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# BRE Client Report

## Daylight and sunlight assessment for proposed development at 23 Crescent East, Hadley Wood

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## Introduction

It is proposed to develop 23 Crescent East, Hadley Wood. The development includes demolition of the existing building on the site with the construction of a new building containing flats.

This report assesses loss of daylight and sunlight to the neighbouring properties. Daylight and sunlight provision to proposed rooms is also assessed. The results are compared with the guidelines in the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice' and BS EN17037:2018 'Daylight in buildings'.

The calculations are based on existing and proposed drawings 521022-21 to 29 all dated 07/23 by Alan Cox Associates. These were used in conjunction with a tree survey report ref: A6070 dated 30 August 2023 by Encon Associates and a BRE site visit to inspect the existing site and surrounding area on 31 August 2023.

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# Methodology

## Loss of daylight to existing dwellings

Guidance on the loss of light to existing buildings following construction of new development nearby is given in the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice'. This report is widely used by local authorities to help determine planning applications. The assessment has been carried out with reference to the third edition of the report, which was published in June 2022.

The advice in the BRE Report is widely used throughout the country to help determine planning applications. The guidance in the BRE Report is advisory in nature and is intended to assist with good design. There is no formal requirement to comply with the advice it contains.

The guidelines in the BRE Report usually apply to habitable rooms including living rooms, kitchens and bedrooms. Non-habitable rooms such as bathrooms, corridors, storerooms and garages need not be analysed.

In the BRE Report loss of daylight (light from the sky, calculated on an overcast day) and sunlight (direct light from the sun) are assessed separately.

### Loss of daylight – vertical sky component

The BRE Report recommends assessment of loss of daylight via the calculation of the vertical sky component. This is the ratio of the direct sky illuminance falling on the outside of a window, to the simultaneous horizontal illuminance under an unobstructed sky. The standard CIE Overcast Sky is used and the ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall. The vertical sky component on a window is a good measure of the amount of daylight entering it.

A BRE computer program was used to calculate the vertical sky component, which has the same basis as the skylight indicators in the BRE Report. Trees and vegetation are not included in the calculations, in line with the advice in the BRE Report.

The BRE Report sets out the following two guidelines for vertical sky component:

a) Where the vertical sky component at the centre of the existing window (or 1.6m from the floor for a floor to ceiling window) exceeds 27% with the new development in place, then enough sky light should still be reaching the existing window.

b) Where the vertical sky component with the new development is both less than 27% **and** less than 0.8 times its former value, then the area lit by the window is likely to appear more gloomy, and electric lighting will be needed for more of the time.

### Loss of daylight - daylight distribution

The BRE report also gives guidance on the distribution of light in the existing buildings, based on the areas of the working plane (0.85m above floor level) which can and cannot receive direct skylight before and after development. If the area able to receive direct skylight is reduced to less than 0.8 times the value before, the diffuse daylighting of the existing building may be adversely affected. These calculations require knowledge of room geometry.

Details of the internal layout at the neighbouring 25 Crescent East were available via planning application 23/01742/HOU on the local authority planning portal. At the time of writing this application has not been decided, and the submitted existing drawings have been used to inform room uses, layouts and the daylight distribution calculations.

Access or data were not available or provided for other properties so these calculations could not be carried out.

### Loss of sunlight - existing dwellings

The BRE Report recommends that loss of sunlight should be checked for main living rooms of dwellings, and conservatories, if they have a window facing within 90° of due south.

If the centre of the window can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21 September and 21 March, then the room should still receive enough sunlight. If the window already receives less than this, a reduction to less than 0.8 times its current value and a reduction of more than 4% of annual probable sunlight hours over the year may lead to the room it serves appearing colder and less cheerful and pleasant.

### Loss of sunlight - existing gardens

For outdoor amenity areas, the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice' recommends that at least half of the space should receive at least two hours of sunlight on 21 March. If an existing space receives less than this and less than 0.8 times the area before with the proposed development in place, the loss of sunlight would be significant.

The nearest garden and open space areas to the proposed development have been assessed.

In line with the advice in the BRE Report, obstructions less than 1.5m high and trees are excluded from the calculations.

## Daylight and sunlight provision to proposed developments

Guidance on daylight and sunlight to new dwellings, including numerical target values, is given in BS EN17037:2018 ‘Daylight in buildings’. This standard supersedes BS8206 Part 2:2008 ‘Lighting for Buildings, Code of Practice for Daylighting’.

### Daylight provision to rooms

BS EN17037 recommends minimum, medium and high target illuminances over at least 50% of a room. Equivalent values of daylight factor for locations in Europe are also given. The daylight factor is the ratio of the illuminance at a point in on the working plane in a room divided by the illuminance of an unobstructed surface outside. It is measured using the CIE standard overcast sky and takes into account factors such as surface reflectances and glazing transmittance.

The UK National Annex gives further advice for UK dwellings. It recommends target illuminances and equivalent daylight factors for a room to achieve over at least 50% of the reference plane at various places in the UK. The targets in the National Annex are designed as minimum guidance for daylight provision in ‘hard to light’ spaces (for example dwellings with basement rooms or with significant external obstructions such as tall trees). The targets for London have been used for this assessment.

**Table 1**: Daylighting targets in National Annex of BS EN17037.

| Room type | Target Illuminance over at least 50% of a reference plane 0.85m from the floor, for at least half of the daylight hours (lx) | Equivalent Daylight Factor (D, %) for London |
|---|---|---|
| Bedroom | 100 | 0.7% |
| Living Room | 150 | 1.1% |
| Kitchen | 200 | 1.4% |

The standard states that where a room has a shared use, the higher target value should apply. However, in practice, many local authorities will accept the target value for living rooms in a shared kitchen space, as it would make little sense to have a separate small non-daylit kitchen to force compliance with the recommendation. This was common practice for the equivalent situation with the superseded BS8206 Part 2.

The daylight factor was calculated at a series of points on the reference plane (0.85m from the floor) of each proposed habitable room using software based on a Radiance ray tracing engine. The reference plane excluded main areas within 0.3m of a room's wall, in line with the guidance in the BRE Report.

