Ham Close Regeneration

Planning Application:

Daylight, Sunlight and Overshadowing Report

Author: Avison Young
April 2022

Ham Close, Richmond, TW10

Daylight, Sunlight and Overshadowing Report

26th April 2022

Contents

Appendices

Report title: The Hill Group
Prepared by: Emily Hearn
Status: Final
Draft date: 26 April 2022

For and on behalf of Avison Young (UK) Limited

1. Executive Summary

1.1 Avison Young has been instructed by Hill Residential to advise on daylight, sunlight and overshadowing matters in relation to the Proposed Development at Ham Close, Ham, Richmond upon Thames, TW10 7PG.

1.2 The assessment has been undertaken with regard to national, regional and local planning policy and, the advice and recommendations set out in the Building Research Establishment (BRE) report entitled 'Site layout planning for daylight and sunlight: A guide to good practice - 2011' (referred to in this report as the "BRE guidelines").

1.3 Section 1 of this report considers the potential daylight and sunlight effects that may occur to the surrounding (neighbouring) residential properties as a result of the Proposed Development and the potential overshadowing to existing amenity spaces in the vicinity of the development site.

1.4 Section 2 of this report considers the potential levels of daylight and sunlight that will be enjoyed within the residential units of the Proposed Development and the potential overshadowing to the proposed amenity spaces.

Section 1 – Neighbouring Daylight, Sunlight and Overshadowing Effects

1.5 In accordance with the BRE guidelines, detailed daylight and sunlight assessments have been undertaken to quantify any alteration in light that may occur because of the Proposed Development, within existing residential habitable rooms and windows.

1.6 Assessments have therefore been carried out within neighbouring properties located on Woodville Road, Ashburnham Road, Mowbray Road and Sheridan Road.

1.7 The results of the technical analysis show that any daylight or sunlight reductions to the surrounding residential properties are generally within the BRE guidelines, with 96% VSC (Vertical Sky Component) compliance; 95% NSL (No Sky Line) compliance; and 100% APSH (Annual Probable Sunlight Hour) compliance.

1.8 Analysis found that 6 main windows (located within 14 Woodville Road, 16 Woodville Road and The Woodville Centre) experience a VSC reduction beyond the BRE guidelines (*i.e. less than 27% VSC retained, and a reduction of greater than 20% its existing VSC value*).

1.9 An additional window within 33 Ashburnham Road also falls short of the BRE guidelines, however, this window is the side pane of a bay window and is classed as a secondary window. The BRE guidelines suggest that it is the effect to the main habitable windows that should be given the principal consideration. With regard to bay windows, the BRE guidelines suggest that the centre window facing outwards can be taken as a main window. The main window to this room meets the BRE guidelines for both the reduction and retained criterion and therefore it can be considered that the effects upon this room can be considered acceptable.

1.10 The 4 main windows within 14 and 16 Woodville Road will experience a minor derogation from the BRE guidelines, whereby the reductions exceed the criteria by a maximum of 2.34%, which in our opinion equates to a minor adverse change.

1.11 The 2 main windows within The Woodville Centre are understood to serve one of the main social spaces within The Woodville Centre along with a further 5 windows. The results for these two windows

however show each will experience a minor derogation from the BRE guidelines, yet both will retain a VSC of at least 25% which is only 2% short of the BRE guidelines recommended criteria. It can therefore be considered that the room as a whole will continue to enjoy good levels of daylight.

1.12 With regard to the daylight distribution (NSL) assessments, 5 rooms will experience reductions beyond the BRE guidelines (within 14, 16, 18, 38 and 40 Woodville Road). The BRE guidelines suggest that a room should enjoy good levels of daylight distribution if 80% of the working plane is in front of the No-Sky Line (NSL). However, for built areas, and in our experience, this is often not achieved. It is our view that for built areas a target of 50% is reasonable. Each of these 5 rooms will continue to enjoy a NSL to over 59% of their room area with the Proposed Development in place and therefore although the reductions are beyond the BRE guidelines, the remaining NSL is considered acceptable for more built areas.

1.13 The sunlight (APSH) results show each window within the neighbouring properties that is orientated within 90 degrees of due south will continue to either enjoy very good levels of sunlight in accordance with the BRE guidelines or will experience a small reduction which is unnoticeable in accordance with the BRE guidelines.

1.14 The overshadowing results show that with the Proposed Development in place, both the playing fields associated with St. Richard's CE Primary school and the play space surrounding The Woodville Centre should continue to enjoy good levels of direct sunlight, in accordance with the BRE guidelines.

Section 2 – Proposed Daylight, Sunlight and Overshadowing Levels

1.15 For the purposes of this assessment, the Proposed Development features open plan living/kitchen/dining rooms ('LKD's') where some of the kitchens/food preparation areas are located at the rear of deep open plan spaces. In many cases the kitchen areas are clearly intended to be predominantly artificially lit with electric lighting given their distance to a main or supplementary window.

1.16 In addition to the above, paragraph 2.1.14 of the BRE Guidelines states in respect of internal galley type kitchens that if these are not directly day-lit they should be directly linked to a well day-lit living room.

1.17 As such where the proposed floor plans indicate galley type kitchen areas to the rear of multi-use living/kitchen/dining ('LKD') rooms with no natural light due to the distance from windows, we have run assessments against both a 2% and 1.5% ADF target value, as a means of estimating the quantum of daylight in the front portion of the rooms (i.e. living/dining area).

1.18 The results of these assessments show that across all proposed blocks 85% of habitable residential rooms will receive levels of daylight which accord with the BRE Guidelines recommendations. In addition, the NSL assessment results show that across all proposed blocks 87% of habitable residential rooms will be in line with the BRE Guidelines recommendations. In our opinion, this is considered a very good level of compliance for a proposed scheme of this size and typology.

1.19 The APSH results show 76% of windows orientated within 90 degrees of due south will meet the BRE criteria for winter sunlight, and 67% of windows will meet the BRE criteria for total (annual) sunlight.

1.20 With regard to overshadowing (or 'sun hours on ground'), the results of our assessments show that all newly proposed communal amenity areas, except for 1 (30 of the 31 areas) will meet the BRE guidelines by achieving 2 hours of sun on ground to over 50% of the assessed area on 21st March, thereby comfortably meeting the BRE target criteria. In addition, the public amenity space known as Ham Village Green which is located within the red line boundary of the Site will also meet the BRE guidelines.

1.21 The one space which falls short is labelled as Area 42 within Appendix 10 and achieves 2 hours sun on ground to 39% of the area on 21st March. However, in the summer months, this increases to 89%.

1.22 The provision of a private garden is an additional beneficial amenity and the BRE guidelines recommend to purely focus on proposed communal amenity spaces, as not all residents have access to a private garden and so it is important to ensure that all residents have access to a well sunlit space. However, for completeness we have undertaken sun hours on ground assessments to the 42 private gardens that are proposed.

1.23 The results of the assessments show that of those gardens that are orientated within 90 degrees of due south the vast majority will enjoy at least 2 hours of sun on ground to over 50% of their garden's area. The one which falls short, labelled area 12 within Appendix 10, only does so by 2%, and enjoys 2 hours of sun on ground to 48% of its area.

1.24 The gardens which are orientated within 90 degrees of due north (29 gardens) fall short of the BRE guidelines, however this is as expected and as the gardens are private, it is up to the future occupier as to whether they are happy with a north facing garden or not. It can however be said that each of these gardens will enjoy very good levels of sunlight in the summer months, when the gardens are more likely to be used.

1.25 It can therefore be concluded that each resident throughout the Site, will have access to a reasonably sunlit amenity space.

1.26 In consideration of the above, it is our professional opinion that the Proposed Development is entirely acceptable in terms of daylight, sunlight, and overshadowing, despite a very small number of isolated transgressions, which are not uncommon when increasing development levels on an existing site of this nature.

2. Introduction

2.1 Avison Young has been instructed by Hill Residential to advise on daylight, sunlight and overshadowing matters in relation to the Proposed Development at Ham Close, Ham, Richmond upon Thames, TW10 7PG.

2.2 The scope of this report is to consider the potential daylight, sunlight and overshadowing effects that may occur to the surrounding residential properties as a result of the Proposed Development, as well as the levels of daylight and sunlight that will be enjoyed to the Proposed Development.

2.3 The assessment has been undertaken with regard to national, regional and local planning policy and, the advice and recommendations set out in the Building Research Establishment (BRE) report entitled 'Site layout planning for daylight and sunlight: A guide to good practice - 2011' (Referred to in this report as the "BRE guidelines").

2.4 A Site Plan and 3D Views of the scheme, detailed results tables, contour plots and the overshadowing assessments are given at Appendices 1 to 10.

3. Planning Policy

3.1 The following sections review the relevant legislation, national, regional and local planning policy and guidance requirements in terms of daylight, sunlight, overshadowing, light pollution and solar glare.

National Planning Policy

National Planning Policy Framework (NPPF), July 2021

3.2 There are no national planning policies directly relating to daylight, sunlight and overshadowing. However, Chapter 11 of the NPPF deals with "Making effective use of land." Under the sub-heading "Achieving appropriate densities" it states at paragraph 125:

> *125. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities and ensure that developments make optimal use of the potential of each site. In these circumstances; …*
>
> *(c) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight where they would otherwise inhibit making efficient use of the site (as long as the resulting scheme would provide acceptable living standards) …*

3.3 Additionally, Chapter 12 of the NPPF deals with 'Achieving well-designed places' and at paragraph 130 it states:

> *130. Planning policies and decisions should ensure that developments:*
>
> *… e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and*
>
> *f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users;*

National Planning Practice Guidance (NPPG), 2019

3.4 The NPPG is an online resource for planning practitioners. In respect to daylight and sunlight, the document titled 'Effective Use of Land' states at paragraph 007 (Reference ID 66-007-20190722):

> *All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design. For example in areas of high density historic buildings, or city centre locations where tall modern buildings predominate, lower daylight and daylight and sunlight levels at some windows may be unavoidable if new developments are to be in keeping with the general form of their surroundings.*
>
> *In such situations good design (such as giving careful consideration to a building's massing and layout of habitable rooms) will be necessary to help make the best use of the site and maintain acceptable living standards.*

Regional Planning Policy

The London Plan, The Spatial Development Strategy for Greater London, March 2021

3.5 The London Plan sets out the Mayor's vision for London and outlines the strategic approach to economic, social, environmental and transport development in London over the next 20 - 25 years.

3.6 Policy D6 Housing Quality and Standards states:

> *c) Housing development should maximise the provision of dual aspect dwellings and normally avoid the provision of single aspect dwellings. A single aspect dwelling should only be provided where it is considered a more appropriate design solution to meet the requirements of Part B in Policy D3 Optimising site capacity through the design-led approach than a dual aspect dwelling, and it can be demonstrated that it will have adequate passive ventilation, daylight and privacy, and avoid overheating.*
>
> *d) The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space.*

3.7 Policy D9 Tall Buildings states:

> *3) environmental impact*
>
> *a) wind, daylight, sunlight penetration and temperature conditions around the building(s) and neighbourhood must be carefully considered and not compromise comfort and the enjoyment of open spaces, including water spaces, around the building*

3.8 Policy D8 Public Realm states:

> *j) ensure that appropriate shade, shelter, seating and, where possible, areas of direct sunlight are provided, with other microclimatic considerations, including temperature and wind, taken into account in order to encourage people to spend time in a place.*

3.9 See below the guidance set out in the adopted Housing SPG, 2016, which forms part of the London Plan.

Housing SPG, 2016 (Part of the London Plan)

3.10 The key policies from the Housing SPG of relevance to this assessment are detailed below.

3.11 Paragraph 1.3.45 states:

> *[…] requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to privacy and overshadowing and where tall buildings are proposed. An appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new development on surrounding properties, as well as within new developments themselves. Guidelines should be applied sensitively to higher density development, especially in opportunity areas, town centres, large sites and accessible locations, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances; the need*

to optimise housing capacity; and scope for the character and form of an area to change over time.

3.12 Paragraph 1.3.46 states that:

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

Local Planning Policy

London Borough of Richmond upon Thames Local Plan (Adopted 3 July 2018)

3.13 The Site is located within the Site Allocation SA 15 which supports comprehensive redevelopment of this site, including demolition of the existing buildings and new build re-provision of all residential and non-residential buildings, plus the provision of additional new residential accommodation.

3.14 Policy LP 2 'Building Heights' states:

The Council will require new buildings, including extensions and redevelopment of existing buildings, to respect and strengthen the setting of the borough's valued townscapes and landscapes, through appropriate building heights, by the following means: …

… 4. take account of climatic effects, including overshadowing, diversion of wind speeds, heat island and glare;

3.15 Policy LP 8 'Amenity and Living Conditions' states:

All development will be required to protect the amenity and living conditions for occupants of new, existing, adjoining and neighbouring properties. The Council will:

1. ensure the design and layout of buildings enables good standards of daylight and sunlight to be achieved in new development and in existing properties affected by new development; where existing daylight and sunlight conditions are already substandard, they should be improved where possible;

3.16 Paragraph 4.85 'Daylight, sunlight and solar glare' states:

In assessing whether sunlight and daylight conditions are good, both inside buildings and in gardens and open spaces, the Council will have regard to the most recent Building Research Establishment guidance, both for new development, and for properties affected by new development. In some circumstances, mathematical calculations to assess daylighting and sunlighting may be an inappropriate measure, and an on-site judgement will often be necessary.

3.17 Policy LP 35 'Housing Mix and Standards' states:

D. Amenity space for all new dwellings, including conversions, should be:…

…c. orientated to take account of need for sunlight and shading;

Draft London Borough of Richmond upon Thames - Richmond Local Plan 'The best for our borough' (Not yet adopted – 10 December 2021)

3.18 Policy 46 'Amenity and living conditions' of the Richmond upon Thames draft Local Plan states:

> *A. All development will be required to protect the amenity and living conditions for occupants of new, existing, adjoining and neighbouring properties. The Council will:*
>
> *1. Ensure the design and layout of buildings enables good standards of daylight and sunlight to be achieved in new development and in existing properties affected by new development; where existing daylight and sunlight conditions are already substandard, they should be improved where possible;*

3.19 Paragraph 22.32 'Daylight, sunlight and solar glare' states:

> *In assessing whether sunlight and daylight conditions are good, both inside buildings and in gardens and open spaces, the Council will have regard to the most recent Building Research Establishment guidance, both for new development, and for properties affected by new development. In some circumstances, mathematical calculations to assess daylighting and sunlighting may be an inappropriate measure, and an on-site judgement will often be necessary.*

3.20 Policy 13 'Housing Mix and Standards' states:

> *D. Amenity space for all new dwellings, including conversions, should be:…*
>
> *…c. orientated to take account of need for sunlight and shading;*

Guidance

Building Research Establishment Guidelines: Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice, Second Edition, 2011

3.21 The BRE Guidelines provides "advice on site layout planning to achieve good daylighting and sunlighting, within buildings and in the open spaces between them."

3.22 It is intended for building designers, developers, consultants and Local Planning Authorities (LPAs). It is intended to be used in conjunction with the Chartered Institute of Building Services Engineers (CIBSE) publication Lighting guide: daylighting and window design.

3.23 The advice it gives is not mandatory and should not be used as an instrument of planning policy. Of particular relevance, it states within the opening summary:

3.24 This guide is a comprehensive revision of the 1991 edition of Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.

3.25 In addition, paragraph 1.6 states:

> *…its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site*

layout design (see Section 5). In special circumstances, the developer or the planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.

4. Section 1 - Neighbouring Daylight, Sunlight and Overshadowing Methodology

Daylight

4.1 The recommendations for daylighting to existing residential buildings around a development site are set out in Part 2.2 of the BRE guidelines.

Vertical Sky Component (VSC)

4.2 The amount of light available to a window depends upon the amount of unobstructed sky that can be seen from the centre of the window under consideration. The amount of visible sky and consequently the amount of available skylight is assessed by calculating the VSC at the centre of the window. The guidelines advise that bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

4.3 The VSC can be calculated by using the skylight indicator provided as part of the guidelines, by mathematical methods using what is known as a Waldram diagram or by 3D CAD modelling.

4.4 Paragraph 2.2.7 of the BRE guidelines states the following:-

> *'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 occupants of the existing building will notice the reduction in the amount of skylight.'*

4.5 It must be interpreted from this criterion that a 27% VSC constitutes adequacy, but where this value cannot be achieved a reduction of up to 0.8 times its former value (this is the same as saying a 20% reduction when compared against the existing condition) would not be noticeable and would not therefore be considered material.

4.6 The VSC calculation only measures sky visibility reaching the outside plane of the window under consideration, so this is considered more a measure of the potential for good daylight within a given room. Depending upon the room and window size, the room may still be adequately lit with a lesser VSC value than the target values referred to above.

No-Sky Line (NSL or Daylight Distribution)

4.7 The BRE Guidelines advise that where room layouts are known, the effect on the daylight distribution can be calculated by plotting the NSL. In terms of the neighbouring receptors, it has not been possible to obtain room layouts for the neighbouring properties and therefore layouts have been assumed.

4.8 The NSL is a measure of the distribution of daylight at the 'working plane' within a room. The 'working plane' means a horizontal 'desktop' plane 0.85m in height for residential properties. The NSL divides those areas of the working plane which can receive direct sky light from those which cannot. If a significant area of the working plane (normally more than 20%) lies beyond the NSL (i.e. it receives no direct sky light), then the distribution of daylight in the room will look poor and supplementary electric lighting may be required.

4.9 The potential effects of daylight distribution in an existing building can be identified by plotting the NSL in each of the main rooms. For residential dwellings, this will include living rooms, dining rooms and

kitchens. Bedrooms should also be analysed, although they are less important. The BRE Guidelines identify that if the area of a room that does receive direct sky light is reduced to less than 0.8 times its former value, then this would be noticeable to its occupants.

Sunlight

4.10 Recommendations for sunlight amenity are set out in Part 3.2 (existing residential neighbours) of the BRE guidelines.

Annual Probable Sunlight Hours (APSH)

4.11 There is a requirement to assess windows of surrounding properties where the main windows face within 90 degrees of due south.

4.12 For new development, APSH calculations are taken at the centre of each window being assessed, on the plane of the inside face of the window wall. For existing neighbours, the outside face of the window wall is used.

4.13 The APSH method is based on the long-term average of the total number of hours during the year in which direct sunlight reaches the unobstructed ground allowing for average levels of cloudiness.

4.14 The sunlight availability indicator is then used to plot what percentage of the annual unobstructed total will reach the window reference point when obstructions and orientation are taken into account.

4.15 The BRE guidelines state:

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

4.16 Paragraphs 3.2.5 and 3.2.6 of the BRE guidelines sets the following recommendations:

> '*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 21st September and 21st March, then the room should still receive enough sunlight. The sunlight availability indicator in Appendix A can be used to check this.*
>
> *Any reduction in sunlight access below this level should be kept to a minimum. If the available sunlight hours are both less than the amount 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.'*

4.17 To summarise the above, the target level of sunlight to a window is 25% annual probable sunlight hours, of which 5% should be in winter months. Where sunlight levels fall below the suggested level, a comparison with the existing condition is reviewed and if the ratio reduction is within 0.8 (the same as saying a 20% reduction) its former value or the reduction in sunlight received over the whole year is 4% or less, then the sunlight loss will not be noticeable.

4.18 Where sunlight reductions fall below a ratio of 0.8 (the same as saying greater than a 20% reduction) then the sunlight losses may be noticeable to occupants.

4.19 The BRE guidance identifies the main influencing factors affecting access to available sunlight are site orientation and degree of obstruction.

4.20 When considering existing neighbours these factors are clearly outside the control of the designer. In new development the BRE suggest that the aim should be to minimise the number of northerly facing dwellings, however in larger developments it is accepted this may not be possible.

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

Overshadowing

Transient Overshadowing

4.22 The BRE Guidelines suggest that where large buildings are proposed which may affect a number of gardens or open spaces, it is useful to plot a shadow plan to illustrate the location of shadows at different times of the day and year. For the purpose of this assessment the overshadowing was mapped for the following three key dates in the year:

- 21st March (Spring Equinox);
- 21st June (Summer Solstice); and
- 21st December (Winter Solstice).

4.23 September 21st (Autumn Equinox) provides the same overshadowing images as March 21st (Spring Equinox) as the sun follows the same path at these corresponding times of year.

Sun Hours on Ground

4.24 The sun on ground assessment is a more detailed test than the transient overshadowing assessment on a particular garden or amenity space. The test is designed to consider whether good levels of sunlight are likely to be enjoyed throughout the year.

4.25 The BRE Guidelines recommend that the availability of sunlight should be checked for all spaces where it will be required. It states *'this will normally include gardens, parks and playing fields, children's playgrounds, pools, sitting out areas such as those between buildings and in public squares and focal points'*.

4.26 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.

4.27 The Spring Equinox, 21st March date is chosen as the sun is at its midpoint in the sky and represents average annual conditions, therefore sunlight amenity within the amenity area is expected to increase after this point, to a maximum on the summer solstice (21st June).

4.28 Using specialist software, the path of the sun is tracked at one-minute intervals to establish where sunlight falls on the ground and where it is prevented from doing so as a result of surrounding obstructions.

4.29 The 2011 BRE Guidelines then go on to suggest that if, as a result of new development, an existing garden or amenity area does not meet the guidance, or the area which can receive some sun on the 21st March is less than 0.8 times its former value then the loss of sunlight is likely to be noticeable.

5. Section 2 – Internal Daylight, Sunlight and Overshadowing Methodology

Daylight

Average Daylight Factor (ADF)

5.1 The ADF assessment methodology is set out in the BRE guidelines.

5.2 The BRE Guidelines state in the opening Summary:

> *'This guide gives advice on site layout planning to achieve good sunlighting and daylighting both within buildings and in the open spaces between them.*

5.3 The Average Daylight Factor (ADF) is defined within the 2011 BRE Guidelines as the:

> *'... ratio of total daylight flux incident on the working plane to the area of the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky. Thus a 1% ADF would mean that the average indoor illuminance would be one hundredth the outdoor unobstructed illuminance'.*

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

5.5 The following assumptions have been made in the ADF calculations:

- Glazing Transmittance: 0.68;
- Maintenance Factor: 0.8;
- Glazing Bar Correction: 0.9;
- Wall Reflectance 0.81;
- Floor Reflectance: 0.4;
- Ceiling Reflectance: 0.85.

5.6 The ADF criteria is the prescribed methodology for evaluating daylight within proposed accommodation and the ADF values based on room use are referenced by the BRE Guidelines. The values for those rooms that are most relevant for our assessments are:

- 2% for a kitchen or living/kitchen/dining room ('LKD');
- 1.5% for a living room or living/dining room ('LD'); *and*
- 1% for a bedroom.

5.7 Where a room is served by more than one purpose, it is suggested that the minimum ADF should be for the highest value, i.e. 2% for Living/Kitchen/ Dining rooms ('*LKD's*').

5.8 The ADF calculation determines the average illuminance on the working plane in a room, divided by the illuminance on an unobstructed surface outdoors.

5.9 It is designed to quantify the amount of daylight in a room as a whole and does not therefore illustrate the likely levels of daylight in the different areas of a large multiuse room.

5.10 For example, where the living room is generally situated at the front of the room, followed by the dining area and then the kitchen at the rear (which is common in most modern apartment block developments), the living and dining areas may receive good levels of daylight amenity, whilst the kitchen at the rear may not be expected to achieve a good level of daylight amenity. It is important therefore to take this into consideration.

5.11 In the case of the Proposed Development, the proposed units feature open plan living/kitchen/dining rooms ('LKD's') where some of the kitchens/food preparation areas are located at the rear of deep open plan spaces. In many cases the kitchen areas are clearly intended to be predominantly artificially lit with electric lighting given their distance to a main or supplementary window.

5.12 In addition to the above, paragraph 2.1.14 of the BRE Guidelines states in respect of internal galley type kitchens that if these are not directly day-lit they should be directly linked to a well day-lit living room.

5.13 As such where the proposed floor plans indicate galley type kitchen areas to the rear of multi-use living/kitchen/dining ('LKD') rooms with less natural light due to the distance from windows, we have run assessments using both 2% and 1.5% ADF target value, as a means of estimating the quantum of daylight in the front portion of the rooms (i.e. living/dining area).

No-Sky Line (NSL or Daylight Distribution)

5.14 In conjunction with the ADF test the BRE guidelines suggest that the distribution of daylight is assessed using the No Sky Line (NSL) test. This test separates those areas of the working plane that can receive direct skylight and those that cannot.

5.15 When dealing with proposed properties the BRE guidelines suggest that a room should enjoy good levels of daylight distribution if 80% of the working plane is in front of the No-Sky Line.

5.16 However, for built areas, and in our experience, this is often not achieved. It is our view that for built areas or areas with increasing densification and where balconies are used for the provision of external private amenity but reduce the level of sky visibility entering deep into a room, a target of 50% is more reasonable.

Sunlight

5.17 Recommendations for sunlight amenity are set out in Part 3.1 (new development) of the BRE guidelines.

Annual Probable Sunlight Hours (APSH)

5.18 With regard to sunlight penetration to proposed habitable rooms, and especially in built areas, a sunlight analysis is not always considered to be necessary. This is because the availability of sunlight is dependent on the orientation of a window and very often the size and shape of a site (which cannot be changed), as well as the bulk and massing of the existing surrounding properties. The daylight calculations are not dependent on the orientation of a window and, therefore, the design of the proposals, as well as the bulk and massing of the existing surrounding properties, will dictate whether good levels of daylight can be enjoyed.

