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CONSULTING LIMITED

Client: McBains

Daylight and Sunlight Assessment for the Development at Barnes Primary School, Cross Street, London SW13 0PD

August 2020

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1 Background and Scope of Appraisal

1.1 Study Objectives

Herrington Consulting has been commissioned by McBains to assess the potential impact of the proposed development at Barnes Primary School, Cross Street, London SW13 0PD, in relation to daylight, sunlight and overshadowing on the neighbouring buildings. The key objectives of the assessment are to:

- assess the baseline conditions at the site;
- analyse the potential impacts of the development on the daylight and sunlight currently received by the neighbouring buildings;
- assess these impacts in line with any relevant planning policies and best practice guidance.

1.2 Site Location

The site is situated in the area of Barnes and is located within the London Borough of Richmond Upon Thames. The location of the site is shown in Figure 1.1 and the site plan included in Appendix A.1 of this report gives a more detailed reference to the site location and layout.

Figure 1.1 – Location map (Contains Ordnance Survey data © Crown copyright and database right 2011)

1.3 The Development

The proposal for development is to demolish the existing care takers property to make space for a new build special resource provision with two classrooms. Drawings of the proposed scheme are included in Appendix A.1 of this report.

2 Policy and Guidance

2.1 National Planning Policy

National Planning Policy Framework (Revised February 2019)

Paragraph 123 on 'Achieving appropriate densities' states that *"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 a site (as long as the resulting scheme would provide acceptable living standards)."*

Guidance on Effective Use of Land (Revised July 2019)

The guidance states that: *'Where a planning application is submitted, local planning authorities will need to consider whether the proposed development would have an unreasonable impact on the daylight and sunlight levels enjoyed by neighbouring occupiers, as well as assessing whether daylight and sunlight within the development itself will provide satisfactory living conditions for future occupants.'*

Further to this, it also states that '*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.'

2.2 Regional Planning Policy

The London Plan – Spatial Development Strategy for London (2016)

Policy 7.6: 'Architecture' of the adopted London Plan, includes the following statements: *"Buildings and structures should… not cause unacceptable harm to the amenity of surrounding land and buildings, particularly residential buildings, in relation to… overshadowing.". "New development, (…), should not have a negative impact on the character or amenity of neighbouring sensitive land uses".*

The London Plan – Supplementary Planning Guidance on Housing (2016)

Policy 7.6Bd on 'Standards for privacy, daylight and sunlight' *requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to privacy and overshadowing'*. It also states that '*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, (…). 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'*

In the 'Standards for privacy, daylight and sunlight', Paragraph 1.3.46 states that '*The degree of harm on adjacent properties (…) should be assessed drawing on*

broadly comparable residential typologies within the area and of a similar nature across London'. Similarly, Paragraph 2.3.47 on 'Daylight and Sunlight' includes the following statement '*Quantitative standards on daylight and sunlight should not be applied rigidly, without carefully considering the location and context and standards experienced in broadly comparable housing typologies in London'*.

Standard 32 on 'Daylight and Sunlight' states that '*All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight'*.

2.3 Local Planning Policy

Local Plan (July 2018)

Policy LP8 – Amenity and Living Conditions*: 'All development will be required to protect the amenity and living conditions of 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.'*

Paragraph 4.8.5 under 'Daylight, sunlight and solar glare' states that *'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.'*

Paragraph 4.8.11 under 'Visual intrusion, privacy and outlook' states that '*Outlook is the visual amenity enjoyed by occupants when looking out of their windows or from their garden; how pleasant an outlook is depends on what is being viewed. Loss of daylight/sunlight (based on Building Research Establishment guidance), overshadowing, loss of outlook to the detriment of residential amenity are material planning considerations; however, the loss of a private view from a property is not protected.'*

2.4 Best Practice Guidance

In the absence of official national planning guidance / legislation on daylight and sunlight, the most recognised guidance document is published by the Building Research Establishment and entitled 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', Second Edition, 2011; herein referred to as the 'BRE Guidelines'.

The BRE Guidelines are not mandatory and themselves state that they should not be used as an instrument of planning policy, however in practice they are heavily relied upon as they provide a good guide to approach, methodology and evaluation of daylight and sunlight impacts.

In conjunction with the BRE Guidelines further guidance is given within the British Standard (BS) 8206-2:2008: 'Lighting for buildings - Part 2: Code of practice for daylighting'.

