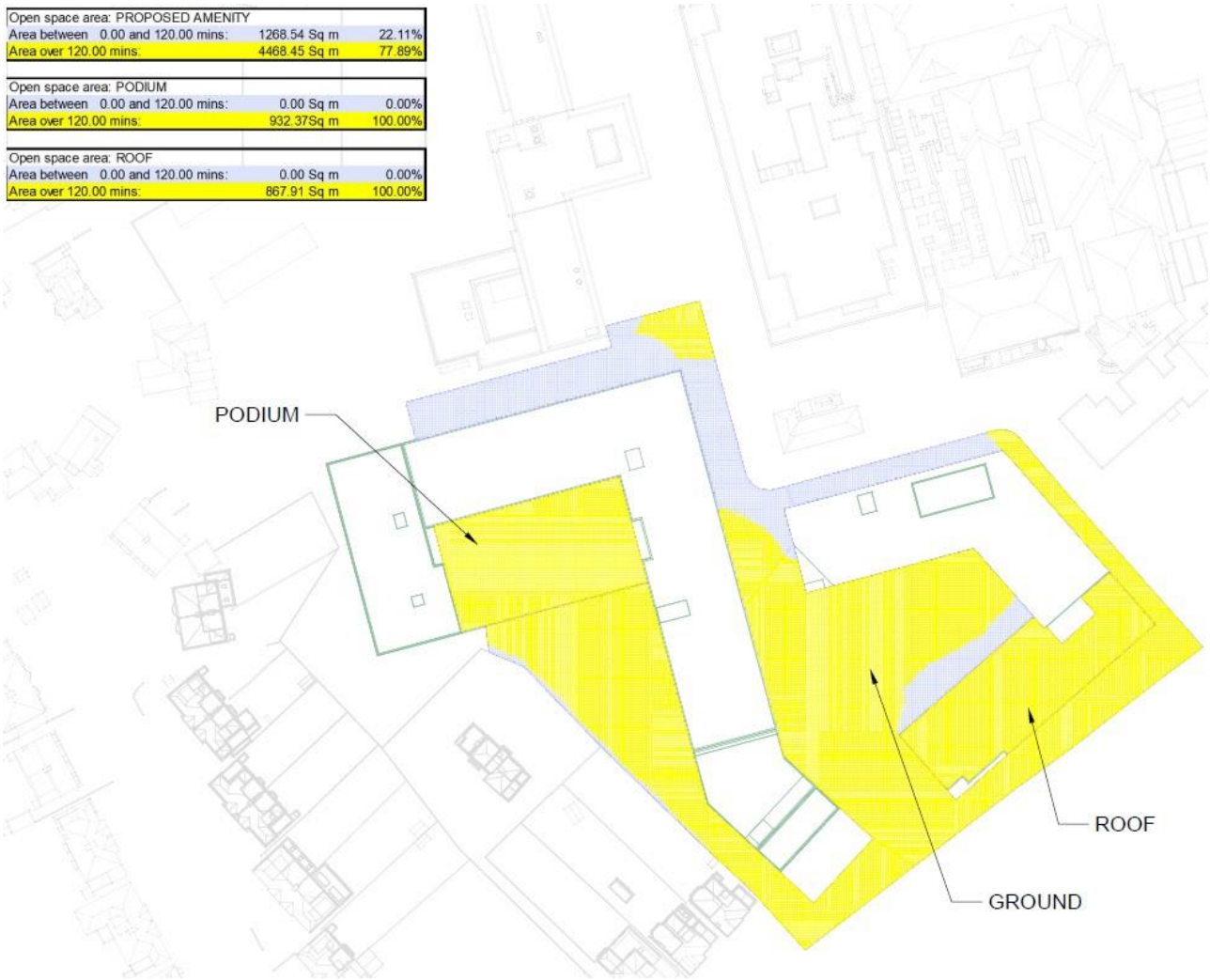

Figure 10: *2hrs sun contour analysis – within the Proposed Development*

9. Summary & Conclusion

9.1 AY have undertaken daylight, sunlight and overshadowing technical assessments in accordance with the BRE guidelines.

9.2 The BRE Guidelines are not mandatory, nor are they an instrument of planning policy. Whilst it provides numerical guidance, these are purely advisory and need to be considered pragmatically against constraints presented by the existing context, and the wider benefits of the development.

9.3 As indicated at the beginning of this report, this planning application is a resubmission of a previous application (ref: 19/01722/FUL), subsequently refused by EEBC in November 2020. The cited reasons for refusal did not include or mention any concerns over natural light. Therefore, it is understood that the original planning submission was found to be acceptable in relation to daylight, sunlight and overshadowing. Nevertheless, the Proposed Development represents a material reduction in massing compared to the original planning submission. Therefore, the potential effects on surrounding light levels are further minimised.

9.4 Our external daylight and sunlight analysis of the **neighbouring buildings** has found that the vast majority of windows and rooms tested will satisfy the BRE guidelines in the proposed condition. There will be some isolated daylight transgressions which are below the recommendations set out in the BRE Guidelines, some of which may be noticeable. However in the majority of cases the rooms affected are likely to be secondary/non-habitable space, or relate to dual-aspect rooms with mitigating light, such that the retained levels of light are considered acceptable. The reduction in light is therefore considered to be acceptable in our professional opinion, and in consideration of the need to determine alternative target criteria in certain circumstances (*See Appendix F of the BRE Guidelines*).

9.5 Our internal daylight analysis of the accommodation within the **Proposed Development** shows that all but four (99%) of the proposed rooms tested meets the recommended ADF daylight criteria. The isolated exceptions represent very minor deviations only and retain a good level of daylight distribution across the key living areas. All other private habitable areas tested surpass the recommended criteria. Bearing in mind this analysis has focussed on the lowest floors only, the upper levels will be even better daylit. For internal sunlight, the overwhelming majority (83%/84%) of windows tested will also meet the relevant APSH sunlight criteria, which also represents a high level of adherence for a development of this nature. In fact, the vast majority of windows and rooms that meet the guidance demonstrate levels that are well in excess of the suggested values. Overall this clearly illustrates that the Proposed Development should provide more than reasonable daylight and sunlight amenity for future occupants.

9.6 For the **overshadowing** assessments ('two hours sun contour'), our analysis of the key amenity space both surrounding and within the Site indicates that the BRE guidelines will be fully satisfied. Existing and new local residents will therefore have access to amenity spaces that receive a good quantum of direct sunlight.

9.7 In consideration of the above, it is AY's professional opinion that the Proposed Development is acceptable in terms of daylight, sunlight, and overshadowing, despite a small number of isolated transgressions, which are not uncommon when increasing development levels on a site of this nature.

Appendix 1
Daylight & Sunlight Principles

Daylight & Sunlight Principles

The BRE Guidelines – Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice are well established and are adopted by most Local Authorities as the appropriate scientific and empirical methods of measuring daylight and sunlight in order to provide objective data upon which to apply their planning policies. The Guidelines are not fixed standards but should be applied flexibly to take account of the specific circumstances of each case.

The Introduction of the Guidelines states:

"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 developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

The 'flexibility' recommended in the Guidelines should reflect the specific characteristics of each case being considered. For example, as the numerical targets within the Guidelines have been derived on the basis of a low density suburban housing model, it is entirely appropriate to apply a more flexible approach when dealing with higher rise developments in a denser urban environment where the general scale of development is greater. In addition, where existing and proposed buildings have specific design features such as projecting balconies, deep recesses, bay windows etc., it is also equally valid to apply a degree of flexibility to take account of the effect of these particular design features. This does not mean that the recommendations and targets within the Guidelines can be disregarded but, instead, the 'flexibility' that should be applied should be founded on sound scientific principles that can be supported and justified. This requires a certain level of professional value judgement and experience.

Daylighting

In respect of daylighting, the BRE Guidelines adopt different methods of measurement depending on whether the assessment is for the impact on existing neighbouring premises or for measuring the adequacy of proposed new dwellings. For safeguarding the daylight received by existing neighbouring residential buildings around a proposed development, the relevant recommendations are set out in Section 2.2 of the Guidelines.

The adequacy of daylight received by existing neighbouring dwellings is measured using two methods of measurement. First, it is necessary to measure the Vertical Sky Component (VSC) followed by the measurement of internal Daylight Distribution by plotting the position of the 'existing' and 'proposed' no sky line contour.

VSC is measured at the mid-point on the external face of the window serving a habitable room. For the purpose of the Guidelines, a "habitable" room is defined as a Kitchen, Living Room or Bedroom. Bathrooms, hallways and circulation space are excluded from this definition. In addition, many Local Authorities make a further distinction in respect of small kitchens. Where the internal area of a small kitchen limits the use to food preparation and is not of sufficient size to accommodate some other form of "habitable" use such as dining, the kitchen need not be classed as a "habitable" room in its own right.

VSC is a 'spot' measurement taken on the face of the window and is a measure of the availability of light from the sky from over the "existing" and "proposed" obstruction caused by buildings or structures in front of the window. As it is measured on the outside face of the window, one of the inevitable shortcomings is that it does not take account of the size of the window or the size or use of the room served by the window. For this reason, the BRE Guidelines require internal Daylight Distribution to be measured in addition to VSC.

The 'No Sky Line' contour plotted for the purpose of measuring internal Daylight Distribution identifies those areas within the room usually measured on a horizontal working plane set at table top level, where there is direct sky visibility. This therefore represents those parts within the room where the sky can be seen through the window. This second measure therefore takes account of the size of the window and the size of the room but is only more reliable than VSC when the actual room uses, layouts and dimensions are known. When interpreted in conjunction with the VSC value, the likely internal lighting conditions, and hence the quality of lighting within the room, can be assessed.

For VSC, the Guidelines states that:

"If this Vertical Sky Component is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the Vertical Sky Component with the new development in place is both less than 27% and less than 0.8 times its former value, then the occupants of the existing building will notice the reduction in the amount of skylight."

To put this in context, the maximum VSC value that can be received for a totally unobstructed vertical window is 40%. There are however circumstances where the VSC value is already below 27%. In such circumstances, it is permissible to reduce the existing VSC value by a factor of 0.2 (i.e. 20%) so that the value on the 'proposed' conditions remains more than 0.8 times its former value. The scientific reasoning for this permissible margin of reduction is that existing daylight (and sunlight) levels can be reduced by a factor of 20% before the loss becomes materially noticeable. This factor of reduction applies to VSC, daylight distribution, sunlight and overshadowing.

By contrast, the adequacy of daylight for proposed 'New-Build' dwellings is measured using the standards in the British Standard Code of Practice for Daylighting, BS8206 Part 2.

The British Standard relies upon the use of Average Daylight Factors (ADF) rather than VSC and Daylight Distribution. The use of ADF is referred to in the BRE Guidelines (Appendix C) but its use is usually limited as a supplementary 'check' of internal lighting conditions once the VSC and Daylight Distribution tests have been completed.

ADF is sometimes seen as a more accurate and representative measure of internal lighting conditions as it comprises a greater number of design factors and input variables/coefficients. That is, the value of ADF is derived from:

- The actual amount of daylight received by the window(s) serving the room expressed as the "angle of visible sky" which is derived from the VSC value and therefore represents the amount of light striking the face of the window.
- The loss of transmittance through the glazing.
- The size of the window (net area of glazing).
- The size of the room served by the window(s) (net internal surface area of the room).
- The internal reflectance values of the internal finishes within the room.
- The specific use of the room.

One of the main reasons why ADF is more appropriate for New-Build dwellings is that any of the above input variables can be changed during the course of the design process in order to achieve the required internal lighting values. The ability to make such changes is not usually available when dealing with existing neighbouring buildings.

Unlike the application of VSC and daylight distribution, the British Standard differentiates between different room uses. It places the highest ADF standard on Family Kitchens where the minimum target value is 2% df. Living Rooms should achieve 1.5% df, and Bedrooms 1.0% df.

Sunlighting

The requirements for protecting sunlight to existing residential buildings are set out in section 3.2 of the BRE Guidelines.

The availability of sunlight varies throughout the year with the maximum amount of sunlight being available on the summer solstice and the minimum on the winter solstice. In view of this, the internationally accepted test date for measuring sunlight is the spring equinox (21 March), on which day the United Kingdom has equal periods of daylight and darkness and sunlight is available from approximately 08:30hrs to 17:30hrs. In addition, on that date, sunlight received perpendicular to the face of a window would only be received where that window faces within 90º of due south. The BRE Guidelines therefore limit the extent of testing for sunlight where a window faces within 90º of due south.

The sunlight standards are normally applied to the principal Living Room within each dwelling rather than to kitchens and bedrooms.

The recommendation for sunlight is:

"If this window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21 September and 21 March, then the room should still receive enough sunlight .

Any reduction in sunlight access below this level should be kept to a minimum. If the availability of sunlight hours are both less than the amounts given and less than 0.8 times their former value, either over the whole year or just during the winter months, then the occupants of the existing building will notice the loss of sunlight."

A good level of sunlight will therefore be achieved where a window achieves more than 25% APSH, of which 5% should be in the winter months. Where sunlight levels fall below this suggested recommendation, a comparison with the existing condition should be undertaken and if the reduction ratio is less than 0.2, i.e. the window continues to receive more than 0.8 times its existing sunlight levels, the impact on sunlight will be acceptable.

Appendix 2
Existing & Proposed Drawings

Sources of Information

EXISTING BUILDING
20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS
20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING
INFO 20200315 - 3d scheme
191128 - Epsom - Massing Model for LVIA

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65 Gresham Street, London, EC2V 7NQ
www.gva.co.uk

Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

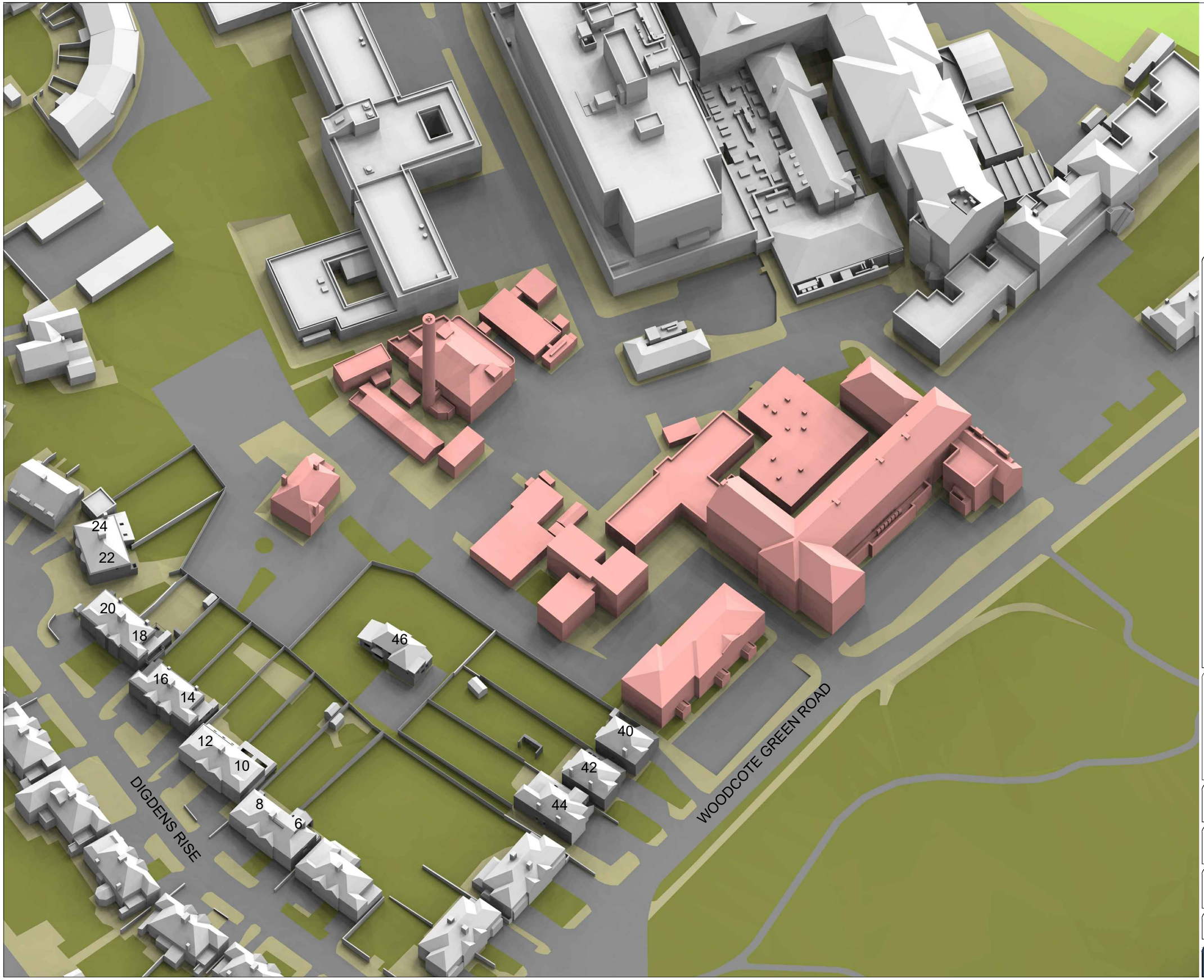
Drawing Title
EXISTING CONDITION
PLAN VIEW

Drawn By	Chk'd By	Scale @ A3	Date
AH		N/A	18 March 2020

Project No.	Drawing No.	Revision
EP05_23	BRE_52	-

Daylight

A3



Do not scale this drawing.
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.