The recommendations are met if the median of the daylight factor point results meets, or exceeds, the targets in Table 1.

BS EN17037 does not mention the impact of trees. However, the BRE Report gives advice in situations with trees, and suggests where there are deciduous trees the calculations be performed in summer and winter as their transparencies will vary. If daylight factor recommendations are met in both summer and winter, then daylight would be considered adequate; and if the recommendations are not reached in both summer or winter then daylight would be considered inadequate. For a room where the recommendation is exceeded in winter, but not in summer, daylight provision year-round is likely to be adequate, but it is clear that the trees are having some effect on daylight. The obstruction due to significant nearby trees has been estimated using data collected on the site visit and the tree report provided.

Data on the transparency of trees are given in Table G1 of the BRE Report. This has been supplemented by data in Tables 8.1 and 8.2 of 'Daylighting: Architecture and Design' by Peter Tregenza and Michael Wilson assuming deciduous trees with dense light-coloured foliage in summer. The species, and therefore associated transparency values, of the trees are allocated based on the data in the tree report provided. For tree species where no transparency data are available the values for sycamore trees are used.

Table 2 gives the reflectance and transmission values used in the daylight factor calculations for internal and external surfaces. Internal surface reflectances used are based on light wood floors, light pastel walls and white ceilings, as confirmed via email correspondence, with the maximum recommendations in the BRE Report.

**Table 2**: Factors used in daylight factor calculations.

| Object / surface | Values used in calculations |
|---|---|
| Internal walls (light pastel) | Reflectance: 0.7 |
| Internal floors (light wood) | Reflectance: 0.4 |
| Internal ceilings (white) | Reflectance: 0.8 |
| External walls, surrounding buildings and fences | Reflectance: 0.2 |
| Ground | Reflectance: 0.2 |
| Glazing (clear) | Transmittance based on a value of 0.68 based on Pilkington data for low emissivity double glazing. |
| Glazing (obscured) | Transmittance based on a value of 0.74 based on Pilkington data for diffusing privacy glazing. |
| Maintenance factors (accounting for dirt on the windows) | Additional maintenance factors based on data in the UK National Annex of BS EN 17037 and the BRE Report (based on suburban setting):<br>0.96 vertical glazing<br>0.92 sloping rooflight glazing<br>0.88 vertical glazing under an overhang |
| Window frames | Reflectance: 0.5 |
| Trees (Sycamore) | SUMMER - Transparency: 0.2. Reflectance: 0.4<br>WINTER - Transparency: 0.6. Reflectance: 0.1 |
| Trees (Birch) | SUMMER - Transparency: 0.2. Reflectance: 0.4<br>WINTER - Transparency: 0.55. Reflectance: 0.1 |
| Trees (Ash) | SUMMER - Transparency: 0.25. Reflectance: 0.4<br>WINTER - Transparency: 0.65. Reflectance: 0.1 |
| Trees (Horse Chestnut) | SUMMER - Transparency: 0.2. Reflectance: 0.4<br>WINTER - Transparency: 0.55. Reflectance: 0.1 |
| Trees (Lime) | SUMMER - Transparency: 0.1. Reflectance: 0.4<br>WINTER - Transparency: 0.55. Reflectance: 0.1 |
| Trees (Cypress) | SUMMER - Transparency: 0.05. Reflectance: 0.1<br>WINTER - Transparency: 0.15. Reflectance: 0.1 |

## Sunlight to proposed dwellings

BS EN17037 gives minimum, medium and high recommended levels for sunlight exposure. This is measured via the duration received to a point on the inside of a window on a selected date (the BRE Report recommends 21 March). This assessment assumes a cloudless sky and therefore represents a maximum possible amount of sunlight. The assessment is undertaken using the calculation of sun position based on the geometrical equations in the standard.

Where trees may impact the amount of sunlight received the calculations have been undertaken with them as solid and repeated without them, as recommended in the BRE Report. This gives the range of potential values. In reality on 21 March a large amount of sunlight may be able to penetrate the canopy of deciduous trees. If the minimum recommendation is met with solid trees then sunlight would be adequate. If the minimum recommendation is not reached with either solid trees or no trees then sunlight would be considered inadequate. For a room where the recommendation is exceeded without trees, but not with solid trees, sunlight provision may be adequate, but the trees will have some effect on the sunlight received.

Table 3 gives the recommended values of sunlight exposure.

**Table 3**: Sunlighting targets in BS EN17037.

| Level of recommended exposure | Sunlight exposure |
|---|---|
| Minimum | 1.5 Hours |
| Medium | 3 Hours |
| High | 4 Hours |

Sunlight has been assessed to all proposed rooms.

If at least one habitable room in a dwelling meets the recommended exposure level then the recommendations in BS EN17037 would be met. However, the BRE Report suggests that sunlight provision to living areas may be seen as the most important. The targets apply to rooms / facades of all orientations, however those facing northerly will be naturally limited and therefore would have less expectation of sunlight.

### Sunlight to proposed gardens

The BRE Report recommends that a proposed garden should receive at least two hours of sunlight on 21 March over at least 50% of its area.

## Loss of daylight and sunlight

Figure 1 shows the site and neighbouring properties with areas analysed for loss of daylight and, where applicable, sunlight, labelled.