In this assessment, the BRE Guidelines have been used to establish the extent to which the Proposed Development meets current best practice guidelines. In cases where the Development is likely to reduce light to key windows the study has compared results against the BRE criteria.

Whilst the BRE Guidelines provide numerical guidance for daylight, sunlight and overshadowing, these criteria should not be seen as absolute targets. The document states that the intention of the guide is to aid rather than constrain the designer. The Guide is not an instrument of planning policy, therefore whilst the methods given are technically robust, it is acknowledged that some level of flexibility should be applied where appropriate.

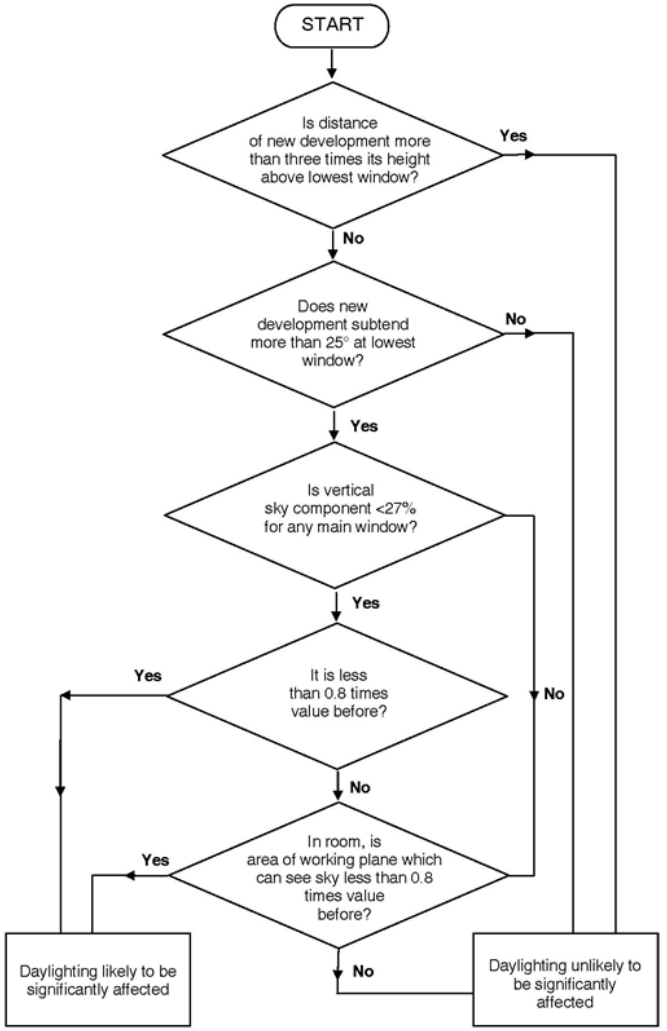
3 Assessment Techniques

3.1 Background

Natural light refers to both daylight and sunlight. However, a distinction between these two concepts is required for the purpose of analysis and quantification of natural light in buildings. In this assessment, the term '*Daylight*' is used for natural light where the source is the sky in overcast conditions, whilst '*Sunlight*' refers specifically to the light coming directly from the sun.

The primary objective of this assessment is to quantify the impacts of the proposed development on the adjacent building[s] and therefore the methods employed by this study are focussed on this objective. These methodologies are described in the following sections of this report and follow the hierarchical approach set out by the BRE Guidelines. The 'decision chart' outlining this process (Figure 20 of the Guidelines) has been reproduced for clarity.

The BRE guidelines are primarily intended for use for residential rooms in adjoining dwellings. However, they may also be applied to any existing non-domestic buildings where the occupants have a reasonable expectation of daylight, which could include schools, hospitals, hotels and offices in specific circumstances. For dwellings, it states that living rooms, dining rooms and kitchens should be assessed. Bedrooms should also be checked, although it states that they are less important. Other rooms, such as bathrooms, toilets, storerooms, circulation areas and garages need not be assessed.



3.2 Vertical Sky Component (VSC)

The Vertical Sky Component (VSC) calculation 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 (Commission Internationale d'Éclairage) Overcast Sky is used and the ratio is expressed as a percentage. For example, a window that has an unobstructed view over open fields would benefit from the maximum VSC, which would be close to 40%. For a window to be considered as having a reasonable amount of skylight reaching it, the BRE Guidelines suggests that a minimum VSC value of 27% should be achieved. When assessing the impact of a new development on an existing building the BRE Guidelines sets out the following specific requirement:

If the VSC with the new development in place is both less than 27% and less than 0.8 times its former value, then the reduction in light to the window is likely to be noticeable.