5.19 The above view does not mean that sunlight availability is not considered during the design stages, as, where possible, dwellings should be designed to be dual aspect with main habitable room windows facing south. However, it must also be recognised that due to site constraints and other design issues this is not always possible, and schemesmay therefore include some single aspect north facing apartments.

5.20 The BRE guidelines provide good practice and target levels, but as set out above it must be recognised that sunlight is highly dependent on orientation, surrounding obstructions and site constraints.

5.21 Within Greater London there are inevitably a large number of existing habitable rooms which receive levels of sunlight below those recommended by the BRE guidelines. These low levels of sunlight are not due to poor design but due to the inherent density of development in the area.

5.22 This is why the BRE guidelines suggest target values and good design rather than fixed numerical values, as the level of sunlight availability is not necessarily achievable within the design remit of the architect. However, it is recognised that sunlight is enjoyed within the home and the proposals have therefore evolved to ensure that sunlight availability to future residents of the Proposed Development is maximised where possible

5.23 For new development, APSH calculations are taken at the centre of each window being assessed, on the plane of the inside face of the window wall. For existing neighbours, the outside face of the window wall is used.

5.24 The APSH method is based on the long-term average of the total number of hours during the year in which direct sunlight reaches the unobstructed ground allowing for average levels of cloudiness.

5.25 The sunlight availability indicator is then used to plot what percentage of the annual unobstructed total will reach the window reference point when obstructions and orientation are taken into account.

5.26 The BRE guidelines state:

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

5.27 Paragraphs 3.1.15 and 3.1.16 of the BRE guidelines summarises the following recommendations:

> *3.1.15 In general a dwelling, or non-domestic building which has a particular requirement for sunlight, will appear reasonably sunlit provided:*
>
> - *At least one main window wall faces within 90 degrees of due south and*
> - *The centre of at least one window to a main living room can receive 25% of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21 September and 21 March.*
>
> *3.1.16 Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the above recommendations.*

Overshadowing

Sun Hours on Ground

5.28 The BRE Guidelines acknowledge that the spaces between buildings have an important impact on their overall appearance and ambience. They state that the availability of sunlight should be checked for all open spaces where it will be required.

5.29 The BRE Guidelines state that different spaces will have different sun-lighting requirements and therefore it is difficult to suggest a hard and fast rule for all. They state that the Spring Equinox (21st March) can be selected as an assessment date as it represents average annual conditions.

5.30 The default recommendation is that at least half of the amenity area being assessed (i.e. 50% of its area) should receive at least 2 hours of sunlight on 21st March. The BRE Guidelines advise plotting the '2 hours sun contour' onto the amenity area in order to determine this.

6. Existing Site and Proposed Development

Existing Site

6.1 The existing site (the 'Site') is located at Ham Close, Ham, Richmond upon Thames, TW10 7PG and currently consists of a range of buildings of up to 5 storeys in height.

6.2 A massing model of the existing Site is illustrated in red on Figure 1 below and drawings Rel 02/01-03, located in Appendix 2.

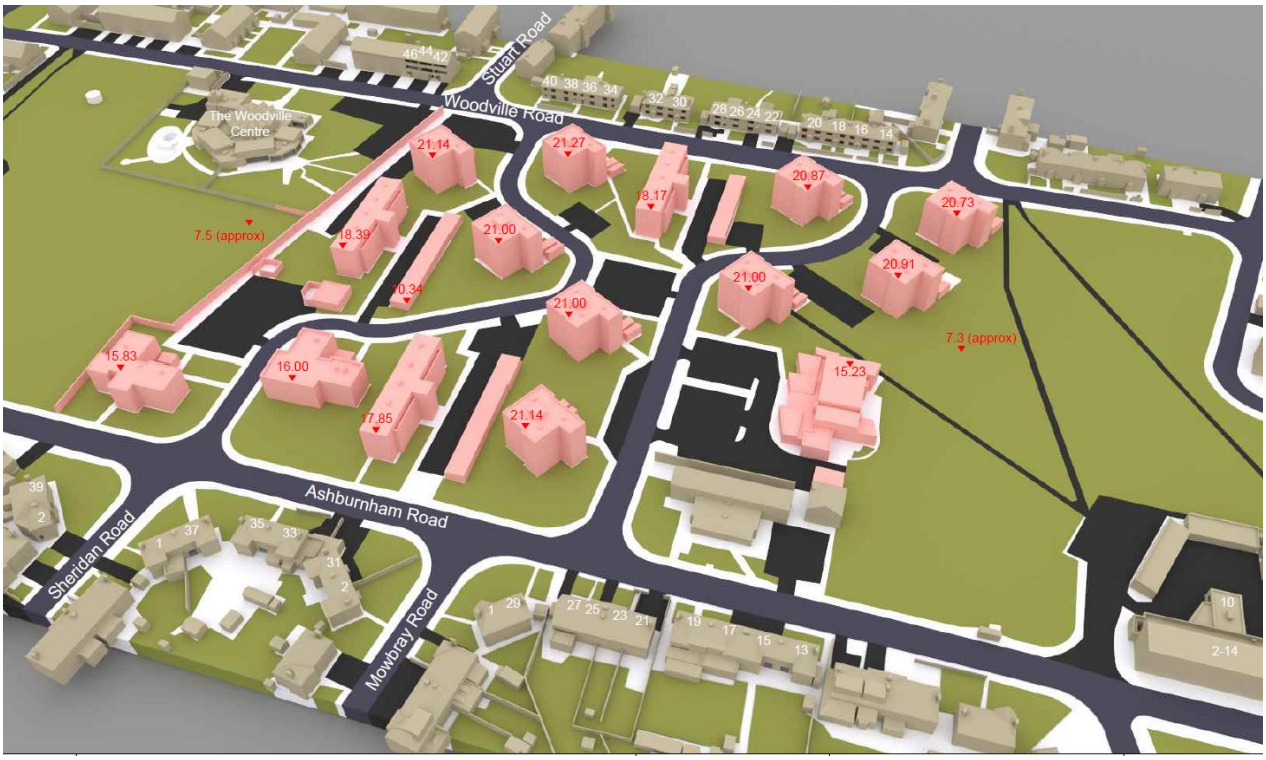


Figure 1 *– Site Plan of the existing Site, illustrated indicatively in red*

Proposed Development

6.3 The proposed development consists of the demolition of existing buildings on-site and phased mixed-use development comprising 452 residential homes (Class C3) up to six storeys; a Community/Leisure Facility (Class F2) of up to 3 storeys in height, a "Makers Lab" (sui generis) of up to 2 storeys together with basement car parking and site wide landscaping ("Proposed Development").

6.4 A massing model of the Proposed Development is illustrated in green on Figure 2 below and drawings Rel 02/04 - 06, located in Appendix 2.

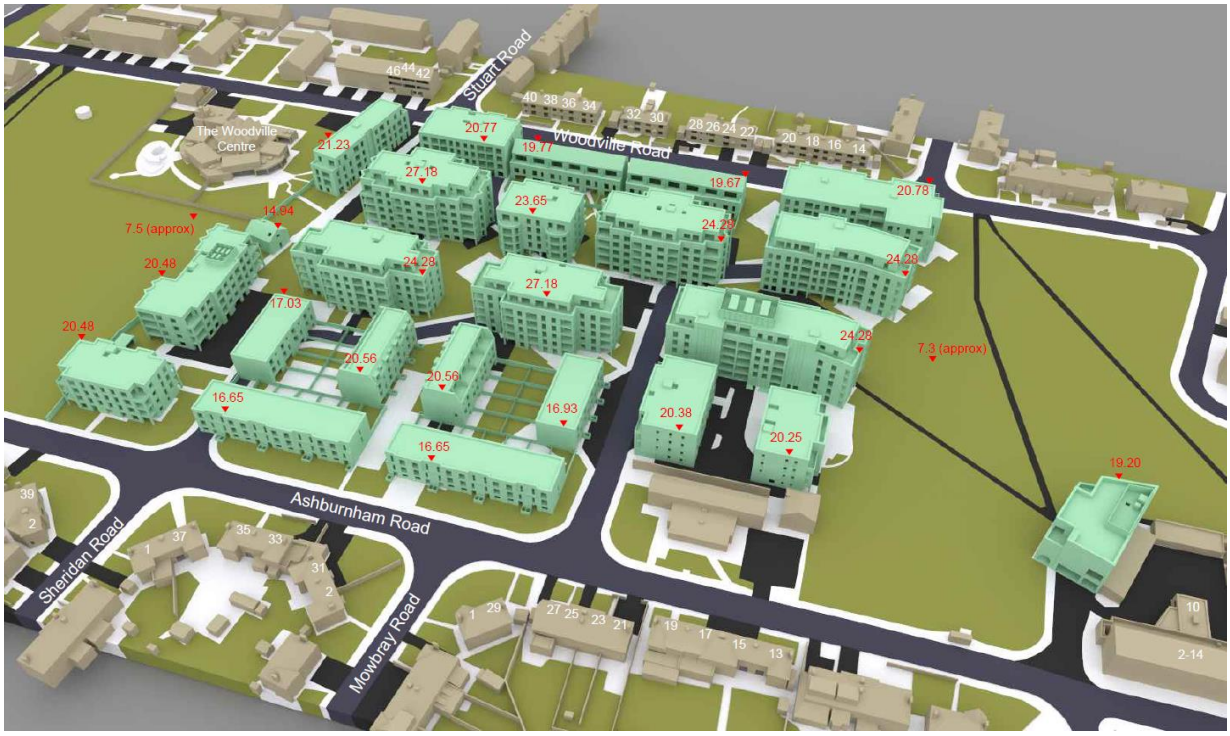


Figure 2 *– Site Plan of the Proposed Development, illustrated in green*

7. Scope of Assessments

Section 1 - Neighbouring Daylight, Sunlight and Overshadowing

7.1 Following research on the Valuation Office Agency website the following properties have been identified as containing some residential, or proposed to contain residential accommodation, and deemed to require assessment:

- 46 Woodville Road
- 44 Woodville Road
- 42 Woodville Road
- 40 Woodville Road
- 38 Woodville Road
- 36 Woodville Road
- 34 Woodville Road
- 32 Woodville Road
- 30 Woodville Road
- 28 Woodville Road
- 26 Woodville Road
- 24 Woodville Road
- 22 Woodville Road
- 20 Woodville Road
- 18 Woodville Road
- 16 Woodville Road
- 14 Woodville Road
- 13 Ashburnham Road
- 15 Ashburnham Road
- 17 Ashburnham Road
- 19 Ashburnham Road
- 21 Ashburnham Road
- 23 Ashburnham Road
- 25 Ashburnham Road
- 27 Ashburnham Road
- 29 Ashburnham Road
- 1 Mowbray Road
- 2 Mowbray Road
- 31 Ashburnham Road
- 33 Ashburnham Road
- 35 Ashburnham Road
- 37 Ashburnham Road
- 1 Sheridan Road
- 2 Sheridan Road
- 39 Ashburnham Road
- 65-77 Ham Street
- 2-14 Ashburnham Road
- The Woodville Centre

7.2 All of the other surrounding properties are either considered to be of sufficient distance from the Site so as not to require detailed assessment or are of a use that is not considered to have a reasonable expectation of daylight or sunlight to require detailed assessment.

7.3 Overshadowing Assessments have also been undertaken the play space surrounding The Woodville Centre and also the playing fields associated with St. Richard's CE Primary School. All other private or public amenity spaces are either considered to be of sufficient distance from the Proposed Development as to not be affected, or, do not fall within the Proposed Development's shadow path as to require detailed assessment.

Section 2 - Internal Daylight, Sunlight and Overshadowing

7.4 To understand the likely effects, Average Daylight Factor (ADF), No-Sky Line (NSL) and Annual Probable Sunlight Hours (APSH) assessments have been undertaken to each of the proposed habitable rooms within the residential dwellings (i.e. living rooms, kitchens and bedrooms).

7.5 Detailed sun on ground and transient overshadowing analysis have also been undertaken to the Proposed Amenity Spaces and to the public amenity space to the east of the Site known as Ham Village Green which is located within the Red Line Boundary of the Site.

8. Section 1 - Neighbouring Daylight, Sunlight and Overshadowing Results

Daylight and Sunlight

8.1 In accordance with the 2011 BRE Guidelines, only the neighbouring residential properties have been considered for the daylight and sunlight technical assessment as they are recognised as having a greater requirement for daylight and sunlight than commercial properties (*BRE Guidelines, Page 7, Section 2.2.2*). Any commercial properties in the vicinity, have therefore not been included within our assessments.

8.2 Non-habitable rooms such as bathrooms, WCs, storerooms and circulation spaces (such as hallways) have been discounted from our analysis where identified, as in accordance with the BRE Guidelines (*Page 7, Section 2.2.2*) which state:

> *'The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.'*

8.3 Please refer to Appendices 4 and 5 for the Daylight and Sunlight analysis tables and associated No Sky-Line contour drawings (*Rel 02 20-30*), upon which this report is based.

8.4 Technical analysis has determined that the following neighbouring properties assessed (listed below and the locations of which are shown in Figure 2 and Appendix 2) will comply with the BRE criterion for daylight (VSC and NSL) and sunlight (APSH), and thus will experience a negligible impact as a result of the Proposed Development:

- 46 Woodville Road
- 44 Woodville Road
- 42 Woodville Road
- 36 Woodville Road
- 34 Woodville Road
- 32 Woodville Road
- 30 Woodville Road
- 28 Woodville Road
- 26 Woodville Road
- 24 Woodville Road
- 22 Woodville Road
- 20 Woodville Road
- 13 Ashburnham Road
- 15 Ashburnham Road
- 17 Ashburnham Road
- 19 Ashburnham Road
- 21 Ashburnham Road
- 23 Ashburnham Road
- 25 Ashburnham Road
- 27 Ashburnham Road
- 29 Ashburnham Road
- 1 Mowbray Road
- 2 Mowbray Road
- 31 Ashburnham Road
- 35 Ashburnham Road
- 37 Ashburnham Road
- 1 Sheridan Road
- 2 Sheridan Road
- 39 Ashburnham Road
- 65-77 Ham Street
- 2-14 Ashburnham Road

8.5 The remaining properties also predominantly experience negligible reductions; however there are a few isolated instances which are discussed in further detail below:

40 Woodville Road

8.6 This property is located directly to the north of the main Proposed Development and east of Stuart Road and it is understood to contain residential accommodation. Floor plans have not been able to be obtained for this property and therefore our reasonable assumptions as to the layout of the property have been applied. Floor plans are not required for the VSC daylight assessment.

8.7 Assessments have therefore been undertaken to 3 site-facing windows, which we understand may serve 3 rooms.

DAYLIGHT

8.8 The VSC results show that each of the site-facing windows will remain in accordance with the BRE guidelines, by either retaining more than 27% VSC or, experiencing a reduction which is within 20% of the existing baseline and considered to be unnoticeable.

8.9 In addition to the VSC tests, the daylight distribution results (NSL) show that all rooms, except for 1, will experience small reductions in daylight distribution which are within the BRE guidelines criteria.

8.10 The one room which falls short is understood to serve a living room on the ground floor of the property and although it falls short of the BRE guidelines, it retains a daylight distribution to 63% of the room's area which exceeds what is considered to be an acceptable level of daylight distribution for a built area. The overall daylight effects, when using the VSC and NSL tests are therefore not considered material and can be considered acceptable.

SUNLIGHT

8.11 The sunlight results show that each of the assessed rooms will meet the BRE guidelines and continue to receive good levels of sunlight with the Proposed Development in place. The proposals are therefore not considered to cause an unacceptable material deterioration to the levels of sunlight currently enjoyed.

38 Woodville Road

8.12 This property is located directly east of 40 Woodville Road and is understood to contain residential accommodation.

8.13 Floor plans have been obtained for this property and therefore on the assumption these floor plans are correct, have been applied for the NSL assessment.

8.14 Assessments have therefore been undertaken to 3 site-facing windows, which we understand may serve 3 rooms.

DAYLIGHT

8.15 The VSC results show that each of the site-facing windows will remain in accordance with the BRE guidelines, by either retaining more than 27% VSC or, experiencing a reduction which is within 20% of the existing baseline and considered to be unnoticeable.

8.16 In addition to the VSC tests, the daylight distribution results (NSL) show that all rooms, except for 1, will experience small reductions in daylight distribution which are within the BRE guidelines criteria.

8.17 The one room which falls short is understood to serve a living room on the ground floor of the property and although it falls short of the BRE guidelines, it retains a daylight distribution to 74% of the room's area which exceeds what is considered to be an acceptable level of daylight distribution for a built area, and is only 6% short of the recommended BRE criteria. The overall daylight effects, when using the VSC and NSL tests are therefore not considered material and can be considered acceptable.

SUNLIGHT

8.18 The sunlight results show that each of the assessed rooms will meet the BRE guidelines and continue to receive good levels of sunlight with the Proposed Development in place. The proposals are therefore not considered to cause an unacceptable material deterioration to the levels of sunlight currently enjoyed.

18 Woodville Road

8.19 This property is located directly to the north of the main Proposed Development and is understood to contain residential accommodation. Floor plans have not been able to be obtained for this property and therefore our reasonable assumptions as to the layout of the property have been applied. Floor plans are not required for the VSC daylight assessment.

8.20 Assessments have therefore been undertaken to 5 site-facing windows, which we understand may serve 4 rooms.

DAYLIGHT

8.21 The VSC results show that all (100%) of the 5 site-facing windows will remain in accordance with the BRE guidelines.

8.22 With regard to the NSL assessment, 3 rooms will meet the BRE guidelines criteria with the remaining 1 room falling below the BRE's target criteria for NSL with a reduction of 25%, in comparison to 20% (which is considered unnoticeable). This room will however continue to enjoy a NSL to over 73% of its room area with the Proposed Development in place and therefore although the reductions are beyond the BRE guidelines, the effect can be considered acceptable.

SUNLIGHT

8.23 The sunlight results show that each of the assessed rooms will meet the BRE guidelines and continue to receive good levels of sunlight with the Proposed Development in place. The proposals are therefore not considered to cause an unacceptable material deterioration to the levels of sunlight currently enjoyed.

16 Woodville Road

8.24 This property is located directly to the north of the main Proposed Development and is understood to contain residential accommodation. Floor plans have not been able to be obtained for this property and therefore our reasonable assumptions as to the layout of the property have been applied. Floor plans are not required for the VSC daylight assessment.

8.25 Assessments have therefore been undertaken to 5 site-facing windows, which we understand may serve 4 rooms.

DAYLIGHT

8.26 The VSC results show that 3 of the site-facing windows will remain in accordance with the BRE guidelines.

8.27 The remaining 2 windows are understood to each serve the dual aspect living room and the dining room. However, if we were to look at the retained values, both rooms will retain a VSC of at least 24% which exceeds what is considered an acceptable level for a built area and is only 3% short of the BRE guidelines recommended criteria.

8.28 With regard to the NSL assessment, 3 rooms will meet the BRE guidelines criteria with the remaining 1 room falling below the BRE's target criteria. This room is understood to serve a dining room on the ground floor of the property and although it falls short of the BRE guidelines, it retains a daylight distribution to 69% of the room's area which exceeds what is considered to be an acceptable level of daylight distribution for a built area. The overall daylight effects, when using the VSC and NSL tests are therefore not considered material and can be considered acceptable.

SUNLIGHT

8.29 The sunlight results show that each of the assessed rooms will meet the BRE guidelines and continue to receive good levels of sunlight with the Proposed Development in place. The proposals are therefore not considered to cause an unacceptable material deterioration to the levels of sunlight currently enjoyed.

14 Woodville Road

8.30 This property is located directly to the north of the main Proposed Development and is understood to contain residential accommodation. Floor plans have not been able to be obtained for this property and therefore our reasonable assumptions as to the layout of the property have been applied. Floor plans are not required for the VSC daylight assessment.

8.31 Assessments have therefore been undertaken to 5 site-facing windows, which we understand may serve 4 rooms.

DAYLIGHT

8.32 The VSC results show that 3 of the site-facing windows will remain in accordance with the BRE guidelines.

8.33 The remaining 2 windows are understood to each serve the dual aspect living room and the dining room. However, if we were to look at the retained values, both rooms will retain a VSC of at least 24% exceeds what is considered an acceptable level for a built area and is only 3% short of the BRE guidelines recommended criteria.

8.34 With regard to the NSL assessment, 3 rooms will meet the BRE guidelines criteria with the remaining 1 room falling below the BRE's target criteria. This room is understood to serve a dining room on the ground floor of the property and although it falls short of the BRE guidelines, it retains a daylight distribution to 59% of the room's area which exceeds what is considered to be an acceptable level of daylight distribution for built area. The overall daylight effects, when using the VSC and NSL tests are therefore not considered material and can be considered acceptable.

SUNLIGHT

8.35 The sunlight results show that each of the assessed rooms will meet the BRE guidelines and continue to receive good levels of sunlight with the Proposed Development in place. The proposals are therefore not considered to cause an unacceptable material deterioration to the levels of sunlight currently enjoyed.

33 Ashburnham Road

8.36 This property is located directly to the south of the main Proposed Development and is understood to contain residential accommodation.

8.37 Floor plans have not been obtained for this property and therefore our reasonable assumptions as to the layout of the property have been applied for the NSL assessment.

8.38 Analysis has been undertaken against 8 site-facing windows and 4 assumed rooms.

DAYLIGHT

8.39 The VSC results show that all of the site-facing windows, except for 1, will remain in accordance with the BRE guidelines.

8.40 The remaining window is understood to each serve the ground floor dining room. However, this window is the side pane of a bay window and is classed as a secondary window. The BRE guidelines suggest that it is the effect to the main habitable windows that should be given the principal consideration. With regard to bay windows, the BRE guidelines suggest that the centre window facing outwards can be taken as a main window. The main window (W2) to this room meets the BRE guidelines reduction criteria and therefore it can be considered that the effects upon this room can be considered acceptable.

8.41 With regard to the NSL assessment, each of the 4 rooms will meet the BRE guidelines criteria. The overall daylight effects, when using the VSC and NSL tests are therefore not considered material and can be considered acceptable.

SUNLIGHT

8.42 The sunlight results show that each of the assessed rooms will meet the BRE guidelines and continue to receive good levels of sunlight with the Proposed Development in place. The proposals are therefore not considered to cause an unacceptable material deterioration to the levels of sunlight currently enjoyed.

The Woodville Centre

8.43 This property is located west of the Proposed Development and is understood to serve as a day centre for individuals who suffer from dementia. We understand that the property therefore does not contain residential accommodation and instead serves as more of a social centre.

8.44 Floor plans have not been obtained for this property, however, some photos obtained from the Woodville Centre's facilities video has allowed us to draw our reasonable assumptions as to the layout of the property.

8.45 Analysis has been undertaken against 12 site-facing windows and 10 assumed rooms.

DAYLIGHT

8.46 The VSC results show that of the 12 of the site-facing windows all, except for 2, will remain in accordance with the BRE guidelines.

8.47 The remaining 2 windows are understood to serve one of the main social spaces within The Woodville Centre along with a further 5 windows. However, if we were to look at the retained values, both windows will retain a VSC of at least 25% which is only 2% short of the BRE guidelines recommended criteria. It can therefore be considered that the room as a whole will continue to enjoy good levels of daylight.

8.48 With regard to the NSL assessment, each of the 4 rooms will meet the BRE guidelines criteria. The overall daylight effects, when using the VSC and NSL tests are therefore not considered material and can be considered acceptable.

SUNLIGHT

8.49 The sunlight results show that each of the assessed rooms will meet the BRE guidelines and continue to receive good levels of sunlight with the Proposed Development in place. The proposals are therefore not considered to cause an unacceptable material deterioration to the levels of sunlight currently enjoyed.

Overshadowing

Sun Hours on Ground

8.50 With the Development in place the 21st March 2-Hour Sun Hours on Ground assessments show that both areas of amenity space (the play space/outdoor space surrounding The Woodville Centre and the playing fields associated with St. Richard's CE Primary School), will not be impacted by the Development and will remain well sunlit for a built area, as over half of each amenity space will receive at least two hours of sunlight on the 21st March.

8.51 In conclusion, the overall effect of the Proposed Development on the tested amenity spaces is considered negligible.

Transient Overshadowing

8.52 Transient overshadowing analysis has been run to assess the instances and duration of any additional shadow caused by the Proposed Development on the grounds of existing public amenity spaces.

8.53 Having plotted the shadows, shadows will cause minimal impacts during the year, with the only additional shadowing in March being cast over the play space and playing fields between 7:00am and 11:00am. In June this reduces to 6:00am and 9:00am.

8.54 Therefore, the effect of the Proposed Development in terms of overshadowing to the existing public amenity spaces throughout the year is therefore considered to be negligible.

9. Section 2 - Internal Daylight, Sunlight and Overshadowing Results

Average Daylight Factor and Daylight Distribution Results

9.1 In the case of the Proposed Development, some of the proposed units feature open plan living/kitchen/dining rooms ('LKD's') where some of the kitchens/food preparation areas are located at the rear of deep open plan spaces. In many cases the kitchen areas are clearly intended to be predominantly artificially lit with electric lighting given their distance to a main or supplementary window.