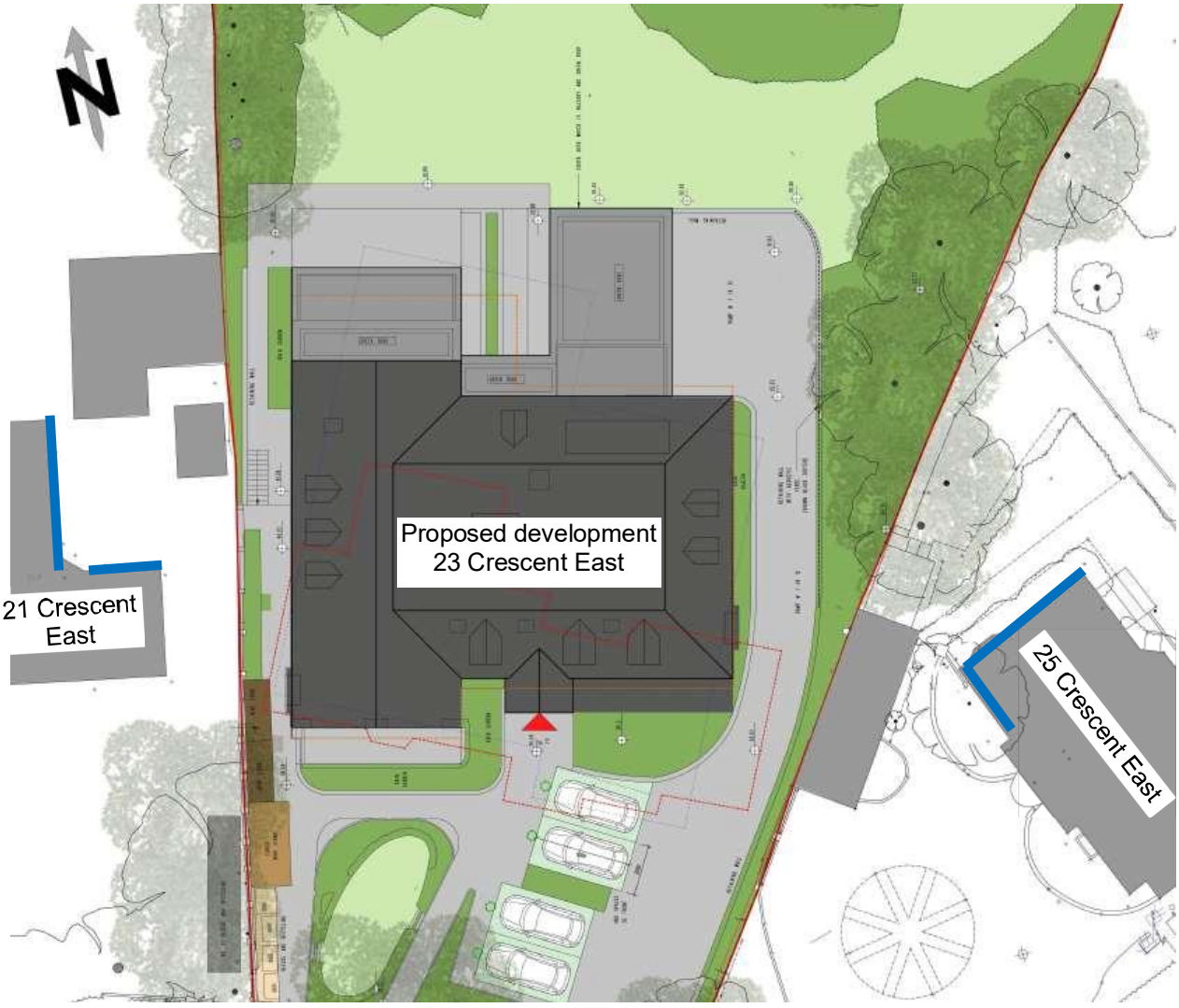



**Figure 1**: Proposed development site neighbouring properties. Areas labelled in blue are assessed for loss of daylight and sunlight (where applicable). Adapted from proposed site plan by Alan Cox Associates.

The neighbouring properties are assessed below. Other areas would be further away and less impacted by the proposed development.

### 25 Crescent East

25 Crescent East is to the east of the proposal site. The nearest windows to the side and front of the building have been assessed.

Current layouts have been informed by drawings as part of planning application 23/01742/HOU. At the time of writing this has not yet been decided. All nearest windows have been assessed for loss of vertical sky component (although some appear to currently light non-habitable areas). Existing room layouts have been assessed for daylight distribution where the current layout suggests habitable rooms. Where rooms would be lit by more than one window these have been included in the daylight distribution assessment.

The windows assessed are shown in Figure 2, with the results in Table 4.

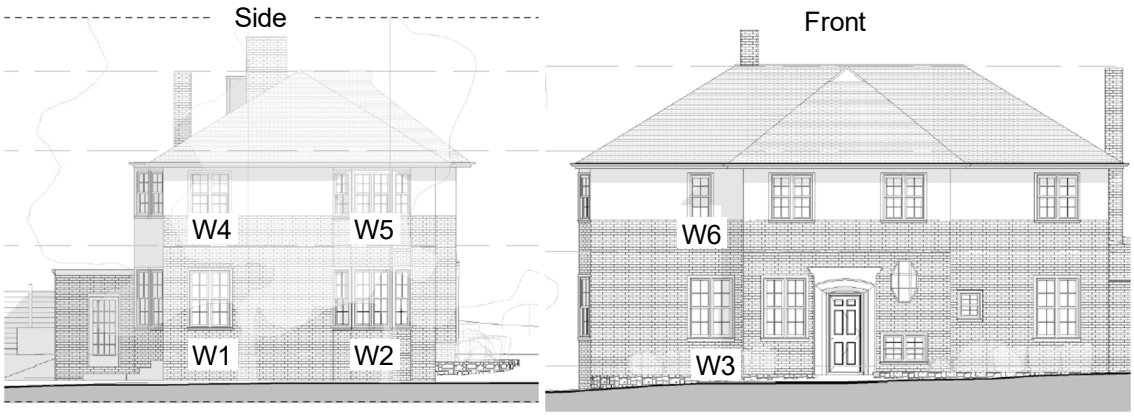



**Figure 2**: Side and front view of 25 Crescent East with areas analysed labelled. Adapted from drawings PA-012 and PA-015 by Domus sourced via planning application 23/01742/HOU.