This means that a reduction in the VSC value of up to 20% its former value would be acceptable and thus the impact would be considered negligible. It is important to note that the VSC is a simple geometrical calculation, which provides an early indication of the potential for daylight entering the space. It does not, however, assess or quantify the actual daylight levels inside the rooms.

3.3 No Sky Line

The No Sky Line, or sometimes referred to as No Sky View method, describes the distribution of daylight within rooms by calculating the area of the 'working plane', which can receive a direct view of the sky. The working plane height is generally set at 850mm above floor level within a residential property and 700mm within a commercial property. When assessing the potential impacts on the daylight available to the neighbouring properties, the BRE Guidelines state that if the area within a room receiving direct skylight is reduced by less than 0.8 following the construction of a new development, the impact will be noticeable to the occupants. This is also true if the No Sky Line encroaches onto key areas like kitchen sinks and worktops.

3.4 Average Daylight Factor

The Average Daylight Factor (ADF) method calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and considers the physical nature of the room behind the window, including; window transmittance, and surface reflectivity.

This method of quantifying the availability of daylight within a room does, however, require the internal layout to be known and is generally only used for establishing daylight provision in new rooms. The BRE Guide sets out the following guidelines for the assessment of the ADF:

If a predominantly daylit appearance is required, then the ADF should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. In dwellings, the following minimum average daylight factors should be achieved: 1% in bedrooms, 1.5% in living rooms and 2% in kitchens.

3.5 Annual Probable Sunlight Hours

It is also possible to quantify the amount of sunlight available to a new development and the recognised methodology for undertaking this analysis is the Annual Probable Sunlight Hours (APSH) method.

To pass this test the centre point of the window will need to receive more than one quarter (25%) of the APSH, including at least 5% APSH in the winter months between 21st September and the 21st March. The BRE Guidelines state that if 'post-development' the available sunlight hours are both less than the amount above and less than 0.8 times their 'pre-development' value, either over the whole year or just within the winter months, then the occupants of the existing building will notice the loss of sunlight. In addition, if the overall annual loss is greater than 4% of APSH, the room may appear colder and less pleasant.

For new development and especially where existing buildings are being re-developed, it is important to acknowledge that these are aspirational targets intended to aid and not constrain the designer.

These aspirational targets were derived to improve the amenity of single dwellings that typically comprise a living room, kitchen and bedrooms; the objective being to maximise sunlight in the main living areas. However, for buildings that contain multiple apartments, it is rarely possible to configure the internal layout such that all rooms receive direct sunlight as it is inevitable that some windows will be situated on an elevation that faces within 90 degrees of due north.

It is therefore important to understand that when assessing the provision of sunlight to a building containing multiple dwellings, the BRE Guidelines seek only to maximise the amount of sunlight received. They do not set absolute targets.

3.6 Overshadowing

The BRE Guidance suggests that where new development may affect one or more amenity areas, then analysis can be undertaken to quantify the loss of sunlight resulting from overshadowing. Typical examples of areas that could be considered as open spaces or amenity areas are main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views, such as a group of monuments or fountains. Amenity areas in the form of balconies are not recommended to be assessed under the BRE Guidelines due to their small size and often significant obstruction.

Sun Hours on Ground

The BRE Guidelines recommend that for a garden or amenity area to appear adequately sunlit throughout the year, at least 50% of an amenity area should receive at least 2 hours of sunlight on 21st March. The BRE Guidelines also suggest that if, as a result of a new development, an existing garden or amenity area does not meet these guidelines, and 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.

When undertaking this analysis, sunlight from an altitude of 10° or less has been ignored as this is likely to be obscured by planting and undulations in the surrounding topography. Driveways and hard standing for cars is also usually left out of the area used for this calculation. Fences or walls less than 1.5 metres

high are also ignored. Front gardens which are relatively small and visible from public footpaths are omitted with only main back gardens needing to be analysed.

The Guidelines also state that "normally, trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than a deep shadow of a building". This is especially the case for deciduous trees, which provide welcome shade in the summer whilst allowing sunlight to penetrate during the winter months.