9.2 In addition to the above, paragraph 2.1.14 of the BRE Guidelines states in respect of internal galley type kitchens that if these are not directly day-lit they should be directly linked to a well day-lit living room.

9.3 As such where the proposed floor plans indicate galley type kitchen areas to the rear of multi-use living/kitchen/dining ('LKD') rooms with less natural light due to the distance from windows, we have run assessments against both a 2% and 1.5% ADF target value, as a means of estimating the quantum of daylight in the front portion of the rooms (i.e. living/dining area).

9.4 A tabular set of ADF and NSL results for all the habitable rooms, as well as the floor plans showing the results are given at Appendices 9 and 10.

9.5 A summary of the ADF test results is given below. In total all 1335 habitable rooms were assessed, regardless of orientation:

Property	Number of Rooms Tested	Rooms satisfying BRE		Rooms not satisfying BRE
		No.	%	
Block A	52	47	90%	5
Block B	59	57	97%	2
Block C	111	100	90%	11
Block D	61	40	66%	21
Block E	97	80	82%	17
Block F	24	24	100%	0
Block G	42	42	100%	0
Block H	32	32	100%	0
Block I	97	82	85%	15
Block J	32	32	100%	0
Block K	42	40	95%	2
Block L	24	24	100%	0
Block M	130	106	82%	24
Block N	40	29	73%	11
Block O	35	27	77%	8
Block P	30	25	83%	5
Block Q	30	24	80%	6
Block R	52	31	60%	21
Block S	112	100	89%	12
Block TU	90	68	76%	22

Block V	101	91	90%	10
Block W	42	39	93%	3
Total	**1335**	**1140**	**85%**	**195**

9.6 Across all the proposed blocks, **85%** of the 1335 habitable rooms will enjoy good levels of daylight in accordance with BRE target criteria, when using the target criteria of 2% for a Living/Kitchen/Dining room and 1% ADF criteria for bedrooms.

9.7 If a lower 1.5% ADF target were applied (i.e. the minimum recommended ADF for a living room) to all LKD's and 1% ADF to bedrooms as an alternative target criteria, **90%** of rooms will meet the alternative criteria.

9.8 The NSL results show that approximately 80% of all rooms will achieve daylight distribution to 80%+ of the room areas in accordance with the BRE guidelines. This increases to 94% of all rooms if an alternative daylight distribution of 50%+ is applied, with the majority of the front portion of these rooms (i.e. the living/dining areas) achieving good levels of daylight distribution.

9.9 Those rooms that do not meet the suggested ADF and NSL criteria are generally influenced by projecting balconies overhead which restrict the quantum of direct daylight penetrating deep into the LKD rooms. However, these balconies do provide future occupants with high levels of external daylight amenity.

9.10 Therefore, there is a trade-off between achieving good levels of internal daylight amenity to all areas of proposed rooms and the provision of external private amenity spaces (balconies), which provide easy access to high levels of external daylight, and in most cases sunlight amenity.

9.11 These results represent a very high overall level of compliance, which is better than or broadly comparable to schemes of a similar typology across London.

9.12 On a block by block basis the daylight results are as follows:

Block A

9.13 Of the 52 rooms relevant for assessment, 90% (47) will meet the following criteria:

- All 24 (100%) bedrooms assessed will achieve an ADF target of 1%+;
- All 14 (100%) LDs and Living Rooms assessed will achieve an ADF target of 1.5%+;
- 9 (64%) of the 14 LKDs and Studios assessed will achieve an ADF target of 2%+.

9.14 The NSL assessment demonstrates that 96% (50 out of 52) of the rooms assessed will achieve over 80% daylight distribution; whilst 100% (52) of the rooms will achieve over 50%+ daylight distribution.

Block B

9.15 Of the 59 rooms relevant for assessment, 97% (57) will meet the following criteria:

- All 37 (100%) bedrooms assessed will achieve an ADF target of 1%+;
- All (1) LDs (100%) assessed will achieve an ADF target of 1.5%+;

- 19 (90%) of the 21 LKDs assessed will achieve an ADF target of 2%+.

9.16 The NSL assessment demonstrates that 97% (57 out of 59) of the rooms assessed will achieve over 80% daylight distribution; whilst 98% (58) of the rooms will achieve over 50%+ daylight distribution.

Block C

9.17 Of the 111 rooms relevant for assessment, 90% (100) will meet the following criteria:

- 67 (99%) of the 68 bedrooms assessed will achieve an ADF target of 1%+;
- All 2 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 31 (76%) of the 41 LKDs assessed will achieve an ADF target of 2%+.

9.18 The NSL assessment demonstrates that 78% (87 out of 111) of the rooms assessed will achieve over 80% daylight distribution; whilst 95% (105) of the rooms will achieve over 50%+ daylight distribution.

Block D

9.19 Of the 61 rooms relevant for assessment, 66% (40) will meet the following criteria:

- 18 (56%) of the 32 bedrooms assessed will achieve an ADF target of 1%+;
- All 8 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 14 (67%) of the 21 LKDs assessed will achieve an ADF target of 2%+.

9.20 The NSL assessment demonstrates that 64% (39 out of 61) of the rooms assessed will achieve over 80% daylight distribution; whilst 74% (45) of the rooms will achieve over 50%+ daylight distribution.

Block E

9.21 Of the 97 rooms relevant for assessment, 82% (80) will meet the following criteria:

- All 59 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- 21 (55%) of the 38 LKDs assessed will achieve an ADF target of 2%+.

9.22 The NSL assessment demonstrates that 82% (80 out of 97) of the rooms assessed will achieve over 80% daylight distribution; whilst 99% (96) of the rooms will achieve over 50%+ daylight distribution.

Block F

9.23 Of the 24 rooms relevant for assessment, 100% (24) will meet the following criteria:

- All 16 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- All 4 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;

- All 4 (100%) LKDs assessed will achieve an ADF target of 2%+.

9.24 The NSL assessment demonstrates that 83% (20 out of 24) of the rooms assessed will achieve over 80% daylight distribution; whilst 100% (24) of the rooms will achieve over 50%+ daylight distribution.

Block G

9.25 Of the 42 rooms relevant for assessment, 100% (42) will meet the following criteria:

- All 28 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- All 7 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- All 7 (100%) LKDs assessed will achieve an ADF target of 2%+.

9.26 The NSL assessment demonstrates that 95% (40 out of 42) of the rooms assessed will achieve over 80% daylight distribution; whilst 100% (42) of the rooms will achieve over 50%+ daylight distribution.

Block H

9.27 Of the 32 rooms relevant for assessment, 100% (32) will meet the following criteria:

- All 20 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- All 8 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- All 8 (100%) LKDs assessed will achieve an ADF target of 2%+.

9.28 The NSL assessment demonstrates that 63% (20 out of 32) of the rooms assessed will achieve over 80% daylight distribution; whilst 94% (30) of the rooms will achieve over 50%+ daylight distribution.

Block I

9.29 Of the 97 rooms relevant for assessment, 85% (82) will meet the following criteria:

- All 59 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- All 2 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 23 (61%) of the 38 LKDs assessed will achieve an ADF target of 2%+.

9.30 The NSL assessment demonstrates that 90% (87 out of 97) of the rooms assessed will achieve over 80% daylight distribution; whilst 99% (97) of the rooms will achieve over 50%+ daylight distribution.

Block J

9.31 Of the 32 rooms relevant for assessment, 100% (32) will meet the following criteria:

- All 20 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;

- All 8 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- All 4 (100%) LKDs assessed will achieve an ADF target of 2%+.

9.32 The NSL assessment demonstrates that 63% (20 out of 32) of the rooms assessed will achieve over 80% daylight distribution; whilst 94% (30) of the rooms will achieve over 50%+ daylight distribution.

Block K

9.33 Of the 42 rooms relevant for assessment, 95% (40) will meet the following criteria:

- All 28 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- All 7 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 5 (71%) of the 7 LKDs assessed will achieve an ADF target of 2%+.

9.34 The NSL assessment demonstrates that 95% (40 out of 42) of the rooms assessed will achieve over 80% daylight distribution; whilst 100% (42) of the rooms will achieve over 50%+ daylight distribution.

Block L

9.35 Of the 24 rooms relevant for assessment, 100% (24) will meet the following criteria:

- All 16 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- All 4 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- All 4 (100%) LKDs assessed will achieve an ADF target of 2%+.

9.36 The NSL assessment demonstrates that 79% (19 out of 24) of the rooms assessed will achieve over 80% daylight distribution; whilst 100% (24) of the rooms will achieve over 50%+ daylight distribution.

Block M

9.37 Of the 130 rooms relevant for assessment, 82% (106) will meet the following criteria:

- 61 (88%) of the 68 bedrooms assessed will achieve an ADF target of 1%+;
- All 9 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 36 (69%) of the 52 LKDs assessed will achieve an ADF target of 2%+.

9.38 The NSL assessment demonstrates that 82% (106 out of 130) of the rooms assessed will achieve over 80% daylight distribution; whilst 96% (125) of the rooms will achieve over 50%+ daylight distribution.

Block N

9.39 Of the 40 rooms relevant for assessment, 73% (29) will meet the following criteria:

- 14 (78%) of the 18 bedrooms assessed will achieve an ADF target of 1%+;
- 1 (25%) of the 4 LDs assessed will achieve an ADF target of 1.5%+;
- 14 (78%) of the 18 LKDs assessed will achieve an ADF target of 2%+.

9.40 The NSL assessment demonstrates that 78% (31 out of 40) of the rooms assessed will achieve over 80% daylight distribution; whilst 98% (39) of the rooms will achieve over 50%+ daylight distribution.

Block O

9.41 Of the 35 rooms relevant for assessment, 77% (27) will meet the following criteria:

- 19 (95%) of the 20 bedrooms assessed will achieve an ADF target of 1%+;
- All 3 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 5 (42%) of the 12 LKDs assessed will achieve an ADF target of 2%+, however, this increases to 100% when an ADF target of 1.5%+ is applied.

9.42 The NSL assessment demonstrates that 89% (31 out of 35) of the rooms assessed will achieve over 80% daylight distribution; whilst 97 (34) of the rooms will achieve over 50%+ daylight distribution.

Block P

9.43 Of the 30 rooms relevant for assessment, 83% (25) will meet the following criteria:

- 19 (79%) of the 24 bedrooms assessed will achieve an ADF target of 1%+;
- All 6 (100%) of the LKDs assessed will achieve an ADF target of 2%+.

9.44 The NSL assessment demonstrates that 70% (21 out of 30) of the rooms assessed will achieve over 80% daylight distribution; whilst 97% (29) of the rooms will achieve over 50%+ daylight distribution.

Block Q

9.45 Of the 30 rooms relevant for assessment, 80% (24) will meet the following criteria:

- 18 (75%) of the 24 bedrooms assessed will achieve an ADF target of 1%+;
- All 6 (100%) LKDs assessed will achieve an ADF target of 2%+.

9.46 The NSL assessment demonstrates that 47% (14 out of 30) of the rooms assessed will achieve over 80% daylight distribution; whilst 73% (22) of the rooms will achieve over 50%+ daylight distribution.

Block R

9.47 Of the 52 rooms relevant for assessment, 60% (31) will meet the following criteria:

- 24 (75%) of the 32 bedrooms assessed will achieve an ADF target of 1%+;
- 7 (35%) of the 20 LKDs assessed will achieve an ADF target of 2%+, however, this increases to 100% when an ADF target of 1.5%+ is applied.

9.48 The NSL assessment demonstrates that 65% (34 out of 52) of the rooms assessed will achieve over 80% daylight distribution; whilst 92% (48) of the rooms will achieve over 50%+ daylight distribution.

Block S

9.49 Of the 112 rooms relevant for assessment, 89% (100) will meet the following criteria:

- All 69 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;ll 2 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 31 (72%) of the 43 LKDs assessed will achieve an ADF target of 2%+, however, this increases to 100% when an ADF target of 1.5%+ is applied.

9.50 The NSL assessment demonstrates that 91% (102 out of 112) of the rooms assessed will achieve over 80% daylight distribution; whilst 100% (112) of the rooms will achieve over 50%+ daylight distribution.

Block TU

9.51 Of the 90 rooms relevant for assessment, 76% (68) will meet the following criteria:

- 43 (81%) of the 53 bedrooms assessed will achieve an ADF target of 1%+;
- The 1 LD assessed will not achieve an ADF target of 1.5%+ (0%);
- 25 (69%) of the 36 LKDs assessed will achieve an ADF target of 2%+, however, this increases to 100% when an ADF target of 1.5%+ is applied.

9.52 The NSL assessment demonstrates that 64% (58 out of 90) of the rooms assessed will achieve over 80% daylight distribution; whilst 78% (70) of the rooms will achieve over 50%+ daylight distribution.

Block V

9.53 Of the 101 rooms relevant for assessment, 90% (91)will meet the following criteria:

- 46 (84%) of the 55 bedrooms assessed will achieve an ADF target of 1%+;
- All 4 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 41 (98%) of the 42 LKDs assessed will achieve an ADF target of 2%+, however, this increases to 100% when an ADF target of 1.5%+ is applied.

9.54 The NSL assessment demonstrates that 82% (83 out of 101) of the rooms assessed will achieve over 80% daylight distribution; whilst 95% (96) of the rooms will achieve over 50%+ daylight distribution.

Block W

9.55 Of the 42 rooms relevant for assessment, 93% (39) will meet the following criteria:

- All 20 (100%) of the bedrooms assessed will achieve an ADF target of 1%+;
- All 9 (100%) of the LDs assessed will achieve an ADF target of 1.5%+;
- 10 (77%) of the 13 LKDs assessed will achieve an ADF target of 2%+, however, this increases to 100% when an ADF target of 1.5%+ is applied.

9.56 The NSL assessment demonstrates that 79% (33 out of 42) of the rooms assessed will achieve over 80% daylight distribution; whilst 100% (42) of the rooms will achieve over 50%+ daylight distribution.

Annual Probable Sunlight Hours – Sunlight

9.57 Requirements for the provision of sunlight to new residential buildings are set out in Part 3.1 of the BRE guidelines.

9.58 Sunlight is considered important for living rooms and conservatories but is generally viewed as less important in bedrooms and in kitchens.

9.59 The BRE guidelines accept site layout (i.e. orientation and overshadowing) as the most important factor affecting the duration of sunlight in buildings and it is appreciated that a site's existing layout and other design constraints may impose orientation or sunlight constraints which may not be possible to overcome.

9.60 Paragraph 3.1.6 of the BRE guidelines states:

> *'A south–facing window will, in general, receive most sunlight, while a north facing one will only receive it on a handful of occasions (early morning and late in summer). East and west facing windows will receive sunlight only at certain times of the day.'*

9.61 Access to sunlight can be quantified for the interior of rooms and is based on the Annual Probable Sunlight Hours (APSH) method of assessment. The BRE Guidelines state:

> *'BS 8206-2 recommends that interiors where the occupants expect sunlight should receive at least one quarter (25%) of APSH, including in the winter months between 21 September and 21 March at least 5% of APSH.'*

9.62 The BRE Guidelines also note that the above criterion is intended to give good access to sunlight, but that in special circumstances the planning authority may wish to choose a different value.

9.63 It is often not possible to achieve the 25% Annual and 5% Winter sunlight tests when assessing schemes in denser apartment blocks over three/four floors located near similarly sized blocks, particularly where a provision of private external amenity (i.e. balconies) is required. Balconies reduce the view of the sky dome/sun from the rear face of the window being assessed (i.e. the point of calculation under the BRE Guidelines).

9.64 In the case of the Proposed Development, the principal boundaries of the Site are orientated north-east, north-west, south-east and south-west. The elevations facing south-east and south-west therefore, have the ability to enjoy good levels of sunlight in accordance with the BRE guidelines, whilst the north-east and north-west elevations are expected to receive lower levels of sunlight.

9.65 Technical analysis indicates that of the 1066 windows orientated within 90 degrees of due south that are relevant for assessment, 808 windows (**76%**) will meet the recommended criteria for winter sunlight and 709 (**67%**) for total sunlight.

9.66 In consideration of the above, whilst there will be windows that fall below the recommended criteria for sunlight, these windows mainly serve less sensitive bedrooms; or are influenced by their north/west/east orientation and/or the presence of overhanging balconies, both of which restrict their access to available sunlight hours.

9.67 In our opinion and in consideration of the above, this represents an acceptable level of sunlight performance to proposed windows and is broadly comparable to schemes of a similar typology across London.

Overshadowing

Sun Hours on Ground to Communal Areas

9.68 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.

9.69 The Spring Equinox, 21st March date is chosen as it represents average annual conditions, therefore sunlight amenity within the amenity area is expected to increase after this point, to a maximum on the summer solstice (21st June).

9.70 Using specialist software, the path of the sun is tracked at one-minute intervals to establish where sunlight falls on the ground and where it is prevented from doing so as a result of surrounding obstructions.

9.71 The results of our assessments show that all proposed amenity areas, except for 1 (30 of the 31 areas) will meet the BRE guidelines by achieving 2 hours of sun on ground to over 50% of the assessed area on 21st March, thereby comfortably meeting the BRE target criteria. In addition, the public amenity space known as Ham Village Green which is located within the red line boundary of the Site will also meet the BRE guidelines.

9.72 The one space which falls short is labelled as Area 42 within Appendix 10 and achieves 2 hours sun on ground to 39% of the area on 21st March. However, in the summer months, this increases to 89%.

9.73 It can therefore be concluded that each resident throughout the Site will have access to a well sunlit amenity space in accordance with the BRE guidelines.

Sun Hours on Ground to Private Gardens

9.74 The provision of a private garden is an additional beneficial amenity and the BRE guidelines recommend to purely focus on proposed communal amenity spaces, as not all residents have access to a private garden and so it is important to ensure that all residents have access to a well sunlit space. However,

for completeness we have undertaken sun hours on ground assessments to the 42 private gardens that are proposed.

9.75 The results of the assessments show that of those gardens that are orientated within 90 degrees of due south (13), 12 will enjoy at least 2 hours of sun on ground to over 50% of their garden's area. The one which falls short, labelled area 12 within Appendix 10, only does so by 2%, and enjoys 2 hours of sun on ground to 48% of its area.

9.76 The gardens which are orientated within 90 degrees of due north (29 gardens) fall short of the BRE guidelines, however this is as expected and as the gardens are private, it is up to the future occupier as to whether they are happy with a north facing garden or not. It can however be said that each of these gardens will enjoy very good levels of sunlight in the summer months, when the gardens are more likely to be used.

9.77 It can therefore be concluded that each resident throughout the Site will have access to a reasonably sunlit amenity space.

10. Conclusion

10.1 Section 1 of this report considered the potential daylight and sunlight effects that may occur to the surrounding (neighbouring) residential properties as a result of the Proposed Development.

10.2 Section 2 of this report considered the potential levels of daylight and sunlight that will be enjoyed within the Proposed Development and the potential overshadowing to the proposed amenity spaces.

Section 1 – Neighbouring Daylight, Sunlight and Overshadowing Effects

10.3 The results of the technical analysis show that any daylight or sunlight reductions to the surrounding residential properties are generally within the BRE guidelines, with 96% VSC (Vertical Sky Component) compliance; 95% NSL (No-Sky line) compliance; and 100% APSH (Annual Probable Sunlight Hour) compliance.

10.4 Analysis found that 6 main windows (located within 14 Woodville Road, 16 Woodville Road and The Woodville Centre) experience a VSC reduction beyond the BRE guidelines (*i.e. less than 27% VSC retained, and a reduction of greater than 20% its existing VSC value*).

10.5 An additional window within 33 Ashburnham Road also falls short of the BRE guidelines, however, this window is the side pane of a bay window and is classed as a secondary window. The BRE guidelines suggest that it is the effect to the main habitable windows that should be given the principal consideration. With regard to bay windows, the BRE guidelines suggest that the centre window facing outwards can be taken as a main window. The main window to this room meets the BRE guidelines for both the reduction and retained criterion and therefore it can be considered that the effects upon this room can be considered acceptable.

10.6 The 4 main windows within 14 and 16 Woodville Road will experience a minor derogation from the BRE guidelines, whereby the reductions exceed the criteria by a maximum of 2.34%, which in our opinion equates to a minor adverse change.

10.7 The 2 main windows within The Woodville Centre are understood to serve one of the main social spaces within The Woodville Centre along with a further 5 windows. The results for these two windows however show each will experience a minor derogation from the BRE guidelines, yet both will retain a VSC of at least 25% which is only 2% short of the BRE guidelines recommended criteria. It can therefore be considered that the room as a whole will continue to enjoy good levels of daylight.

10.8 With regard to the daylight distribution (NSL) assessments, 5 rooms will experience reductions beyond the BRE guidelines (within 14, 16, 18, 38 and 40 Woodville Road). The BRE guidelines suggest that a room should enjoy good levels of daylight distribution if 80% of the working plane is in front of the No-Sky Line (NSL). However, for built areas, and in our experience, this is often not achieved. It is our view that for built areas that a target of 50% is reasonable. Each of these 5 rooms will continue to enjoy a NSL to over 59% of their room area with the Proposed Development in place and therefore although the reductions are beyond the BRE guidelines, the remaining NSL is considered acceptable for built areas.

10.9 The sunlight (APSH) results show each window within the neighbouring properties that is orientated within 90 degrees of due south will continue to either enjoy very good levels of sunlight in accordance with the BRE guidelines or will experience a small reduction which is unnoticeable in accordance with the BRE guidelines.

10.10 The overshadowing results show that with the Proposed Development in place, both the playing fields associated with St. Richard's CE Primary school and the play space surrounding The Woodville Centre should continue to enjoy good levels of direct sunlight, in accordance with the BRE guidelines.

Section 2 – Proposed Daylight, Sunlight and Overshadowing Levels

10.11 The results of these assessments show that across all proposed blocks 85% of habitable residential rooms will levels of daylight which accord with the BRE Guidelines recommendations. In addition, the NSL assessment results show that across all proposed blocks 87% of habitable residential rooms will be in line with the BRE Guidelines recommendations. In our opinion, this is considered a very good level of compliance for a proposed scheme of this size and typology.

10.12 The APSH results show 76% of windows orientated within 90 degrees of due south will meet the BRE criteria for winter sunlight, and 67% of windows will meet the BRE criteria for total (annual) sunlight.

10.13 With regard to overshadowing (or 'sun hours on ground'), the results of our assessments show that all proposed communal amenity areas, except for 1 (30 of the 31 areas) will meet the BRE guidelines by achieving 2 hours of sun on ground to over 50% of the assessed area on 21st March, thereby comfortably meeting the BRE target criteria. In addition, the public amenity space known as Ham Village Green which is located within the red line boundary of the Site will also meet the BRE guidelines.

10.14 The one space which falls short is labelled as Area 42 within Appendix 10 and achieves 2 hours sun on ground to 39% of the area on 21st March. However, in the summer months, this increases to 89%.

10.15 The provision of a private garden is an additional beneficial amenity and the BRE guidelines recommend to focus on proposed communal amenity spaces, as not all residents have access to a private garden and so it is important to ensure that all residents have access to a well sunlit space. However, for completeness we have undertaken sun hours on ground assessments to the 42 private gardens that are proposed.

10.16 The results of the assessments show that of those gardens that are orientated within 90 degrees of due south the vast majority will enjoy at least 2 hours of sun on ground to over 50% of their garden's area. The one which falls short, labelled area 12 within Appendix 10, only does so by 2%, and enjoys 2 hours of sun on ground to 48% of it's area.

10.17 The gardens which are orientated within 90 degrees of due north (29 gardens) fall short of the BRE guidelines, however this is as expected and as the gardens are private, it is up to the future occupier as to whether they are happy with a north facing garden or not. It can however be said that each of these gardens will enjoy very good levels of sunlight in the summer months, when the gardens are more likely to be used.

10.18 It can therefore be concluded that each resident throughout the Site will have access to a well sunlit amenity space, in addition to their private garden.