**Table 4**: Vertical sky component and daylight distribution results for 25 Crescent East.

| Floor | Window | Vertical sky component, % | | | Daylight distribution (percentage of space able to receive direct skylight) | | | |
|---|---|---|---|---|---|---|---|---|
| | | Before | After | Ratio After/Before | Room | Before | After | Ratio After/Before |
| Ground | W1 | 38.4 | 36.3 | 0.94 | Living room | 100% | 100% | 1.00 |
| | W2 | 38.1 | 34.5 | 0.91 | | | | |
| | W3 | 33.5 | 32.6 | 0.97 | | | | |
| First | W4 | 33.9 | 32.9 | 0.97 | Bedroom 1 | 100% | 100% | 1.00 |
| | W5 | 38.5 | 36.7 | 0.95 | Ensuite | N/A | | |
| | W6 | 30.2 | 29.4 | 0.97 | Ensuite | N/A | | |

All windows would comfortably meet the BRE vertical sky component guidelines as the values would be above 27% with the proposed development in place.

Where existing plans suggest windows currently light habitable rooms, they would also comfortably meet the daylight distribution guideline; the areas able to receive direct skylight would be unchanged.

The results suggest that if the 25 Crescent East is developed (via application 23/01742/HOU) any loss of daylight due to the proposal at 23 Crescent East would likely continue to be small and not significant.

The front of the building faces within 90° of due south. The living room window (W3) on this facade is therefore checked for loss of sunlight. It would receive 42% annual probable sunlight hours, including 13% in the winter months, comfortably meeting the 25% annual and 5% winter guidelines.

## 21 Crescent East

21 Crescent East is to the west of the proposal site and contains the Green Trees Care Home. Windows on the eastern side of the building, facing the proposed development site, have been analysed for loss of

daylight, and where applicable, sunlight. Windows to other parts of the building would have a limited, or no, view of the proposed development and therefore would be insignificantly impacted.

Figure 3 shows the windows analysed. The vertical sky component results are given in Table 5.

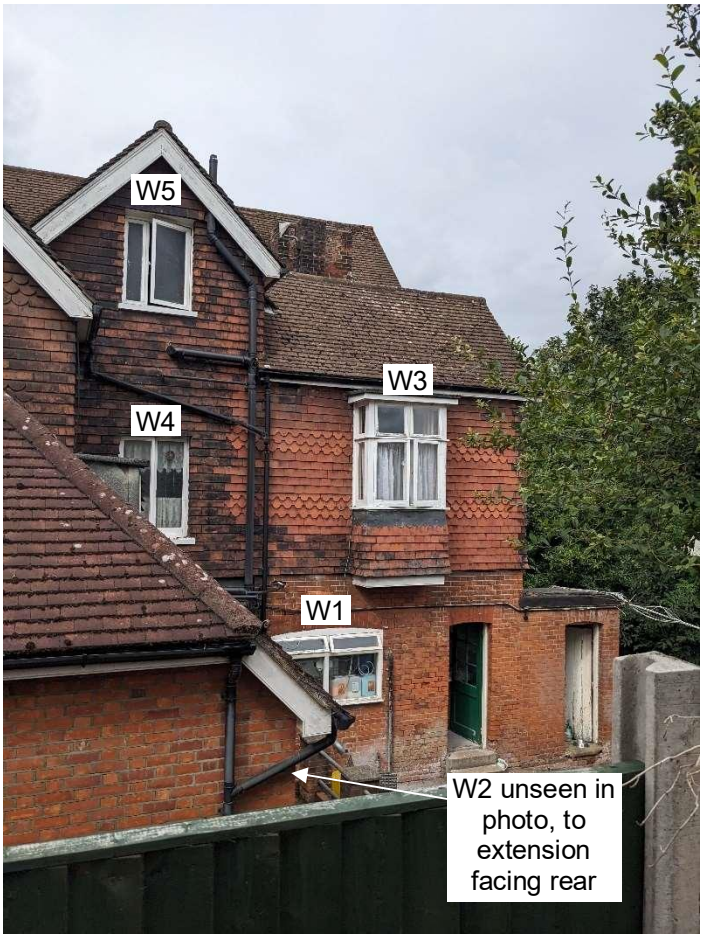



**Figure 3**: Side of 21 Crescent East as seen from the proposal site with windows analysed labelled. Since internal layouts and room uses could not be confirmed all windows have been included in the analysis, although loss of light would not be an issue to any non-habitable areas.

**Table 5**: Vertical sky component results for 21 Crescent East.

| Floor | Window | Vertical sky component, % | | |
|---|---|---|---|---|
| | | Before | After | Ratio After/Before |
| Ground | W1 | 25.8 | 19.7 | 0.76 |
| | W2 | 27.5 | 24.6 | 0.90 |
| First | W3 | 35.6 | 29.5 | 0.83 |
| | W4 | 25.5 | 20.2 | 0.79 |
| Second | W5 | 36.4 | 31.8 | 0.87 |

Three of the five windows analysed would meet the BRE loss of vertical sky component guidelines since the vertical sky component would be greater than 27% with the proposed development in place or have values more than 0.8 times those currently.

Windows W1 and W4 would be below the guidelines. Window W1 is understood to light a utility room for the care home. Window W4 is below the guidelines by the smallest of margins. Frosted glazing also

suggests the window lights a bathroom. Loss of light to non-habitable areas would not be an issue in the context of the BRE Report.

Windows on the side of the building face within 90° of due south and have therefore been assessed for loss of sunlight. Loss of sunlight is only relevant for living areas but since room use could not be confirmed all relevantly orientated windows have been assessed.

**Table 6**: Loss of sunlight results for southerly facing windows at 21 Crescent East.

| Floor | Window | Probable sunlight hours (%) BEFORE | | Probable sunlight hours (%) AFTER | | Ratio AFTER/BEFORE | |
|---|---|---|---|---|---|---|---|
| | | Annual | Winter | Annual | Winter | Annual | Winter |
| Ground | W1 | 33 | 1 | 21 | 1 | 0.64 | 0.92 |
| First | W3 | 51 | 12 | 42 | 10 | 0.82 | 0.84 |
| | W4 | 22 | 0 | 12 | 0 | 0.56 | N/A |
| Second | W5 | 52 | 13 | 45 | 12 | 0.88 | 0.91 |

All windows analysed would meet the winter probable sunlight hours guideline as the value with the proposed development in place would be greater than 5% or unchanged.

Two of the four windows also meet the annual probable sunlight hours guideline. Windows W1 and W4 would be below the guideline. This would only be an issue if they are to living areas, which they do not appear to be.