Transient Overshadowing

The BRE Guidelines suggest that where large buildings are proposed, which may affect a number of open spaces or amenity areas, it is useful and illustrative to plot a shadow plan to show the location of shadows at different times of the day and at key times during the year. Typically, the 21st March, the 21st June, and 21st December are used to represent the annual variance of sun position, noting that the position of the sun in the sky during the spring equinox (21st March) is equivalent to that of the autumn equinox.

The BRE Guidelines provide no criteria for the significance of transitory overshadowing other than to suggest that by establishing the different times of day and year when shadow would be cast over surrounding areas, provides an indication as to the significance of the likely effect of a new development. The assessment of transient overshadowing effects is therefore based upon expert judgment, taking into consideration the likely effects of the various baseline conditions and comparing them with the likely significant transient overshadowing effects of the redevelopment proposals.

4 Assessment Methodology

4.1 Method of Baseline Data Collation

The following data and information has been used to inform this study:

- OS Mastermap mapping
- Scheme drawings in AutoCAD format (McBains – July 2020)
- Photographic information collected during a site visit carried out on 27th July 2020
- 3D Building Revit model (McBains – July 2020)
- Aerial photography (Google Maps and Bing)

4.2 Identification of Key Sensitive Receptors

The BRE Guidelines are intended for use for rooms and adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms circulation areas and garages are not deemed as requiring daylight and therefore are not identified as sensitive receptors. The BRE document also states that the guidelines may also be applied to any non-domestic building where the occupants have a reasonable expectation of daylight. This would normally include schools, hospitals, hotels, hostels, small workshops and some offices.

The first step in this process is to determine the key sensitive receptors, i.e. which windows may be affected by the proposed development. Key receptors are those windows that face, or are located broadly perpendicular to the proposed development.

If a window falls into this category, the second step is to measure the obstruction angle. This is the angle at the level of the centre of the lowest window between the horizontal plane and the line joining the highest point of nearest obstruction formed from any part of the proposed development. If this angle is less than 25° then it is unlikely to have a substantial effect on the diffuse daylight enjoyed by the existing window and the window is not deemed to be a sensitive receptor. A graphical representation of the 25° rule is illustrated in Figure 4.1 below.

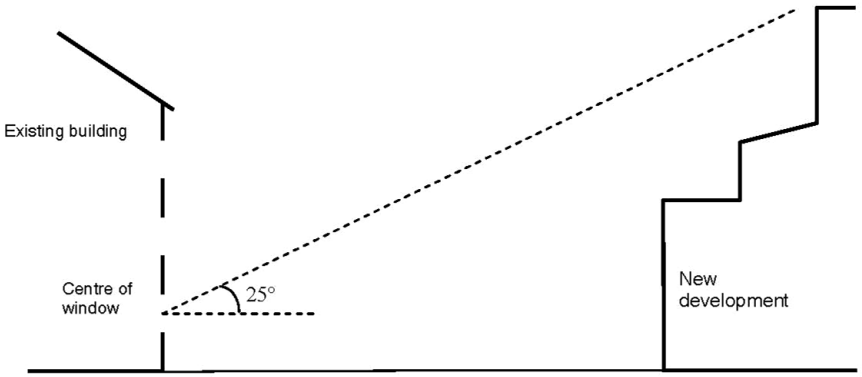


Figure 4.1 – Graphical representation of the 25° Rule (indicative buildings used for illustration purposes only)

As part of this assessment a digital three-dimensional model of the study area has been created for both the 'pre' and 'post' development scenarios. Images of these models are shown by the drawings appended to this report.

Using the 3D model, it is possible to identify all windows having an obstruction angle no greater than 25°. Impacts to these windows are therefore deemed to be negligible in line with the criteria set out within the BRE Guidelines.

There are, however, circumstances where the 25°*degree* rule is not wholly appropriate, for example where the development facing the window does not create a uniform obstruction along the skyline, or where the proposals are not directly adjacent to the receptor window. In these situations, professional judgement is used to differentiate between windows that require more detailed analysis and those that will clearly not be impacted. Where any level of uncertainty exists, the window is taken forward for detailed analysis.

Windows serving non-habitable spaces are not included within the assessment as these are not identified by planning policy or by the BRE Guidelines to be sensitive to changes in daylight and sunlight. Therefore, as part of the identification of sensitive receptor process, the use of each room is, where possible, established and windows serving non-habitable spaces such as toilets, store rooms, stairwells and circulation spaces are identified. Typically kitchens that have a floor area less then 13m^2 are not considered to be habitable spaces in their own right.