10.19 In consideration of the above, it is our professional opinion that the Proposed Development is entirely acceptable in terms of daylight, sunlight, and overshadowing, despite a very small number of isolated transgressions, which are not uncommon when increasing development levels on an existing 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 Site Plan and 3D Views

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name	Drawn By	Scale @ A3
Ham Close, Richmond	MF	-
Drawing Title		
Plan view		
Existing scenario		

Date	Project No.	Drawing No.	Revision
March 2022	HA167_22	Rel 02/01	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name		
Ham Close, Richmond		
Drawing Title		
3D view		
Existing scenario		
Drawn By	Scale @ A3	Date
MF	-	March 2022
Project No.	Drawing No.	Revision
HA167_22	Rel 02/02	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name		
Ham Close, Richmond		
Drawing Title		
3D view		
Existing scenario		
Drawn By	Scale @ A3	Date
MF	-	March 2022
Project No.	Drawing No.	Revision
HA167_22	Rel 02/03	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Proposed Site Plan and 3D Views

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name		
Ham Close, Richmond		
Drawing Title		
Plan view		
Proposed scheme		
Drawn By	Scale @ A3	Date
MF	-	March 2022
Project No.	Drawing No.	Revision
HA167_22	Rel 02/04	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
3D view
Propsoed scheme

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/05	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

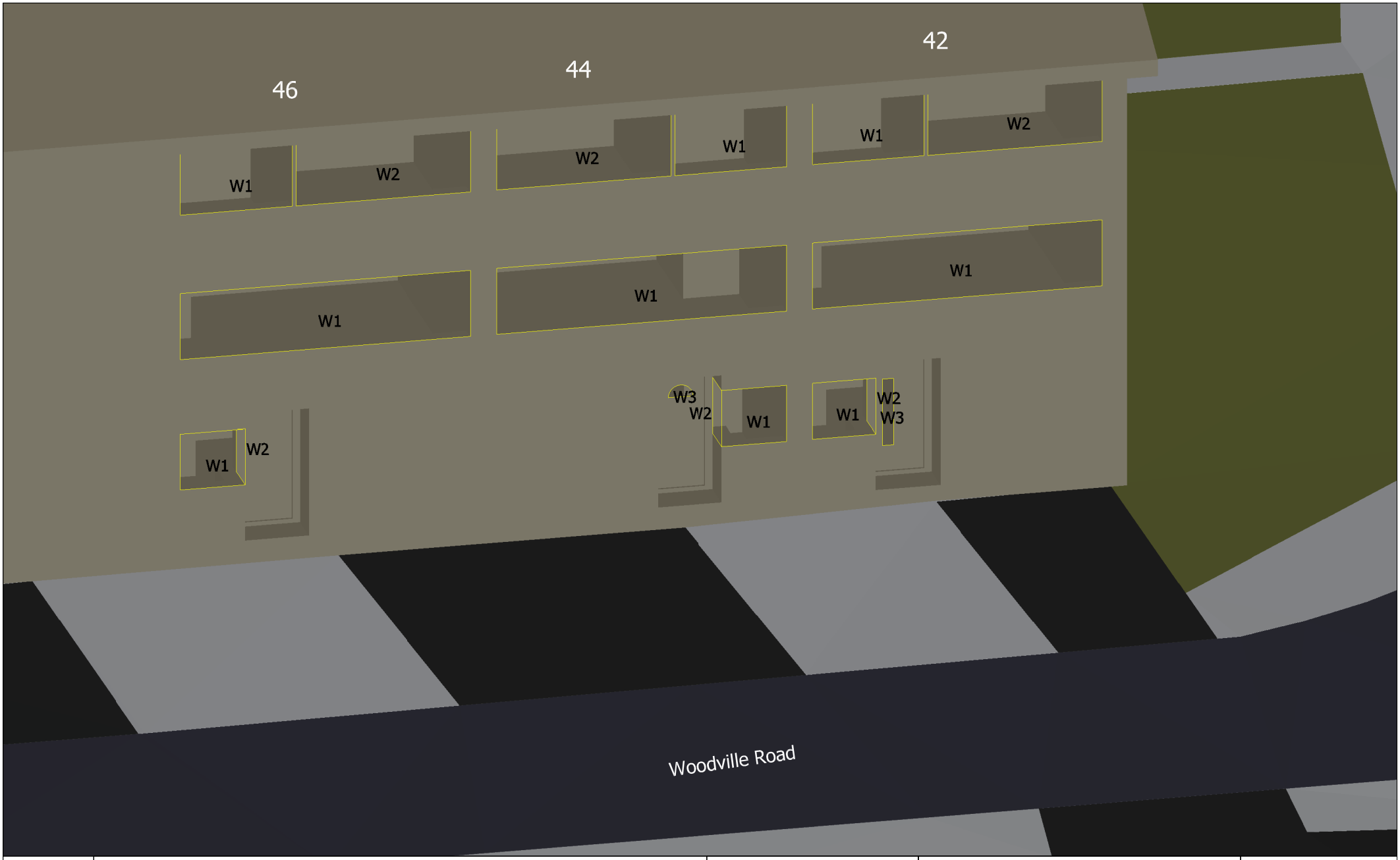
Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name	Drawn By	Scale @ A3	Date
Ham Close, Richmond	MF	-	March 2022
Drawing Title			
3D view			
Proposed scheme	**Project No.**	**Drawing No.**	**Revision**
	HA167_22	Rel 02/06	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Appendix 3
Window Maps



Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/07	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/08	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/09	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/10	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/11	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/12	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/13	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/14	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/15	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/16	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

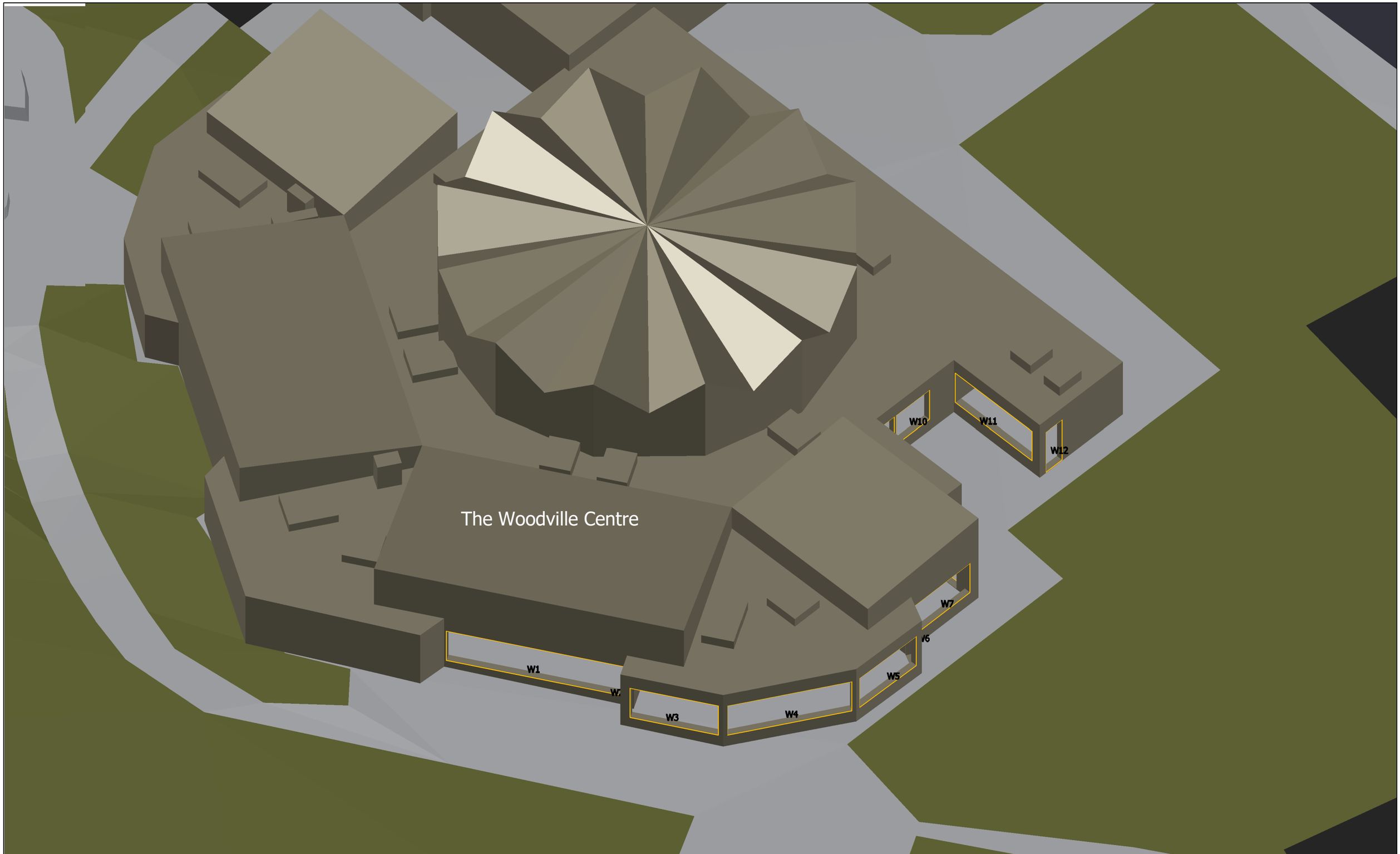
Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/17	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk



Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Window map

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/18	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Appendix 4
VSC and APSH Tabular Results

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
46 Woodville Road																					
First	R1	Residential	Living Room	W1	Existing	37.39	0.91	YES	149°	79.00	0.99	YES	27.00	0.96	YES						
					Proposed	34.10				78.00			26.00								
																79.00			27.00		
																78.00	0.99	YES	26.00	0.96	YES
Second	R1	Residential	Bedroom	W1	Existing	30.19	0.92	YES	149°	63.00	0.97	YES	26.00	0.92	YES						
					Proposed	27.90				61.00			24.00								
																63.00			26.00		
																61.00	0.97	YES	24.00	0.92	YES
	R2	Residential	Bedroom	W2	Existing	30.14	0.92	YES	149°	62.00	0.98	YES	25.00	0.96	YES						
					Proposed	27.68				61.00			24.00								
																62.00			25.00		
																61.00	0.98	YES	24.00	0.96	YES
44 Woodville Road																					
First	R1	Residential	Living Room	W1	Existing	37.25	0.90	YES	149°	78.00	0.99	YES	26.00	0.96	YES						
					Proposed	33.50				77.00			25.00								
																78.00			26.00		
																77.00	0.99	YES	25.00	0.96	YES
Second	R1	Residential	Bedroom	W1	Existing	30.00	0.91	YES	149°	63.00	0.98	YES	25.00	0.96	YES						
					Proposed	27.17				62.00			24.00								
																63.00			25.00		
																62.00	0.98	YES	24.00	0.96	YES
	R2	Residential	Bedroom	W2	Existing	30.07	0.91	YES	149°	62.00	0.98	YES	25.00	0.96	YES						
					Proposed	27.38				61.00			24.00								
																62.00			25.00		
																61.00	0.98	YES	24.00	0.96	YES
42 Woodville Road																					
First	R1	Residential	Living Room	W1	Existing	37.12	0.89	YES	149°	79.00	0.94	YES	27.00	0.81	YES						
					Proposed	33.01				74.00			22.00								
																79.00			27.00		
																74.00	0.94	YES	22.00	0.81	YES
Second	R1	Residential	Bedroom	W1	Existing	29.94	0.90	YES	149°	63.00	0.98	YES	25.00	0.96	YES						
					Proposed	26.99				62.00			24.00								
																63.00			25.00		
																62.00	0.98	YES	24.00	0.96	YES
	R2	Residential	Bedroom	W2	Existing	29.91	0.90	YES	149°	63.00	0.97	YES	25.00	0.92	YES						
					Proposed	26.83				61.00			23.00								
																63.00			25.00		
																61.00	0.97	YES	23.00	0.92	YES
40 Woodville Road																					
Ground	R2	Residential	Living Room	W2	Existing	34.13	0.80	YES	149°	76.00	0.88	YES	24.00	0.63	YES						
					Proposed	27.25				67.00			15.00								
																76.00			24.00		
																67.00	0.88	YES	15.00	0.63	YES
First	R1	Residential	Bedroom	W1	Existing	31.18	0.81	YES	149°	69.00	0.90	YES	25.00	0.72	YES						
					Proposed	25.34				62.00			18.00								
																69.00			25.00		

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
	R2	Residential	Bedroom	W2	Existing	31.05	0.82	YES	149°	69.00	0.91	YES	25.00	0.76	YES	62.00	0.90	YES	18.00	0.72	YES
					Proposed	25.60				63.00			19.00			69.00			25.00		
																63.00	0.91	YES	19.00	0.76	YES
38 Woodville Road																					
Ground	R2	Residential	Living Room	W2	Existing	33.80	0.83	YES	149°	79.00	0.87	YES	27.00	0.63	YES						
					Proposed	28.00				69.00			17.00			79.00			27.00		
																69.00	0.87	YES	17.00	0.63	YES
First	R1	Residential	Bedroom	W1	Existing	30.78	0.86	YES	149°	70.00	0.91	YES	26.00	0.77	YES						
					Proposed	26.46				64.00			20.00			70.00			26.00		
																64.00	0.91	YES	20.00	0.77	YES
	R2	Residential	Bedroom	W2	Existing	30.88	0.85	YES	149°	70.00	0.90	YES	26.00	0.73	YES						
					Proposed	26.18				63.00			19.00			70.00			26.00		
																63.00	0.90	YES	19.00	0.73	YES
36 Woodville Road																					
Ground	R2	Residential	Living Room	W3	Existing	33.66	0.86	YES	149°	78.00	0.87	YES	26.00	0.62	YES						
					Proposed	29.01				68.00			16.00			78.00			26.00		
																68.00	0.87	YES	16.00	0.62	YES
First	R1	Residential	Bedroom	W1	Existing	30.70	0.87	YES	149°	70.00	0.93	YES	26.00	0.81	YES						
					Proposed	26.70				65.00			21.00			70.00			26.00		
																65.00	0.93	YES	21.00	0.81	YES
	R2	Residential	Bedroom	W2	Existing	30.62	0.88	YES	149°	70.00	0.94	YES	26.00	0.85	YES						
					Proposed	27.01				66.00			22.00			70.00			26.00		
																66.00	0.94	YES	22.00	0.85	YES
34 Woodville Road																					
Ground	R2	Residential	Living Room	W2	Existing	33.58	0.87	YES	149°	77.00	0.90	YES	25.00	0.68	YES						
					Proposed	29.34				69.00			17.00			77.00			25.00		
																69.00	0.90	YES	17.00	0.68	YES
First	R1	Residential	Bedroom	W1	Existing	30.48	0.90	YES	149°	71.00	0.94	YES	27.00	0.85	YES						
					Proposed	27.43				67.00			23.00			71.00			27.00		
																67.00	0.94	YES	23.00	0.85	YES
	R2	Residential	Bedroom	W2	Existing	30.53	0.89	YES	149°	71.00	0.94	YES	27.00	0.85	YES						
					Proposed	27.28				67.00			23.00			71.00			27.00		
																67.00	0.94	YES	23.00	0.85	YES
32 Woodville Road																					
Ground	R1	Residential	Living Room	W1	Existing	32.22	0.89	YES	149°	69.00	0.96	YES	22.00	0.86	YES						
					Proposed	28.77				66.00			19.00								

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
																69.00			22.00		
	R3	Residential	Dining Room	W4	Existing	32.21	0.90	YES	149°	67.00	0.94	YES	18.00	0.78	YES	66.00	0.96	YES	19.00	0.86	YES
					Proposed	28.90				63.00			14.00								
				W5	Existing	22.33	1.00	YES	329°N	0.00	*North	*North	0.00	*North	*North						
					Proposed	22.33				0.00			0.00								
																67.00			18.00		
																63.00	0.94	YES	14.00	0.78	YES
First	R1	Residential	Bedroom	W1	Existing	31.47	0.91	YES	149°	68.00	1.00	YES	24.00	1.00	YES						
					Proposed	28.63				68.00			24.00								
																68.00			24.00		
	R2	Residential	Bedroom	W2	Existing	31.53	0.91	YES	149°	70.00	0.97	YES	26.00	0.92	YES	68.00	1.00	YES	24.00	1.00	YES
					Proposed	28.64				68.00			24.00								
																70.00			26.00		
																68.00	0.97	YES	24.00	0.92	YES
30 Woodville Road																					
Ground	R1	Residential	Living Room	W1	Existing	31.90	0.89	YES	149°	66.00	0.95	YES	18.00	0.83	YES						
					Proposed	28.51				63.00			15.00								
																66.00			18.00		
																63.00	0.95	YES	15.00	0.83	YES
	R3	Residential	Dining Room	W5	Existing	32.67	0.89	YES	149°	73.00	0.93	YES	25.00	0.80	YES						
					Proposed	29.23				68.00			20.00								
				W6	Existing	21.53	1.00	YES	329°N	8.00	*North	*North	0.00	*North	*North						
					Proposed	21.53				8.00			0.00								
																81.00			25.00		
																76.00	0.94	YES	20.00	0.80	YES
First	R1	Residential	Bedroom	W1	Existing	31.78	0.90	YES	149°	70.00	0.97	YES	26.00	0.92	YES						
					Proposed	28.76				68.00			24.00								
																70.00			26.00		
																68.00	0.97	YES	24.00	0.92	YES
	R2	Residential	Bedroom	W2	Existing	31.58	0.91	YES	149°	71.00	0.97	YES	26.00	0.92	YES						
					Proposed	28.69				69.00			24.00								
																71.00			26.00		
																69.00	0.97	YES	24.00	0.92	YES
28 Woodville Road																					
Ground	R2	Residential	Living Room	W2	Existing	33.55	0.89	YES	149°	77.00	0.94	YES	25.00	0.80	YES						
					Proposed	29.77				72.00			20.00								
																77.00			25.00		
																72.00	0.94	YES	20.00	0.80	YES
First	R1	Residential	Bedroom	W1	Existing	25.35	0.88	YES	149°	57.00	1.00	YES	24.00	1.00	YES						
					Proposed	22.21				57.00			24.00								
																57.00			24.00		
																57.00	1.00	YES	24.00	1.00	YES
	R2	Residential	Bedroom	W2	Existing	25.38	0.88	YES	149°	58.00	0.98	YES	25.00	0.96	YES						
					Proposed	22.26				57.00			24.00								
																58.00			25.00		
																57.00	0.98	YES	24.00	0.96	YES
26 Woodville Road																					

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
Ground	R2	Residential	Living Room	W2	Existing	33.42	0.88	YES	149°	73.00	0.96	YES	24.00	0.83	YES						
					Proposed	29.57				70.00			20.00								
																73.00			24.00		
																70.00	0.96	YES	20.00	0.83	YES
First	R1	Residential	Bedroom	W1	Existing	25.34	0.87	YES	149°	58.00	0.98	YES	25.00	0.96	YES						
					Proposed	22.17				57.00			24.00								
																58.00			25.00		
																57.00	0.98	YES	24.00	0.96	YES
	R2	Residential	Bedroom	W2	Existing	25.33	0.87	YES	149°	58.00	0.98	YES	25.00	0.96	YES						
					Proposed	22.14				57.00			24.00								
																58.00			25.00		
																57.00	0.98	YES	24.00	0.96	YES
24 Woodville Road																					
Ground	R2	Residential	Living Room	W2	Existing	28.56	0.87	YES	114°	59.00	0.92	YES	18.00	0.78	YES						
					Proposed	24.91				54.00			14.00								
				W3	Existing	34.00	0.89	YES	149°	79.00	0.94	YES	25.00	0.84	YES						
					Proposed	30.09				74.00			21.00								
				W4	Existing	30.55	0.90	YES	184° Inc	72.00	0.93	YES	25.00	0.84	YES						
					Proposed	27.58				67.00			21.00								
																79.00			25.00		
																74.00	0.94	YES	21.00	0.84	YES
First	R1	Residential	Bedroom	W1	Existing	25.21	0.87	YES	149°	57.00	0.98	YES	24.00	0.96	YES						
					Proposed	22.04				56.00			23.00								
																57.00			24.00		
																56.00	0.98	YES	23.00	0.96	YES
22 Woodville Road																					
Ground	R2	Residential	Living Room	W2	Existing	33.05	0.89	YES	149°	74.00	0.92	YES	24.00	0.83	YES						
					Proposed	29.40				68.00			20.00								
																74.00			24.00		
																68.00	0.92	YES	20.00	0.83	YES
First	R1	Residential	Bedroom	W1	Existing	24.98	0.88	YES	149°	57.00	0.96	YES	24.00	0.92	YES						
					Proposed	21.94				55.00			22.00								
																57.00			24.00		
																55.00	0.96	YES	22.00	0.92	YES
20 Woodville Road																					
Ground	R1	Residential	Dining Room	W1	Existing	31.15	0.88	YES	149°	71.00	0.93	YES	24.00	0.88	YES						
					Proposed	27.47				66.00			21.00								
																71.00			24.00		
																66.00	0.93	YES	21.00	0.88	YES
	R3	Residential	Living Room	W5	Existing	31.55	0.87	YES	149°	67.00	0.90	YES	19.00	0.74	YES						
					Proposed	27.39				60.00			14.00								
				W6	Existing	15.34	1.00	YES	329°N	0.00	*North	*North	0.00	*North	*North						
					Proposed	15.34				0.00			0.00								
																67.00			19.00		
																60.00	0.90	YES	14.00	0.74	YES
First	R1	Residential	Bedroom	W1	Existing	29.75	0.89	YES	149°	69.00	0.97	YES	25.00	0.96	YES						
					Proposed	26.53				67.00			24.00								
																69.00			25.00		
																67.00	0.97	YES	24.00	0.96	YES

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
	R2	Residential	Bedroom	W2	Existing	29.56	0.88	YES	149°	69.00	0.96	YES	25.00	0.92	YES						
					Proposed	26.09				66.00			23.00								
																69.00			25.00		
																66.00	0.96	YES	23.00	0.92	YES
18 Woodville Road																					
Ground	R1	Residential	Dining Room	W1	Existing	30.85	0.81	YES	149°	64.00	0.92	YES	16.00	0.75	YES						
					Proposed	24.96				59.00			12.00								
																64.00			16.00		
																59.00	0.92	YES	12.00	0.75	YES
	R3	Residential	Living Room	W4	Existing	31.67	0.84	YES	149°	70.00	0.93	YES	24.00	0.83	YES						
					Proposed	26.74				65.00			20.00								
				W5	Existing	14.13	1.00	YES	329°N	0.00	*North	*North	0.00	*North	*North						
					Proposed	14.13				0.00			0.00								
																70.00			24.00		
																65.00	0.93	YES	20.00	0.83	YES
First	R1	Residential	Bedroom	W1	Existing	29.67	0.84	YES	149°	68.00	0.94	YES	24.00	0.83	YES						
					Proposed	24.91				64.00			20.00								
																68.00			24.00		
																64.00	0.94	YES	20.00	0.83	YES
	R2	Residential	Bedroom	W2	Existing	29.57	0.86	YES	149°	68.00	0.94	YES	24.00	0.88	YES						
					Proposed	25.56				64.00			21.00								
																68.00			24.00		
																64.00	0.94	YES	21.00	0.88	YES
16 Woodville Road																					
Ground	R1	Residential	Dining Room	W1	Existing	30.89	0.79	NO	149°	66.00	0.89	YES	22.00	0.77	YES						
					Proposed	24.47				59.00			17.00								
																66.00			22.00		
																59.00	0.89	YES	17.00	0.77	YES
	R3	Residential	Living Room	W6	Existing	32.14	0.78	NO	149°	68.00	0.87	YES	18.00	0.61	YES						
					Proposed	25.16				59.00			11.00								
				W7	Existing	15.38	1.00	YES	329°N	0.00	*North	*North	0.00	*North	*North						
					Proposed	15.38				0.00			0.00								
																68.00			18.00		
																59.00	0.87	YES	11.00	0.61	YES
First	R1	Residential	Bedroom	W1	Existing	29.77	0.83	YES	149°	67.00	0.94	YES	23.00	0.83	YES						
					Proposed	24.65				63.00			19.00								
																67.00			23.00		
																63.00	0.94	YES	19.00	0.83	YES
	R2	Residential	Bedroom	W2	Existing	29.93	0.82	YES	149°	69.00	0.90	YES	25.00	0.76	YES						
					Proposed	24.42				62.00			19.00								
																69.00			25.00		
																62.00	0.90	YES	19.00	0.76	YES
14 Woodville Road																					
Ground	R1	Residential	Dining Room	W1	Existing	31.38	0.78	NO	149°	64.00	0.86	YES	16.00	0.50	YES						
					Proposed	24.40				55.00			8.00								
																64.00			16.00		
																55.00	0.86	YES	8.00	0.50	YES
	R3	Residential	Living Room	W5	Existing	32.12	0.78	NO	149°	68.00	0.87	YES	23.00	0.70	YES						
					Proposed	24.94				59.00			16.00								

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
				W6	Existing	15.32	1.00	YES	329°N	2.00	*North	*North	0.00	*North	*North						
					Proposed	15.32				2.00			0.00								
																70.00			23.00		
																61.00	0.87	YES	16.00	0.70	YES
First	R1	Residential	Bedroom	W1	Existing	29.96	0.82	YES	149°	70.00	0.90	YES	25.00	0.76	YES						
					Proposed	24.48				63.00			19.00								
																70.00			25.00		
																63.00	0.90	YES	19.00	0.76	YES
	R2	Residential	Bedroom	W2	Existing	29.97	0.81	YES	149°	71.00	0.87	YES	26.00	0.69	YES						
					Proposed	24.36				62.00			18.00								
																71.00			26.00		
																62.00	0.87	YES	18.00	0.69	YES
13 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	33.73	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	32.26															
																	*North	*North		*North	*North
	R3	Residential	Living Room	W3	Existing	32.55	0.96	YES	329°N	16.00	*North	*North	2.00	*North	*North						
					Proposed	31.26				15.00			2.00								
				W4	Existing	30.52	1.00	YES	149°	61.00	1.00	YES	23.00	1.00	YES						
					Proposed	30.52				61.00			23.00								
																77.00			25.00		
																76.00	0.99	YES	25.00	1.00	YES
First	R1	Residential	Bedroom	W1	Existing	33.84	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	32.25															
																	*North	*North		*North	*North
	R2	Residential	Bedroom	W2	Existing	33.81	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	32.15															
																	*North	*North		*North	*North
15 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	32.85	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	31.68															
																	*North	*North		*North	*North
	R3	Residential	Living Room	W3	Existing	33.10	0.96	YES	329°N	5.00	*North	*North	0.00	*North	*North						
					Proposed	31.62				4.00			0.00								
				W4	Existing	29.45	1.00	YES	149°	49.00	1.00	YES	15.00	1.00	YES						
					Proposed	29.45				49.00			15.00								
																54.00			15.00		
																53.00	0.98	YES	15.00	1.00	YES
First	R1	Residential	Bedroom	W1	Existing	33.74	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	32.08															
																	*North	*North		*North	*North
	R2	Residential	Bedroom	W2	Existing	33.56	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	31.95															
																	*North	*North		*North	*North