Sources of Information

EXISTING BUILDING
20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

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EXISTING CONDITION
3D VIEW

Drawn By	Chk'd By	Scale @ A3	Date
AH		NTS	18 March 2020

Project No.	Drawing No.	Revision
EP05_23	BRE_53	-

Daylight

A3

Sources of Information

EXISTING BUILDING
INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS
INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING
INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

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Project Name
EPSOM HOSPITAL

Client
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Drawing Title
PROPOSED CONDITION
PLAN VIEW

Drawn By	Chk'd By	Scale @ A3	Date
CC		N/A	14 DEC 2020

Project No.	Drawing No.	Revision
EP05_32	BRE_54	-

Daylight

A3

Sources of Information

EXISTING BUILDING
INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

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3D VIEW

Drawn By	Chk'd By	Scale @ A3	Date
CC		NTS	14 DEC 2020

Project No.	Drawing No.	Revision
EP05_32	BRE_55	-

Daylight

A3

Appendix 3

Neighbouring Daylight & Sunlight Results & Contour Drawings

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15-Dec-20
JOB 32 - DAYLIGHT RESULTS

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
40 WOODCOTE GREEN ROAD										
Gnd Floor										
R2/10	UNKNOWN	W2/10	11.09	7.13	35.71%	0.29	0.09	68.03%	16.91%	58.33%
R3/10	UNKNOWN	W3/10	13.04	9.43	27.68%	3.05	2.66	12.79%	97.27%	0.00%
		W4/10	10.70	9.50	11.21%					
		W5/10	33.77	28.56	>27					
		W6/10	34.30	28.77	>27					
R4/10	UNKNOWN	W7/10	27.00	17.55	35.00%	3.14	2.78	11.43%	99.76%	0.08%
		W8/10	35.55	30.35	>27					
		W9/10	25.80	25.39	1.59%					
		W10/10	20.03	20.03	0.00%					
		W11/10	18.04	18.04	0.00%					
1st Floor										
R1/11	UNKNOWN	W1/11	18.53	14.05	24.18%	0.24	0.21	15.64%	41.39%	17.39%
R2/11	UNKNOWN	W2/11	17.36	10.49	39.57%	1.30	0.86	34.05%	39.57%	42.52%
R3/11	UNKNOWN	W3/11	25.26	16.00	36.66%	1.78	1.47	17.15%	99.02%	0.00%
		W4/11	35.11	29.38	>27					
R4/11	UNKNOWN	W5/11	30.43	20.00	34.28%	2.20	1.92	12.66%	99.80%	0.12%
		W6/11	37.20	32.01	>27					
		W7/11	31.70	31.25	>27					
42 WOODCOTE GREEN ROAD										
Gnd Floor										
R1/20	UNKNOWN	W1/20	33.44	31.12	>27	3.82	3.65	4.35%	96.89%	0.00%
		W2/20	67.98	63.53	>27					
		W9/20	63.92	61.60	>27					
R2/20	UNKNOWN	W3/20	35.34	31.28	>27	1.84	1.68	8.60%	99.27%	0.07%
R3/20	UNKNOWN	W4/20	27.91	20.69	25.87%	3.04	2.80	8.09%	99.61%	0.09%
		W5/20	34.85	31.37	>27					
		W6/20	22.79	22.57	0.97%					
		W7/20	16.38	16.38	0.00%					
		W8/20	10.75	10.75	0.00%					

AVISON YOUNG

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
1st Floor										
R1/21	UNKNOWN	W1/21	18.71	16.80	10.21%	1.40	1.28	8.49%	62.20%	29.49%
R2/21	UNKNOWN	W2/21	27.02	21.82	19.25%	1.83	1.65	9.64%	99.02%	0.00%
		W3/21	35.86	31.98	>27					
R3/21	UNKNOWN	W4/21	29.79	22.88	23.20%	2.16	1.97	8.58%	99.44%	0.17%
		W5/21	37.28	33.85	>27					
		W6/21	30.75	30.50	>27					
R4/21	UNKNOWN	W7/21	19.24	17.64	8.32%	0.27	0.24	9.67%	48.91%	3.52%
44 WOODCOTE GREEN ROAD										
R1/100	KITCHEN	W1/100	64.36	63.30	>27	3.19	3.05	4.66%	98.57%	1.43%
		W2/100	36.36	33.40	>27					
		W3/100	35.90	33.24	>27					
R2/100	DINING	W4/100	29.92	24.76	17.25%	3.12	3.00	3.87%	99.67%	-0.13%
		W5/100	36.09	33.56	>27					
		W6/100	34.89	32.37	>27					
		W7/100	34.44	32.02	>27					
		W8/100	19.25	19.22	0.16%					
		W9/100	29.32	29.32	>27					
		W10/100	26.79	26.79	0.00%					
R1/101	BEDROOM	W1/101	32.81	32.81	>27	1.09	1.08	1.37%	92.88%	0.65%
		W2/101	28.00	27.24	>27					
R4/101	BEDROOM	W5/101	37.29	34.89	>27	2.63	2.50	5.02%	97.15%	0.00%
46 WOODCOTE GREEN ROAD										
Gnd Floor										
R1/30	KITCHEN	W1/30	34.25	22.53	34.22%	1.97	1.42	27.89%	81.67%	14.33%
R3/30	LIVING	W5/30	34.47	22.33	35.22%	4.34	3.84	11.43%	98.37%	1.51%
		W7/30	19.59	19.59	0.00%					
		W8/30	33.70	33.70	>27					
		W9/30	10.33	10.33	0.00%					
R4/30	DINING	W3/30	34.43	34.43	>27	4.98	4.12	17.15%	98.45%	1.36%
		W4/30	22.83	17.67	22.60%					
		W6/30	35.11	22.92	34.72%					
R7/30	UNKNOWN	W11/30	36.21	33.35	>27	2.81	2.64	5.98%	93.16%	0.00%
		W12/30	34.03	31.08	>27					
1st Floor										
R1/31	UNKNOWN	W1/31	35.03	23.97	31.57%	0.46	0.30	34.21%	51.54%	42.78%
R2/31	UNKNOWN	W2/31	31.60	20.60	34.81%	0.37	0.24	35.60%	67.58%	21.84%
		W3/31	31.25	20.59	34.11%					
R4/31	UNKNOWN	W5/31	34.41	23.34	32.17%	2.98	2.58	13.56%	99.18%	0.82%
		W6/31	34.99	34.99	>27					
R6/31	UNKNOWN	W8/31	36.48	36.48	>27	2.00	1.94	2.95%	96.65%	0.38%
		W9/31	37.43	35.06	>27					
		W10/31	37.40	34.81	>27					

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Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
8 DIGDENS RISE										
R2/130	UNKNOWN	W2/130	28.97	27.11	>27	1.69	1.59	5.74%	83.22%	13.12%
		W3/130	32.23	29.96	>27					
R3/130	UNKNOWN	W4/130	19.06	17.97	5.72%	5.46	5.16	5.44%	99.38%	0.19%
		W5/130	34.18	31.58	>27					
		W6/130	13.25	12.68	4.30%					
R1/131	UNKNOWN	W1/131	36.38	33.96	>27	1.48	1.39	6.21%	93.36%	0.00%
R2/131	UNKNOWN	W2/131	37.57	35.12	>27	2.00	1.88	6.05%	99.24%	0.00%
10 DIGDENS RISE										
R1/120	KD	W1/120	76.13	75.67	>27	6.46	6.27	2.99%	97.47%	1.44%
		W2/120	36.72	33.41	>27					
		W3/120	77.07	76.62	>27					
		W4/120	36.82	33.45	>27					
R1/121	UNKNOWN	W1/121	38.05	35.14	>27	1.58	1.47	7.22%	98.70%	0.00%
R2/121	UNKNOWN	W2/121	38.15	35.26	>27	1.35	1.25	7.32%	98.23%	0.00%
		W3/121	38.15	35.28	>27					
12 DIGDENS RISE										
R1/110	UNKNOWN	W1/110	77.10	75.32	>27	3.50	3.29	6.16%	98.74%	0.00%
		W2/110	34.83	31.75	>27					
		W3/110	78.26	76.48	>27					
		W4/110	34.96	31.68	>27					
		W5/110	78.67	76.89	>27					
R1/111	UNKNOWN	W1/111	37.10	34.24	>27	1.39	1.29	7.61%	98.54%	0.00%
		W2/111	36.44	33.59	>27					
		W3/111	37.43	34.58	>27					
R2/111	UNKNOWN	W4/111	37.89	35.05	>27	1.58	1.47	7.02%	98.74%	0.00%
14 DIGDENS RISE										
Gnd Floor										
R1/40	KITCHEN	W1/40	27.28	26.73	2.02%	2.50	2.38	4.65%	99.78%	0.00%
		W2/40	33.37	32.70	>27					
		W3/40	32.39	29.71	>27					
		W4/40	35.12	31.67	>27					
R3/40	DINING	W6/40	31.00	28.92	>27	3.75	3.50	6.51%	99.35%	0.00%
		W7/40	37.63	34.15	>27					
		W8/40	28.46	26.58	6.61%					
1st Floor										
R2/41	BEDROOM	W2/41	36.03	32.98	>27	1.81	1.66	7.98%	99.17%	0.00%

AVISON YOUNG

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
16 DIGDENS RISE										
Gnd Floor										
R1/50	UNKNOWN	W1/50	29.36	27.25	>27	3.68	3.44	6.44%	99.35%	0.00%
		W2/50	37.34	33.88	>27					
		W3/50	27.88	26.10	6.38%					
R2/50	UNKNOWN	W4/50	34.09	30.77	>27	1.73	1.63	6.12%	99.72%	0.00%
		W5/50	31.23	28.51	>27					
		W6/50	14.62	14.50	0.82%					
R3/50	UNKNOWN	W7/50	32.90	29.71	>27	1.11	1.01	9.52%	98.51%	0.00%
1st Floor										
R1/51	UNKNOWN	W1/51	35.95	32.96	>27	1.81	1.66	7.98%	99.24%	0.00%
R2/51	UNKNOWN	W2/51	34.62	31.72	>27	1.39	1.27	8.09%	95.38%	0.00%
18 DIGDENS RISE										
Gnd Floor										
R1/60	UNKNOWN	W1/60	37.67	33.49	>27	0.79	0.70	11.59%	93.81%	0.00%
R2/60	UNKNOWN	W2/60	37.45	33.12	>27	26.65	25.91	2.77%	99.77%	0.00%
		W3/60	37.16	32.87	>27					
		W4/60	37.29	33.09	>27					
		W5/60	22.52	22.18	1.51%					
		W6/60	78.99	77.89	>27					
		W7/60	73.45	72.61	>27					
R3/60	UNKNOWN	W8/60	8.78	7.94	9.57%	4.01	3.75	6.44%	99.56%	0.00%
		W9/60	36.71	33.14	>27					
		W10/60	24.43	23.31	4.58%					
R4/60	UNKNOWN	W11/60	13.42	13.42	0.00%	9.77	9.63	1.40%	99.87%	0.00%
		W12/60	28.82	28.03	>27					
		W13/60	24.97	22.53	9.77%					
		W14/60	79.67	79.09	>27					
1st Floor										
R1/61	UNKNOWN	W1/61	35.11	31.94	>27	1.19	1.09	8.67%	96.35%	0.00%
R2/61	UNKNOWN	W2/61	35.85	32.79	>27	1.80	1.66	7.99%	99.25%	0.00%
R3/61	UNKNOWN	W3/61	29.26	28.55	>27	1.20	1.19	1.25%	95.01%	0.00%
R4/61	UNKNOWN	W4/61	30.17	29.51	>27	1.20	1.19	0.92%	92.62%	0.00%
20 DIGDENS RISE										
Gnd Floor										
R1/70	DINING	W1/70	29.36	26.70	9.06%	3.94	3.68	6.68%	99.62%	0.00%
		W2/70	36.12	32.75	>27					
		W3/70	23.64	22.73	3.85%					
R2/70	KITCHEN	W4/70	33.69	30.46	>27	1.06	0.96	8.81%	93.99%	0.00%
		W5/70	28.61	25.62	10.45%					
1st Floor										
R1/71	BEDROOM	W1/71	35.44	32.48	>27	1.70	1.56	7.84%	99.10%	0.00%
R3/71	BEDROOM	W3/71	33.26	30.48	>27	1.56	1.44	7.89%	98.45%	0.00%

AVISON YOUNG

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
22 DIGDENS RISE										
Gnd Floor										
R2/80	KITCHEN	W2/80	26.26	23.26	11.42%	1.43	1.30	8.91%	96.25%	1.44%
R3/80	DINING	W3/80	33.79	30.22	>27	2.07	1.87	9.49%	98.26%	0.19%
		W4/80	32.07	28.70	>27					
		W5/80	32.09	28.66	>27					
1st Floor										
R2/81	BEDROOM	W3/81	36.21	32.36	>27	1.73	1.57	9.58%	98.57%	0.06%
24 DIGDENS RISE										
Gnd Floor										
R1/90	LKD	W1/90	35.86	30.11	>27	2.94	2.62	11.18%	74.82%	23.99%
		W2/90	83.67	81.69	>27					
		W3/90	85.25	82.90	>27					
1st Floor										
R1/91	BEDROOM	W1/91	36.20	32.29	>27	1.69	1.53	9.82%	98.63%	0.00%
6 DIGDENS RISE										
Gnd Floor										
R1/140	UNKNOWN	W1/140	66.14	65.53	>27	20.80	20.02	3.77%	99.75%	0.00%
		W2/140	36.81	34.07	>27					
		W3/140	37.65	34.92	>27					
		W4/140	23.38	23.21	0.73%					
		W5/140	64.72	64.48	>27					
R2/140	UNKNOWN	W6/140	24.05	22.57	6.15%	1.09	1.04	4.85%	94.99%	-0.47%
R4/140	UNKNOWN	W7/140	21.97	20.23	7.92%	1.07	1.00	6.27%	95.86%	-3.35%
		W9/140	5.58	5.47	1.97%					
1st Floor										
R1/141	UNKNOWN	W1/141	37.83	35.38	>27	4.07	3.82	6.07%	98.93%	0.00%
R2/141	UNKNOWN	W2/141	37.95	35.50	>27	2.72	2.56	6.03%	98.42%	0.00%
R3/141	UNKNOWN	W3/141	37.86	35.46	>27	3.61	3.51	2.88%	96.99%	0.00%
		W4/141	22.31	22.25	0.27%					
2nd Floor										
R1/142	UNKNOWN	W1/142	36.49	34.55	>27	3.79	3.60	5.04%	91.36%	0.00%
R2/142	UNKNOWN	W2/142	38.76	36.71	>27	1.56	1.47	5.27%	96.20%	0.00%

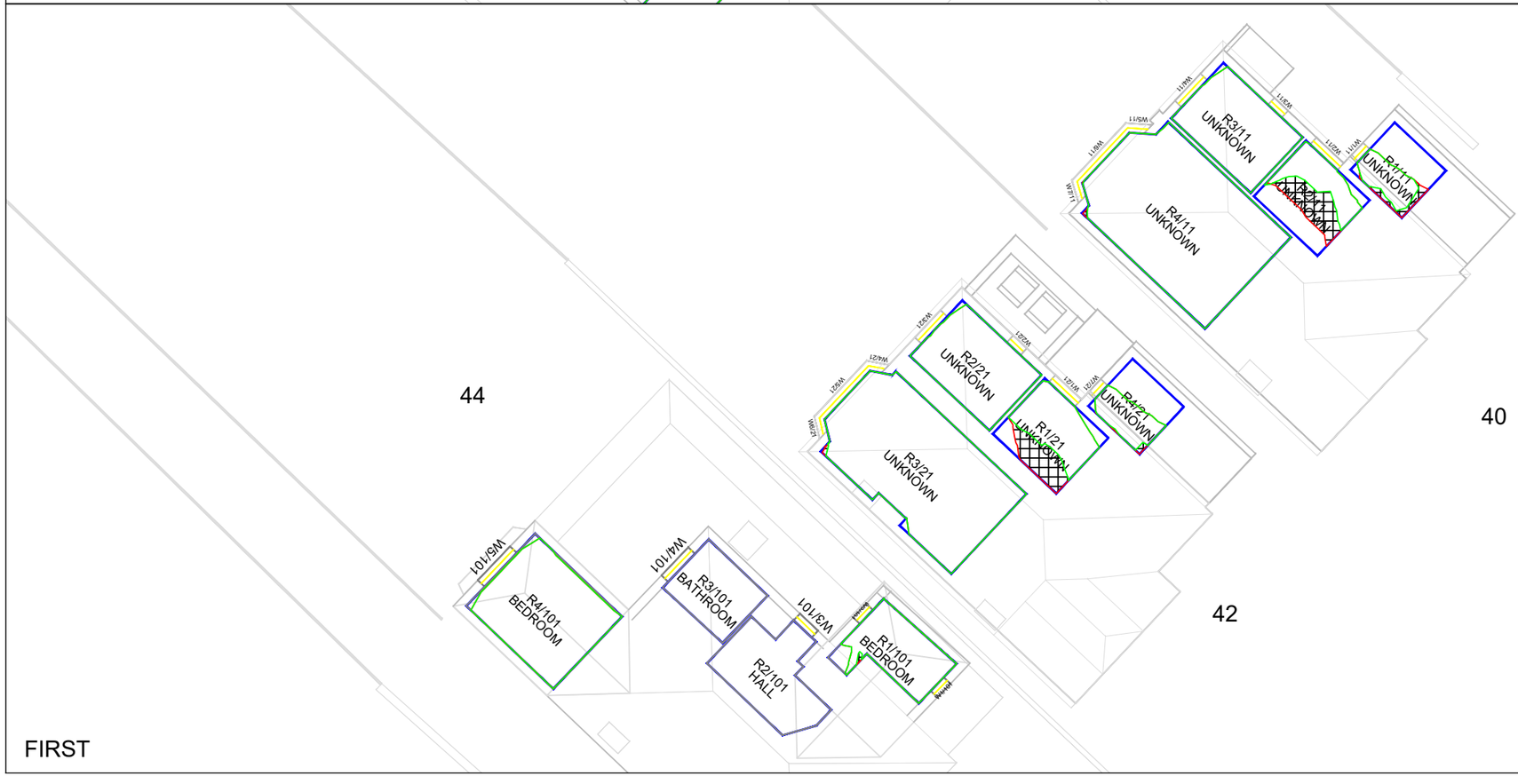
AVISON YOUNG

EPSOM HOSPITAL
15-Dec-20
JOB 32 - SUNLIGHT RESULTS

Available sunlight as a percentage of
annual unobstructed total (1486.0 Hrs)