Windows serving rooms within commercial premises are assumed to be non-habitable and in accordance with the BRE Guidelines are not identified as sensitive receptors. However, there are special cases where it can be assumed that some non-domestic uses could be deemed to have a reasonable expectation of daylight and therefore could be taken forward for more detailed analysis. Typically, these could be school classrooms, hospital wards, art studios etc, but professional judgement is generally relied upon to determine this and where considered appropriate, windows serving commercial premises are included.

Drawings showing the location of all sensitive receptors that have been assessed as part of this study are included in Appendix A.2 of this report.

In summary, habitable rooms in the following residential buildings have been identified as potential sensitive receptors and have therefore been tested.

- Nos. 74 – 84 Westfields Avenue (even numbers only)
- Nos. 50 – 56 Railway Side

4.3 Numerical Modelling

The numerical analysis used in this assessment has been undertaken using the Waldrum Tools (Version 5.0.0.1) software package.

4.4 Calculation Assumptions

The following assumptions have been made when undertaking the analysis:

- When assessing the VSC the calculation is based on the centre point of the window position.
- When assessing the ADF for internal rooms and in the absence of specific information, the following parameters are assumed:
  - For new buildings, the glazing type is assumed to be double glazing (Pilkington K Glass 4/16/4 Argon filled) with a light transmittance value of 0.78 (value for double glazed unit not per pane). For existing buildings, a value of 0.68 has been assumed.

- Correction factor for frames and glazing bars = 0.8
- Where information from the designer is not available, the following values are used to derive the Maintenance Factor applied to the transmittance values.

Location / setting	Building type (Residential – good maintenance)	Exposure (normal)	Special exposure	Maintenance Factor
Urban	8%	x 1.0	x 1.0	0.92
Rural / suburban	4%	x 1.0	x 1.0	0.96

Table 4.1 – Parameters used for deriving Maintenance Factor (refer to BS 8206-2:2008 Tables A3, A4 and A5)

- The reflectance values used in the ADF analysis of neighbouring buildings are based on typical values for internal surfaces. Where information on internal finishes is not available, the default value of 0.5 prescribed by the BRE Guidelines is adopted.
- The reflectance values used in the ADF analysis of the proposed new buildings are shown in table 4.2 below and are used unless specified otherwise by the designer:

Surface	Value
Internal walls (painted pale cream)	81%
Internal ceiling (painted white)	85%
Internal flooring	30%

Table 4.2 – Reflectance values used in ADF analysis

- Where information on internal room layouts of adjacent properties is not known, best estimates as to room layout and size have been made in order to undertake No Skyline analysis and, if applicable, ADF analysis.
- Where the internal arrangements and room uses have been estimated, it should be noted that this has no bearing upon the tests for VSC or APSH because the reference point is at the centre of the window being tested and windows have been accurately drawn from the survey information where possible. It is relevant to the daylight distribution assessment, but in the absence of suitable plans, estimation is a conventional approach.
- In areas where survey data has not been provided or needs to be supplemented with additional information, photographs, OS mapping and brick counts have been used in the process of building the 3D model of the surrounding and existing buildings.
- When analysing the effect of the new building on the existing buildings, the shading effect of the existing trees has been ignored. This is the recommended practice where deciduous trees that do not form a dense belt or tree line are present (BRE Guidelines – Appendix H). This is because

daylight is at its scarcest and most valuable in the winter when most trees will not be in leaf.

- In situations where windows are deeply set-back beneath balconies or other overhanging features, it is common for these rooms to have low VSC values as a result of the obstruction caused by the balcony. It widely accepted and acknowledged within the BRE Guidelines that the presence of balconies can mask the impact of a proposed development when using the VSC test and therefore the Guidelines suggest that the window should be tested both 'with' and 'without' the balcony in place. If the ratio of change with the development in place, but with the balconies removed, remains above 0.8, then it can be concluded that it is the presence of the balcony rather than the introduction of a new building that is the main factor in the relative loss of light.

- Where the results of the detailed analysis are presented in the appendix to 2 decimal places, these values may be rounded to a single decimal place when interpreting the results and discussing compliance with assessment criteria. This is to fit with the convention adopted within the BRE Guidelines where all ratio of change values are expressed to one decimal place.