## Loss of sunlight to gardens

Loss of sunlight to areas at the neighbouring properties have been assessed via the areas able to receive at least two hours of sunlight on 21 March before and after development. In line with the guidelines in the BRE Report, trees and vegetation have not been included in the calculations.

The rear garden of 25 Crescent East was assessed since survey details were provided. At 21 Crescent East there is a yard area between the building and the proposal site (in front of the windows analysed above). Since it was observed that this area contained seating and directly neighbours the proposal site it has been assessed for loss of sunlight. There is also a large rear garden space to the rear of the building. This is further away from the proposed development which is to the east, meaning there is only the potential for additional shading in the morning. The majority of any shading to the space on 21 Match would come from the existing building at 21 Crescent East directly to the south and its outbuildings. The proposed development would therefore not be expected to significantly impact sunlight provision to this space.

A visual representation of the results for the garden at 25 Crescent East and the yard at 21 Crescent East is shown in Figure 4. Numerical results are given in Table 7.

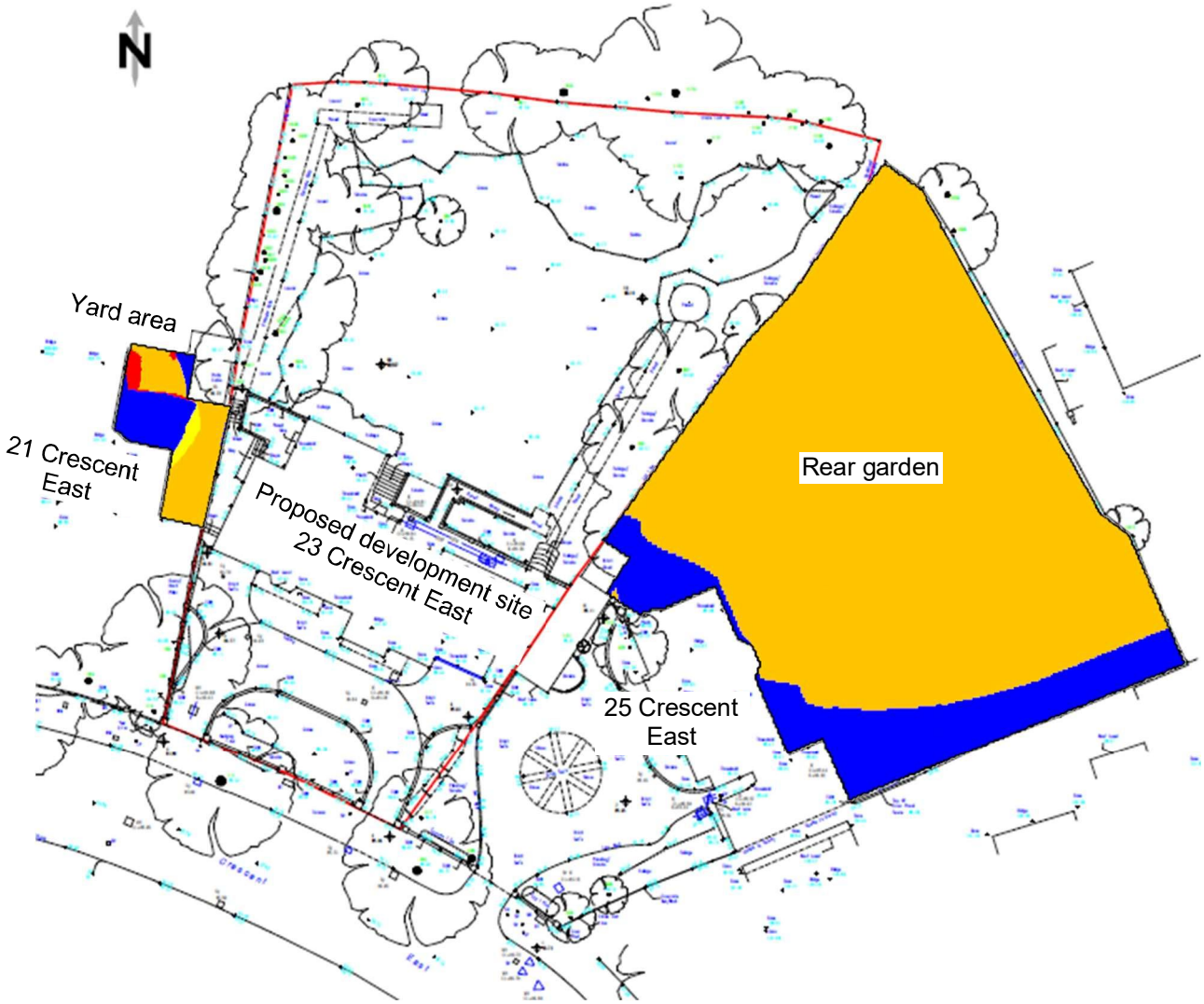



**Figure 4:** Sunlight to nearest garden and open space areas. Orange areas receive at least two hours of sunlight on 21 March before and after development. Blue areas receive less than two hours of sunlight on 21 March before and after development. Red areas receive two hours before, but not after development. Yellow areas receive less than two hours currently, but more than two hours after development. Superimposed onto existing site survey drawing by Alan Cox Associates.