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
17 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	32.58	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	31.20															
	R3	Residential	Living Room	W4	Existing	32.53	0.96	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	31.37															
First	R1	Residential	Bedroom	W1	Existing	33.44	0.95	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	31.80															
	R2	Residential	Bedroom	W2	Existing	33.34	0.95	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	31.64															
19 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	31.78	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	30.57															
	R3	Residential	Living Room	W4	Existing	32.36	0.96	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	31.11															
First	R1	Residential	Bedroom	W1	Existing	33.22	0.95	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	31.52															
	R2	Residential	Bedroom	W2	Existing	33.12	0.95	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	31.43															
21 Ashburnham Road																					
Ground	R1	Residential	Living Room	W1	Existing	34.26	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	32.78															
First	R1	Residential	Bedroom	W1	Existing	28.45	0.94	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	26.84															
23 Ashburnham Road																					
Ground	R1	Residential	Living Room	W1	Existing	35.18	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	33.64															

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
First	R1	Residential	Bedroom	W1	Existing	28.75	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	27.18											*North	*North		*North	*North
25 Ashburnham Road																					
Ground	R1	Residential	Living Room	W1	Existing	35.06	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	33.52											*North	*North		*North	*North
First	R1	Residential	Bedroom	W1	Existing	28.64	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	27.15											*North	*North		*North	*North
27 Ashburnham Road																					
Ground	R1	Residential	Living Room	W1	Existing	31.96	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	30.42											*North	*North		*North	*North
First	R1	Residential	Bedroom	W1	Existing	28.54	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	27.18											*North	*North		*North	*North
	R2	Residential	Residential	W2	Existing	29.69	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	28.30											*North	*North		*North	*North
29 Ashburnham Road																					
Ground	R1	Residential	Living Room	W1	Existing	34.59	0.97	YES	289°N		*North	*North		*North	*North						
					Proposed	33.39											*North	*North		*North	*North
First	R1	Residential	Bedroom	W1	Existing	28.42	0.97	YES	289°N		*North	*North		*North	*North						
					Proposed	27.69											*North	*North		*North	*North
1 Mowbray Road																					
Ground	R1	Residential	Living Room	W1	Existing	35.34	0.97	YES	289°N		*North	*North		*North	*North						
					Proposed	34.30											*North	*North		*North	*North
First	R1	Residential	Bedroom	W1	Existing	36.66	0.98	YES	289°N		*North	*North		*North	*North						
					Proposed	35.93											*North	*North		*North	*North
2 Mowbray Road																					

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
Ground	R1	Residential	Dining Room	W1	Existing	32.86	0.98	YES	13°N		*North	*North		*North	*North						
					Proposed	32.08															
																	*North	*North		*North	*North
	R3	Residential	Living Room	W5	Existing	32.80	0.97	YES	13°N	1.00	*North	*North	0.00	*North	*North						
					Proposed	31.97				0.00			0.00								
				W6	Existing	30.55	1.00	YES	193°	56.00	1.00	YES	23.00	1.00	YES						
					Proposed	30.55				56.00			23.00								
																57.00			23.00		
																56.00	0.98	YES	23.00	1.00	YES
First	R1	Residential	Bedroom	W1	Existing	30.95	0.98	YES	13°N		*North	*North		*North	*North						
					Proposed	30.18															
																	*North	*North		*North	*North
	R2	Residential	Bedroom	W2	Existing	30.96	0.98	YES	13°N		*North	*North		*North	*North						
					Proposed	30.19															
																	*North	*North		*North	*North
31 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	32.19	0.97	YES	13°N		*North	*North		*North	*North						
					Proposed	31.27															
																	*North	*North		*North	*North
	R3	Residential	Living Room	W4	Existing	32.67	0.97	YES	13°N	8.00	*North	*North	0.00	*North	*North						
					Proposed	31.84				8.00			0.00								
				W5	Existing	29.26	1.00	YES	193°	62.00	1.00	YES	24.00	1.00	YES						
					Proposed	29.26				62.00			24.00								
																70.00			24.00		
																70.00	1.00	YES	24.00	1.00	YES
First	R1	Residential	Bedroom	W1	Existing	30.92	0.98	YES	13°N		*North	*North		*North	*North						
					Proposed	30.20															
																	*North	*North		*North	*North
	R2	Residential	Bedroom	W2	Existing	30.93	0.98	YES	13°N		*North	*North		*North	*North						
					Proposed	30.21															
																	*North	*North		*North	*North
33 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	3.58	0.85	YES	38°N	0.00	*North	*North	0.00	*North	*North						
					Proposed	3.05				0.00			0.00								
				W2	Existing	21.57	0.88	YES	329°N	8.00	*North	*North	1.00	*North	*North						
					Proposed	19.03				6.00			1.00								
				W3	Existing	5.21	0.73	NO	258°	3.00	0.67	YES	0.00	1.00	YES						
					Proposed	3.80				2.00			0.00								
																8.00			1.00		
																6.00	0.75	YES	1.00	1.00	YES
	R3	Residential	Living Room	W7	Existing	4.59	0.88	YES	38°N	0.00	*North	*North	0.00	*North	*North						
					Proposed	4.06				0.00			0.00								
				W8	Existing	22.61	0.88	YES	329°N	13.00	*North	*North	2.00	*North	*North						
					Proposed	19.88				11.00			2.00								
				W9	Existing	18.98	0.89	YES	258°	17.00	0.88	YES	2.00	1.00	YES						

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
					Proposed	16.92				15.00			2.00								
																17.00			2.00		
																15.00	0.88	YES	2.00	1.00	YES
First	R1	Residential	Bedroom	W1	Existing	29.88	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	28.25															
	R2	Residential	Bedroom	W2	Existing	29.85	0.94	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	28.12															
																	*North	*North		*North	*North
35 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	31.78	0.91	YES	329°N		*North	*North		*North	*North						
					Proposed	28.96															
	R3	Residential	Living Room	W3	Existing	31.61	0.92	YES	329°N	6.00	*North	*North	0.00	*North	*North		*North	*North		*North	*North
					Proposed	29.02				5.00			0.00								
				W4	Existing	27.78	1.00	YES	149°	48.00	1.00	YES	17.00	1.00	YES						
					Proposed	27.78				48.00			17.00								
																54.00			17.00		
																53.00	0.98	YES	17.00	1.00	YES
First	R1	Residential	Bedroom	W1	Existing	29.98	0.94	YES	329°N		*North	*North		*North	*North						
					Proposed	28.09															
	R2	Residential	Bedroom	W2	Existing	29.91	0.94	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	28.10															
																	*North	*North		*North	*North
37 Ashburnham Road																					
Ground	R1	Residential	Dining Room	W1	Existing	33.66	0.92	YES	283°N		*North	*North		*North	*North						
					Proposed	31.08															
	R3	Residential	Living Room	W5	Existing	33.08	0.94	YES	283°N	37.00	*North	*North	9.00	*North	*North		*North	*North		*North	*North
					Proposed	31.00				35.00			9.00								
				W6	Existing	25.81	1.00	YES	103°	37.00	1.00	YES	3.00	1.00	YES						
					Proposed	25.81				37.00			3.00								
																74.00			12.00		
																72.00	0.97	YES	12.00	1.00	YES
First	R1	Residential	Bedroom	W1	Existing	31.64	0.94	YES	283°N		*North	*North		*North	*North						
					Proposed	29.62															
	R2	Residential	Bedroom	W2	Existing	31.58	0.94	YES	283°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	29.72															
																	*North	*North		*North	*North
1 Sheridan Road																					

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
Ground	R1	Residential	Dining Room	W1	Existing	32.80	0.95	YES	283°N		*North	*North		*North	*North						
					Proposed	31.23															
	R3	Residential	Living Room	W4	Existing	33.18	0.94	YES	283°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	31.18															
																	*North	*North		*North	*North
First	R1	Residential	Bedroom	W1	Existing	31.45	0.95	YES	283°N		*North	*North		*North	*North						
					Proposed	29.92															
	R2	Residential	Bedroom	W2	Existing	31.52	0.95	YES	283°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	29.81															
																	*North	*North		*North	*North
2 Sheridan Road																					
Ground	R2	Residential	Residential	W2	Existing	36.12	0.95	YES	17°N		*North	*North		*North	*North						
					Proposed	34.45															
	R3	Residential	Residential	W3	Existing	34.93	0.96	YES	17°N	11.00	*North	*North	0.00	*North	*North		*North	*North		*North	*North
					Proposed	33.63				11.00			0.00								
				W4	Existing	28.44	1.00	YES	107°	33.00	1.00	YES	5.00	1.00	YES						
					Proposed	28.43				33.00			5.00								
																33.00			5.00		
																33.00	1.00	YES	5.00	1.00	YES
First	R1	Residential	Residential	W1	Existing	37.57	0.96	YES	17°N		*North	*North		*North	*North						
					Proposed	35.97															
	R2	Residential	Residential	W2	Existing	33.62	0.96	YES	17°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	32.30															
																	*North	*North		*North	*North
39 Ashburnham Road																					
Ground	R2	Residential	Residential	W2	Existing	35.59	0.94	YES	17°N		*North	*North		*North	*North						
					Proposed	33.41															
																	*North	*North		*North	*North
First	R1	Residential	Residential	W1	Existing	33.96	0.94	YES	17°N		*North	*North		*North	*North						
					Proposed	31.98															
																	*North	*North		*North	*North
65-77 Ham Street																					
First	R1	Residential	Kitchen	W1	Existing	38.28	0.92	YES	239°	66.00	0.94	YES	24.00	0.83	YES						
					Proposed	35.28				62.00			20.00								
																66.00			24.00		

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
	R2	Residential	Hallway	W2	Existing	37.75	0.92	YES	239°	64.00	0.94	YES	23.00	0.83	YES	62.00	0.94	YES	20.00	0.83	YES
					Proposed	34.75				60.00			19.00			64.00			23.00		
	R3	Residential	Hallway	W3	Existing	37.69	0.92	YES	239°	64.00	0.95	YES	23.00	0.87	YES	60.00	0.94	YES	19.00	0.83	YES
					Proposed	34.71				61.00			20.00			64.00			23.00		
	R4	Residential	Kitchen	W4	Existing	38.09	0.92	YES	239°	66.00	0.95	YES	24.00	0.88	YES	61.00	0.95	YES	20.00	0.87	YES
					Proposed	35.15				63.00			21.00			66.00			24.00		
	R5	Residential	Kitchen	W5	Existing	37.96	0.93	YES	239°	66.00	0.95	YES	24.00	0.88	YES	63.00	0.95	YES	21.00	0.88	YES
					Proposed	35.14				63.00			21.00			66.00			24.00		
	R6	Residential	Hallway	W6	Existing	37.33	0.93	YES	239°	64.00	0.94	YES	23.00	0.87	YES	63.00	0.95	YES	21.00	0.88	YES
					Proposed	34.68				60.00			20.00			64.00			23.00		
	R7	Residential	Hallway	W7	Existing	37.12	0.93	YES	239°	64.00	0.95	YES	23.00	0.91	YES	60.00	0.94	YES	20.00	0.87	YES
					Proposed	34.68				61.00			21.00			64.00			23.00		
	R8	Residential	Kitchen	W8	Existing	37.29	0.94	YES	239°	66.00	0.97	YES	24.00	0.96	YES	61.00	0.95	YES	21.00	0.91	YES
					Proposed	35.05				64.00			23.00			66.00			24.00		
	R9	Residential	Kitchen	W9	Existing	36.75	0.95	YES	239°	64.00	0.97	YES	22.00	0.95	YES	64.00	0.97	YES	23.00	0.96	YES
					Proposed	34.78				62.00			21.00			64.00			22.00		
	R10	Residential	Hallway	W10	Existing	35.57	0.95	YES	239°	59.00	0.97	YES	18.00	0.94	YES	62.00	0.97	YES	21.00	0.95	YES
					Proposed	33.77				57.00			17.00			59.00			18.00		
																57.00	0.97	YES	17.00	0.94	YES
Second	R1	Residential	Bedroom	W1	Existing	38.94	0.95	YES	239°	66.00	0.97	YES	24.00	0.92	YES						
					Proposed	36.83				64.00			22.00			66.00			24.00		
	R2	Residential	Bathroom	W2	Existing	38.96	0.95	YES	239°	66.00	0.97	YES	24.00	0.92	YES	64.00	0.97	YES	22.00	0.92	YES
					Proposed	36.90				64.00			22.00			66.00			24.00		
	R3	Residential	Bathroom	W3	Existing	38.95	0.95	YES	239°	66.00	0.97	YES	24.00	0.92	YES	64.00	0.97	YES	22.00	0.92	YES
					Proposed	36.94				64.00			22.00			66.00			24.00		
	R4	Residential	Bedroom	W4	Existing	38.91	0.95	YES	239°	66.00	0.97	YES	24.00	0.92	YES	64.00	0.97	YES	22.00	0.92	YES
					Proposed	36.92				64.00			22.00			66.00			24.00		
	R5	Residential	Bedroom	W5	Existing	38.88	0.95	YES	239°	66.00	0.97	YES	24.00	0.92	YES	64.00	0.97	YES	22.00	0.92	YES
					Proposed	36.98				64.00			22.00								

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
																66.00			24.00		
	R6	Residential	Bathroom	W6	Existing	38.87	0.96	YES	239°	66.00	0.97	YES	24.00	0.92	YES	64.00	0.97	YES	22.00	0.92	YES
					Proposed	37.14				64.00			22.00								
																66.00			24.00		
	R7	Residential	Bathroom	W7	Existing	38.83	0.96	YES	239°	66.00	0.97	YES	24.00	0.96	YES	64.00	0.97	YES	22.00	0.92	YES
					Proposed	37.23				64.00			23.00								
																66.00			24.00		
	R8	Residential	Bedroom	W8	Existing	38.72	0.96	YES	239°	66.00	0.97	YES	24.00	0.96	YES	64.00	0.97	YES	23.00	0.96	YES
					Proposed	37.25				64.00			23.00								
																66.00			24.00		
	R9	Residential	Bedroom	W9	Existing	38.58	0.97	YES	239°	66.00	0.97	YES	24.00	0.96	YES	64.00	0.97	YES	23.00	0.96	YES
					Proposed	37.30				64.00			23.00								
																66.00			24.00		
	R10	Residential	Bathroom	W10	Existing	38.45	0.97	YES	239°	66.00	0.98	YES	24.00	0.96	YES	64.00	0.97	YES	23.00	0.96	YES
					Proposed	37.31				65.00			23.00								
																66.00			24.00		
																65.00	0.98	YES	23.00	0.96	YES
2-14 Ashburnham Road																					
First	R1	Residential	Kitchen	W1	Existing	33.05	0.98	YES	329°N		*North	*North		*North	*North						
					Proposed	32.34															
																	*North	*North		*North	*North
	R2	Residential	Hallway	W2	Existing	32.04	0.98	YES	329°N		*North	*North		*North	*North						
					Proposed	31.25															
																	*North	*North		*North	*North
	R3	Residential	Hallway	W3	Existing	33.22	0.97	YES	329°N		*North	*North		*North	*North						
					Proposed	32.32															
																	*North	*North		*North	*North
	R4	Residential	Kitchen	W4	Existing	34.71	0.97	YES	329°N		*North	*North		*North	*North						
					Proposed	33.66															
																	*North	*North		*North	*North
	R5	Residential	Kitchen	W5	Existing	35.73	0.97	YES	329°N		*North	*North		*North	*North						
					Proposed	34.49															
																	*North	*North		*North	*North
	R6	Residential	Hallway	W6	Existing	35.86	0.96	YES	329°N		*North	*North		*North	*North						
					Proposed	34.43															
																	*North	*North		*North	*North
	R7	Residential	Hallway	W7	Existing	36.42	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	34.75															
																	*North	*North		*North	*North
	R8	Residential	Kitchen	W8	Existing	37.32	0.95	YES	329°N		*North	*North		*North	*North						
					Proposed	35.33															

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
	R9	Residential	Kitchen	W9	Existing	37.65	0.94	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	35.28															
	R10	Residential	Hallway	W10	Existing	37.36	0.93	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	34.66															
	R11	Residential	Hallway	W11	Existing	37.52	0.92	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	34.40															
	R12	Residential	Kitchen	W12	Existing	38.15	0.90	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	34.49															
	R13	Residential	Kitchen	W13	Existing	38.24	0.89	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	34.09															
	R14	Residential	Hallway	W14	Existing	37.82	0.88	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	33.15															
	R15	Residential	Hallway	W15	Existing	37.88	0.86	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	32.69															
	R16	Residential	Kitchen	W16	Existing	38.41	0.85	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	32.77															
Second	R1	Residential	Bedroom	W1	Existing	37.68	0.99	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.21															
	R2	Residential	Bathroom	W2	Existing	37.65	0.99	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.14															
	R3	Residential	Bathroom	W3	Existing	37.94	0.98	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.35															
	R4	Residential	Bedroom	W4	Existing	38.09	0.98	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.39															
	R5	Residential	Bedroom	W5	Existing	38.36	0.98	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.53															
	R6	Residential	Bathroom	W6	Existing	38.59	0.98	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
					Proposed	37.64															
	R7	Residential	Bathroom	W7	Existing	38.71	0.97	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.59															
	R8	Residential	Bedroom	W8	Existing	38.76	0.97	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.43															
	R9	Residential	Bedroom	W9	Existing	38.84	0.96	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.26															
	R10	Residential	Bathroom	W10	Existing	38.92	0.95	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	37.11															
	R11	Residential	Bathroom	W11	Existing	38.96	0.95	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	36.85															
	R12	Residential	Bedroom	W12	Existing	38.95	0.94	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	36.51															
	R13	Residential	Bedroom	W13	Existing	38.97	0.93	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	36.20															
	R14	Residential	Bathroom	W14	Existing	39.00	0.92	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	35.90															
	R15	Residential	Bathroom	W15	Existing	39.00	0.91	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	35.59															
	R16	Residential	Bedroom	W16	Existing	38.99	0.90	YES	329°N		*North	*North		*North	*North		*North	*North		*North	*North
					Proposed	35.24															
																	*North	*North		*North	*North
The Woodville Centre																					
Ground	R1	School	Class Room	W1	Existing	36.52	0.91	YES	118°	67.00	0.96	YES	22.00	0.91	YES						
					Proposed	33.27				64.00			20.00								
																67.00			22.00		
																64.00	0.96	YES	20.00	0.91	YES
	R2	School	Class Room	W2	Existing	20.17	0.99	YES	208°	49.00	0.98	YES	21.00	0.95	YES						
					Proposed	19.89				48.00			20.00								
				W3	Existing	36.60	0.89	YES	118°	67.00	0.99	YES	23.00	0.96	YES						
					Proposed	32.63				66.00			22.00								
				W4	Existing	35.76	0.79	YES	89°N	49.00	*North	*North	15.00	*North	*North						

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight & Sunlight Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref.	Property Type	Room Use	Window Ref.		VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Pr/Ex	Meets BRE Criteria	Total Suns per Room Winter	Pr/Ex	Meets BRE Criteria
					Proposed	28.30				46.00			14.00								
				W5	Existing	35.46	0.71	NO	59°N	33.00	*North	*North	6.00	*North	*North						
					Proposed	25.11				26.00			3.00								
				W6	Existing	28.58	0.81	YES	355°N	4.00	*North	*North	0.00	*North	*North						
					Proposed	23.28				0.00			0.00								
				W7	Existing	34.39	0.72	NO	58°N	25.00	*North	*North	2.00	*North	*North						
					Proposed	24.71				20.00			1.00								
				W8	Existing	28.96	0.94	YES	328°N	0.00	*North	*North	0.00	*North	*North						
					Proposed	27.30				0.00			0.00								
																67.00			23.00		
																66.00	0.99	YES	22.00	0.96	YES
	R3	School	Class Room	W9	Existing	20.94	0.83	YES	58°N		*North	*North		*North	*North						
					Proposed	17.48															
				W10	Existing	27.48	0.84	YES	58°N		*North	*North		*North	*North						
					Proposed	23.22															
																	*North	*North		*North	*North
	R4	School	Class Room	W11	Existing	23.62	0.94	YES	148°	54.00	0.93	YES	4.00	1.00	YES						
					Proposed	22.25				50.00			4.00								
				W12	Existing	35.11	0.78	YES	58°N	30.00	*North	*North	3.00	*North	*North						
					Proposed	27.38				21.00			1.00								
																57.00			7.00		
																51.00	0.89	YES	5.00	0.71	YES

NSL Tabular Results

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
46 Woodville Road									
First	R1	Residential	Living Room	Area m2	24.48	24.48	24.48		
				% of room		99.99%	99.99%	1.00	YES
Second	R1	Residential	Bedroom	Area m2	5.63	5.53	5.53		
				% of room		98.39%	98.39%	1.00	YES
	R2	Residential	Bedroom	Area m2	12.08	11.86	11.86		
				% of room		98.21%	98.21%	1.00	YES
44 Woodville Road									
First	R1	Residential	Living Room	Area m2	24.48	24.48	24.37		
				% of room		99.99%	99.54%	1.00	YES
Second	R1	Residential	Bedroom	Area m2	5.63	5.54	5.54		
				% of room		98.52%	98.52%	1.00	YES
	R2	Residential	Bedroom	Area m2	12.08	11.86	11.86		
				% of room		98.17%	98.17%	1.00	YES
42 Woodville Road									
First	R1	Residential	Living Room	Area m2	24.48	24.48	24.41		
				% of room		99.99%	99.70%	1.00	YES
Second	R1	Residential	Bedroom	Area m2	5.63	5.54	5.54		
				% of room		98.53%	98.53%	1.00	YES
	R2	Residential	Bedroom	Area m2	12.08	11.92	11.92		
				% of room		98.67%	98.67%	1.00	YES
40 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	18.24	17.79	11.52		
				% of room		97.58%	63.19%	0.65	NO
First	R1	Residential	Bedroom	Area m2	6.41	6.12	6.12		
				% of room		95.48%	95.48%	1.00	YES
	R2	Residential	Bedroom	Area m2	7.40	7.08	7.04		
				% of room		95.73%	95.13%	0.99	YES
38 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	17.37	16.58	12.79		
				% of room		95.45%	73.66%	0.77	NO
First	R1	Residential	Bedroom	Area m2	6.34	6.08	6.08		
				% of room		95.93%	95.93%	1.00	YES
	R2	Residential	Bedroom	Area m2	7.40	7.22	7.22		
				% of room		97.60%	97.55%	1.00	YES
36 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	18.40	17.43	14.22		
				% of room		94.73%	77.28%	0.82	YES
First	R1	Residential	Bedroom	Area m2	6.34	5.91	5.91		
				% of room		93.34%	93.34%	1.00	YES
	R2	Residential	Bedroom	Area m2	7.40	7.17	7.13		
				% of room		96.95%	96.38%	0.99	YES
34 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	17.68	16.80	13.98		
				% of room		95.01%	79.04%	0.83	YES
First	R1	Residential	Bedroom	Area m2	6.33	6.01	6.01		
				% of room		94.95%	94.94%	1.00	YES
	R2	Residential	Bedroom	Area m2	7.40	7.11	7.11		

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
				% of room		96.16%	96.12%	1.00	YES
32 Woodville Road									
Ground	R1	Residential	Living Room	Area m2	9.98	9.82	9.82		
				% of room		98.36%	98.34%	1.00	YES
	R3	Residential	Dining Room	Area m2	15.79	15.69	14.44		
				% of room		99.38%	91.41%	0.92	YES
First	R1	Residential	Bedroom	Area m2	10.68	10.53	10.53		
				% of room		98.58%	98.57%	1.00	YES
	R2	Residential	Bedroom	Area m2	12.71	12.59	12.58		
				% of room		99.11%	99.05%	1.00	YES
30 Woodville Road									
Ground	R1	Residential	Living Room	Area m2	10.05	9.89	9.89		
				% of room		98.38%	98.38%	1.00	YES
	R3	Residential	Dining Room	Area m2	15.98	15.93	14.76		
				% of room		99.68%	92.39%	0.93	YES
First	R1	Residential	Bedroom	Area m2	10.75	10.61	10.61		
				% of room		98.71%	98.72%	1.00	YES
	R2	Residential	Bedroom	Area m2	12.86	12.73	12.73		
				% of room		98.98%	98.97%	1.00	YES
28 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	16.86	16.70	15.73		
				% of room		99.01%	93.25%	0.94	YES
First	R1	Residential	Bedroom	Area m2	4.82	4.67	4.67		
				% of room		96.93%	96.92%	1.00	YES
	R2	Residential	Bedroom	Area m2	9.18	9.12	9.12		
				% of room		99.32%	99.32%	1.00	YES
26 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	16.86	16.67	15.61		
				% of room		98.83%	92.56%	0.94	YES
First	R1	Residential	Bedroom	Area m2	4.41	4.21	4.21		
				% of room		95.59%	95.57%	1.00	YES
	R2	Residential	Bedroom	Area m2	9.18	9.13	9.13		
				% of room		99.40%	99.40%	1.00	YES
24 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	16.86	16.64	14.51		
				% of room		98.66%	86.04%	0.87	YES
First	R1	Residential	Bedroom	Area m2	13.47	13.16	13.14		
				% of room		97.72%	97.60%	1.00	YES
22 Woodville Road									
Ground	R2	Residential	Living Room	Area m2	16.86	16.57	16.16		
				% of room		98.23%	95.82%	0.98	YES
First	R1	Residential	Bedroom	Area m2	13.47	13.15	13.15		
				% of room		97.65%	97.64%	1.00	YES
20 Woodville Road									
Ground	R1	Residential	Dining Room	Area m2	10.30	9.98	10.01		
				% of room		96.92%	97.23%	1.00	YES
	R3	Residential	Living Room	Area m2	15.33	15.03	13.90		
				% of room		98.05%	90.71%	0.93	YES