4.5 Assessment criteria

The numerical assessment criteria specified within the BRE Guidelines is designed to identify the threshold at which point a change in daylight or sunlight would become 'noticeable' to the occupants. Consequently, where the results of the daylight/sunlight analysis demonstrate compliance with the BRE criteria it can be concluded that the impact will be negligible. However, a point that should be stressed here is that 'noticeable' does not necessarily equate to 'unacceptable' and the BRE's standard target values should not always be considered as pass/fail criteria. Whilst the BRE Guidelines provide numerical guidance for daylight, sunlight and overshadowing, these criteria should not be seen as absolute targets since, as the document states, the intention of the guide is to help rather than constrain the designer. The Guide is not an instrument of planning policy, therefore whilst the methods given are technically robust, it is acknowledged that some level of flexibility should be applied where appropriate. Consequently, based on the numerical assessment criteria set out with the BRE Guidelines and the use of professional judgment, the following assessment criteria have been established and are used in describing the impacts of the proposed development.

Significance	Description	Change Ratio
Negligible	No alteration or a small alteration from the existing scenario. Results demonstrate full compliance with the BRE assessment criteria and therefore occupants are unlikely to notice any change.	1.0 to 0.8
Minor adverse	An alteration from the existing scenario which may be marginally noticeable to the occupant. This may include a marginal infringement of the numerical levels suggested in the BRE Guidelines, which should be viewed in context. A typical change ratio for this level of significance would be 0.7	0.7 to 0.8
Moderate adverse	An alteration from the existing scenario which may cause a moderate noticeable change to the occupant. This may consist of a moderate infringement of the numerical BRE assessment criteria with	0.6 to 0.7
Major adverse	An alteration from the existing scenario which may cause a major noticeable change to the occupant. This may consist of a significant infringement of the numerical BRE assessment criteria.	Less than 0.6

Table 4.3 – Daylight & Sunlight Impact Descriptors

5 Discussion of Daylighting Impacts

Based on the results of the numerical analysis summarised in Appendix A.3, it is possible to draw conclusions on the impacts that the proposed development will have on the neighbouring buildings. These are based on the principle numerical tests that are discussed below.

5.1 Vertical Sky Component Assessment

The BRE Guidelines operate on the general principle that where the retained VSC is 27% or greater, or where the retained VSC has not reduced to less than 0.8 times its former value, then the reduction in daylight is unlikely to be noticeable to the building's occupants and thus the impact can be deemed negligible. The results of the VSC analysis are summarised below.

Property	No. Windows Tested	Windows meeting BRE Guidelines		VSC Windows Transgressions		
		No.	%	Minor adverse	Moderate adverse	Major adverse
74 Westfields Avenue	2	2	100%	0	0	0
76 Westfields Avenue	3	3	100%	0	0	0
78 Westfields Avenue	3	3	100%	0	0	0
80 Westfields Avenue	3	3	100%	0	0	0
82 Westfields Avenue	3	3	100%	0	0	0
84 Westfields Avenue	7	7	100%	0	0	0
50 Railway Side	3	3	100%	0	0	0
51 Railway Side	4	4	100%	0	0	0
52 Railway Side	3	3	100%	0	0	0
53 Railway Side	5	5	100%	0	0	0
54 Railway Side	8	8	100%	0	0	0
55 Railway Side	2	2	100%	0	0	0
56 Railway Side	6	6	100%	0	0	0
Total	**52**	**52**	**100%**	**0**	**0**	**0**

Table 5.1 – Results of Vertical Sky Component (VSC) Analysis

Inspection of the results of this test show that all of the windows either retain a VSC value greater than 27% post development, or have a ratio of change that is 0.8 or above and therefore are fully compliant. Consequently, in line with the assessment criteria set out within the BRE Guidelines it is possible to conclude that the impact will be **negligible**.

5.2 No Sky Line Assessment

In order to pass the No Sky Line Assessment, the BRE Guidelines state that the area of the working plane within the room that has a view of the sky should not be reduced to less than 0.8 times its former value as a result of new development. One benefit of the daylight distribution test is that the resulting contour plans show where the light falls within a room, for both the existing and proposed conditions, and a judgement can be made as to whether the room will retain light to a reasonable depth.