**Table 7**: Loss of sunlight to nearest gardens and open spaces.

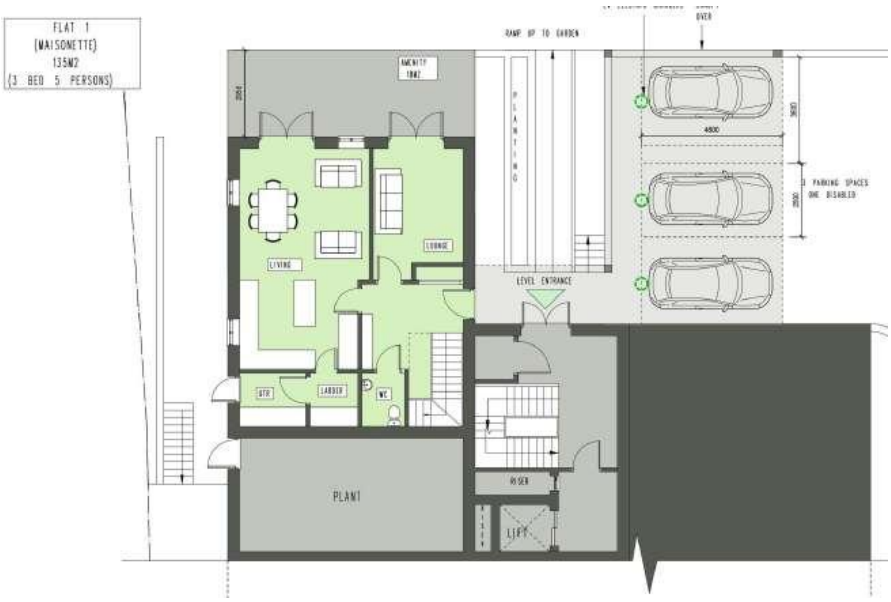
| Garden / open space | Percentage of space able to receive at least two hours of sunlight on 21 March (%) | | |
|---|---|---|---|
| | Before | After | Ratio After/Before |
| 21 Crescent East – yard area | 59% | 59% | 0.99 |
| 25 Crescent East – rear garden | 85% | 85% | 1.00 |

The spaces analysed would comfortably meet the BRE guidelines as the areas able to receive at least two hours of sunlight after development would be greater than 0.8 times those before.

## Daylight and sunlight provision to the proposed development

All habitable rooms in the proposed development have been assessed for daylight provision. The calculations include an account for the impact of surrounding trees and values in summer and winter are given. An extract of the tree report showing the position of retained trees considered in the assessment is shown in Figure 5. The proposed internal layouts are shown in Figure 6.


**Figure 5**: Extract from drawing A6070 03 from the tree report by Encon Associates showing the position of the retained trees included in the assessment.




Lower Ground


Ground

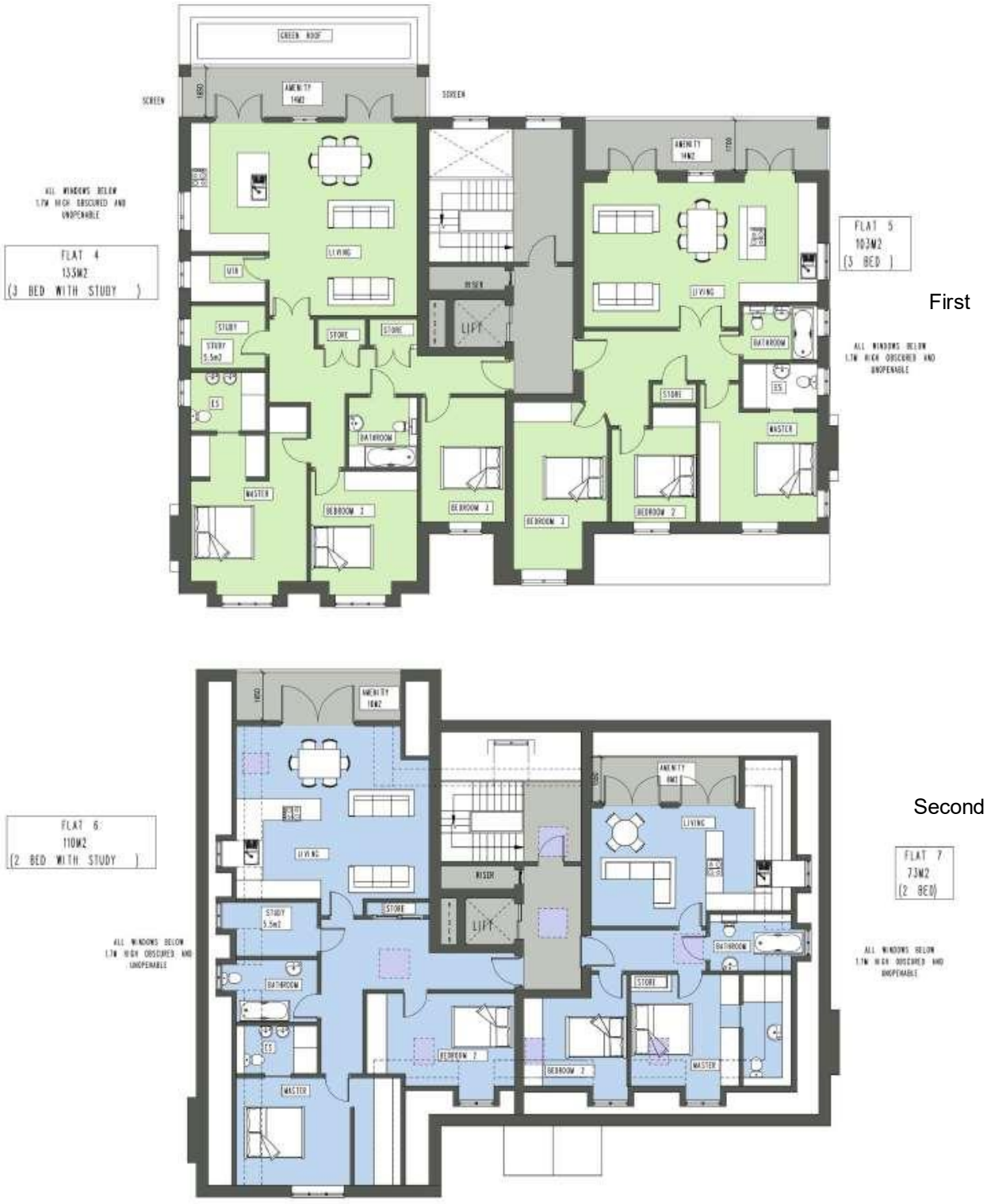



**Figure 6**: Layouts of the lower ground to second floors of the proposed development. Habitable rooms are analysed for daylight provision and sunlight.