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
First	R1	Residential	Bedroom	Area m2	10.37	10.24	10.19		
				% of room		98.69%	98.23%	1.00	YES
	R2	Residential	Bedroom	Area m2	11.59	11.45	10.87		
				% of room		98.82%	93.82%	0.95	YES
18 Woodville Road									
Ground	R1	Residential	Dining Room	Area m2	10.30	10.02	7.56		
				% of room		97.29%	73.37%	0.75	NO
	R3	Residential	Living Room	Area m2	15.33	15.10	15.09		
				% of room		98.53%	98.46%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.37	10.25	8.89		
				% of room		98.84%	85.71%	0.87	YES
	R2	Residential	Bedroom	Area m2	11.59	11.47	11.36		
				% of room		98.94%	98.00%	0.99	YES
16 Woodville Road									
Ground	R1	Residential	Dining Room	Area m2	10.30	10.01	7.10		
				% of room		97.24%	68.91%	0.71	NO
	R3	Residential	Living Room	Area m2	15.33	15.19	12.10		
				% of room		99.10%	78.91%	0.80	YES
First	R1	Residential	Bedroom	Area m2	10.37	10.26	8.50		
				% of room		98.87%	81.93%	0.83	YES
	R2	Residential	Bedroom	Area m2	11.59	11.46	10.76		
				% of room		98.88%	92.83%	0.94	YES
14 Woodville Road									
Ground	R1	Residential	Dining Room	Area m2	10.30	10.14	6.10		
				% of room		98.48%	59.24%	0.60	NO
	R3	Residential	Living Room	Area m2	15.33	15.29	12.45		
				% of room		99.76%	81.20%	0.81	YES
First	R1	Residential	Bedroom	Area m2	10.37	10.23	8.28		
				% of room		98.61%	79.86%	0.81	YES
	R2	Residential	Bedroom	Area m2	11.59	11.47	10.86		
				% of room		98.94%	93.70%	0.95	YES
13 Ashburnham Road									
Ground	R1	Residential	Dining Room	Area m2	10.52	10.34	10.34		
				% of room		98.29%	98.28%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.52	14.52		
				% of room		100.00%	100.00%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.79	10.78		
				% of room		98.51%	98.51%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.23	10.23		
				% of room		98.31%	98.31%	1.00	YES
15 Ashburnham Road									
Ground	R1	Residential	Dining Room	Area m2	10.52	10.31	10.31		
				% of room		97.96%	97.96%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.52	14.52		
				% of room		100.00%	100.00%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.41	10.22	10.22		
				% of room		98.17%	98.16%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.95	10.78	10.78		
				% of room		98.47%	98.47%	1.00	YES
17 Ashburnham Road									

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
Ground	R1	Residential	Dining Room	Area m2	10.52	10.30	10.30		
				% of room		97.94%	97.94%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.28	14.28		
				% of room		98.33%	98.33%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.79	10.79		
				% of room		98.55%	98.54%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.23	10.23		
				% of room		98.30%	98.30%	1.00	YES
19 Ashburnham Road									
Ground	R1	Residential	Dining Room	Area m2	10.24	10.03	10.03		
				% of room		97.86%	97.87%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.27	14.27		
				% of room		98.28%	98.27%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.41	10.21	10.21		
				% of room		98.12%	98.11%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.66	10.50	10.50		
				% of room		98.53%	98.53%	1.00	YES
21 Ashburnham Road									
Ground	R1	Residential	Living Room	Area m2	15.97	15.75	15.75		
				% of room		98.61%	98.61%	1.00	YES
First	R1	Residential	Bedroom	Area m2	9.88	9.76	9.76		
				% of room		98.75%	98.74%	1.00	YES
23 Ashburnham Road									
Ground	R1	Residential	Living Room	Area m2	15.88	15.79	15.79		
				% of room		99.48%	99.48%	1.00	YES
First	R1	Residential	Bedroom	Area m2	9.24	9.17	9.17		
				% of room		99.23%	99.23%	1.00	YES
25 Ashburnham Road									
Ground	R1	Residential	Living Room	Area m2	15.88	15.78	15.78		
				% of room		99.42%	99.43%	1.00	YES
First	R1	Residential	Bedroom	Area m2	9.24	9.16	9.16		
				% of room		99.09%	99.09%	1.00	YES
27 Ashburnham Road									
Ground	R1	Residential	Living Room	Area m2	15.75	15.42	15.42		
				% of room		97.91%	97.91%	1.00	YES
First	R1	Residential	Bedroom	Area m2	9.88	9.75	9.75		
				% of room		98.65%	98.65%	1.00	YES
	R2	Residential	Residential	Area m2	2.80	2.73	2.73		
				% of room		97.54%	97.54%	1.00	YES
29 Ashburnham Road									
Ground	R1	Residential	Living Room	Area m2	15.97	15.77	15.77		
				% of room		98.75%	98.75%	1.00	YES
First	R1	Residential	Bedroom	Area m2	9.88	9.77	9.77		
				% of room		98.85%	98.85%	1.00	YES
1 Mowbray Road									
Ground	R1	Residential	Living Room	Area m2	15.88	15.78	15.78		
				% of room		99.39%	99.39%	1.00	YES
First	R1	Residential	Bedroom	Area m2	9.24	9.16	9.16		

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
				% of room		99.09%	99.09%	1.00	YES
2 Mowbray Road									
Ground	R1	Residential	Dining Room	Area m2	10.24	10.05	10.05		
				% of room		98.07%	98.06%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.52	14.52		
				% of room		100.00%	100.00%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.78	10.78		
				% of room		98.50%	98.49%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.20	10.20		
				% of room		98.01%	98.00%	1.00	YES
31 Ashburnham Road									
Ground	R1	Residential	Dining Room	Area m2	10.24	10.03	10.03		
				% of room		97.95%	97.95%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.52	14.52		
				% of room		100.00%	100.00%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.78	10.78		
				% of room		98.44%	98.44%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.22	10.21		
				% of room		98.18%	98.13%	1.00	YES
33 Ashburnham Road									
Ground	R1	Residential	Dining Room	Area m2	10.24	9.57	9.54		
				% of room		93.45%	93.16%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.04	12.28		
				% of room		96.69%	84.56%	0.87	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.78	10.78		
				% of room		98.50%	98.49%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.22	10.22		
				% of room		98.19%	98.19%	1.00	YES
35 Ashburnham Road									
Ground	R1	Residential	Dining Room	Area m2	10.24	10.03	10.04		
				% of room		97.91%	97.96%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.52	14.52		
				% of room		100.00%	100.00%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.79	10.79		
				% of room		98.52%	98.52%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.22	10.22		
				% of room		98.17%	98.13%	1.00	YES
37 Ashburnham Road									
Ground	R1	Residential	Dining Room	Area m2	10.24	10.05	10.05		
				% of room		98.11%	98.11%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.52	14.52		
				% of room		100.00%	100.00%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.76	10.76		
				% of room		98.30%	98.30%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.22	10.22		
				% of room		98.19%	98.18%	1.00	YES
1 Sheridan Road									
Ground	R1	Residential	Dining Room	Area m2	10.24	10.03	10.03		
				% of room		97.91%	97.91%	1.00	YES
	R3	Residential	Living Room	Area m2	14.52	14.25	14.25		

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
				% of room		98.10%	98.10%	1.00	YES
First	R1	Residential	Bedroom	Area m2	10.95	10.78	10.78		
				% of room		98.46%	98.45%	1.00	YES
	R2	Residential	Bedroom	Area m2	10.41	10.22	10.22		
				% of room		98.18%	98.17%	1.00	YES
2 Sheridan Road									
Ground	R2	Residential	Residential	Area m2	15.61	15.39	15.39		
				% of room		98.59%	98.59%	1.00	YES
	R3	Residential	Residential	Area m2	15.00	14.84	14.84		
				% of room		98.91%	98.91%	1.00	YES
First	R1	Residential	Residential	Area m2	15.61	15.43	15.43		
				% of room		98.89%	98.88%	1.00	YES
	R2	Residential	Residential	Area m2	15.00	14.76	14.76		
				% of room		98.40%	98.38%	1.00	YES
39 Ashburnham Road									
Ground	R2	Residential	Residential	Area m2	15.72	15.42	15.41		
				% of room		98.10%	98.04%	1.00	YES
First	R1	Residential	Residential	Area m2	15.72	15.51	15.51		
				% of room		98.68%	98.65%	1.00	YES
65-77 Ham Street									
First	R1	Residential	Kitchen	Area m2	10.61	10.03	10.03		
				% of room		94.50%	94.49%	1.00	YES
	R2	Residential	Hallway	Area m2	6.75	6.54	6.54		
				% of room		96.83%	96.83%	1.00	YES
	R3	Residential	Hallway	Area m2	6.75	6.54	6.54		
				% of room		96.82%	96.81%	1.00	YES
	R4	Residential	Kitchen	Area m2	10.46	9.91	9.90		
				% of room		94.71%	94.69%	1.00	YES
	R5	Residential	Kitchen	Area m2	10.46	9.90	9.90		
				% of room		94.69%	94.67%	1.00	YES
	R6	Residential	Hallway	Area m2	6.75	6.54	6.54		
				% of room		96.85%	96.85%	1.00	YES
	R7	Residential	Hallway	Area m2	6.75	6.53	6.53		
				% of room		96.74%	96.74%	1.00	YES
	R8	Residential	Kitchen	Area m2	10.46	9.91	9.91		
				% of room		94.71%	94.70%	1.00	YES
	R9	Residential	Kitchen	Area m2	10.46	9.91	9.91		
				% of room		94.73%	94.72%	1.00	YES
	R10	Residential	Hallway	Area m2	7.05	6.83	6.83		
				% of room		96.87%	96.87%	1.00	YES
Second	R1	Residential	Bedroom	Area m2	10.61	10.21	10.20		
				% of room		96.18%	96.17%	1.00	YES
	R2	Residential	Bathroom	Area m2	6.75	6.29	6.28		
				% of room		93.05%	93.02%	1.00	YES
	R3	Residential	Bathroom	Area m2	6.75	6.30	6.30		
				% of room		93.32%	93.29%	1.00	YES
	R4	Residential	Bedroom	Area m2	10.46	10.10	10.10		
				% of room		96.57%	96.55%	1.00	YES
	R5	Residential	Bedroom	Area m2	10.46	10.10	10.09		
				% of room		96.52%	96.50%	1.00	YES
	R6	Residential	Bathroom	Area m2	6.75	6.29	6.29		
				% of room		93.12%	93.10%	1.00	YES
	R7	Residential	Bathroom	Area m2	6.75	6.29	6.29		
				% of room		93.18%	93.17%	1.00	YES
	R8	Residential	Bedroom	Area m2	10.46	10.10	10.10		
				% of room		96.54%	96.53%	1.00	YES

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

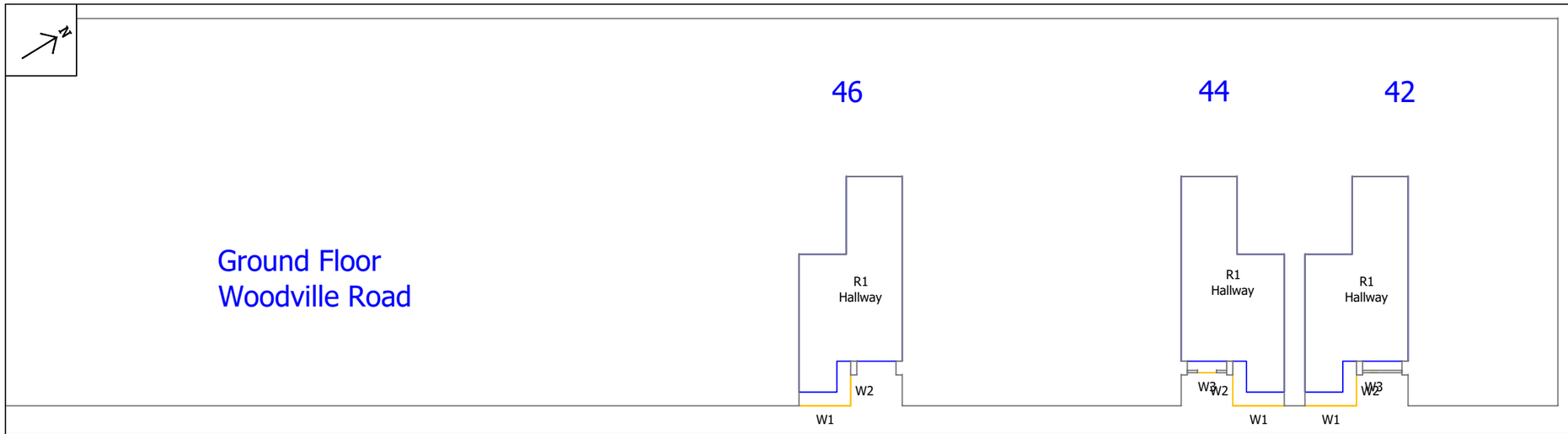
Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
	R9	Residential	Bedroom	Area m2	10.46	10.10	10.10		
				% of room		96.61%	96.59%	1.00	YES
	R10	Residential	Bathroom	Area m2	7.05	6.55	6.55		
				% of room		92.91%	92.91%	1.00	YES
			2-14 Ashburnham Road						
First	R1	Residential	Kitchen	Area m2	10.61	9.72	9.72		
				% of room		91.61%	91.61%	1.00	YES
	R2	Residential	Hallway	Area m2	6.75	5.22	5.22		
				% of room		77.32%	77.32%	1.00	YES
	R3	Residential	Hallway	Area m2	6.75	6.17	6.17		
				% of room		91.31%	91.31%	1.00	YES
	R4	Residential	Kitchen	Area m2	10.46	9.87	9.87		
				% of room		94.40%	94.40%	1.00	YES
	R5	Residential	Kitchen	Area m2	10.46	9.91	9.91		
				% of room		94.76%	94.76%	1.00	YES
	R6	Residential	Hallway	Area m2	6.75	6.54	6.54		
				% of room		96.83%	96.83%	1.00	YES
	R7	Residential	Hallway	Area m2	6.75	6.54	6.54		
				% of room		96.86%	96.86%	1.00	YES
	R8	Residential	Kitchen	Area m2	10.46	9.89	9.89		
				% of room		94.53%	94.53%	1.00	YES
	R9	Residential	Kitchen	Area m2	10.46	9.91	9.91		
				% of room		94.73%	94.72%	1.00	YES
	R10	Residential	Hallway	Area m2	6.75	6.54	6.54		
				% of room		96.85%	96.85%	1.00	YES
	R11	Residential	Hallway	Area m2	6.75	6.54	6.54		
				% of room		96.76%	96.76%	1.00	YES
	R12	Residential	Kitchen	Area m2	10.46	9.86	9.85		
				% of room		94.22%	94.16%	1.00	YES
	R13	Residential	Kitchen	Area m2	10.46	9.86	9.86		
				% of room		94.30%	94.28%	1.00	YES
	R14	Residential	Hallway	Area m2	6.75	6.54	6.53		
				% of room		96.83%	96.74%	1.00	YES
	R15	Residential	Hallway	Area m2	6.75	6.54	6.08		
				% of room		96.79%	90.07%	0.93	YES
	R16	Residential	Kitchen	Area m2	10.46	9.89	9.53		
				% of room		94.54%	91.14%	0.96	YES
Second	R1	Residential	Bedroom	Area m2	10.61	10.22	10.22		
				% of room		96.30%	96.30%	1.00	YES
	R2	Residential	Bathroom	Area m2	6.75	6.30	6.30		
				% of room		93.19%	93.19%	1.00	YES
	R3	Residential	Bathroom	Area m2	6.75	6.29	6.29		
				% of room		93.17%	93.17%	1.00	YES
	R4	Residential	Bedroom	Area m2	10.46	10.07	10.07		
				% of room		96.23%	96.23%	1.00	YES
	R5	Residential	Bedroom	Area m2	10.46	10.10	10.10		
				% of room		96.58%	96.58%	1.00	YES
	R6	Residential	Bathroom	Area m2	6.75	6.32	6.32		
				% of room		93.51%	93.51%	1.00	YES
	R7	Residential	Bathroom	Area m2	6.75	6.30	6.30		
				% of room		93.19%	93.19%	1.00	YES
	R8	Residential	Bedroom	Area m2	10.46	10.07	10.07		
				% of room		96.31%	96.31%	1.00	YES
	R9	Residential	Bedroom	Area m2	10.46	10.10	10.10		
				% of room		96.61%	96.60%	1.00	YES
	R10	Residential	Bathroom	Area m2	6.75	6.34	6.34		
				% of room		93.83%	93.82%	1.00	YES
	R11	Residential	Bathroom	Area m2	6.75	6.19	6.19		
				% of room		91.62%	91.58%	1.00	YES
	R12	Residential	Bedroom	Area m2	10.46	10.03	10.03		

Project Name: Ham Close
Project No.: HA 167_R02
Report Title: Daylight Distribution Analysis - Neighbour
Date of Analysis: 21/03/2022

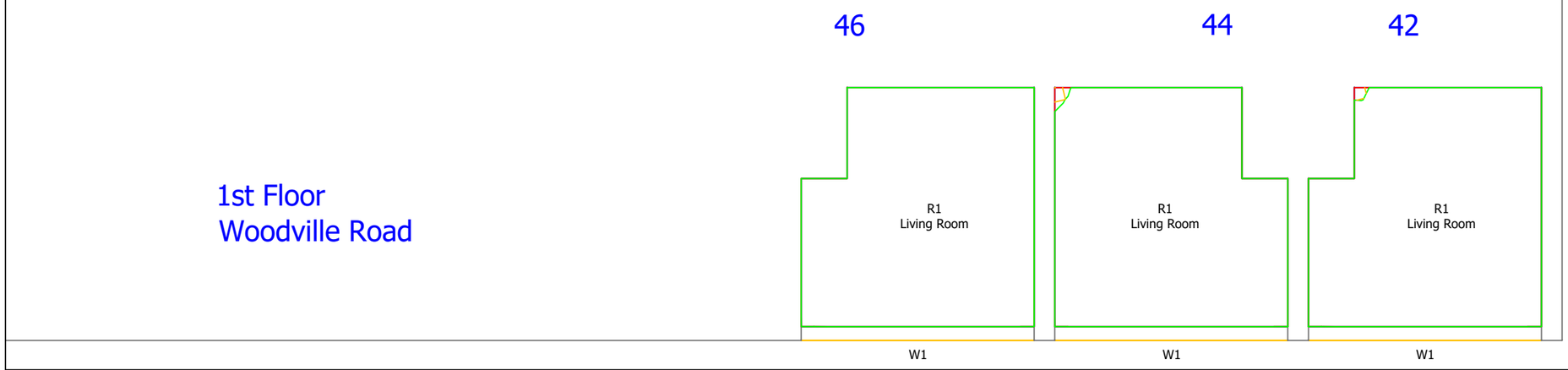
Floor Ref.	Room Ref	Property Type	Room Use		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
				% of room		95.89%	95.86%	1.00	YES
	R13	Residential	Bedroom	Area m2	10.46	10.04	10.04		
				% of room		96.01%	95.99%	1.00	YES
	R14	Residential	Bathroom	Area m2	6.75	6.32	6.31		
				% of room		93.52%	93.47%	1.00	YES
	R15	Residential	Bathroom	Area m2	6.75	6.30	6.29		
				% of room		93.29%	93.09%	1.00	YES
	R16	Residential	Bedroom	Area m2	10.46	10.07	10.06		
				% of room		96.28%	96.15%	1.00	YES
The Woodville Centre									
Ground	R1	School	Class Room	Area m2	58.61	58.48	58.42		
				% of room		99.77%	99.67%	1.00	YES
	R2	School	Class Room	Area m2	94.34	94.34	93.54		
				% of room		100.00%	99.15%	0.99	YES
	R3	School	Class Room	Area m2	14.49	14.28	13.10		
				% of room		98.55%	90.44%	0.92	YES
	R4	School	Class Room	Area m2	18.89	18.89	18.88		
				% of room		100.00%	99.94%	1.00	YES

Appendix 5
NSL Contour Plots

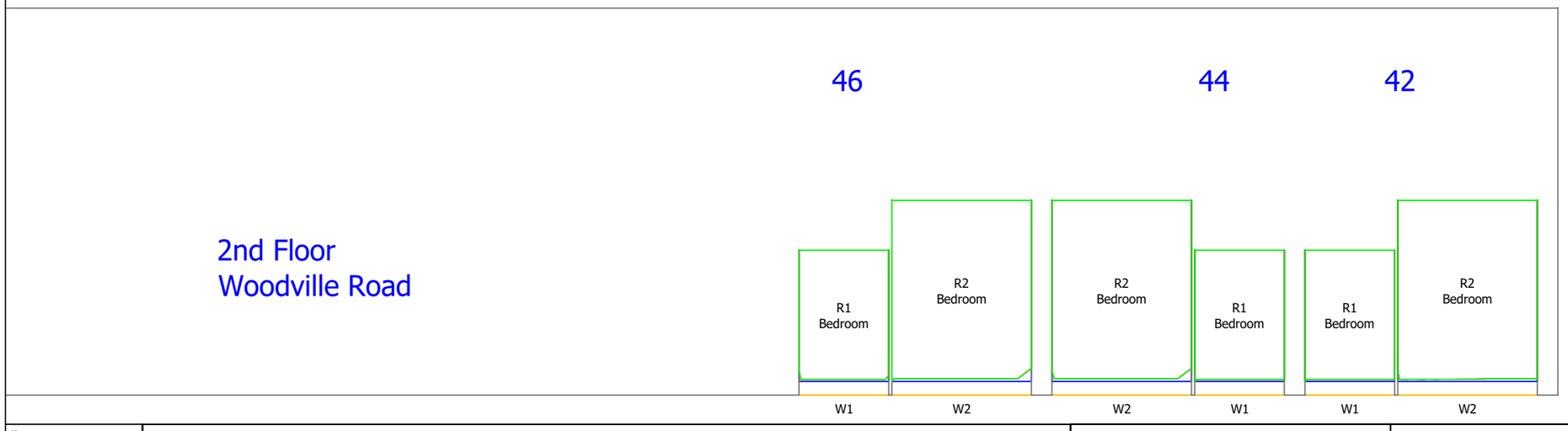
Ground Floor
Woodville Road



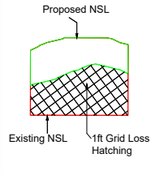
1st Floor
Woodville Road



2nd Floor
Woodville Road



Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

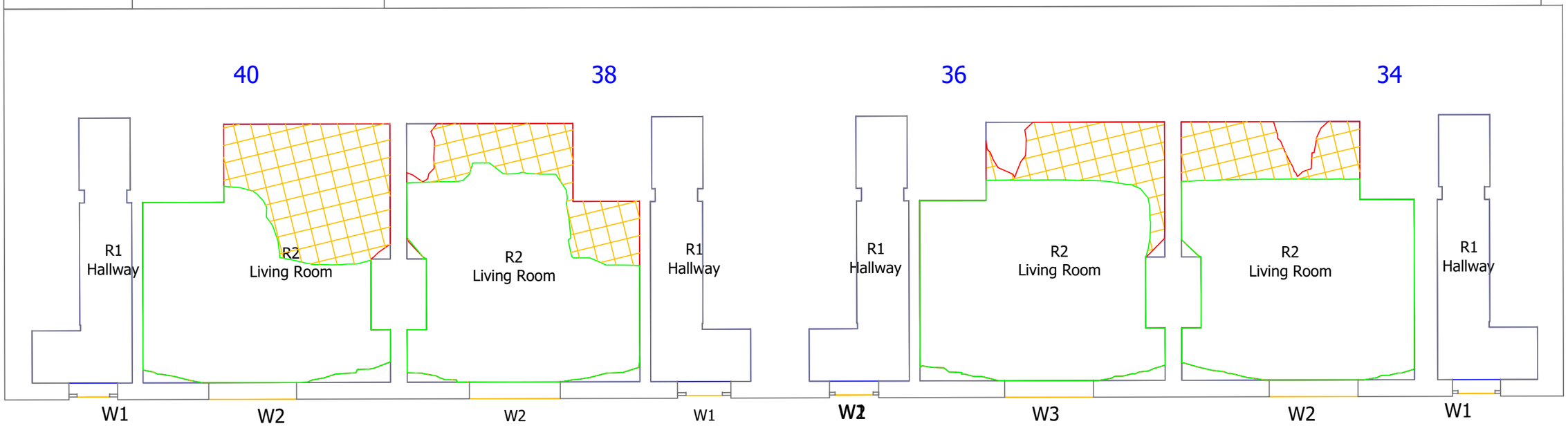
Project Name
Ham Close, Richmond

Drawing Title
Daylight Distribution
Contour Plot

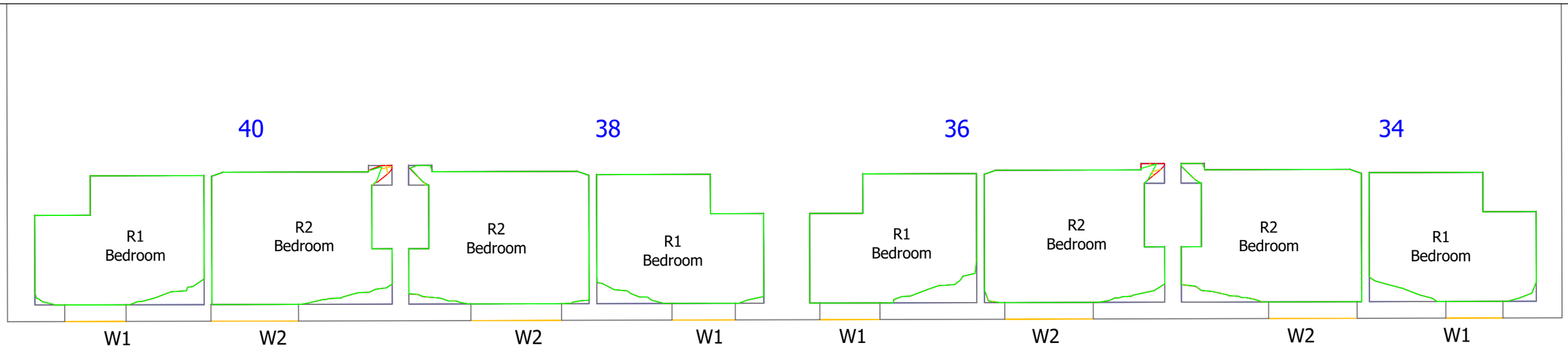
Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/20	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