In this case, the dimensions and layouts of the habitable rooms of Nos. 74 and 76 Westfields Avenue, and Nos. 50, 51, 52 and 54 Railway Side, have been reproduced from information obtained via the planning portal (Application numbers: 97/0443, 12/3569/HOT, 18/2517/HOT, and 14/2456/HOT) and estate agent details. There are no internal floor layouts available for Nos. 78 – 84 (even numbers) Westfield Avenue, as well as Nos. 53, 55 and 56 Railway Side and therefore an estimate of the room dimensions and layouts has been made. As is considered best practice, the rooms within this/these buildings have been assumed to be 4.2m deep when considered appropriate to the building.

The results of the No Sky Line/Daylight Distribution analysis are summarised below.

Property	Number of Rooms Tested	Rooms that meet BRE Guidelines		No Sky Line No. of Rooms Experiencing Transgressions		
		No.	%	Minor adverse	Moderate adverse	Major adverse
74 Westfields Avenue	2	2	100%	0	0	0
76 Westfields Avenue	2	2	100%	0	0	0
78 Westfields Avenue	2	2	100%	0	0	0
80 Westfields Avenue	2	2	100%	0	0	0
82 Westfields Avenue	2	2	100%	0	0	0
84 Westfields Avenue	5	5	100%	0	0	0
50 Railway Side	2	2	100%	0	0	0
51 Railway Side	2	2	100%	0	0	0
52 Railway Side	2	2	100%	0	0	0
53 Railway Side	3	3	100%	0	0	0
54 Railway Side	3	3	100%	0	0	0
55 Railway Side	2	2	100%	0	0	0
56 Railway Side	2	2	100%	0	0	0
Total	**31**	**31**	**100%**	**0**	**0**	**0**

Table 5.2 – Results of No Sky Line (NSL) Analysis

From the results summarised above, it can be seen that as a result of the proposed development, the impact on the daylight distribution within the assessed rooms will be negligible. The reduction in the area of the working plane that has a direct view of the sky will be less than 20% therefore occupants are unlikely to notice any change.

5.3 Summary of Daylighting Impacts

The proposed development at Barnes Primary School, Cross Street, London SW13 0PD has been evaluated against the criteria set out by the BRE Guidelines for the assessment of the potential impacts on the daylight of the neighbouring properties. Thirteen properties have been identified as sensitive receptors for this study, Nos. 74 – 84 (even numbers) Westfield Avenue and Nos. 50 – 56 Railway Side, and therefore, the habitable rooms and the windows serving these rooms have been tested.

When the magnitude of reduction is considered, it is evident that this will be within the acceptable limits set out within the BRE Guidelines. Consequently, it is possible to conclude that any changes to the daylight received by the habitable rooms of the neighbouring buildings will not be significant and is unlikely to be noticeable by the occupants.

6 Sunlight and Overshadowing Analysis

6.1 Annual Probable Sunlight Hours Assessment

The Annual Probable Sunlight Hours (APSH) tests have been carried out using the numerical model described in Section 4.3. The assessment requirements for the APSH test, as set out in the BRE Guidelines, have been reiterated below. For the assessment to conclude that the sunlighting of the existing dwelling could be adversely affected, all three of the following tests need to have been failed:

Test A - Does the window receive less than 25% of the APSH, or less than 5% the APSH between 21st September and 21st March?

Test B - Does the assessed window receive less than 0.8 times its former sunlight hours during either the 'whole year' or 'winter' period?

Test C - Is the reduction in sunlight received over the whole of the year greater than 4% of the APSH?

However, these tests are only applicable to windows that face within 90 degrees of due south. Consequently, in line with the guidelines and assessment methodologies set out within the BRE document, the analysis of sunlight impacts has only been carried out for these windows. Windows facing within 90 degrees of due north are not analysed and impacts are deemed to be negligible.

It should also be noted that where rooms have windows on more than one elevation, it is acceptable to sum the non-coincident sunlight hours to achieve a 'room total'. This approach is acknowledged by the BRE Guidelines and facilitates a greater understanding of the sunlight received within a room by taking into account the fact that some windows will receive sunlight at different times during the day.

When examining the results of the three sunlight tests, it is first necessary to understand why there are three separate tests and more importantly, why it is not necessary to pass all three to demonstrate that there is no adverse impact. The BRE Guidelines clearly state that for the proposed development to be considered to have an adverse effect on the available sunlight to neighbouring windows, all three tests would need to have been failed.