## Daylight provision

The daylight factor has been calculated at points on the working plane (0.85m from the floor). The UK National Annex of BS EN17037 gives recommended values of median daylight factor of 0.7% for bedrooms, 1.1% for living rooms and 1.4% for kitchens in London. The median daylight factor results are shown in Table 8. The results have been calculated including an account for the impact of existing trees, with values presented for summer and winter conditions.

**Table 8**: Median daylight factor results for proposed rooms.

| Floor | Unit | Room | Median Daylight Factor, % | |
|---|---|---|---|---|
| | | | Summer | Winter |
| Lower Ground | Flat 1 | Living/Dining/Kitchen | 1.1% | 1.2% |
| | | Lounge | 1.8% | 1.9% |
| Ground | | Master bedroom | 2.5% | 2.5% |
| | | Bedroom 2 | 2.2% | 2.2% |
| | | Bedroom 3 | 0.8% | 0.8% |
| | Flat 2 | Living/Dining/Kitchen | 1.0% | 1.2% |
| | | Master bedroom | 1.7% | 2.1% |
| | | Bedroom 2 | 0.8% | 0.9% |
| | | Study | 0.9% | 0.9% |
| | Flat 3 | Living/Dining/Kitchen | 1.5% | 1.6% |
| | | Master bedroom | 0.7% | 0.8% |
| | | Bedroom 2 | 0.9% | 1.0% |
| First | Flat 4 | Living/Dining/Kitchen | 1.1% | 1.1% |
| | | Master bedroom | 0.7% | 0.9% |
| | | Bedroom 2 | 0.8% | 0.9% |
| | | Bedroom 3 | 0.9% | 1.0% |
| | | Study | 2.1% | 2.2% |
| | Flat 5 | Living/Dining/Kitchen | 1.1% | 1.1% |
| | | Master bedroom | 1.6% | 1.6% |
| | | Bedroom 2 | 1.5% | 1.6% |
| | | Bedroom 3 | 0.7% | 0.8% |
| Second | Flat 6 | Living/Dining/Kitchen | 1.1% | 1.1% |
| | | Master bedroom | 1.2% | 1.3% |
| | | Bedroom 2 | 0.9% | 1.0% |
| | | Study | 1.0% | 1.0% |
| | Flat 7 | Living/Dining/Kitchen | 3.5% | 3.5% |
| | | Master bedroom | 1.0% | 1.0% |
| | | Bedroom 2 | 0.8% | 0.8% |

All of the 17 bedrooms proposed would meet the recommended 0.7% median daylight factor in summer and winter conditions.

Of the three studies proposed, one (Flat 4) would meet the recommendations for a bedroom and living room. The other two would meet the recommendation for a bedroom.

All eight living areas proposed (including separate living/dining/kitchen and lounge areas to Flat 1), would meet at least the 1.1% living room recommendation in winter. All but one living area would also meet at least the 1.1% living room recommendation in summer; the living area to Flat 2 would be very marginally below the recommendation. The BRE Report states: “For a room where the recommendation is exceeded in winter, but not in summer, daylight provision year round is likely to be adequate, but it is clear that the trees are having some effect on daylight.”

## Sunlight provision to rooms

Potential sunlight hours received on 21 March have been calculated. Northerly facing rooms would be naturally limited but have been included in the assessment. The values are compared against the

minimum (1.5 hours), medium (3 hours) and high (4 hours) targets. Surrounding trees have been taken into account and the values are calculated with the trees as solid and repeated without the trees to give the range of possible values.

**Table 9**: Sunlight hours results for proposed rooms on 21 March.

| Floor | Unit | Room | Hours of sunlight received on 21 March | |
|---|---|---|---|---|
| | | | Solid trees | No trees |
| Lower Ground | Flat 1 | Living | 0.1 | 0.1 |
| | | Lounge | 0.0 | 0.0 |
| Ground | | Master bedroom | 0.0 | 0.0 |
| | | Bedroom 2 | 0.0 | 0.0 |
| | | Bedroom 3 | 0.6 | 0.6 |
| | Flat 2 | Living/Dining/Kitchen | 4.2 | 8.6 |
| | | Master bedroom | 4.5 | 8.6 |
| | | Bedroom 2 | 1.4 | 1.4 |
| | | Study | 1.0 | 1.0 |
| | Flat 3 | Living/Dining/Kitchen | 1.6 | 4.4 |
| | | Master bedroom | 0.0 | 0.0 |
| | | Bedroom 2 | 1.8 | 2.5 |
| First | Flat 4 | Living/Dining/Kitchen | 1.5 | 1.5 |
| | | Master bedroom | 4.9 | 8.0 |
| | | Bedroom 2 | 4.7 | 8.0 |
| | | Bedroom 3 | 2.6 | 3.5 |
| | | Study | 1.6 | 1.6 |
| | Flat 5 | Living/Dining/Kitchen | 2.1 | 4.9 |
| | | Master bedroom | 5.4 | 6.8 |
| | | Bedroom 2 | 4.8 | 6.0 |
| | | Bedroom 3 | 4.7 | 6.8 |
| Second | Flat 6 | Living/Dining/Kitchen | 3.5 | 3.5 |
| | | Master bedroom | 6.7 | 8.2 |
| | | Bedroom 2 | 7.0 | 7.4 |
| | | Study | 3.5 | 3.5 |
| | Flat 7 | Living/Dining/Kitchen | 3.8 | 5.4 |
| | | Master bedroom | 7.4 | 8.4 |
| | | Bedroom 2 | 6.8 | 7.2 |

Six of the seven living areas would meet at least the minimum 1.5 hours of sunlight recommendation with and without trees. Because six of the seven units proposed would have at least one habitable room meeting at least the minimum sunlight recommendation with and without trees, these units would meet the sunlight provision recommendations. Flat 1 is the only unit below the recommendations, regardless of whether trees are considered or not.

## Sunlight provision to proposed garden

Sunlight provision to the garden at the rear of the proposed development has been assessed via the areas able to receive at least two hours of sunlight on 21 March. Trees and vegetation have not been included in the calculations in line with the advice in the BRE Report. A visual representation of the results is given in Figure 7.