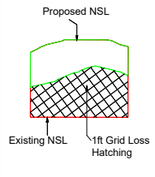


Ground Floor
Woodville Road



1st Floor
Woodville Road

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

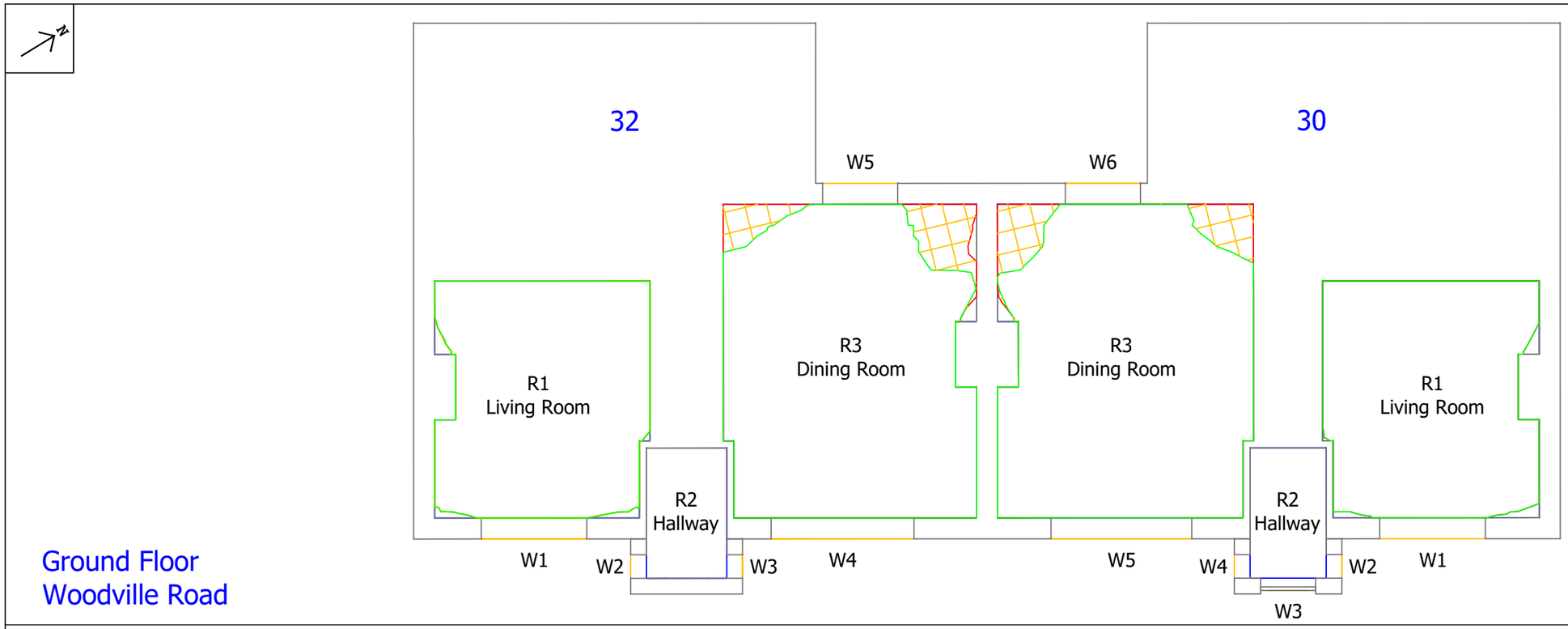
Project Name
Ham Close, Richmond

Drawing Title
Daylight Distribution
Contour Plot

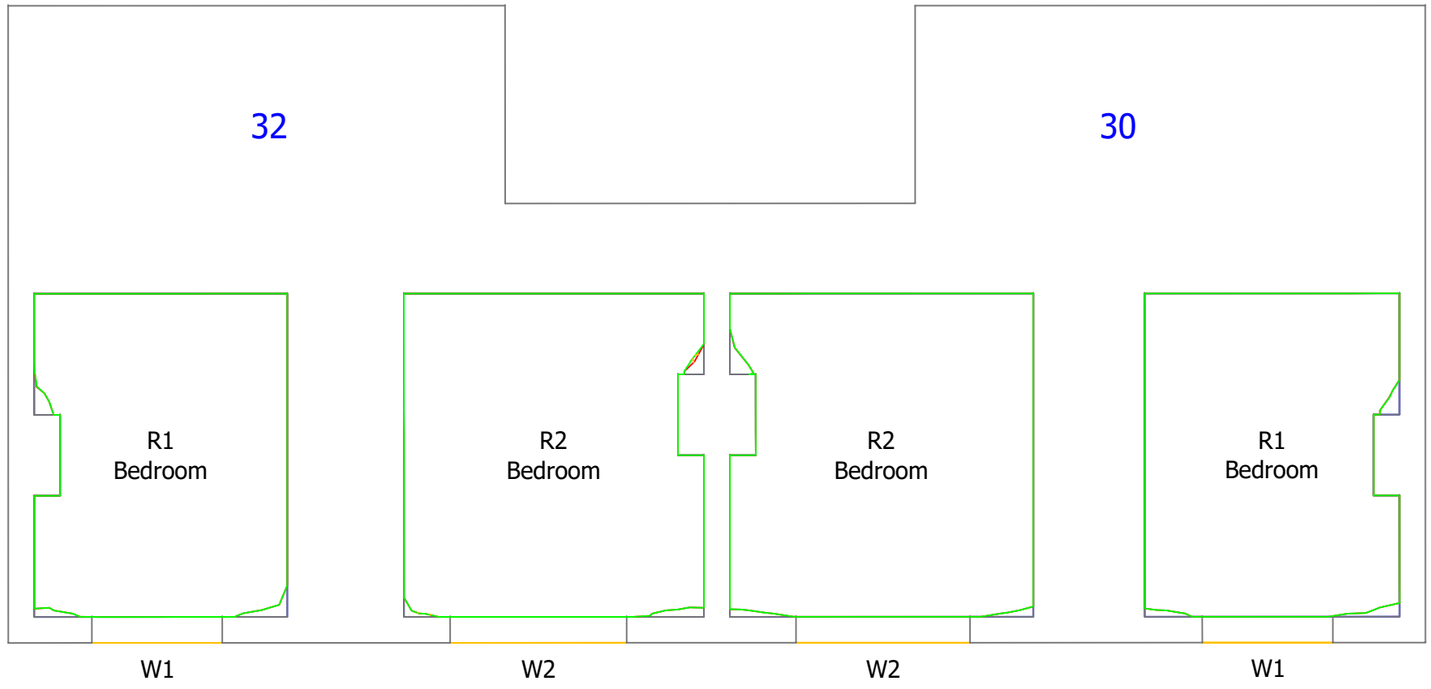
Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/21	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

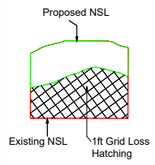


Ground Floor
Woodville Road



1st Floor
Woodville Road

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

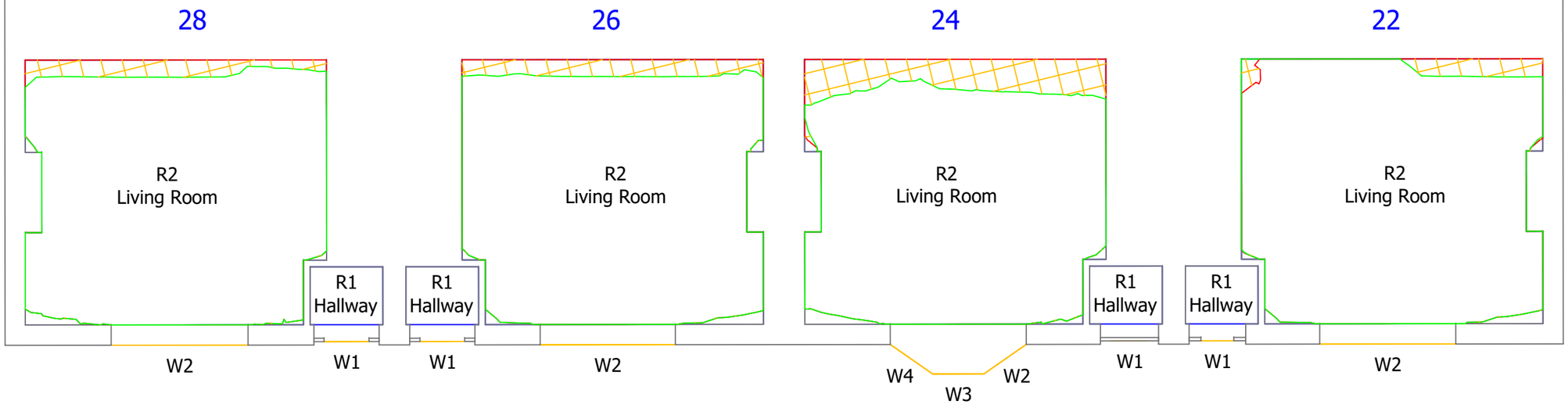
Project Name
Ham Close, Richmond

Drawing Title
Daylight Distribution
Contour Plot

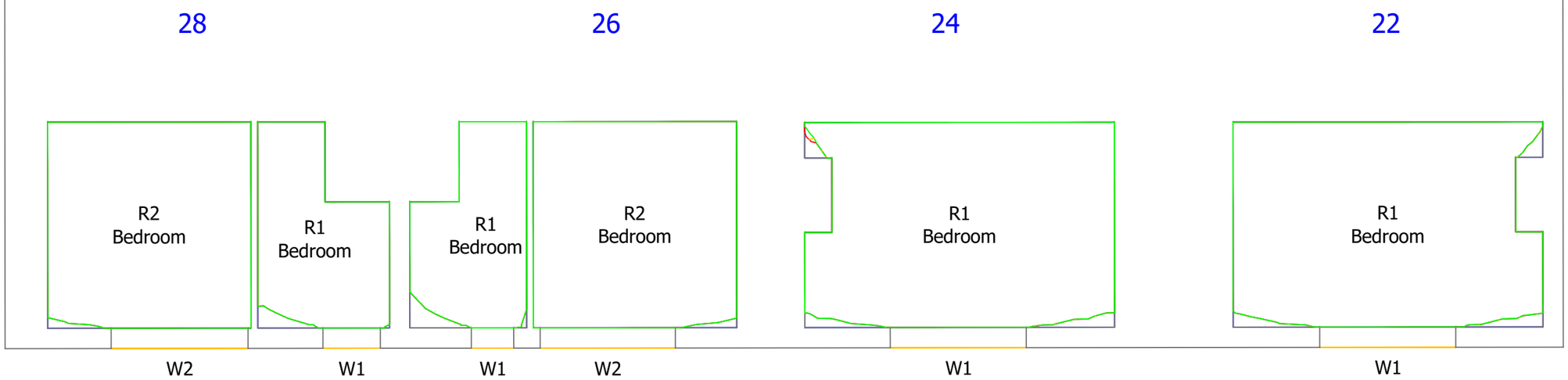
Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/22	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

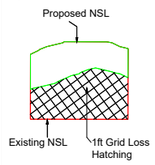


Ground Floor
Woodville Road



1st Floor
Woodville Road

Key:



Sources of information

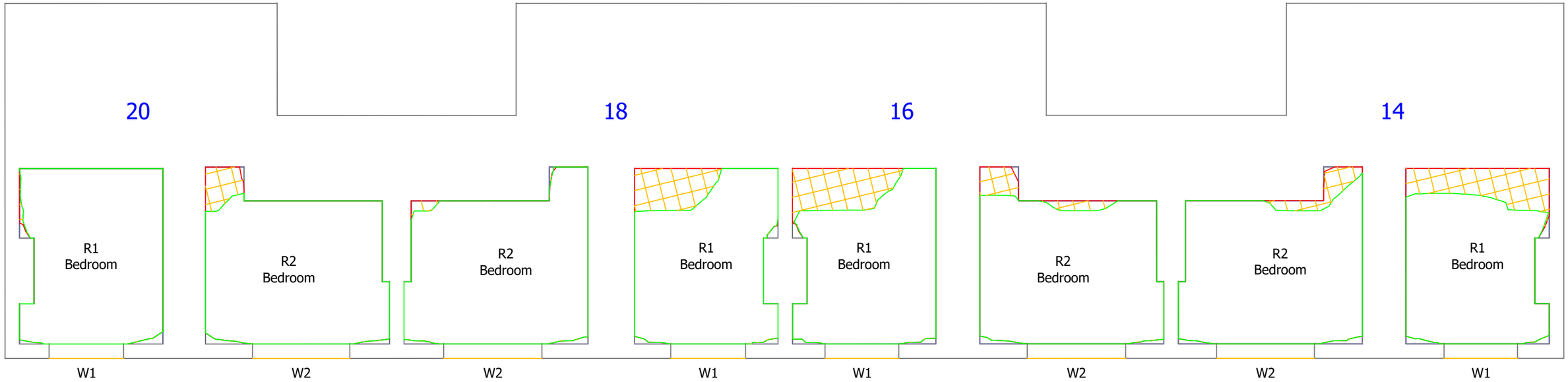
Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

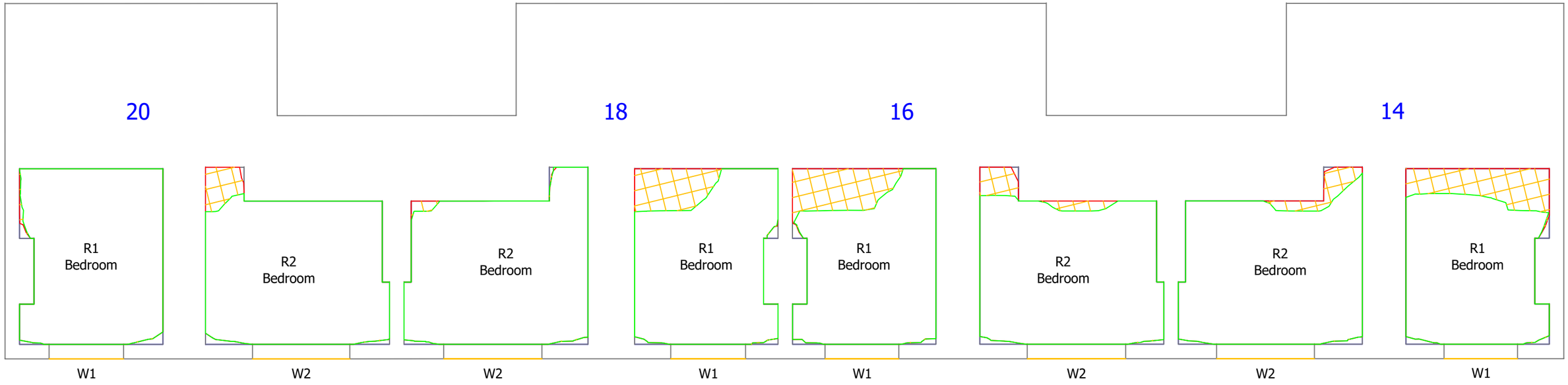
Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name	Drawn By	Scale @ A3	Date
Ham Close, Richmond	MF	-	March 2022
Drawing Title: Daylight Distribution Contour Plot	Project No. HA167_22	Drawing No. Rel 02/23	Revision -

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

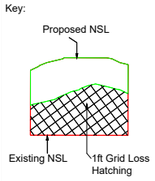


Ground Floor
Woodville Road



1st Floor
Woodville Road

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

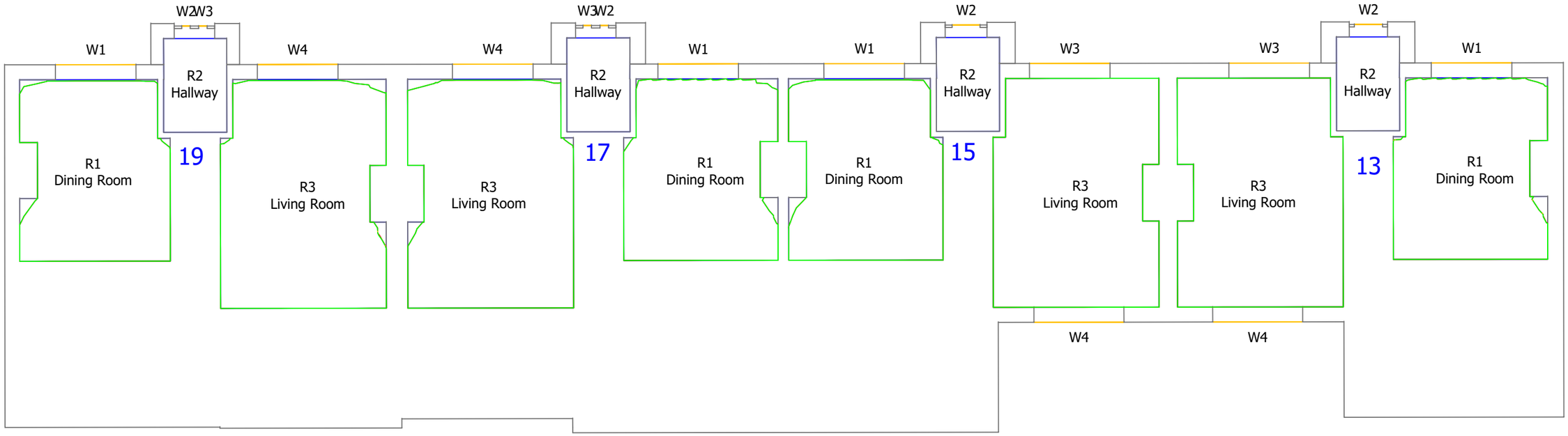
Project Name
Ham Close, Richmond

Drawing Title
Daylight Distribution
Contour Plot

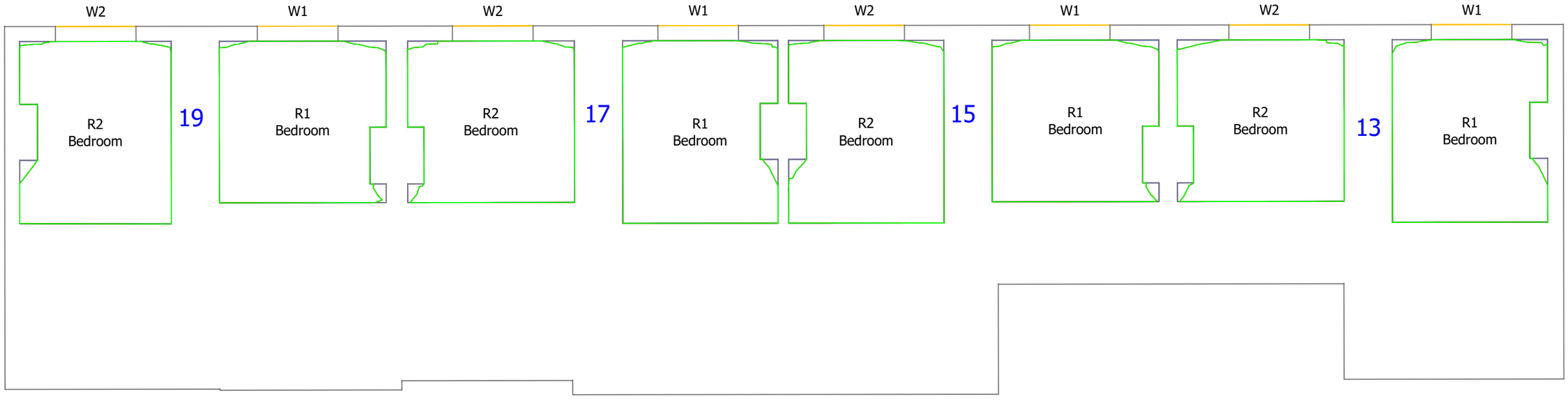
Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/24	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

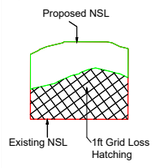


Ground Floor
Ashburnham Road



1st Floor
Ashburnham Road

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

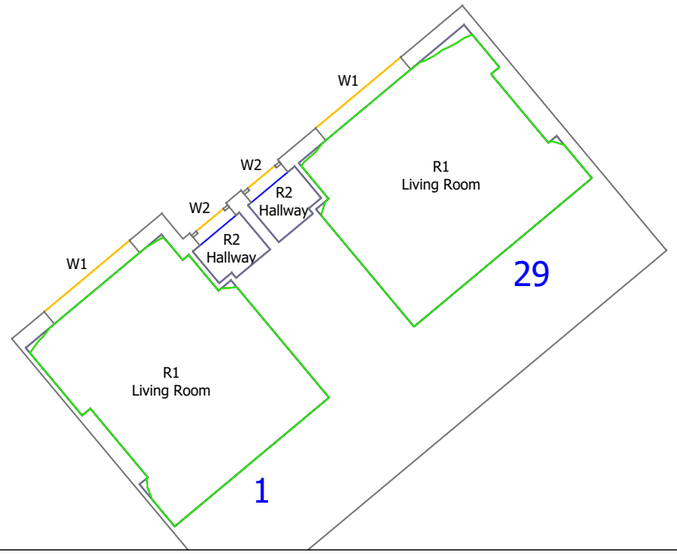
Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

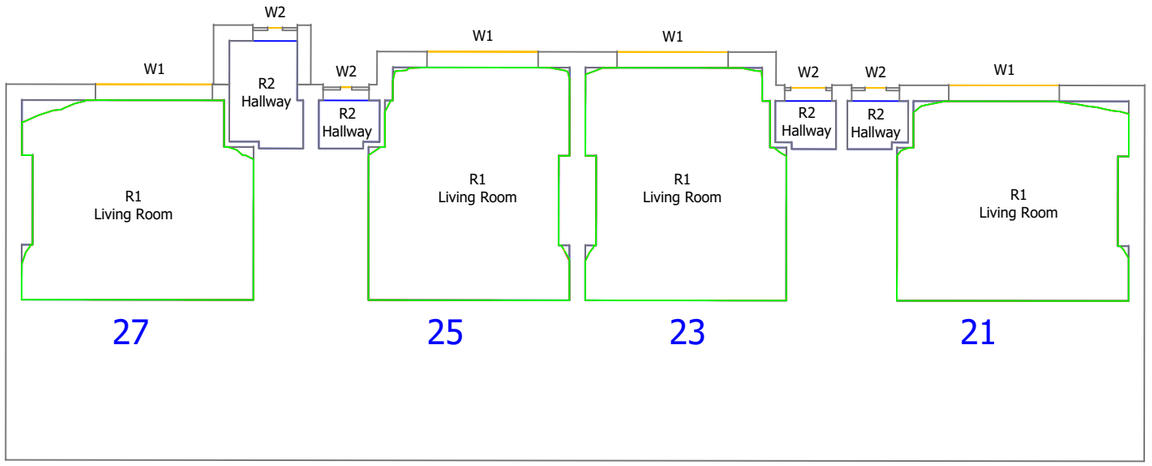
Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