		Existing %			Proposed %					
Room use	Window Ref	Summer	Winter	Total	Summer	Winter	Total	% Loss of Summer	% Loss of Winter	% Loss of Total
46 WOODCOTE GREEN ROAD										
Gnd Floor										
UNKNOWN	W11/30	46.00	25.00	71.00	42.00	25.00	67.00	8.70%	0.00%	5.63%
UNKNOWN	W12/30	40.00	20.00	60.00	34.00	20.00	54.00	15.00%	0.00%	10.00%
1st Floor										
UNKNOWN	W9/31	46.00	25.00	71.00	43.00	25.00	68.00	6.52%	0.00%	4.23%
UNKNOWN	W10/31	46.00	25.00	71.00	43.00	25.00	68.00	6.52%	0.00%	4.23%
6 DIGDENS RISE										
Gnd Floor										
UNKNOWN	W4/140	33.00	5.00	38.00	33.00	5.00	38.00	0.00%	0.00%	0.00%
UNKNOWN	W9/140	11.00	2.00	13.00	11.00	2.00	13.00	0.00%	0.00%	0.00%
1st Floor										
UNKNOWN	W4/141	40.00	11.00	51.00	40.00	11.00	51.00	0.00%	0.00%	0.00%
14 DIGDENS RISE										
Gnd Floor										
KITCHEN	W1/40	44.00	11.00	55.00	43.00	11.00	54.00	2.27%	0.00%	1.82%
KITCHEN	W2/40	49.00	18.00	67.00	48.00	17.00	65.00	2.04%	5.56%	2.99%
18 DIGDENS RISE										
Gnd Floor										
UNKNOWN	W12/60	49.00	10.00	59.00	47.00	10.00	57.00	4.08%	0.00%	3.39%
UNKNOWN	W14/60	53.00	17.00	70.00	52.00	17.00	69.00	1.89%	0.00%	1.43%
1st Floor										
UNKNOWN	W3/61	42.00	14.00	56.00	41.00	14.00	55.00	2.38%	0.00%	1.79%
UNKNOWN	W4/61	44.00	20.00	64.00	43.00	20.00	63.00	2.27%	0.00%	1.56%

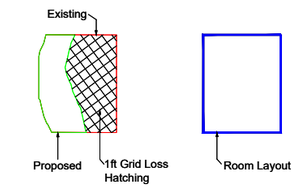
GROUND



FIRST

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING

INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

AVISON YOUNG

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

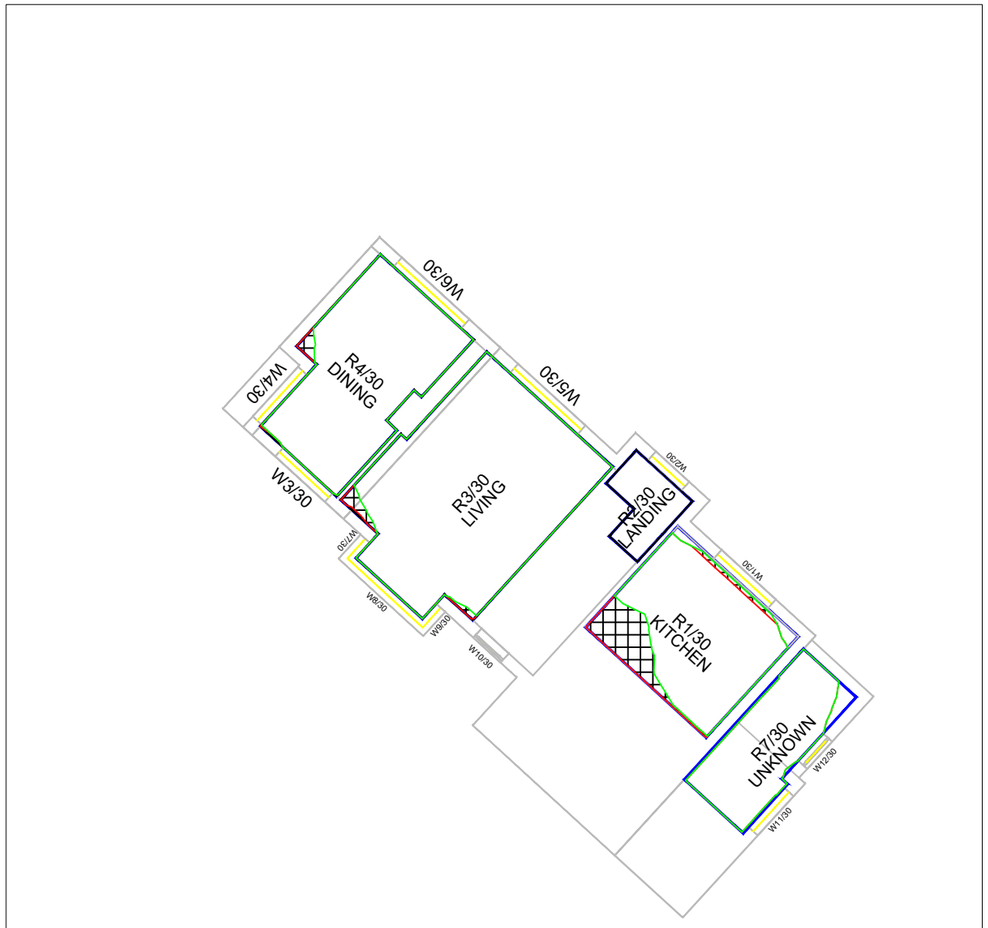
Drawing Title
NO SKYLINE CONTOURS
40-44 WOODCOTE GREEN ROAD

Drawn By	Chk'd By	Scale @ A3	Date
CC		1/175	14 DEC 2020

Project No.	Drawing No.	Revision
EP05_32	BRE_56	-

Daylight

A3



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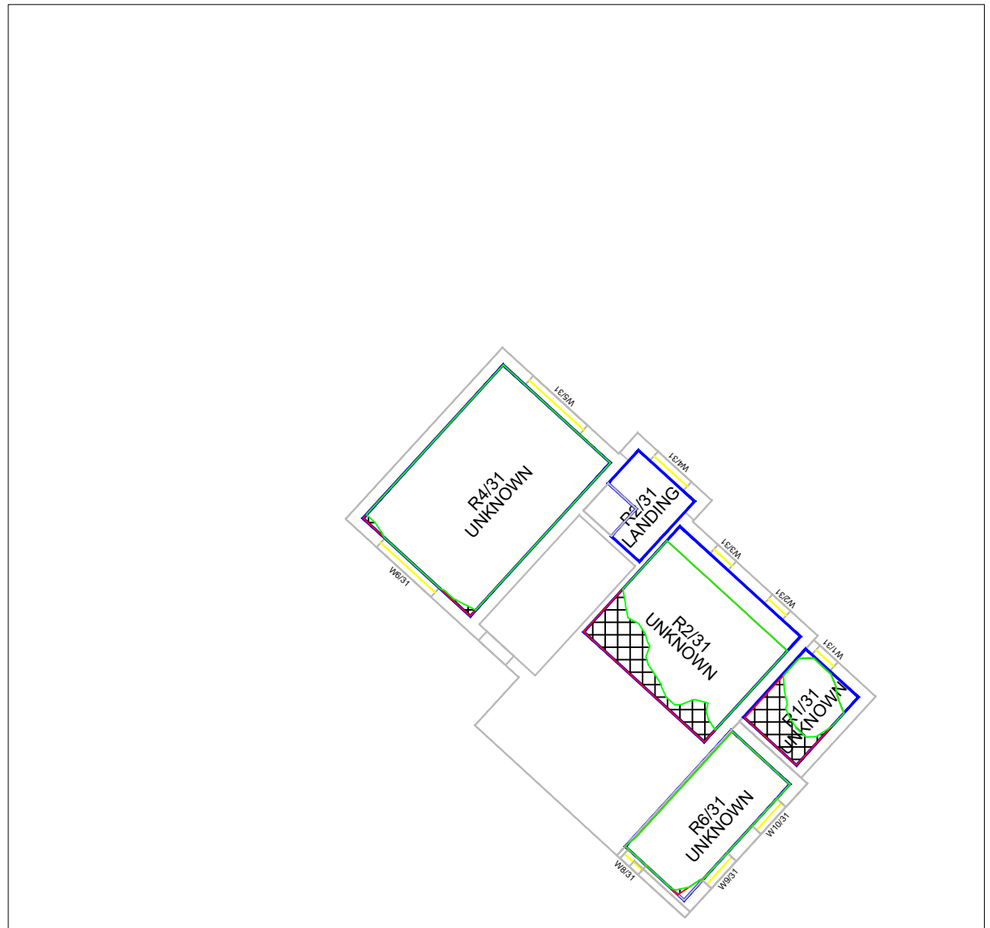
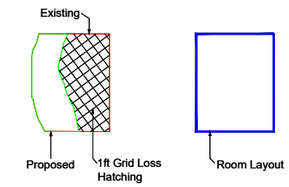


FIRST

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING

INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

AVISON YOUNG

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
46 WOODCOTE GREEN ROAD

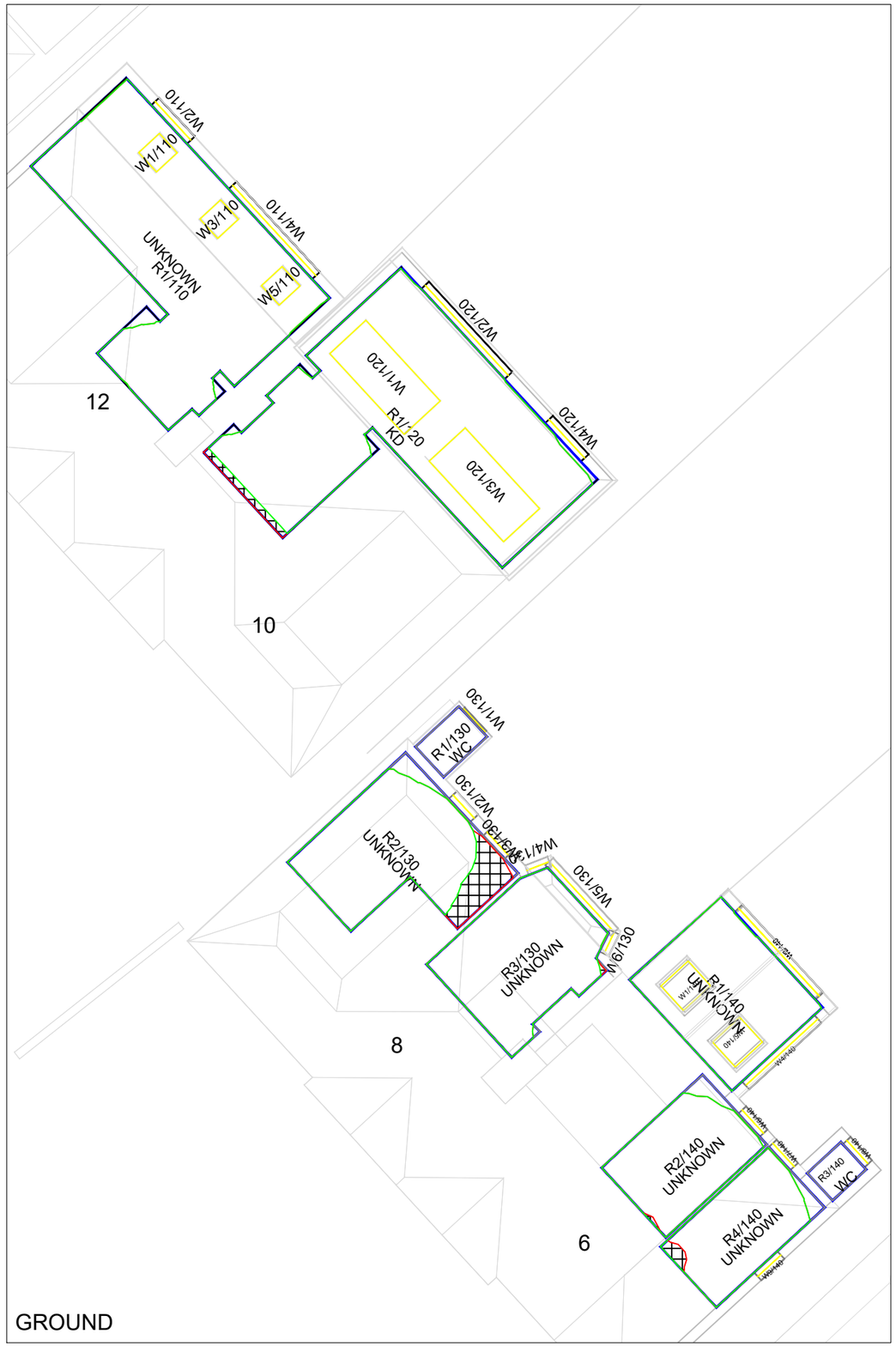
Drawn By	Chk'd By	Scale @ A3	Date
CC		1/150	14 DEC 2020

Project No.	Drawing No.	Revision
EP05_32	BRE_57	-

Daylight

A3

Do not scale this drawing.
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.