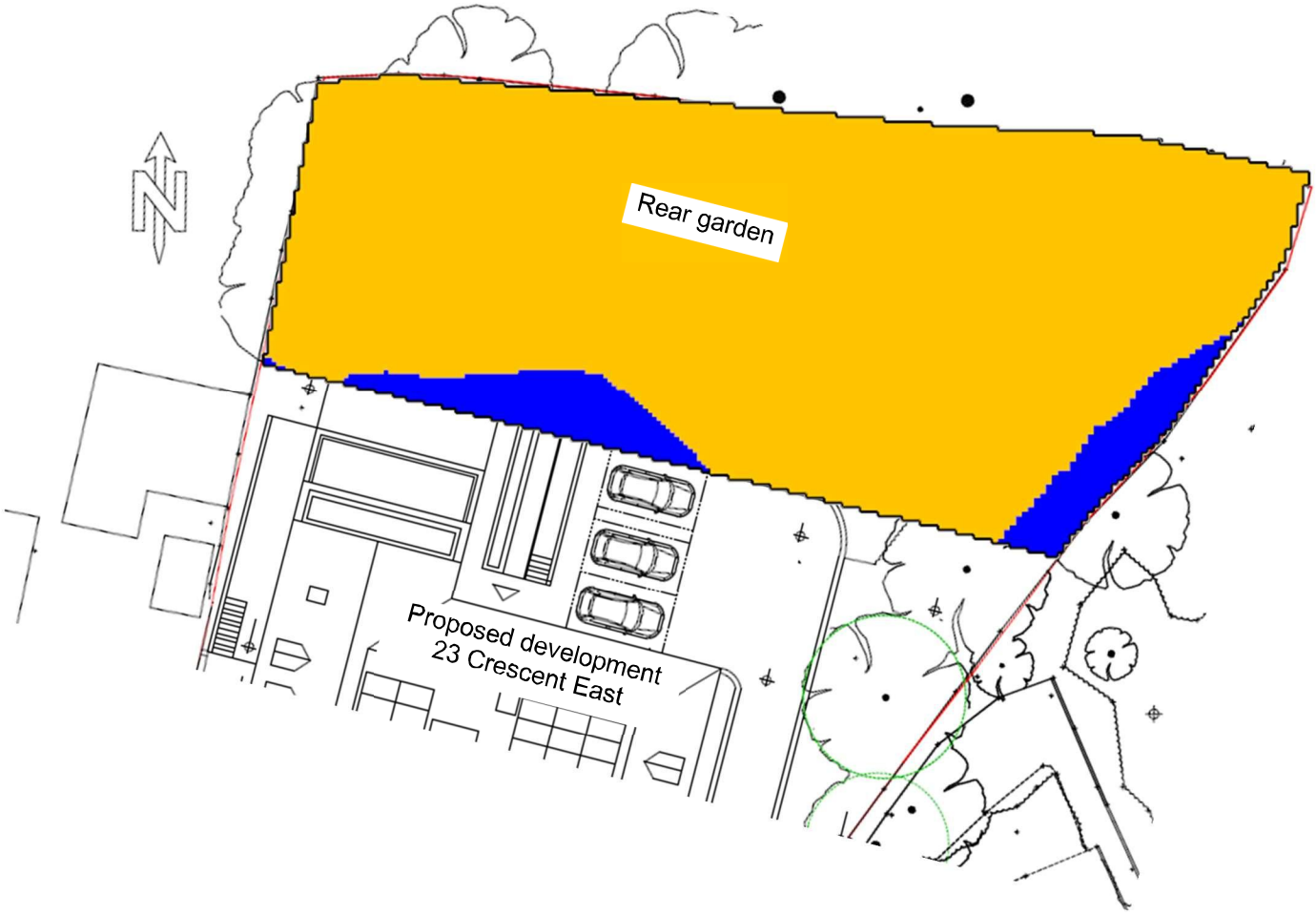



**Figure 7:** Sunlight to proposed garden space. Orange areas received at least two hours of sunlight on 21 March, blue areas do not. Superimposed onto proposed site plan by Alan Cox Associates.

The proposed garden would meet the BRE guideline as 92% of the space would be able to receive at least two hours of sunlight on 21 March, comfortably above the 50% target.

## Conclusions

Loss of daylight and sunlight to existing properties due to a proposed development at 23 Crescent East, Hadley Wood has been assessed. The results have been compared to the guidelines in the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice'.

Windows and rooms assessed at 25 Crescent East would comfortably meet the BRE loss of daylight and sunlight guidelines. Sunlight to the garden would also meet the guidelines.

Two windows would be below the BRE guidelines at 21 Crescent East. However, one window is understood to light a utility room and the other (which is below the guidelines by the smallest of margins) a bathroom. Loss of light to non-habitable areas is considered less of an issue in the BRE Report. The two windows would also be below the annual probable sunlight hours guideline. However, loss of sunlight is only relevant for living areas. A yard area would meet the BRE loss of sunlight guidelines. The main rear garden would also be expected to be similarly not significantly impacted.

Daylight and sunlight provision to habitable rooms in the proposed development has also been analysed. Account for surrounding trees has been included in the calculations and results for summer and winter calculated. The results have been compared to the recommendations in the UK National Annex of BS EN17037 and the BRE Report.

All of the 17 bedrooms would meet the daylight recommendation in summer and winter conditions.

All of the three proposed studies one would meet at least the recommendations for a bedroom.

All living areas would meet at least the living room daylight recommendation in winter conditions. All but one of the living areas would also meet at least the living room recommendation in summer conditions. The remaining room is only very marginally below the recommended target. The BRE Report states: "For a room where the recommendation is exceeded in winter, but not in summer, daylight provision year round is likely to be adequate, but it is clear that the trees are having some effect on daylight."

Six of the seven units would meet the recommendations for sunlight provision. This includes six living areas which would meet at least the minimum recommendations with and without trees. Sunlight to the proposed rear garden would meet the BRE guideline.

The guidance in 'Site layout planning for daylight and sunlight: a guide to good practice' is not mandatory and the Report itself states "although it gives numerical guidelines these should be interpreted flexibly because natural lighting is only one of many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values." This could be justified if there were other significant benefits of the development.