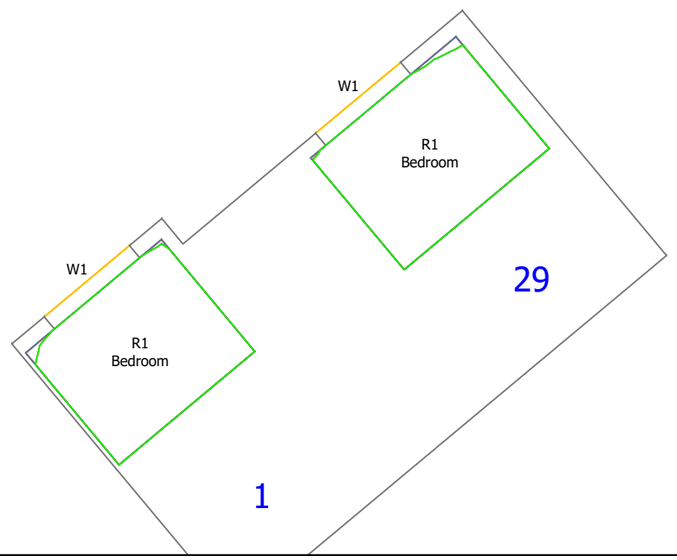
Project Name		
Ham Close, Richmond		
Drawing Title		
Daylight Distribution		
Contour Plot		
Drawn By	**Scale @ A3**	**Date**
MF	-	March 2022
Project No.	**Drawing No.**	**Revision**
HA167_22	Rel 02/25	-

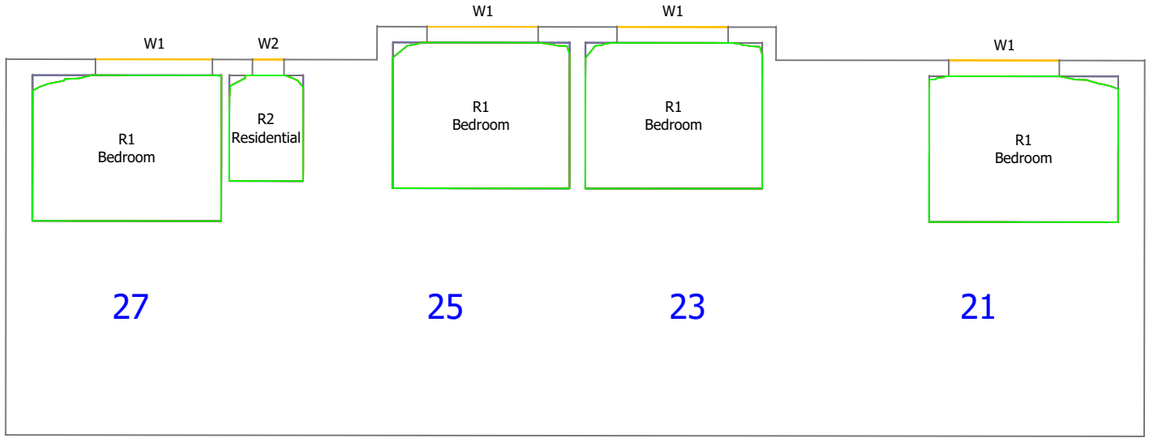
AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk





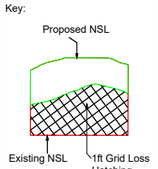
Ground Floor
Ashburnham Road/Mowbray Road





1st Floor
Ashburnham Road/Mowbray Road

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

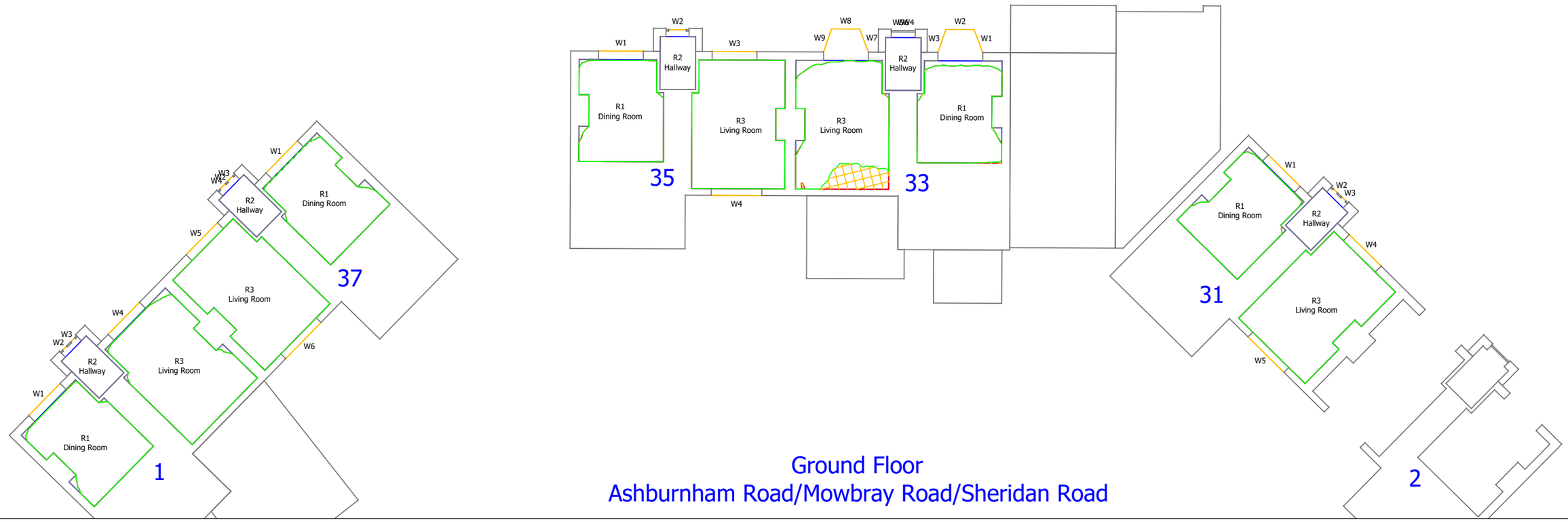
Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

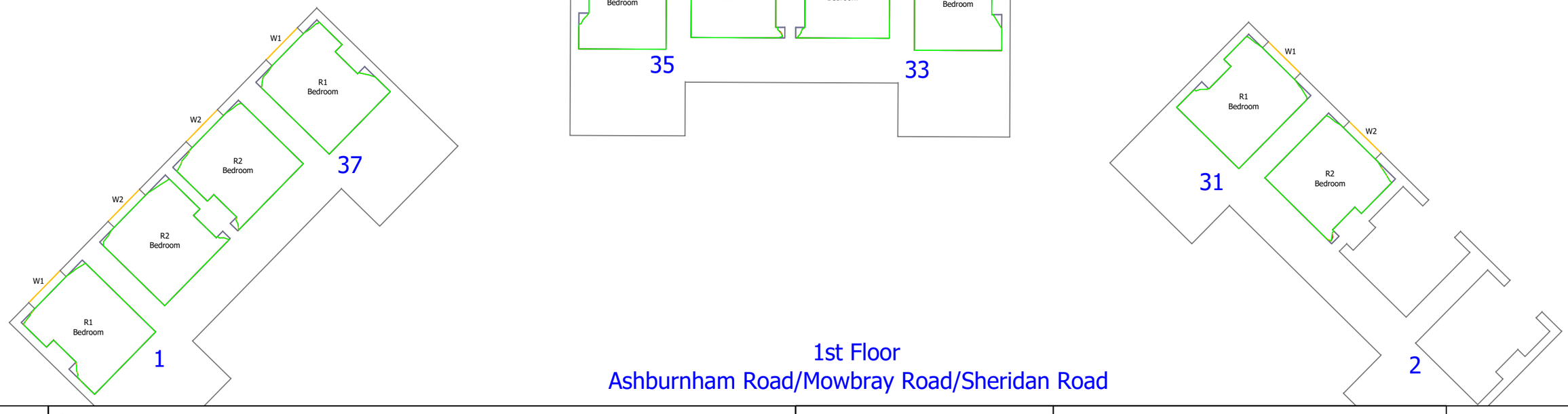
Info received 28 Feb 2022
3D model

Project Name		
Ham Close, Richmond		
Drawing Title		
Daylight Distribution		
Contour Plot		
Drawn By	**Scale @ A3**	**Date**
MF	-	March 2022
Project No.	**Drawing No.**	**Revision**
HA167_22	Rel 02/26	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

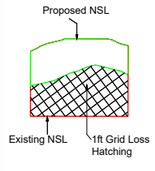


Ground Floor
Ashburnham Road/Mowbray Road/Sheridan Road



1st Floor
Ashburnham Road/Mowbray Road/Sheridan Road

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

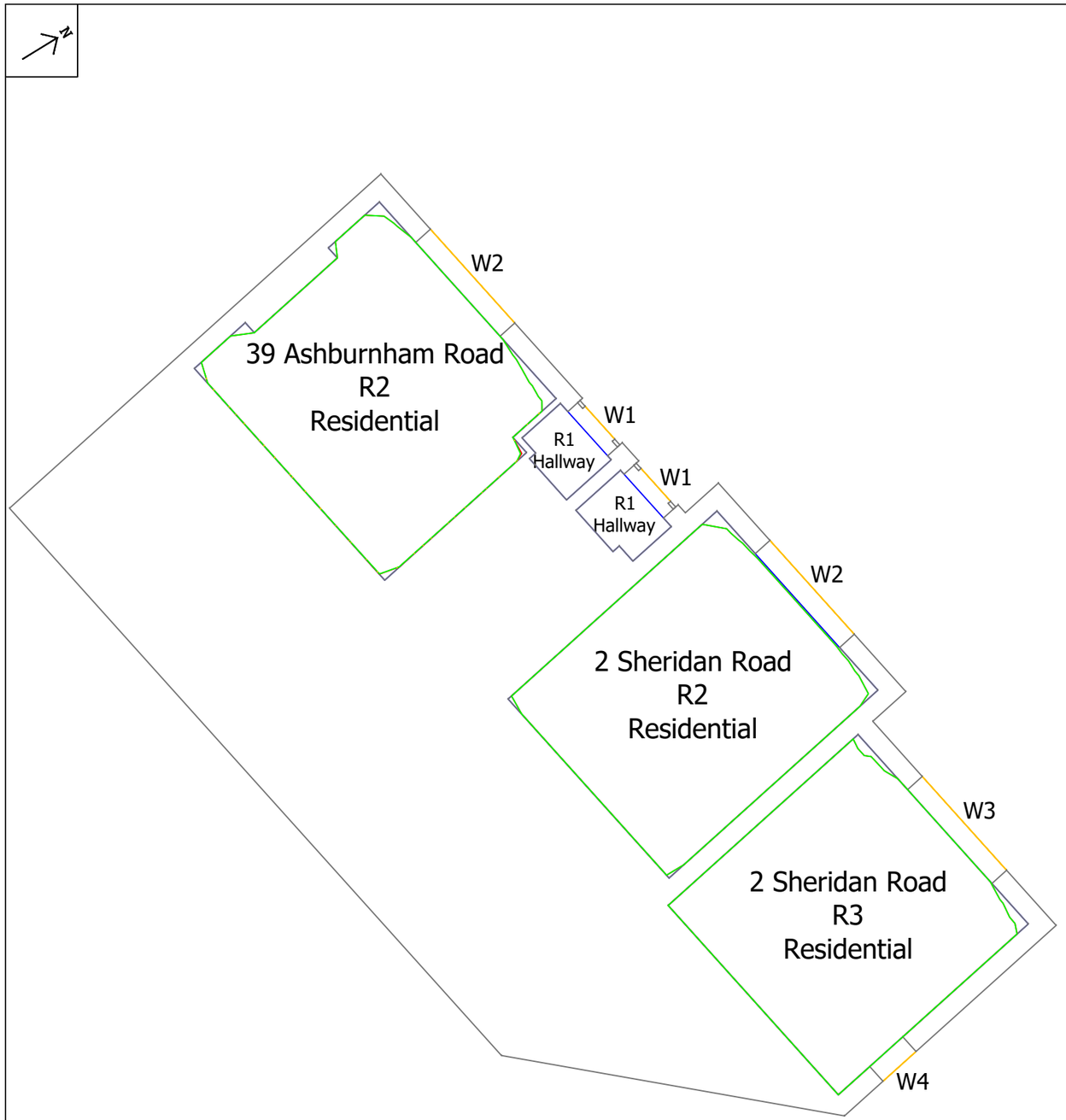
Project Name
Ham Close, Richmond

Drawing Title
Daylight Distribution
Contour Plot

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/27	-

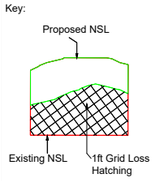
AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk



Ground Floor
Ashburnham Road/Sheridan Road

1st Floor
Ashburnham Road/Sheridan Road

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

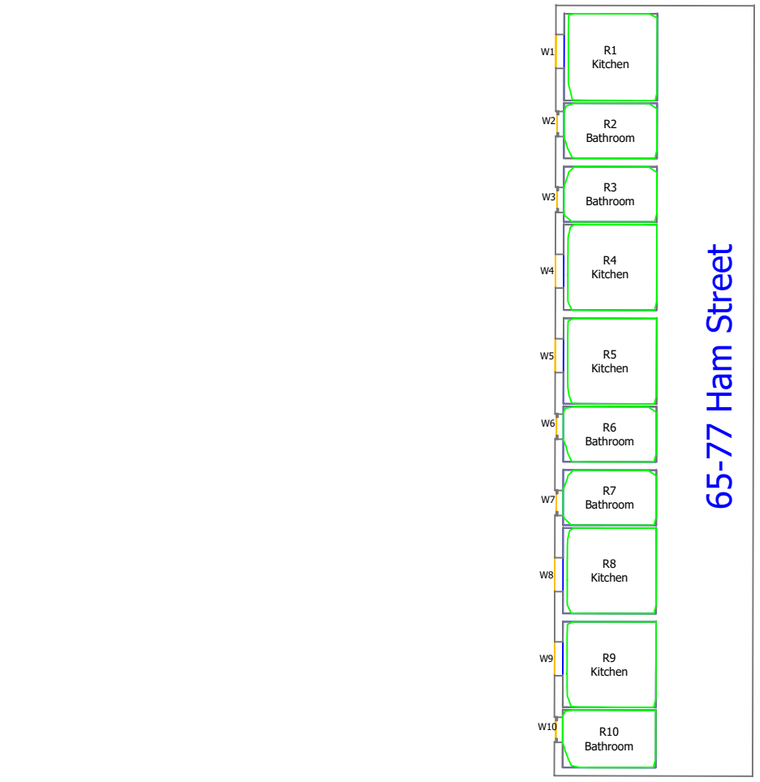
Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

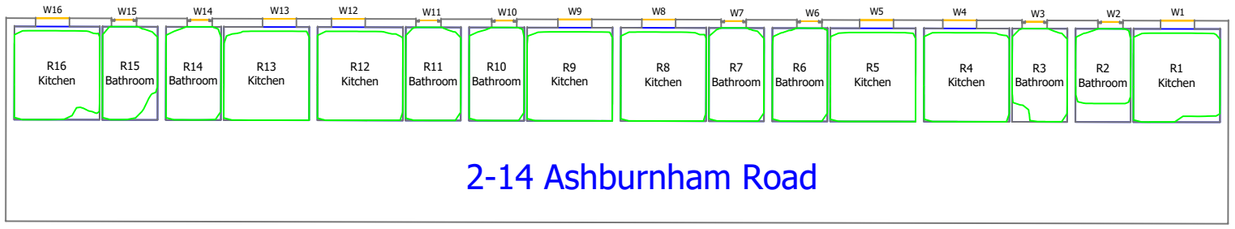
Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

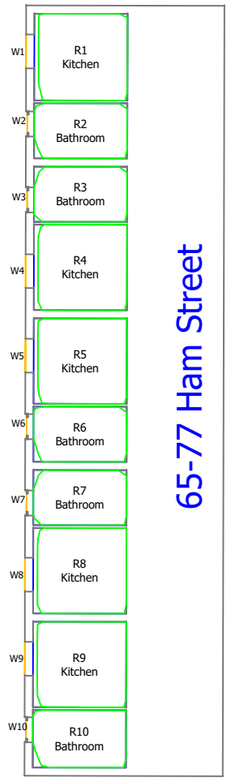
Project Name	Drawn By	Scale @ A3	Date
Ham Close, Richmond	MF	-	March 2022
Drawing Title			
Daylight Distribution			
Contour Plot	Project No.	Drawing No.	Revision
	HA167_22	Rel 02/28	-

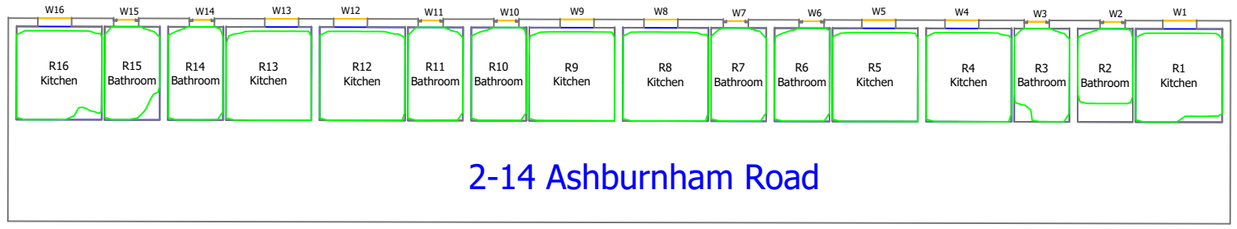
AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk





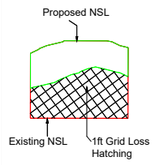
1st Floor





2nd Floor

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

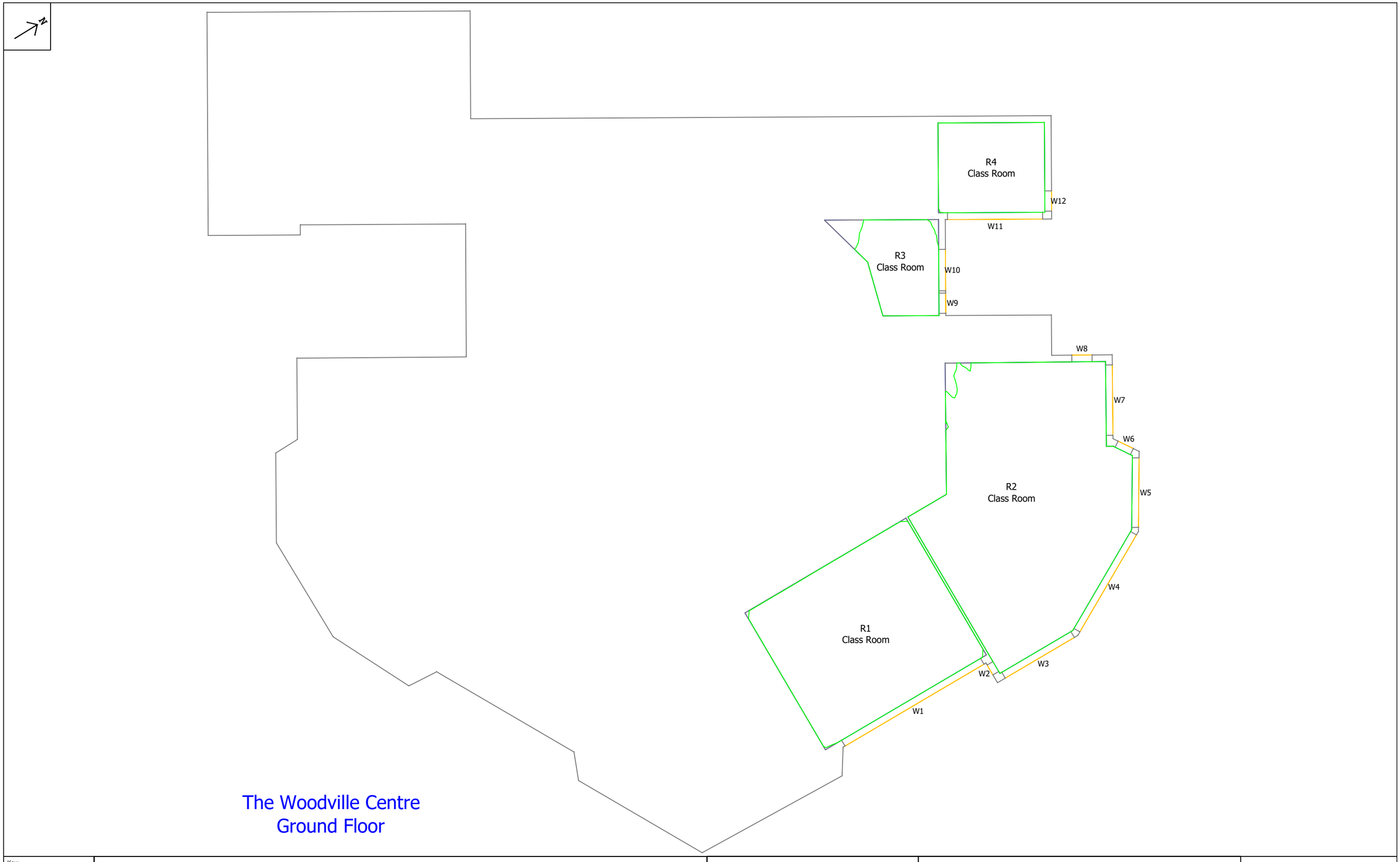
Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

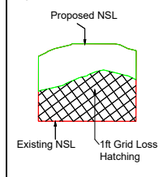
Project Name	Drawn By	Scale @ A3	Date
Ham Close, Richmond	MF	-	March 2022
Drawing Title: Daylight Distribution Contour Plot	Project No. HA167_22	Drawing No. Rel 02/29	Revision -

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk



The Woodville Centre
Ground Floor

Key:



Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack

Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

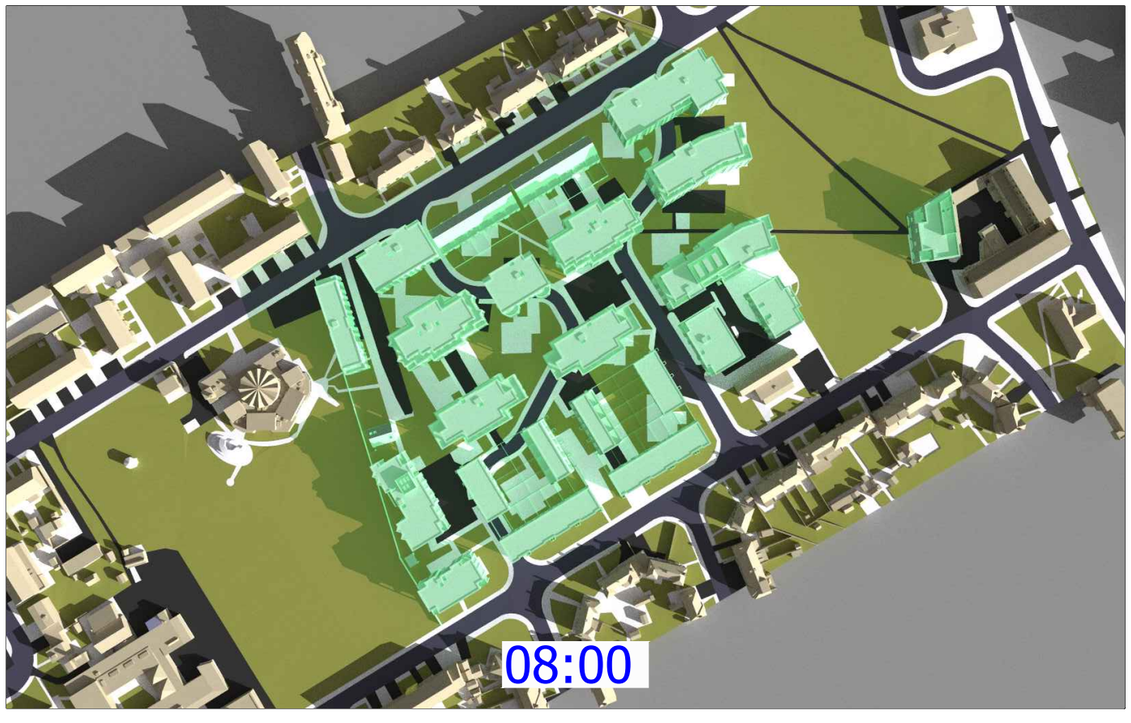
Drawing Title
Daylight Distribution
Contour Plot

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/90	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk

Appendix 6
Transient Overshadowing Analysis Plots



Key:

- Existing
- Proposed
- Consented
- Surrounding Context

Sources of information

Existing building
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Surrounding buildings
Accucities: 28 Jan 2022
002429_Ham Close, Richmond_HD_MASTER

Proposed building
Info received 25 Feb 2022
2D scheme freeze drawing pack
Info received 28 Feb 2022
3D model

Project Name
Ham Close, Richmond

Drawing Title
Transient Shadow analysis
21st March

Drawn By	Scale @ A3	Date
MF	-	March 2022

Project No.	Drawing No.	Revision
HA167_22	Rel 02/300	-

AVISON YOUNG
65 Gresham Street, London, EC2V 7NQ
08449 02 03 04 www.avisonyoung.co.uk