Legend

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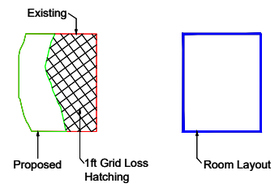

Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING

INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

AVISON YOUNG
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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

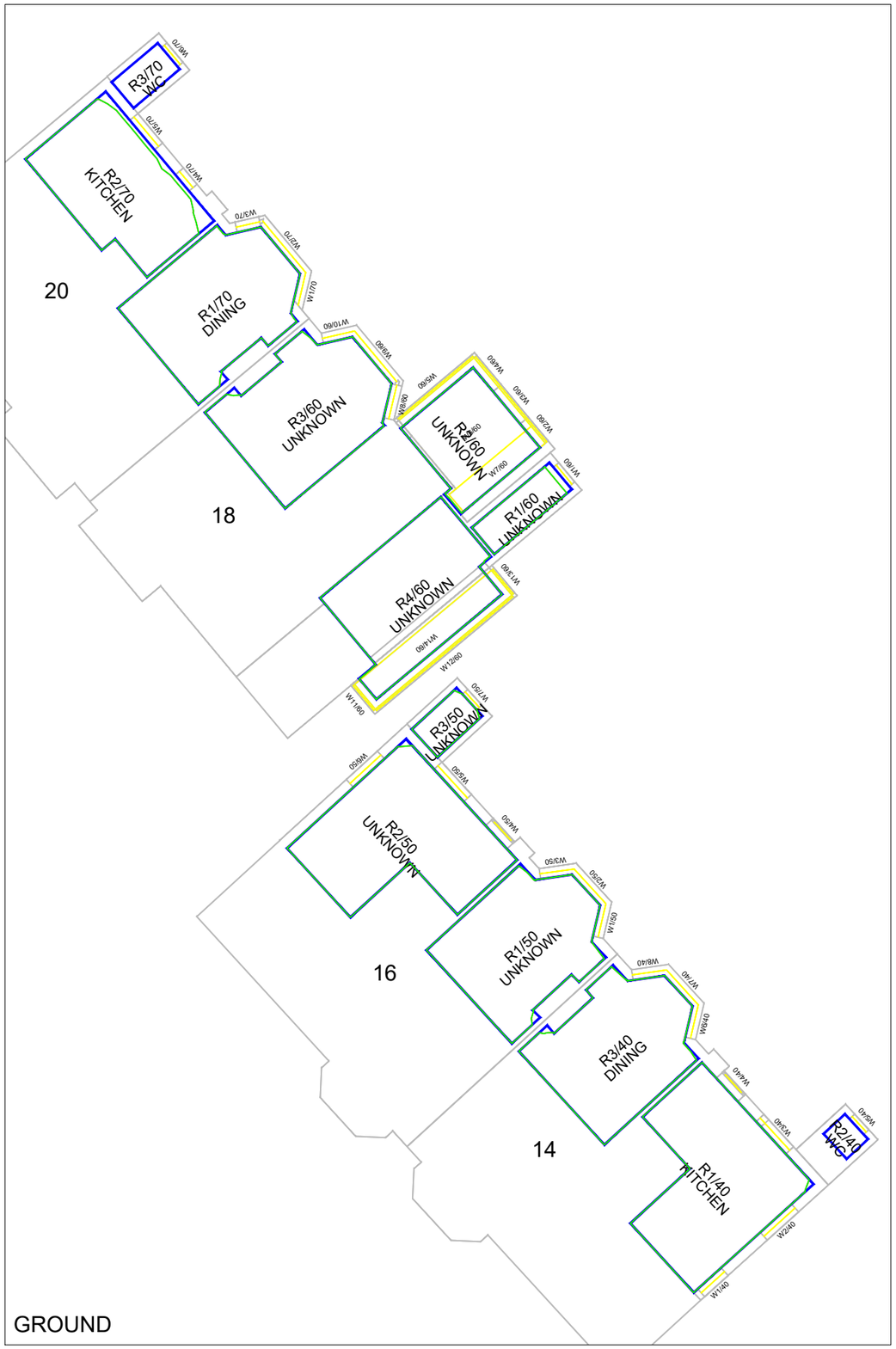
Drawing Title
NO SKYLINE CONTOURS
6-12 DIGDENS RISE

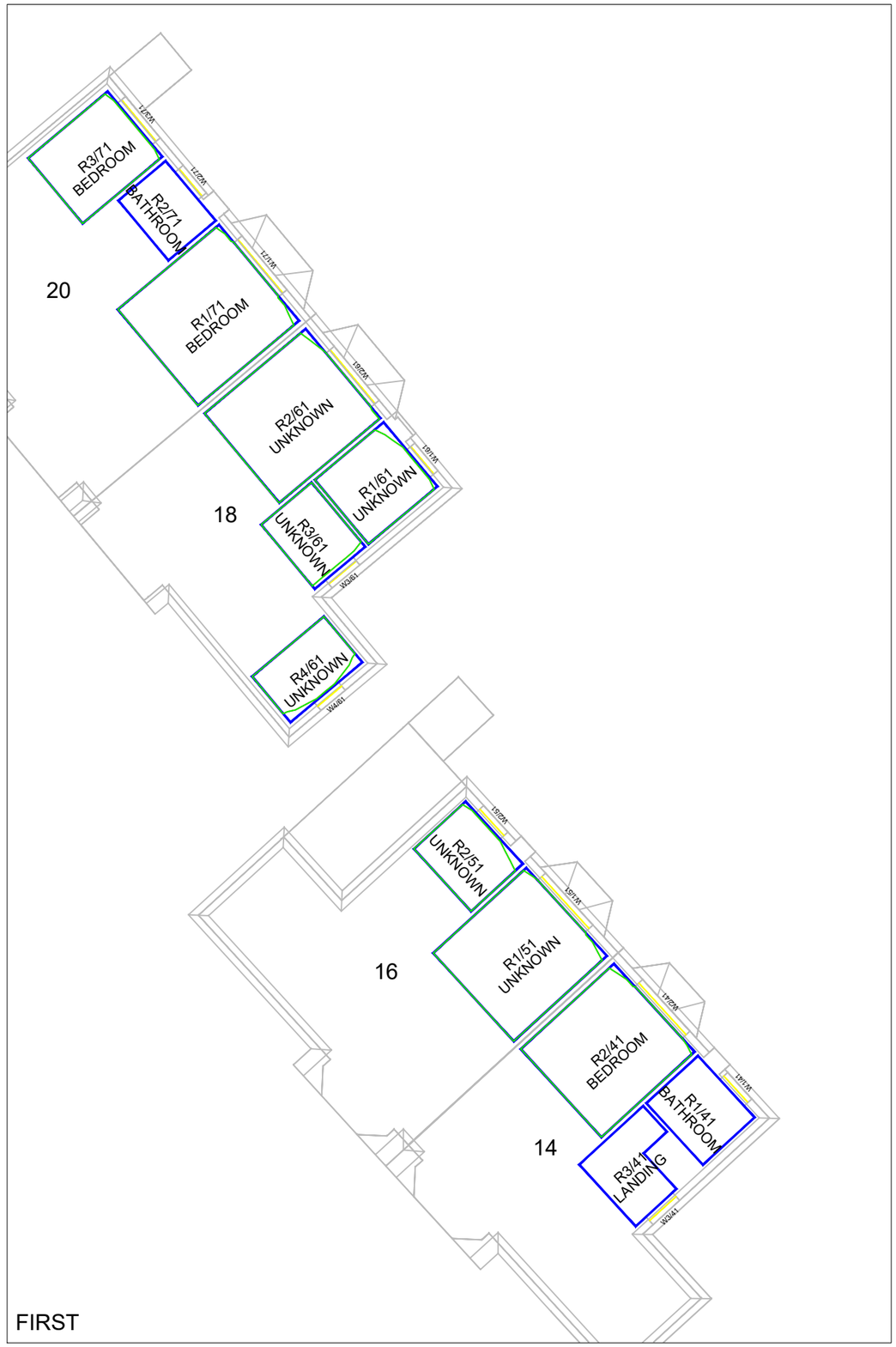
Drawn By	Chk'd By	Scale @ A3	Date
CC		1/150	14 DEC 2020

Project No.	Drawing No.	Revision
EP05_32	BRE_58	-

Daylight

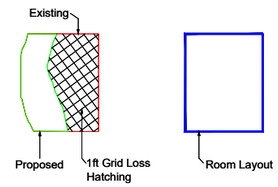
A3





Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING

INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
14-20 DIGDENS RISE

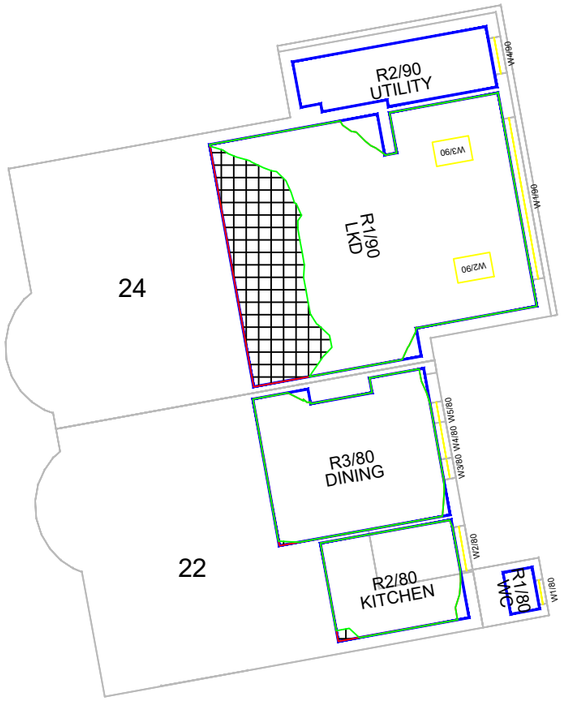
Drawn By	Chk'd By	Scale @ A3	Date
CC		1/150	14 DEC 2020

Project No.	Drawing No.	Revision
EP05_32	BRE_59	-

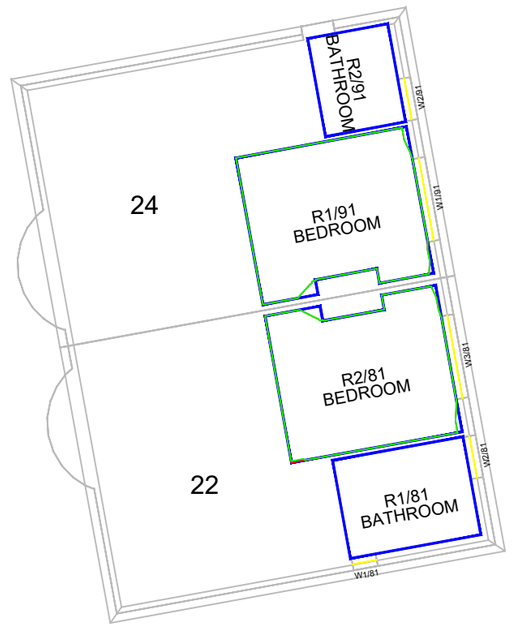
Daylight

A3

Do not scale this drawing.
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.



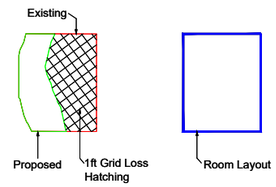
GROUND



FIRST

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING

INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

AVISON YOUNG
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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
22-24 DIGDENS RISE

Drawn By	Chk'd By	Scale @ A3	Date
CC		1/150	14 DEC 2020

Project No.	Drawing No.	Revision
EP05_32	BRE_60	-

Daylight

A3

Appendix 4
Internal Daylight & Sunlight Results & Contour Drawings

Epsom Hospital

Daylight and sunlight analsysi results
Job 36
11-Jan-21

Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
Building A										
Gnd Floor										
R1/140	LD	W1/140	34.52	4.7	191.40	190.40	99.48%	N/A	N/A	N/A
R2/140	BEDROOM	W2/140	35.49	3.1	91.60	83.30	90.94%	N/A	N/A	N/A
R3/140	BEDROOM	W3/140	35.59	2.5	128.00	115.80	90.47%	N/A	N/A	N/A
R4/140	LD	W4/140	35.56	5.7	176.20	176.00	99.89%	0	0	0
		W5/140	30.42					28	6	34
R5/140	BEDROOM	W6/140	23.50	1.4	172.70	112.80	65.32%	21	2	23
R6/140	STUDIO	W7/140	18.40	2.6	193.50	118.50	61.24%	13	3	16
R7/140	STUDIO	W8/140	15.76	2.0	193.00	165.60	85.80%	6	3	9
		W9/140	20.50					15	5	20
R8/140	BEDROOM	W10/140	26.47	1.7	142.90	126.90	88.80%	20	6	26
R9/140	LD	W11/140	29.63	4.5	172.00	171.70	99.83%	25	11	36
R10/140	STUDIO	W12/140	30.68	2.8	205.20	197.30	96.15%	24	7	31
		W13/140	31.40					22	4	26
R11/140	BEDROOM	W14/140	32.08	2.5	110.00	101.70	92.45%	24	5	29
R12/140	LD	W15/140	32.52	7.7	130.90	129.90	99.24%	25	6	31
		W16/140	34.02					42	25	67
R13/140	BEDROOM	W17/140	31.09	2.3	122.00	111.10	91.07%	23	21	44
1st Floor										
R1/141	LKD	W48/141	28.00	7.8	246.50	245.70	99.68%	N/A	N/A	N/A
		W49/141	27.90					N/A	N/A	N/A
		W50/141	30.89					N/A	N/A	N/A
R2/141	BEDROOM	W1/141	30.34	3.2	93.90	79.20	84.35%	N/A	N/A	N/A
R3/141	BEDROOM	W2/141	29.88	2.7	108.70	104.60	96.23%	N/A	N/A	N/A
R4/141	BEDROOM	W3/141	28.97	2.2	128.60	116.30	90.44%	N/A	N/A	N/A
R5/141	LD	W51/141	27.79	4.2	190.60	184.40	96.75%	N/A	N/A	N/A
R6/141	BEDROOM	W52/141	27.37	4.8	138.30	109.50	79.18%	N/A	N/A	N/A
R7/141	LD	W4/141	29.32	1.6	197.00	161.90	82.18%	N/A	N/A	N/A
R8/141	LD	W5/141	31.47	3.5	197.00	192.20	97.56%	N/A	N/A	N/A
		W6/141	32.64					N/A	N/A	N/A
R9/141	BEDROOM	W7/141	33.29	2.3	138.70	130.40	94.02%	N/A	N/A	N/A
R10/141	LD	W53/141	37.02	4.9	208.60	207.10	99.28%	N/A	N/A	N/A
R11/141	BEDROOM	W8/141	37.05	2.1	165.40	157.90	95.47%	N/A	N/A	N/A
R12/141	BEDROOM	W9/141	36.99	2.3	140.90	134.10	95.17%	N/A	N/A	N/A
R13/141	LD	W54/141	37.28	4.7	178.10	174.90	98.20%	N/A	N/A	N/A
R14/141	BEDROOM	W10/141	36.96	2.7	128.00	115.50	90.23%	N/A	N/A	N/A
R15/141	LD	W11/141	36.99	6.6	177.10	176.90	99.89%	0	0	0
		W55/141	35.53					30	12	42
R16/141	BEDROOM	W12/141	35.17	2.0	172.70	147.40	85.35%	27	7	34
R17/141	STUDIO	W56/141	35.34	4.2	190.70	182.60	95.75%	29	14	43
R18/141	STUDIO	W13/141	35.13	3.6	194.30	189.10	97.32%	26	7	33
		W14/141	35.22					26	7	33
R19/141	BEDROOM	W58/141	34.97	2.1	143.10	131.10	91.61%	24	5	29
R20/141	LD	W57/141	35.21	5.4	171.80	171.40	99.77%	29	12	41
R21/141	STUDIO	W15/141	34.96	3.4	204.50	196.70	96.19%	26	7	33
		W16/141	35.00					24	6	30
R22/141	BEDROOM	W17/141	35.14	3.1	109.60	101.30	92.43%	26	5	31
R23/141	LD	W18/141	35.00	7.1	149.90	148.90	99.33%	26	7	33
		W59/141	36.18					39	26	65
R24/141	BEDROOM	W19/141	35.97	2.9	122.10	110.90	90.83%	28	22	50
R25/141	STUDIO	W72/141	35.60	4.1	201.70	196.50	97.42%	42	24	66
R26/141	BEDROOM	W20/141	34.81	2.3	138.50	133.10	96.10%	26	8	34
R27/141	BEDROOM	W21/141	35.07	3.6	93.30	77.20	82.74%	27	8	35
R28/141	LD	W60/141	35.59	5.4	178.80	178.40	99.78%	29	15	44
R29/141	BEDROOM	W22/141	35.84	2.6	128.20	122.10	95.24%	26	8	34
R30/141	BEDROOM	W23/141	36.04	3.1	115.20	104.80	90.97%	26	8	34
R31/141	LD	W61/141	36.34	4.4	211.80	211.00	99.62%	29	14	43

Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
R32/141	BEDROOM	W24/141	36.35	2.3	150.70	146.40	97.15%	26	8	34
R33/141	BEDROOM	W25/141	36.43	3.7	86.10	71.00	82.46%	27	8	35
R34/141	LD	W62/141	36.70	4.5	213.00	208.90	98.08%	30	14	44
R35/141	LD	W63/141	36.96	5.5	184.10	182.60	99.19%	37	23	60
R36/141	BEDROOM	W26/141	36.56	3.7	84.90	73.60	86.69%	29	16	45
R37/141	BEDROOM	W27/141	36.31	2.2	147.20	142.40	96.74%	29	16	45
R38/141	LD	W28/141	38.60	5.6	325.10	318.20	97.88%	30	15	45
		W29/141	28.31					1	0	1
		W64/141	38.42					37	20	57
R39/141	BEDROOM	W30/141	27.83	2.9	91.60	87.50	95.52%	N/A	N/A	N/A
R40/141	BEDROOM	W31/141	27.48	2.7	96.50	89.10	92.33%	N/A	N/A	N/A
R41/141	BEDROOM	W32/141	26.92	1.8	145.80	91.60	62.83%	N/A	N/A	N/A
R42/141	BEDROOM	W33/141	26.50	1.6	179.80	167.80	93.33%	N/A	N/A	N/A
R43/141	BEDROOM	W34/141	28.22	2.7	108.80	105.10	96.60%	N/A	N/A	N/A
R44/141	LD	W65/141	28.57	3.7	227.60	227.20	99.82%	N/A	N/A	N/A
R45/141	LD	W35/141	28.19	1.6	211.80	178.30	84.18%	N/A	N/A	N/A
R46/141	BEDROOM	W36/141	28.17	2.6	114.20	99.40	87.04%	N/A	N/A	N/A
R47/141	BEDROOM	W37/141	27.11	2.2	127.80	112.80	88.26%	N/A	N/A	N/A
R48/141	LD	W66/141	26.28	4.0	178.80	170.10	95.13%	N/A	N/A	N/A
R49/141	BEDROOM	W38/141	24.62	2.6	93.50	46.40	49.63%	N/A	N/A	N/A
R50/141	BEDROOM	W39/141	24.10	1.7	136.30	115.20	84.52%	N/A	N/A	N/A
R51/141	BEDROOM	W40/141	22.98	1.6	136.20	80.90	59.40%	N/A	N/A	N/A
R52/141	BEDROOM	W41/141	22.30	2.3	93.80	75.00	79.96%	N/A	N/A	N/A
R53/141	LD	W67/141	20.14	3.1	179.20	137.20	76.56%	N/A	N/A	N/A
R54/141	LD	W68/141	18.94	3.1	164.00	131.60	80.24%	N/A	N/A	N/A
R55/141	BEDROOM	W42/141	18.51	1.1	149.00	63.40	42.55%	N/A	N/A	N/A
R56/141	BEDROOM	W43/141	19.78	1.3	127.30	59.80	46.98%	N/A	N/A	N/A
R57/141	LD	W69/141	22.82	3.3	190.70	183.10	96.01%	N/A	N/A	N/A
R58/141	LD	W44/141	23.88	1.3	189.00	126.40	66.88%	N/A	N/A	N/A
R59/141	BEDROOM	W45/141	24.95	1.8	129.10	110.60	85.67%	N/A	N/A	N/A
R60/141	LD	W70/141	26.28	4.1	164.10	162.10	98.78%	N/A	N/A	N/A
R61/141	BEDROOM	W46/141	26.85	1.8	149.60	112.60	75.27%	N/A	N/A	N/A
R62/141	LD	W71/141	27.57	4.5	164.10	163.40	99.57%	N/A	N/A	N/A
R63/141	BEDROOM	W47/141	27.67	1.8	148.40	140.60	94.74%	N/A	N/A	N/A
2nd Floor										
R1/142	BEDROOM	W1/142	33.75	1.8	206.30	178.30	86.43%	N/A	N/A	N/A
R2/142	BEDROOM	W2/142	33.44	1.9	187.90	177.40	94.41%	N/A	N/A	N/A
R3/142	BEDROOM	W3/142	33.05	2.4	142.80	134.50	94.19%	N/A	N/A	N/A
R4/142	BEDROOM	W4/142	33.66	1.8	198.90	173.50	87.23%	N/A	N/A	N/A
R5/142	BEDROOM	W5/142	36.06	1.9	208.90	197.10	94.35%	N/A	N/A	N/A
R6/142	BEDROOM	W6/142	36.52	1.8	205.20	195.60	95.32%	N/A	N/A	N/A
R7/142	BEDROOM	W7/142	37.35	2.0	188.70	176.70	93.64%	N/A	N/A	N/A
R8/142	STUDIO	W8/142	37.63	4.5	308.30	302.40	98.09%	N/A	N/A	N/A
		W67/142	37.74					N/A	N/A	N/A
R9/142	STUDIO	W9/142	37.83	4.9	305.80	303.20	99.15%	N/A	N/A	N/A
		W68/142	38.05					N/A	N/A	N/A
R10/142	STUDIO	W10/142	38.01	5.1	297.50	292.90	98.45%	N/A	N/A	N/A
		W69/142	38.21					N/A	N/A	N/A
R11/142	LKD	W11/142	38.03	5.5	351.00	348.90	99.40%	0	0	0
		W12/142	38.16					1	0	1
		W70/142	37.29					30	14	44
R12/142	BEDROOM	W13/142	37.03	2.5	156.80	150.20	95.79%	28	8	36
R13/142	STUDIO	W71/142	37.32	3.4	299.10	290.60	97.16%	30	14	44
R14/142	BEDROOM	W14/142	37.07	2.6	140.80	137.00	97.30%	28	10	38
R15/142	LD	W15/142	37.41	2.6	141.10	137.70	97.59%	27	8	35
R16/142	LD	W16/142	37.29	2.5	151.00	147.40	97.62%	27	8	35
R17/142	BEDROOM	W72/142	37.23	5.6	168.60	166.90	98.99%	30	14	44
R18/142	STUDIO	W17/142	36.99	3.7	198.40	192.40	96.98%	28	9	37
		W18/142	37.13					30	9	39
R19/142	BEDROOM	W19/142	37.28	3.3	109.60	101.40	92.52%	27	8	35
R20/142	LD	W20/142	37.41	8.1	153.20	153.00	99.87%	27	8	35
		W73/142	37.74					44	28	72
R21/142	BEDROOM	W21/142	37.42	3.0	122.00	112.00	91.80%	28	22	50
R22/142	STUDIO	W22/142	24.30	10.0	196.90	193.70	98.37%	13	0	13
		W74/142	37.27					45	25	70
		W75/142	25.25					18	3	21

Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
R23/142	STUDIO	W23/142	20.77	4.7	199.30	149.50	75.01%	N/A	N/A	N/A
		W76/142	22.16					N/A	N/A	N/A
R24/142	STUDIO	W77/142	17.10	2.2	320.60	128.80	40.17%	N/A	N/A	N/A
R25/142	STUDIO	W24/142	26.35	2.9	310.20	297.00	95.74%	30	12	42
		W25/142	29.69					29	15	44
R26/142	STUDIO	W26/142	31.10	2.6	308.60	298.00	96.57%	28	18	46
		W27/142	31.38					29	20	49
R27/142	BEDROOM	W28/142	31.46	2.2	189.50	181.20	95.62%	30	20	50
R28/142	BEDROOM	W29/142	30.55	2.1	208.40	183.80	88.20%	29	18	47
R29/142	BEDROOM	W30/142	29.39	1.7	204.70	175.80	85.88%	27	17	44
R30/142	BEDROOM	W31/142	25.85	2.0	197.60	152.70	77.28%	21	17	38
R31/142	BEDROOM	W33/142	19.46	1.6	194.40	81.50	41.92%	17	7	24
R32/142	BEDROOM	W34/142	25.01	1.8	217.90	193.00	88.57%	22	9	31
R33/142	BEDROOM	W35/142	28.23	2.2	179.40	166.60	92.87%	22	9	31
R34/142	COMMUNAL AREA	W36/142	30.33	4.5	701.50	699.20	99.67%	27	14	41
		W37/142	32.12					30	15	45
R35/142	BEDROOM	W38/142	35.88	1.8	198.70	187.40	94.31%	25	7	32
R36/142	BEDROOM	W78/142	36.82	4.6	216.40	211.70	97.83%	32	14	46
R37/142	LD	W79/142	36.99	4.2	209.80	208.50	99.38%	30	12	42
R38/142	BEDROOM	W39/142	36.90	3.3	115.30	108.20	93.84%	25	7	32
R39/142	BEDROOM	W80/142	37.36	6.8	128.10	128.00	99.92%	30	12	42
R40/142	BEDROOM	W40/142	37.40	2.4	150.10	145.90	97.20%	27	8	35
R41/142	BEDROOM	W41/142	37.37	3.9	86.20	71.20	82.60%	27	9	36
R42/142	LD	W81/142	37.78	4.4	212.70	208.60	98.07%	30	12	42
R43/142	LD	W82/142	38.53	5.8	183.10	181.70	99.24%	38	22	60
R44/142	BEDROOM	W42/142	38.27	4.0	84.90	74.10	87.28%	30	16	46
R45/142	BEDROOM	W43/142	38.58	2.7	147.20	143.20	97.28%	31	17	48
R46/142	LD	W44/142	38.56	5.6	326.70	320.20	98.01%	32	15	47
		W45/142	31.03					5	0	5
		W83/142	38.78					38	21	59
R47/142	BEDROOM	W46/142	30.48	3.2	88.80	83.00	93.47%	N/A	N/A	N/A
R48/142	BEDROOM	W47/142	30.05	3.0	96.50	88.90	92.12%	N/A	N/A	N/A
R49/142	BEDROOM	W48/142	29.22	2.0	145.80	114.20	78.33%	N/A	N/A	N/A
R50/142	BEDROOM	W49/142	28.58	1.9	159.10	156.50	98.37%	N/A	N/A	N/A
R51/142	BEDROOM	W50/142	30.42	2.9	114.40	108.70	95.02%	N/A	N/A	N/A
R52/142	LD	W84/142	30.90	5.0	171.10	170.60	99.71%	N/A	N/A	N/A
R53/142	BEDROOM	W51/142	30.29	2.6	128.10	120.30	93.91%	N/A	N/A	N/A
R54/142	BEDROOM	W52/142	30.35	2.8	115.50	105.50	91.34%	N/A	N/A	N/A
R55/142	LD	W85/142	29.63	3.4	209.70	203.90	97.23%	N/A	N/A	N/A
R56/142	BEDROOM	W53/142	28.14	1.5	217.40	185.30	85.23%	N/A	N/A	N/A
R57/142	BEDROOM	W54/142	26.29	1.4	198.60	106.80	53.78%	N/A	N/A	N/A
R58/142	BEDROOM	W55/142	24.87	1.4	196.90	158.50	80.50%	N/A	N/A	N/A
R59/142	BEDROOM	W56/142	22.36	1.1	217.40	100.40	46.18%	N/A	N/A	N/A
R60/142	BEDROOM	W57/142	20.88	1.3	179.50	85.60	47.69%	N/A	N/A	N/A
R61/142	BEDROOM	W58/142	20.28	1.0	207.30	115.60	55.76%	N/A	N/A	N/A
R62/142	BEDROOM	W59/142	24.73	1.3	211.20	169.70	80.35%	N/A	N/A	N/A
R63/142	BEDROOM	W60/142	25.68	1.4	207.50	97.60	47.04%	N/A	N/A	N/A
R64/142	BEDROOM	W61/142	27.80	1.5	206.20	167.50	81.23%	N/A	N/A	N/A
R65/142	BEDROOM	W62/142	28.64	1.8	179.20	137.10	76.51%	N/A	N/A	N/A
R66/142	BEDROOM	W63/142	29.41	1.8	179.00	169.40	94.64%	N/A	N/A	N/A
R67/142	BEDROOM	W65/142	29.86	4.3	209.70	208.50	99.43%	N/A	N/A	N/A
		W66/142	33.56					N/A	N/A	N/A
3rd Floor										
R1/143	BEDROOM	W1/143	36.66	3.8	93.50	78.40	83.85%	N/A	N/A	N/A
R2/143	BEDROOM	W2/143	36.98	2.5	136.10	131.40	96.55%	N/A	N/A	N/A
R3/143	BEDROOM	W3/143	37.22	2.5	138.50	132.60	95.74%	N/A	N/A	N/A
R4/143	LD	W66/143	37.46	4.5	234.00	230.80	98.63%	N/A	N/A	N/A
R5/143	LD	W67/143	37.74	5.0	179.30	178.40	99.50%	N/A	N/A	N/A
R6/143	BEDROOM	W4/143	37.64	3.7	93.70	77.00	82.18%	N/A	N/A	N/A
R7/143	BEDROOM	W5/143	37.72	2.6	138.30	134.70	97.40%	N/A	N/A	N/A
R8/143	LD	W68/143	38.06	5.5	178.10	177.60	99.72%	N/A	N/A	N/A
R9/143	BEDROOM	W6/143	37.94	3.7	94.40	80.50	85.28%	N/A	N/A	N/A
R10/143	BEDROOM	W7/143	38.02	2.6	138.10	131.70	95.37%	N/A	N/A	N/A
R11/143	BEDROOM	W8/143	38.33	2.5	147.90	140.50	95.00%	N/A	N/A	N/A
R12/143	LD	W69/143	38.64	5.3	163.60	161.60	98.78%	N/A	N/A	N/A
R13/143	BEDROOM	W9/143	38.42	2.6	138.00	133.40	96.67%	N/A	N/A	N/A

Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
R14/143	BEDROOM	W10/143	38.50	3.9	93.60	85.40	91.24%	N/A	N/A	N/A
R15/143	LD	W70/143	38.66	5.1	178.00	177.20	99.55%	N/A	N/A	N/A
R16/143	BEDROOM	W11/143	38.53	2.3	149.40	137.70	92.17%	N/A	N/A	N/A
R17/143	LD	W71/143	38.87	5.4	163.50	161.40	98.72%	N/A	N/A	N/A
R18/143	BEDROOM	W12/143	38.69	2.8	127.30	123.60	97.09%	N/A	N/A	N/A
R19/143	BEDROOM	W13/143	38.97	3.3	112.60	103.20	91.65%	N/A	N/A	N/A
R20/143	LKD	W14/143	39.01	6.4	290.00	288.20	99.38%	1	0	1
		W15/143	38.67					28	10	38
		W72/143	38.98					31	12	43
R21/143	LD	W73/143	39.06	5.4	180.10	179.30	99.56%	32	15	47
R22/143		W74/143	39.02	8.6	97.20	96.30	99.07%	30	14	44
R23/143	BEDROOM	W16/143	38.84	3.4	138.80	135.90	97.91%	30	10	40
R24/143	BEDROOM	W17/143	38.91	3.1	125.90	114.50	90.95%	28	10	38
R25/143	BEDROOM	W75/143	39.02	6.8	152.90	152.00	99.41%	32	14	46
R26/143	STUDIO	W18/143	38.69	3.9	202.60	195.40	96.45%	28	10	38
		W19/143	39.02					28	10	38
R27/143	BEDROOM	W20/143	38.81	3.4	109.60	101.40	92.52%	27	8	35
R28/143	LD	W21/143	38.99	8.1	153.90	153.40	99.68%	28	10	38
		W76/143	38.56					44	28	72
R29/143	BEDROOM	W22/143	38.19	3.1	122.00	111.30	91.23%	28	22	50
R30/143	STUDIO	W23/143	26.95	10.3	197.20	196.50	99.65%	14	1	15
		W77/143	38.04					46	26	72
		W78/143	27.99					21	4	25
R31/143	STUDIO	W24/143	23.02	5.0	195.40	166.40	85.16%	N/A	N/A	N/A
		W79/143	24.75					N/A	N/A	N/A
R32/143	LD	W80/143	17.14	2.5	237.40	179.20	75.48%	N/A	N/A	N/A
R33/143	LD	W81/143	29.12	2.9	301.60	291.90	96.78%	42	15	57
R34/143	BEDROOM	W25/143	33.11	3.9	108.40	96.00	88.56%	29	19	48
R35/143	BEDROOM	W26/143	33.62	3.1	139.10	134.40	96.62%	29	20	49
R36/143	BEDROOM	W27/143	34.15	2.5	137.40	132.20	96.22%	28	20	48
R37/143	BEDROOM	W28/143	34.02	3.6	94.40	83.10	88.03%	29	20	49
R38/143	LD	W82/143	33.81	5.4	179.10	178.80	99.83%	40	24	64
R39/143	LD	W83/143	32.73	4.9	178.40	177.80	99.66%	37	23	60
R40/143	BEDROOM	W29/143	31.14	3.3	94.00	63.00	67.02%	27	18	45
R41/143	BEDROOM	W30/143	29.89	2.9	138.50	133.30	96.25%	28	18	46
R42/143	LD	W84/143	27.00	4.2	186.60	152.50	81.73%	28	21	49
R43/143	BEDROOM	W31/143	23.61	1.7	159.50	134.10	84.08%	17	14	31
R44/143	BEDROOM	W32/143	20.40	2.2	136.00	128.60	94.56%	17	9	26
R45/143	BEDROOM	W33/143	22.66	2.7	95.10	45.60	47.95%	19	9	28
R46/143	LD	W85/143	27.03	4.0	179.50	178.80	99.61%	22	15	37
R47/143	LD	W86/143	17.60	2.4	241.20	232.80	96.52%	13	10	23
R48/143	LD	W87/143	16.60	2.2	240.80	231.30	96.05%	12	6	18
R49/143	BEDROOM	W34/143	33.40	2.5	128.70	120.50	93.63%	26	10	36
R50/143	LD	W35/143	34.79	2.1	185.50	167.40	90.24%	25	9	34
R51/143	BEDROOM	W36/143	36.97	2.4	138.30	132.80	96.02%	25	7	32
R52/143	BEDROOM	W37/143	37.24	3.7	93.80	77.40	82.52%	27	9	36
R53/143	LD	W88/143	37.60	5.5	178.80	178.60	99.89%	29	14	43
R54/143	BEDROOM	W38/143	37.71	2.7	128.40	122.20	95.17%	26	7	33
R55/143	BEDROOM	W39/143	37.93	3.3	114.90	104.50	90.95%	26	7	33
R56/143	LD	W89/143	38.37	4.8	211.80	211.00	99.62%	31	12	43
R57/143	BEDROOM	W40/143	38.29	2.4	150.30	146.20	97.27%	27	8	35
R58/143	BEDROOM	W41/143	38.31	3.9	86.20	70.70	82.02%	27	9	36
R59/143	LD	W90/143	38.61	4.6	212.50	208.60	98.16%	29	12	41
R60/143	LD	W91/143	39.19	5.6	183.10	181.60	99.18%	36	22	58
R61/143	BEDROOM	W42/143	39.01	4.0	84.90	74.10	87.28%	30	15	45
R62/143	BEDROOM	W43/143	39.35	2.5	147.20	143.20	97.28%	31	17	48
R63/143	LKD	W44/143	38.95	5.8	327.30	323.90	98.96%	30	15	45
		W45/143	33.66					6	0	6
		W92/143	39.33					38	20	58
R64/143	BEDROOM	W46/143	33.18	3.5	89.10	86.00	96.52%	N/A	N/A	N/A
R65/143	BEDROOM	W47/143	32.66	3.2	96.40	89.00	92.32%	N/A	N/A	N/A
R66/143	BEDROOM	W48/143	31.75	2.1	145.70	130.30	89.43%	N/A	N/A	N/A
R67/143	BEDROOM	W49/143	30.92	1.8	177.20	173.50	97.91%	N/A	N/A	N/A
R68/143	BEDROOM	W50/143	32.93	3.0	108.80	105.10	96.60%	N/A	N/A	N/A
R69/143	LD	W93/143	33.54	4.2	227.60	227.30	99.87%	N/A	N/A	N/A
R70/143	LD	W51/143	33.02	1.8	211.80	203.20	95.94%	N/A	N/A	N/A

Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
R71/143	BEDROOM	W52/143	32.96	3.0	113.70	99.20	87.25%	N/A	N/A	N/A
R72/143	BEDROOM	W53/143	31.80	2.3	128.00	123.50	96.48%	N/A	N/A	N/A
R73/143	LD	W94/143	31.13	4.6	178.40	177.90	99.72%	N/A	N/A	N/A
R74/143	BEDROOM	W55/143	28.70	2.0	138.40	133.90	96.75%	N/A	N/A	N/A
R75/143	BEDROOM	W56/143	27.46	2.0	136.50	114.00	83.52%	N/A	N/A	N/A
R76/143	BEDROOM	W57/143	26.65	2.7	93.80	77.90	83.05%	N/A	N/A	N/A
R77/143	LD	W95/143	24.44	3.7	178.80	152.60	85.35%	N/A	N/A	N/A
R78/143	LD	W96/143	23.12	3.7	171.40	136.40	79.58%	N/A	N/A	N/A
R79/143	BEDROOM	W58/143	22.46	1.5	149.00	66.30	44.50%	N/A	N/A	N/A
R80/143	BEDROOM	W59/143	23.47	1.8	125.50	70.10	55.86%	N/A	N/A	N/A
R81/143	BEDROOM	W60/143	26.63	1.8	150.00	131.00	87.33%	N/A	N/A	N/A
R82/143	BEDROOM	W61/143	27.64	1.9	149.60	104.30	69.72%	N/A	N/A	N/A
R83/143	BEDROOM	W62/143	28.47	2.2	127.80	113.40	88.73%	N/A	N/A	N/A
R84/143	LD	W97/143	30.36	4.5	171.70	170.90	99.53%	N/A	N/A	N/A
R85/143	BEDROOM	W63/143	30.64	2.1	149.90	127.80	85.26%	N/A	N/A	N/A
R86/143	LD	W98/143	31.68	4.9	172.00	171.30	99.59%	N/A	N/A	N/A
R87/143	BEDROOM	W64/143	31.77	2.1	148.60	141.10	94.95%	N/A	N/A	N/A
R88/143	LKD	W65/143	32.14	8.2	260.30	259.80	99.81%	N/A	N/A	N/A
		W99/143	32.41					N/A	N/A	N/A
		W100/143	36.43					N/A	N/A	N/A
R89/143	BEDROOM	W54/143	29.41	3.0	93.50	55.60	59.47%	N/A	N/A	N/A
Building B										
Gnd Floor										
R1/150	BEDROOM	W1/150	16.66	1.6	112.50	81.20	72.18%	N/A	N/A	N/A
R2/150	BEDROOM	W2/150	16.76	2.1	105.00	84.00	80.00%	N/A	N/A	N/A
R3/150	BEDROOM	W3/150	17.01	4.4	158.80	156.00	98.24%	2	0	2
		W4/150	27.52					21	11	32
R4/150	LKD	W5/150	31.20	5.4	284.80	278.50	97.79%	26	19	45
		W6/150	26.69					20	22	42
R5/150	LD	W7/150	32.87	4.3	183.70	183.30	99.78%	31	22	53
R6/150	BEDROOM	W8/150	35.49	3.6	74.00	65.30	88.24%	30	15	45
R7/150	BEDROOM	W9/150	29.94	2.3	127.70	117.80	92.25%	21	16	37
R8/150	LD	W10/150	31.59	4.8	179.30	178.90	99.78%	31	22	53
R9/150	BEDROOM	W11/150	35.72	3.4	93.30	79.20	84.89%	34	18	52
R10/150	BEDROOM	W12/150	36.41	2.9	138.40	134.30	97.04%	35	18	53
R11/150	BEDROOM	W13/150	36.40	2.9	138.50	136.10	98.27%	35	18	53
R12/150	BEDROOM	W14/150	35.77	3.4	93.40	72.80	77.94%	32	15	47
R13/150	LD	W15/150	30.68	4.7	180.00	179.70	99.83%	31	22	53
R14/150	LD	W16/150	30.63	4.8	179.60	179.30	99.83%	30	21	51
R15/150	BEDROOM	W17/150	35.50	3.4	93.30	77.20	82.74%	34	18	52
R16/150	BEDROOM	W18/150	36.43	2.9	138.70	135.10	97.40%	35	18	53
R17/150	BEDROOM	W19/150	36.44	3.4	122.50	117.50	95.92%	35	18	53
R18/150	BEDROOM	W20/150	35.63	3.7	84.40	77.00	91.23%	32	15	47
R19/150	LKD	W21/150	32.11	4.0	279.90	253.40	90.53%	0	0	0
		W22/150	36.83					16	2	18
		W23/150	36.50					6	0	6
R20/150	BEDROOM	W24/150	36.12	2.3	138.80	131.20	94.52%	N/A	N/A	N/A
R21/150	BEDROOM	W25/150	35.36	8.6	96.10	95.40	99.27%	N/A	N/A	N/A
R22/150	LD	W26/150	24.10	1.7	169.20	158.60	93.74%	N/A	N/A	N/A
1st Floor										
R1/151	LD	W1/151	23.31	5.1	203.90	199.20	97.69%	10	22	32
		W69/151	33.14					28	13	41
R2/151	LD	W2/151	28.78	3.9	184.20	183.90	99.84%	21	23	44
R3/151	BEDROOM	W3/151	34.98	4.0	73.70	65.00	88.20%	30	15	45
R4/151	BEDROOM	W4/151	29.92	2.6	127.50	117.40	92.08%	21	16	37
R5/151	LD	W5/151	28.57	4.4	179.30	178.90	99.78%	20	22	42
R6/151	BEDROOM	W6/151	37.97	3.7	94.60	81.20	85.84%	33	18	51
R7/151	BEDROOM	W7/151	38.58	3.3	138.40	134.40	97.11%	34	18	52
R8/151	BEDROOM	W8/151	38.64	3.3	138.40	135.90	98.19%	34	18	52
R9/151	BEDROOM	W9/151	38.03	3.7	94.60	75.60	79.92%	32	15	47
R10/151	LD	W10/151	27.69	4.3	179.40	179.10	99.83%	20	22	42
R11/151	LD	W11/151	27.60	4.3	179.40	179.00	99.78%	20	21	41
R12/151	BEDROOM	W12/151	37.67	3.7	94.60	79.80	84.36%	33	18	51
R13/151	BEDROOM	W13/151	38.53	3.3	138.40	135.10	97.62%	34	18	52
R14/151	BEDROOM	W14/151	38.59	3.7	122.50	117.70	96.08%	34	18	52

Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
R15/151	BEDROOM	W15/151	37.88	4.1	85.20	78.40	92.02%	32	15	47
R16/151	LKD	W16/151	29.13	4.1	280.10	253.80	90.61%	0	0	0
		W17/151	37.63					16	2	18
		W18/151	37.37					6	0	6
R17/151	BEDROOM	W19/151	37.08	2.5	138.40	130.90	94.58%	N/A	N/A	N/A
R18/151	BEDROOM	W20/151	37.10	9.1	96.50	95.60	99.07%	N/A	N/A	N/A
R19/151	LD	W21/151	36.70	5.5	160.30	159.50	99.50%	N/A	N/A	N/A
R20/151	LD	W22/151	36.27	2.3	175.20	152.00	86.76%	N/A	N/A	N/A
R21/151	BEDROOM	W23/151	35.94	3.4	128.80	125.20	97.20%	N/A	N/A	N/A
R22/151	BEDROOM	W24/151	35.64	2.6	132.40	126.00	95.17%	N/A	N/A	N/A
R23/151	LD	W25/151	35.35	4.6	192.30	189.30	98.44%	N/A	N/A	N/A
R24/151	BEDROOM	W26/151	33.87	2.4	145.50	135.80	93.33%	N/A	N/A	N/A
R25/151	BEDROOM	W27/151	33.13	4.2	87.90	82.00	93.29%	N/A	N/A	N/A
R26/151	LD	W28/151	33.05	4.4	174.40	159.10	91.23%	N/A	N/A	N/A
R27/151	LD	W29/151	31.46	4.4	174.40	160.20	91.86%	N/A	N/A	N/A
R28/151	BEDROOM	W30/151	31.29	3.4	87.40	76.40	87.41%	N/A	N/A	N/A
R29/151	BEDROOM	W31/151	31.27	2.3	145.70	136.00	93.34%	N/A	N/A	N/A
R30/151	BEDROOM	W32/151	31.26	2.4	138.40	133.60	96.53%	N/A	N/A	N/A
R31/151	BEDROOM	W33/151	31.08	3.4	93.30	83.40	89.39%	N/A	N/A	N/A
R32/151	LD	W34/151	30.93	4.8	179.00	176.60	98.66%	N/A	N/A	N/A
R33/151	LD	W35/151	29.47	3.5	226.40	215.70	95.27%	N/A	N/A	N/A
R34/151	BEDROOM	W36/151	28.65	2.2	138.90	128.20	92.30%	N/A	N/A	N/A
R35/151	BEDROOM	W37/151	27.82	3.1	126.30	120.20	95.17%	N/A	N/A	N/A
R36/151	BEDROOM	W38/151	26.34	5.2	150.10	136.10	90.67%	0	0	0
		W39/151	8.26					0	0	0
R37/151	LKD	W40/151	8.08	1.7	344.10	306.60	89.10%	0	0	0
		W41/151	13.57					2	14	16
R38/151	BEDROOM	W42/151	27.99	5.1	146.00	145.60	99.73%	37	16	53
R39/151	BEDROOM	W43/151	28.40	3.3	94.20	72.70	77.18%	29	17	46
R40/151	LD	W44/151	28.65	4.3	179.30	178.70	99.67%	39	18	57
R41/151	LD	W45/151	28.23	4.5	178.80	178.30	99.72%	38	18	56
R42/151	BEDROOM	W46/151	27.51	3.1	93.30	76.30	81.78%	28	16	44
R43/151	BEDROOM	W47/151	26.81	2.7	138.50	134.10	96.82%	29	16	45
R44/151	LD	W48/151	15.57	2.8	195.60	191.60	97.96%	7	17	24
R45/151	BEDROOM	W49/151	22.33	2.3	102.60	87.80	85.58%	24	15	39
R46/151	BEDROOM	W50/151	21.99	3.1	102.40	98.70	96.39%	23	14	37
R47/151	BEDROOM	W51/151	20.84	1.2	207.40	178.80	86.21%	20	13	33
R48/151	BEDROOM	W52/151	20.15	1.4	210.20	195.70	93.10%	22	10	32
R49/151	BEDROOM	W53/151	21.78	3.1	103.60	99.20	95.75%	25	10	35
R50/151	BEDROOM	W54/151	22.45	2.5	107.50	101.90	94.79%	26	10	36
R51/151	LD	W55/151	22.40	3.4	220.40	203.80	92.47%	27	8	35
R52/151	BEDROOM	W56/151	20.68	2.1	129.10	123.30	95.51%	26	4	30
R53/151	LD	W57/151	17.02	1.4	174.20	128.90	74.00%	19	2	21
R54/151	BEDROOM	W58/151	9.91	1.0	137.50	39.60	28.80%	N/A	N/A	N/A
R55/151	BEDROOM	W59/151	11.44	1.5	95.00	41.90	44.11%	N/A	N/A	N/A
R56/151	LD	W60/151	13.63	2.5	164.70	88.20	53.55%	N/A	N/A	N/A
R57/151	BEDROOM	W61/151	15.30	1.8	110.30	65.50	59.38%	N/A	N/A	N/A
R58/151	LD	W62/151	16.32	3.0	167.30	92.30	55.17%	N/A	N/A	N/A
R59/151	LD	W63/151	17.47	2.9	168.50	94.80	56.26%	N/A	N/A	N/A
R60/151	BEDROOM	W64/151	18.29	1.9	112.80	62.50	55.41%	N/A	N/A	N/A
R61/151	BEDROOM	W65/151	19.42	1.9	114.00	91.50	80.26%	N/A	N/A	N/A
R62/151	BEDROOM	W66/151	19.62	2.5	105.70	87.80	83.07%	N/A	N/A	N/A
R63/151	BEDROOM	W67/151	19.88	4.8	160.40	158.80	99.00%	4	0	4
		W68/151	29.65					23	12	35
2nd Floor										
R1/152	LD	W1/152	23.43	5.3	203.90	199.30	97.74%	10	22	32
		W69/152	34.83					29	13	42
R2/152	LD	W2/152	29.04	4.0	184.20	183.90	99.84%	23	23	46
R3/152	BEDROOM	W3/152	35.76	3.8	73.70	65.00	88.20%	30	15	45
R4/152	BEDROOM	W4/152	30.25	2.6	127.50	117.40	92.08%	21	16	37
R5/152	LD	W5/152	28.69	4.4	179.30	178.90	99.78%	20	22	42
R6/152	BEDROOM	W6/152	38.51	3.9	94.60	81.20	85.84%	34	18	52
R7/152	BEDROOM	W7/152	38.91	3.2	138.40	134.40	97.11%	35	18	53
R8/152	BEDROOM	W8/152	38.94	3.4	138.40	135.90	98.19%	35	18	53
R9/152	BEDROOM	W9/152	38.59	3.9	94.60	75.60	79.92%	32	15	47
R10/152	LD	W10/152	27.89	4.3	179.40	179.10	99.83%	20	22	42

Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
R11/152	LD	W11/152	27.76	4.3	179.40	179.00	99.78%	20	21	41
R12/152	BEDROOM	W12/152	38.23	3.9	94.60	79.80	84.36%	34	18	52
R13/152	BEDROOM	W13/152	38.87	3.2	138.40	135.10	97.62%	35	18	53
R14/152	BEDROOM	W14/152	38.91	3.6	122.50	117.70	96.08%	35	18	53
R15/152	BEDROOM	W15/152	38.41	4.2	85.20	78.40	92.02%	32	15	47
R16/152	LKD	W16/152	29.24	4.3	280.10	253.80	90.61%	0	0	0
		W17/152	38.27					16	2	18
		W18/152	38.10					6	0	6
R17/152	BEDROOM	W19/152	37.87	2.7	138.40	130.90	94.58%	N/A	N/A	N/A
R18/152	BEDROOM	W20/152	37.88	9.2	96.50	95.60	99.07%	N/A	N/A	N/A
R19/152	LD	W21/152	37.54	5.5	160.30	159.50	99.50%	N/A	N/A	N/A
R20/152	LD	W22/152	37.12	2.3	175.20	152.00	86.76%	N/A	N/A	N/A
R21/152	BEDROOM	W23/152	36.87	3.4	128.80	125.20	97.20%	N/A	N/A	N/A
R22/152	BEDROOM	W24/152	36.87	2.7	132.40	126.00	95.17%	N/A	N/A	N/A
R23/152	LD	W25/152	36.66	4.9	192.30	189.30	98.44%	N/A	N/A	N/A
R24/152	BEDROOM	W26/152	36.11	2.6	145.50	135.60	93.20%	N/A	N/A	N/A
R25/152	BEDROOM	W27/152	35.51	4.6	87.90	82.00	93.29%	N/A	N/A	N/A
R26/152	LD	W28/152	35.52	4.8	174.40	159.10	91.23%	N/A	N/A	N/A
R27/152	LD	W29/152	33.31	4.6	174.40	160.20	91.86%	N/A	N/A	N/A
R28/152	BEDROOM	W30/152	33.21	3.7	87.40	76.40	87.41%	N/A	N/A	N/A
R29/152	BEDROOM	W31/152	33.17	2.5	145.70	137.50	94.37%	N/A	N/A	N/A
R30/152	BEDROOM	W32/152	32.96	2.4	138.40	134.40	97.11%	N/A	N/A	N/A
R31/152	BEDROOM	W33/152	32.79	3.4	93.30	83.40	89.39%	N/A	N/A	N/A
R32/152	LD	W34/152	32.71	5.3	179.00	177.70	99.27%	N/A	N/A	N/A
R33/152	LD	W35/152	31.47	3.8	226.40	218.40	96.47%	N/A	N/A	N/A
R34/152	BEDROOM	W36/152	30.64	2.4	138.90	132.00	95.03%	N/A	N/A	N/A
R35/152	BEDROOM	W37/152	29.57	3.1	126.30	120.00	95.01%	N/A	N/A	N/A
R36/152	BEDROOM	W38/152	28.10	5.3	150.10	139.90	93.20%	0	0	0
		W39/152	10.11					3	0	3
R37/152	LKD	W40/152	10.07	1.9	344.10	317.70	92.33%	3	0	3
		W41/152	15.07					2	15	17
R38/152	BEDROOM	W42/152	30.36	5.3	146.00	145.60	99.73%	39	18	57
R39/152	BEDROOM	W43/152	30.79	3.4	94.20	74.50	79.09%	29	20	49
R40/152	LD	W44/152	31.32	4.6	179.30	178.70	99.67%	40	21	61
R41/152	LD	W45/152	31.12	5.0	178.80	178.30	99.72%	39	21	60
R42/152	BEDROOM	W46/152	30.58	3.5	93.30	77.70	83.28%	28	20	48
R43/152	BEDROOM	W47/152	29.87	2.8	138.50	134.10	96.82%	29	20	49
R44/152	LD	W48/152	18.50	3.2	195.60	192.80	98.57%	8	22	30
R45/152	BEDROOM	W49/152	25.31	3.0	102.60	87.80	85.58%	24	20	44
R46/152	BEDROOM	W50/152	24.92	3.4	102.40	98.70	96.39%	24	19	43
R47/152	BEDROOM	W51/152	23.67	1.5	207.40	197.70	95.32%	20	17	37
R48/152	BEDROOM	W52/152	22.25	1.4	210.20	196.90	93.67%	22	12	34
R49/152	BEDROOM	W53/152	24.22	3.4	103.60	99.60	96.14%	25	12	37
R50/152	BEDROOM	W54/152	25.45	2.8	107.50	102.00	94.88%	26	10	36
R51/152	LD	W55/152	25.83	3.8	220.40	211.00	95.74%	28	12	40
R52/152	BEDROOM	W56/152	24.65	2.3	129.10	124.80	96.67%	29	6	35
R53/152	LD	W57/152	20.21	1.7	174.20	140.90	80.88%	25	3	28
R54/152	BEDROOM	W58/152	11.35	1.2	137.50	47.50	34.55%	N/A	N/A	N/A
R55/152	BEDROOM	W59/152	13.32	1.7	95.00	52.70	55.47%	N/A	N/A	N/A
R56/152	LD	W60/152	15.90	2.9	164.70	98.20	59.62%	N/A	N/A	N/A
R57/152	BEDROOM	W61/152	17.81	2.0	110.30	76.80	69.63%	N/A	N/A	N/A
R58/152	LD	W62/152	18.95	3.5	167.30	109.90	65.69%	N/A	N/A	N/A
R59/152	LD	W63/152	20.18	3.3	168.50	112.80	66.94%	N/A	N/A	N/A
R60/152	BEDROOM	W64/152	21.11	2.0	112.80	80.00	70.92%	N/A	N/A	N/A
R61/152	BEDROOM	W65/152	22.25	2.0	114.00	102.40	89.82%	N/A	N/A	N/A
R62/152	BEDROOM	W66/152	22.42	2.9	105.70	96.50	91.30%	N/A	N/A	N/A
R63/152	BEDROOM	W67/152	22.80	5.7	160.40	159.20	99.25%	5	0	5
		W68/152	31.89					26	12	38
3rd Floor										
R1/153	LD	W1/153	33.16	6.6	203.90	201.60	98.87%	29	22	51
		W69/153	36.22					31	14	45
R2/153	LD	W2/153	39.43	5.5	184.20	183.90	99.84%	42	23	65
R3/153	BEDROOM	W3/153	39.11	4.3	73.70	65.00	88.20%	32	15	47
R4/153	BEDROOM	W4/153	31.22	2.6	127.50	118.30	92.78%	21	16	37
R5/153	LD	W5/153	39.44	6.2	179.30	178.90	99.78%	40	22	62
R6/153	BEDROOM	W6/153	39.27	3.9	94.60	81.20	85.84%	34	18	52

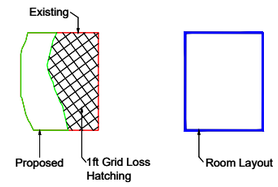
Room/Floor	Room Use	Window	%VSC	%ADF	Daylight Distribution			%Sun		
					Room Area sq ft	Proposed Area sq ft	Proposed % of Room Area	Summer	Winter	Total
R7/153	BEDROOM	W7/153	39.14	3.4	138.40	134.40	97.11%	35	18	53
R8/153	BEDROOM	W8/153	39.14	3.4	138.40	135.90	98.19%	35	18	53
R9/153	BEDROOM	W9/153	39.27	3.9	94.60	75.60	79.92%	32	15	47
R10/153	LD	W10/153	39.44	6.2	179.40	179.10	99.83%	40	22	62
R11/153	LD	W11/153	39.44	6.2	179.40	179.00	99.78%	40	22	62
R12/153	BEDROOM	W12/153	39.27	3.9	94.60	79.80	84.36%	34	18	52
R13/153	BEDROOM	W13/153	39.14	3.4	138.40	135.10	97.62%	35	18	53
R14/153	BEDROOM	W14/153	39.14	3.9	122.50	117.70	96.08%	35	18	53
R15/153	BEDROOM	W15/153	39.27	4.2	85.20	78.40	92.02%	32	15	47
R16/153	LKD	W16/153	39.48	4.4	280.10	253.80	90.61%	0	0	0
		W17/153	38.77					16	2	18
		W18/153	38.57					6	0	6
R17/153	BEDROOM	W19/153	38.42	2.7	138.40	130.90	94.58%	N/A	N/A	N/A
R18/153	BEDROOM	W20/153	38.53	9.3	96.50	95.60	99.07%	N/A	N/A	N/A
R19/153	LD	W21/153	38.31	5.7	160.30	159.50	99.50%	N/A	N/A	N/A
R20/153	LD	W22/153	38.03	2.4	175.20	152.00	86.76%	N/A	N/A	N/A
R21/153	BEDROOM	W23/153	37.79	3.6	128.80	125.20	97.20%	N/A	N/A	N/A
R22/153	BEDROOM	W24/153	37.67	2.7	132.40	126.00	95.17%	N/A	N/A	N/A
R23/153	LD	W25/153	37.63	4.8	192.30	189.30	98.44%	N/A	N/A	N/A
R24/153	BEDROOM	W26/153	37.19	2.6	145.50	135.60	93.20%	N/A	N/A	N/A
R25/153	BEDROOM	W27/153	36.71	4.6	87.90	82.00	93.29%	N/A	N/A	N/A
R26/153	LD	W28/153	36.81	5.2	174.40	158.20	90.71%	N/A	N/A	N/A
R27/153	LD	W29/153	35.03	4.7	174.40	160.20	91.86%	N/A	N/A	N/A
R28/153	BEDROOM	W30/153	34.83	3.7	87.40	76.40	87.41%	N/A	N/A	N/A
R29/153	BEDROOM	W31/153	34.78	2.5	145.70	137.50	94.37%	N/A	N/A	N/A
R30/153	BEDROOM	W32/153	34.80	2.5	138.40	134.40	97.11%	N/A	N/A	N/A
R31/153	BEDROOM	W33/153	34.65	3.6	93.30	83.40	89.39%	N/A	N/A	N/A
R32/153	LD	W34/153	34.55	5.2	179.00	178.40	99.66%	N/A	N/A	N/A
R33/153	LD	W35/153	33.27	3.9	226.40	220.00	97.17%	N/A	N/A	N/A
R34/153	BEDROOM	W36/153	32.41	2.4	138.90	132.50	95.39%	N/A	N/A	N/A
R35/153	BEDROOM	W37/153	31.55	3.3	126.30	121.60	96.28%	N/A	N/A	N/A
R36/153	BEDROOM	W38/153	30.11	6.1	150.10	144.20	96.07%	0	0	0
		W39/153	12.87					6	0	6
R37/153	LKD	W40/153	12.76	2.1	344.10	319.20	92.76%	6	0	6
		W41/153	16.97					6	15	21
R38/153	BEDROOM	W42/153	32.84	5.7	146.00	145.60	99.73%	40	22	62
R39/153	BEDROOM	W43/153	33.38	3.7	94.20	79.20	84.08%	29	22	51
R40/153	LD	W44/153	33.95	4.9	179.30	178.70	99.67%	40	23	63
R41/153	LD	W45/153	33.85	5.1	178.80	178.40	99.78%	39	22	61
R42/153	BEDROOM	W46/153	33.38	3.6	93.30	79.00	84.67%	28	22	50
R43/153	BEDROOM	W47/153	32.68	3.1	138.50	134.10	96.82%	29	22	51
R44/153	LD	W48/153	21.45	3.6	195.60	192.90	98.62%	9	24	33
R45/153	BEDROOM	W49/153	28.41	3.3	102.60	89.10	86.84%	26	21	47
R46/153	BEDROOM	W50/153	27.94	3.6	102.40	98.90	96.58%	24	20	44
R47/153	BEDROOM	W51/153	26.44	1.7	207.40	197.70	95.32%	20	18	38
R48/153	BEDROOM	W52/153	24.31	1.5	210.20	198.60	94.48%	22	12	34
R49/153	BEDROOM	W53/153	26.64	3.2	103.60	99.80	96.33%	26	12	38
R50/153	BEDROOM	W54/153	28.51	2.9	107.50	102.00	94.88%	27	12	39
R51/153	LD	W55/153	29.52	4.0	220.40	213.30	96.78%	29	17	46
R52/153	BEDROOM	W56/153	29.56	2.5	129.10	125.10	96.90%	29	10	39
R53/153	LD	W57/153	26.60	1.9	174.20	162.40	93.23%	29	6	35
R54/153	BEDROOM	W58/153	13.05	1.3	137.50	58.80	42.76%	N/A	N/A	N/A
R55/153	BEDROOM	W59/153	15.53	2.0	95.00	61.90	65.16%	N/A	N/A	N/A
R56/153	LD	W60/153	18.71	3.4	164.70	114.30	69.40%	N/A	N/A	N/A
R57/153	BEDROOM	W61/153	20.75	2.2	110.30	93.40	84.68%	N/A	N/A	N/A
R58/153	LD	W62/153	22.05	4.1	167.30	130.60	78.06%	N/A	N/A	N/A
R59/153	LD	W63/153	23.31	3.9	168.50	131.70	78.16%	N/A	N/A	N/A
R60/153	BEDROOM	W64/153	24.08	2.4	112.80	96.50	85.55%	N/A	N/A	N/A
R61/153	BEDROOM	W65/153	25.18	2.4	114.00	106.80	93.68%	N/A	N/A	N/A
R62/153	BEDROOM	W66/153	25.34	3.1	105.70	102.30	96.78%	N/A	N/A	N/A
R63/153	BEDROOM	W67/153	25.76	6.1	160.40	159.20	99.25%	5	0	5
		W68/153	34.00					27	12	39

Do not scale this drawing.
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.

Ground Floor

Legend

Daylight



Existing No-Sky Line Contour
Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING
20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS
20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING
INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

AVISON YOUNG
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www.gva.co.uk

Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
BUILDING A

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/400	11 JAN 2021

Project No.	Drawing No.	Revision
EP05_36	BRE_150	-

Daylight

A3

First Floor

Legend

Daylight

Existing

Proposed

1ft Grid Loss Hatching

Room Layout

Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING
20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS
20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING
INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

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Project Name
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Client
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Drawing Title
NO SKYLINE CONTOURS
BUILDING A

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/400	11 JAN 2021

Project No.	Drawing No.	Revision
EP05_36	BRE_151	-

Daylight

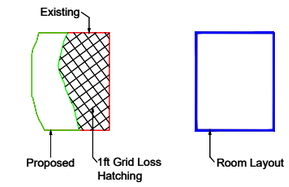
A3

Second Floor

Do not scale this drawing.
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING

INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

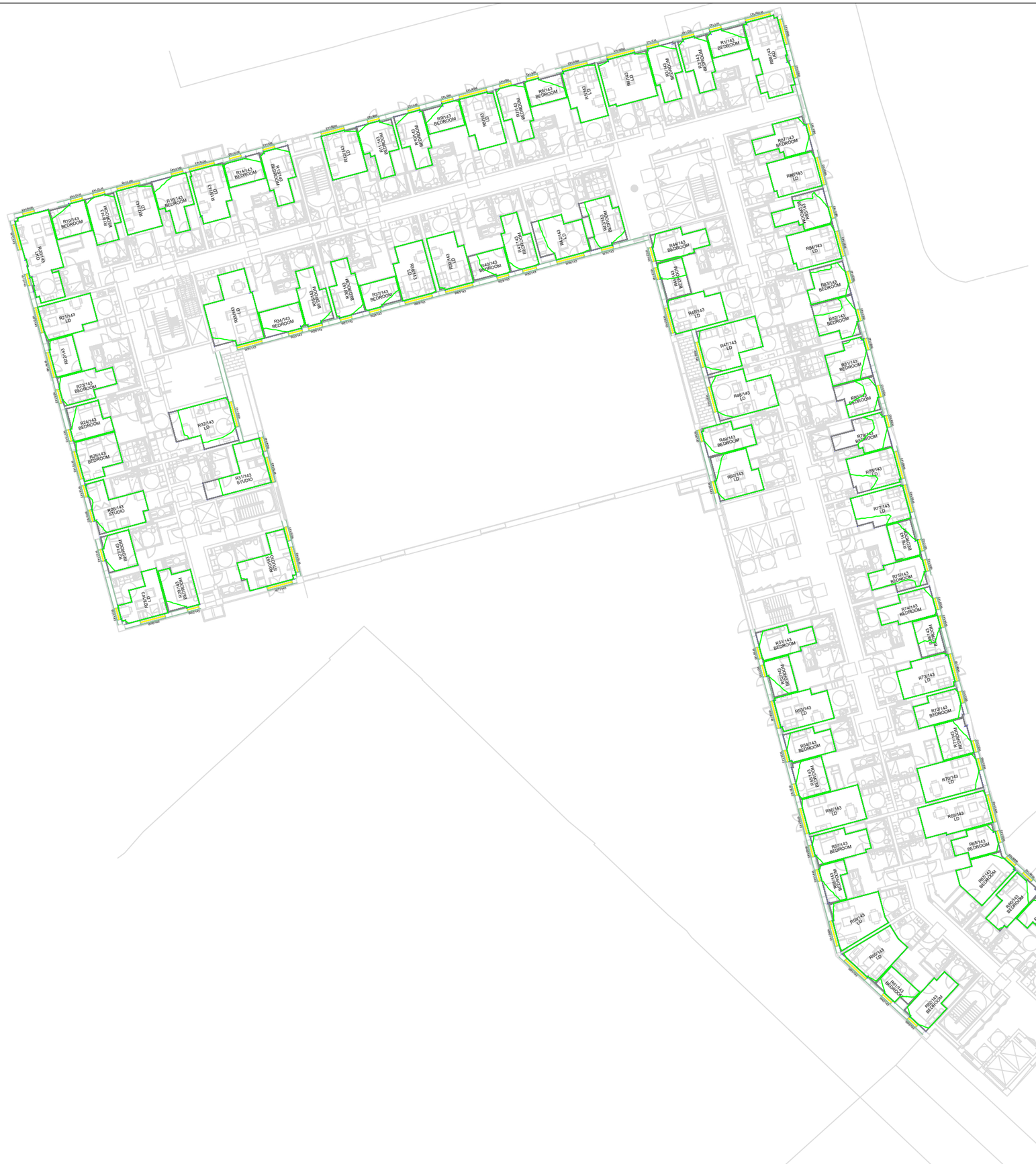
Drawing Title
NO SKYLINE CONTOURS
BUILDING A

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/400	11 JAN 2021

Project No.	Drawing No.	Revision
EP05_36	BRE_152	

Daylight

A3

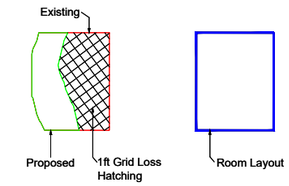


Third Floor

Do not scale this drawing.
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING

INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
BUILDING A

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/400	11 JAN 2021

Project No.	Drawing No.	Revision
EP05_36	BRE_153	-

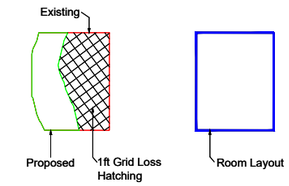
Daylight

A3

Ground Floor

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING

INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

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Project Name
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Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
BUILDING B

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/300	11 JAN 2021

Project No.	Drawing No.	Revision
EP05_36	BRE_154	-

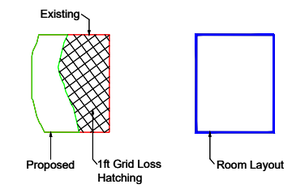
Daylight

A3

First Floor

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING

INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

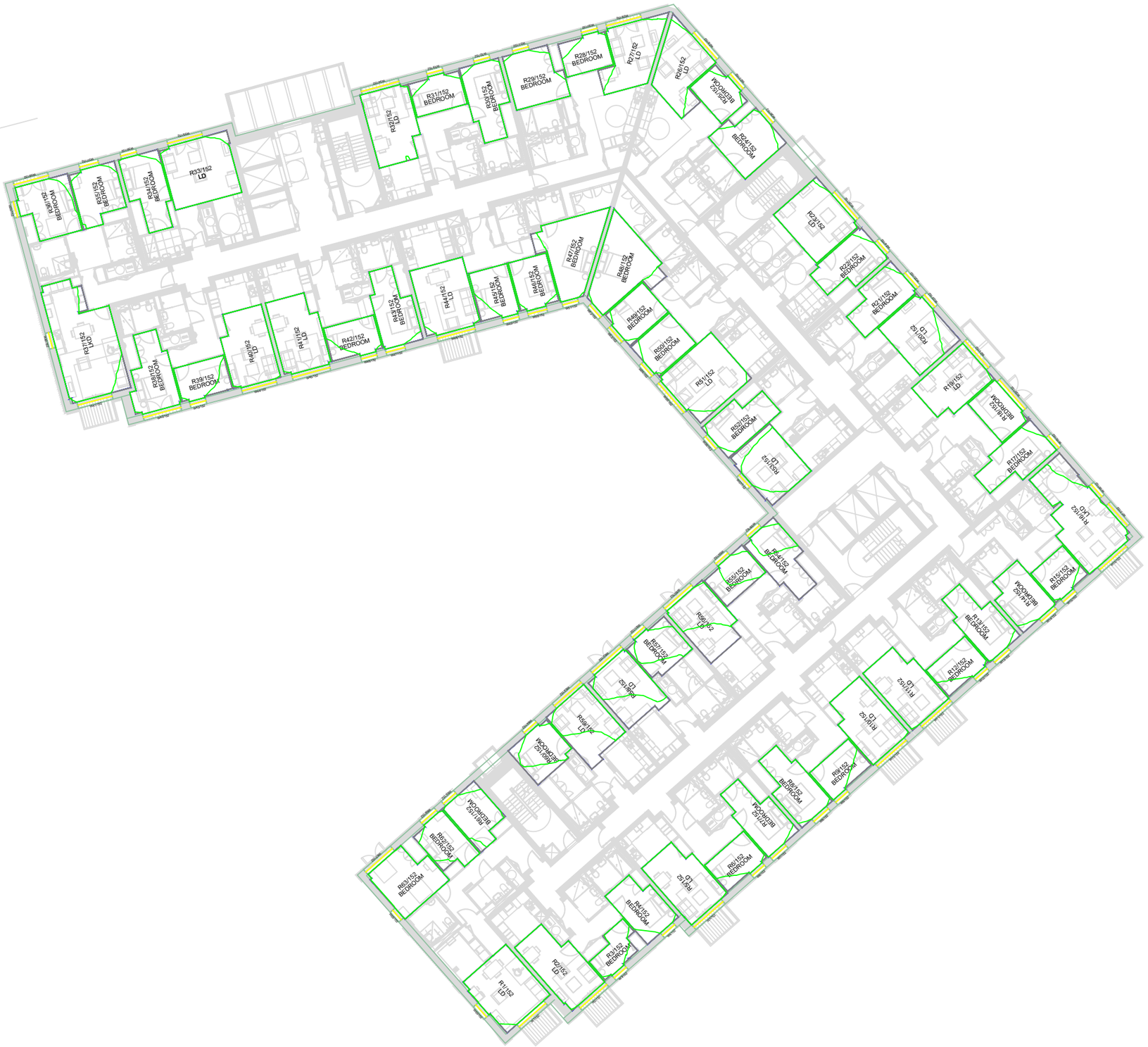
Drawing Title
NO SKYLINE CONTOURS
BUILDING B

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/300	11 JAN 2021

Project No.	Drawing No.	Revision
EP05_36	BRE_155	-

Daylight

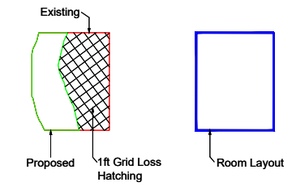
A3



Second Floor

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING

INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
BUILDING B

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/300	11 JAN 2021

Project No.	Drawing No.	Revision
EP05_36	BRE_156	-

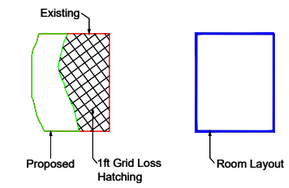
Daylight

A3

Third Floor

Legend

Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information

EXISTING BUILDING

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg

SURROUNDING BUILDINGS

20190725 - AccuCities 3D model
000868_Epsom Hospital_HD_MASTER.dwg
Internal layouts from local authority research,Bing map,apple map

PROPOSED BUILDING

INFO 05 JAN 2021
210104_3D View DWG

INFO 05 JAN 2021
210104_20-500 - BUILDING A - L00
210104_20-501 - BUILDING A - L01
210104_20-502 - BUILDING A - L02
210104_20-503 - BUILDING A - L03
210104_20-510 - BUILDING B - L00
210104_20-511 - BUILDING B - L01
210104_20-512 - BUILDING B - L02
210104_20-513 - BUILDING B - L03

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
NO SKYLINE CONTOURS
BUILDING B

Drawn By	Chk'd By	Scale @ A3	Date
AH		1/300	11 JAN 2021

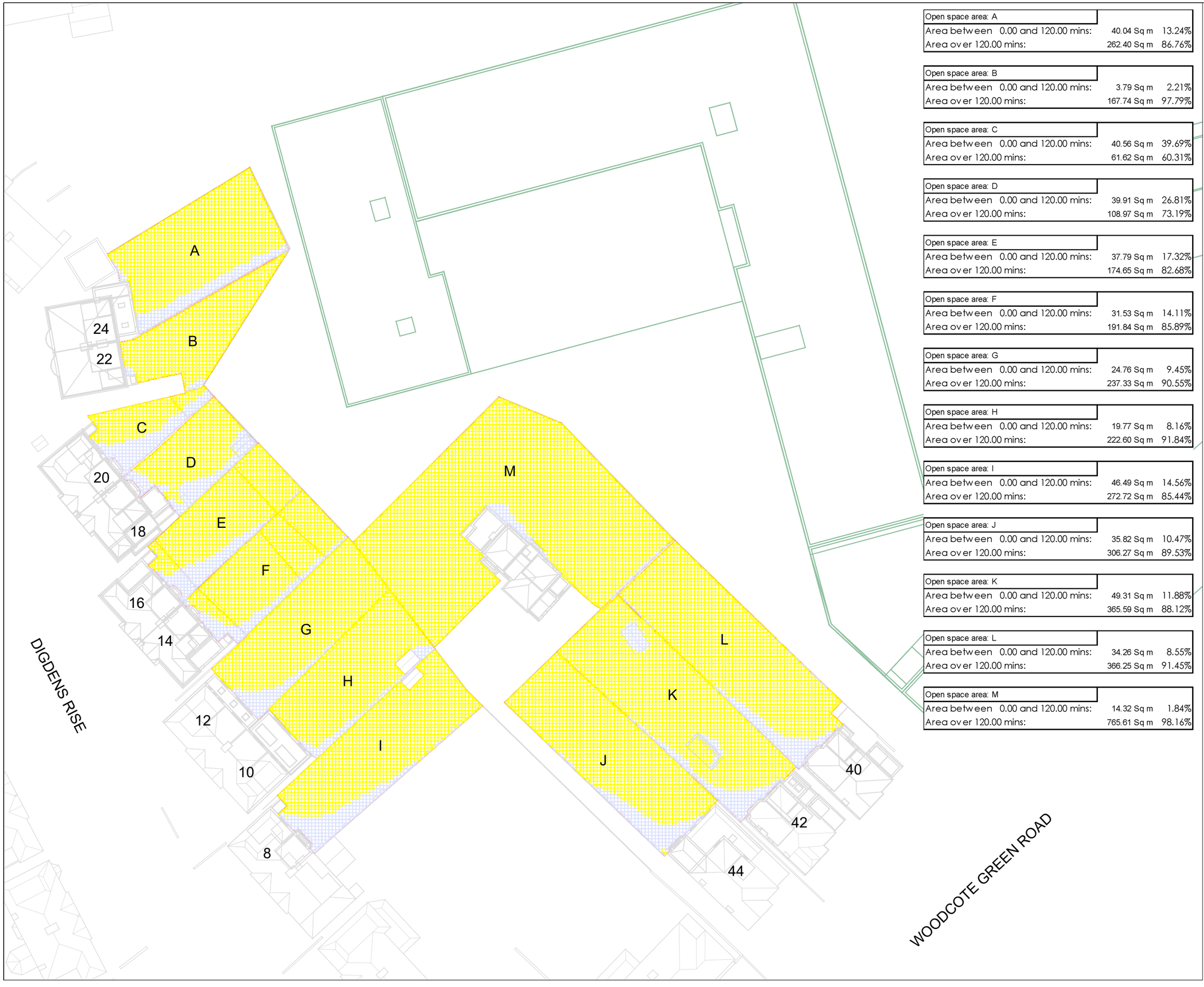
Project No.	Drawing No.	Revision
EP05_36	BRE_157	-

Daylight

A3

Appendix 5
Neighbouring & Internal Overshadow Assessment

Neighbouring Overshadow Assessment



Open space area: A		
Area between 0.00 and 120.00 mins:	40.04 Sq m	13.24%
Area over 120.00 mins:	262.40 Sq m	86.76%

Open space area: B		
Area between 0.00 and 120.00 mins:	3.79 Sq m	2.21%
Area over 120.00 mins:	167.74 Sq m	97.79%

Open space area: C		
Area between 0.00 and 120.00 mins:	40.56 Sq m	39.69%
Area over 120.00 mins:	61.62 Sq m	60.31%

Open space area: D		
Area between 0.00 and 120.00 mins:	39.91 Sq m	26.81%
Area over 120.00 mins:	108.97 Sq m	73.19%

Open space area: E		
Area between 0.00 and 120.00 mins:	37.79 Sq m	17.32%
Area over 120.00 mins:	174.65 Sq m	82.68%

Open space area: F		
Area between 0.00 and 120.00 mins:	31.53 Sq m	14.11%
Area over 120.00 mins:	191.84 Sq m	85.89%

Open space area: G		
Area between 0.00 and 120.00 mins:	24.76 Sq m	9.45%
Area over 120.00 mins:	237.33 Sq m	90.55%

Open space area: H		
Area between 0.00 and 120.00 mins:	19.77 Sq m	8.16%
Area over 120.00 mins:	222.60 Sq m	91.84%

Open space area: I		
Area between 0.00 and 120.00 mins:	46.49 Sq m	14.56%
Area over 120.00 mins:	272.72 Sq m	85.44%

Open space area: J		
Area between 0.00 and 120.00 mins:	35.82 Sq m	10.47%
Area over 120.00 mins:	306.27 Sq m	89.53%

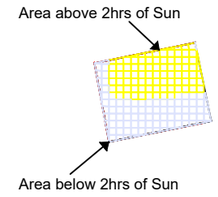
Open space area: K		
Area between 0.00 and 120.00 mins:	49.31 Sq m	11.88%
Area over 120.00 mins:	365.59 Sq m	88.12%

Open space area: L		
Area between 0.00 and 120.00 mins:	34.26 Sq m	8.55%
Area over 120.00 mins:	366.25 Sq m	91.45%

Open space area: M		
Area between 0.00 and 120.00 mins:	14.32 Sq m	1.84%
Area over 120.00 mins:	765.61 Sq m	98.16%

Legend

Time in Sun



Sources of Information

EXISTING BUILDING
INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS
INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING
INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
SUN HOURS ON GROUND 21 MARCH
PROPOSED CONDITION

Drawn By	Chk'd By	Scale @ A3	Date
CC		1/500	15 DEC 2020

Project No.	Drawing No.	Revision
EP05_33	BRE_124	

Daylight

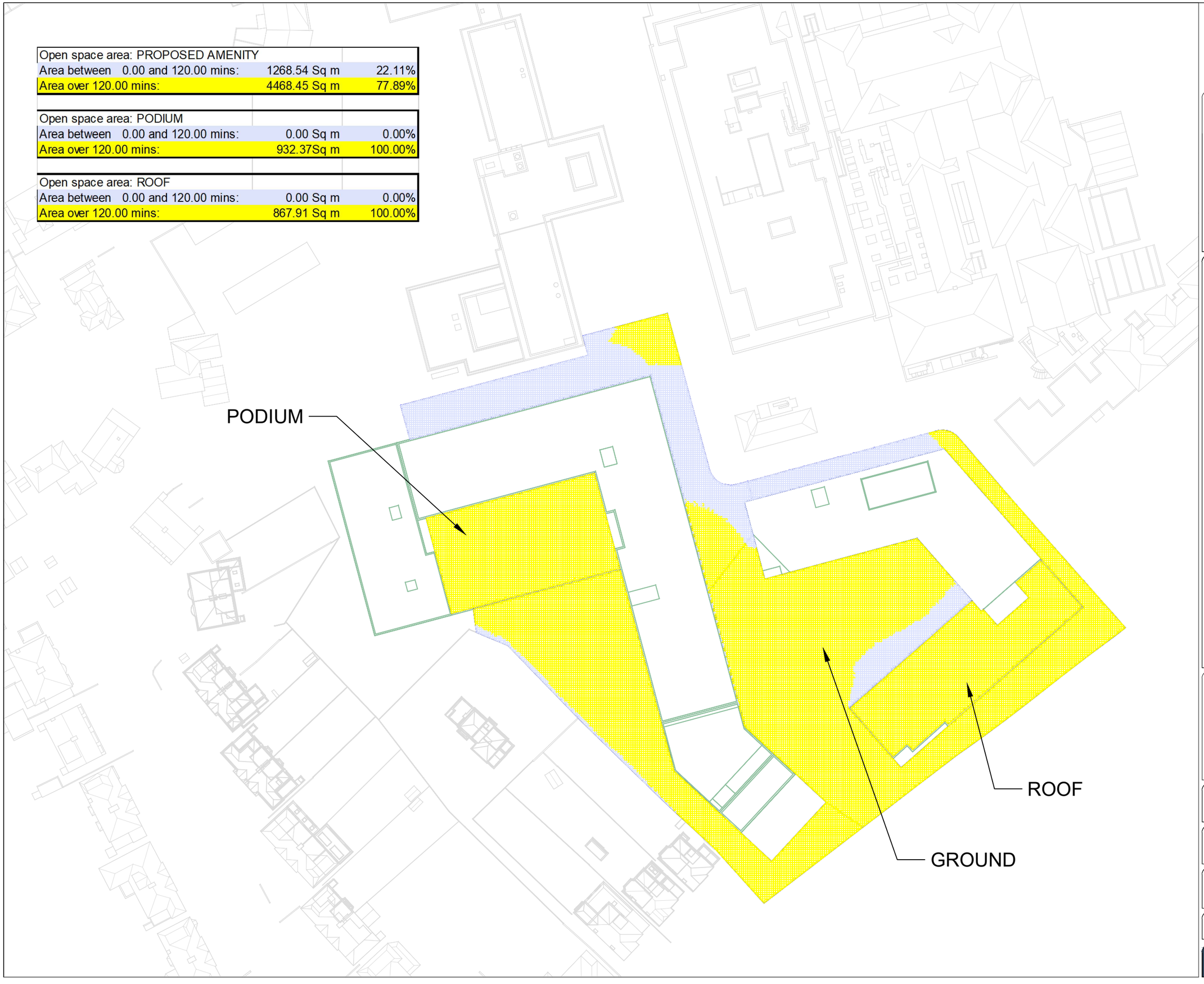
A3

Internal Overshadow Assessment

Open space area: PROPOSED AMENITY		
Area between 0.00 and 120.00 mins:	1268.54 Sq m	22.11%
Area over 120.00 mins:	4468.45 Sq m	77.89%

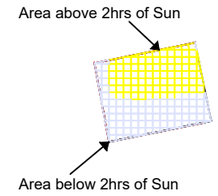
Open space area: PODIUM		
Area between 0.00 and 120.00 mins:	0.00 Sq m	0.00%
Area over 120.00 mins:	932.37Sq m	100.00%

Open space area: ROOF		
Area between 0.00 and 120.00 mins:	0.00 Sq m	0.00%
Area over 120.00 mins:	867.91 Sq m	100.00%



Legend

Time in Sun



Sources of Information

EXISTING BUILDING

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

SURROUNDING BUILDINGS

INFO MBS 3D SURVEY 23 MARCH 2020
MBS20_1093 Kings High School, Warwick
INFO 17 MARCH 2020 ACCUCITIES MODEL
001204_Kings High School,Warwick_HD_MASTER

PROPOSED BUILDING

INFO 12 DECEMBER 2020 NEW MODEL
201211 - Epsom - Planning Re Submission (1).skp

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Project Name
EPSOM HOSPITAL

Client
GUILD LIVING LTD

Drawing Title
2 HOUR TIME IN SUN 21 MARCH
PROPOSED CONDITION

Drawn By	Chk'd By	Scale @ A3	Date
CC		N/A	18 DEC 2020

Project No.	Drawing No.	Revision
EP05_34	TIS_133	-

Daylight

A3