This is because sunlight is not assessed in terms of its contribution to the overall lighting levels within the room. The value attributed to sunlight is its transient presence and the way in which it can make a room appear bright and cheerful. There are also therapeutic values associated with sunlight and therefore it can be seen that these are not quantitative metrics that can be assessed using a single pass/fail criteria test. It is also necessary to understand that the amount of sunlight received by a window is strongly influenced by the orientation of the window elevation and any surrounding obstructions.

As a consequence of these factors, the assessment methodology embodied within the three separate tests allows the change in sunlight to be assessed in terms of the magnitude of change, absolute change and the retained level of sunlight. To conclude that a new development has no adverse impact, all that is required is for one of the three tests to be passed. The APSH test has been carried out and the detailed results of the analysis are included in Appendix A.3 and a summary of the results are shown in Table 6.1 below.

Property	Number of Windows Tested	Annual			Winter		
		Windows that meet BRE Guidelines		No. of Windows Experiencing Adverse Impacts	Windows that meet BRE Guidelines		No. of Windows Experiencing Adverse Impacts
		No.	%		No.	%	
74 Westfields Avenue	2	2	100%	0	2	100%	0
76 Westfields Avenue	3	3	100%	0	3	100%	0
78 Westfields Avenue	3	3	100%	0	3	100%	0
80 Westfields Avenue	3	3	100%	0	3	100%	0
82 Westfields Avenue	3	3	100%	0	3	100%	0
84 Westfields Avenue	7	7	100%	0	7	100%	0
50 Railway Side	*North facing*						
51 Railway Side	2	2	100%	0	2	100%	0
52 Railway Side	*North facing*						
53 Railway Side	2	2	100%	0	2	100%	0
54 Railway Side	2	2	100%	0	2	100%	0
55 Railway Side	*North facing*						
56 Railway Side	3	3	100%	0	3	100%	0
Total	**30**	**30**	**100%**	**0**	**30**	**100%**	**0**

Table 6.1 – Results of APSH Analysis

When the results of the APSH analysis summarised in Table 6.1 are inspected, it can be seen that all windows and rooms pass at least two of the three sunlight tests. Consequently, it has been demonstrated that the proposed scheme will have a negligible impact on neighbouring buildings.

6.2 Sun on the Ground

The BRE Guidelines acknowledge that good site layout planning for daylight and sunlight should not limit itself to providing good natural light inside buildings. Sunlight in the space between buildings has an important effect on the overall appearance and ambiance of a development.

The 2011 BRE Guidelines suggest that the Spring Equinox (21st March) is a suitable date for the assessment and therefore using the specialist software described in Section 4.3, the path of the sun is tracked to determine where the sun would reach the ground and where it would not.

The BRE guidelines recommend that at least half of a garden or amenity area should receive at least 2 hours of sunlight on March 21st or the area which receives 2 hours of direct sunlight should not be reduced to less than 0.8 times its former value (i.e. there should be no more than a 20% reduction).

Typical examples of areas that could be considered as open spaces or amenity areas are main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views.

The gardens of the following properties have been identified as sensitive amenity areas and the results of the sun on the ground analysis are summarised in Table 6.2.

- Rear gardens to Nos. 74 – 88 Westfields Avenue (even numbers only)
- Rear gardens to Nos. 50 – 56 Railway Side

The graphical results of the overshadowing analysis are included in Appendix A.2.

Amenity area	Percentage of area lit for 2 hours or more on the 21st March		Ratio of change	Compliant with BRE criteria?
	Existing	Proposed		
74 Westfields Avenue	75%	63%	0.84	Yes
76 Westfields Avenue	74%	48%	0.65	No
78 Westfields Avenue	60%	53%	0.88	Yes
80 Westfields Avenue	68%	59%	0.88	Yes
82 Westfields Avenue	72%	42%	0.69	No
84 Westfields Avenue	66%	41%	0.62	No
86 Westfields Avenue	73%	55%	0.75	Yes
88 Westfields Avenue	74%	68%	0.91	Yes
50 Railway Side	64%	64%	n/a	Yes
51 Railway Side	58%	58%	n/a	Yes
52 Railway Side	58%	58%	n/a	Yes
53 Railway Side	61%	61%	n/a	Yes
54 Railway Side	57%	57%	n/a	Yes
55 Railway Side	68%	68%	n/a	Yes
56 Railway Side	63%	63%	n/a	Yes

Table 6.2 – Results of the Sun on Ground analysis

To gain an understanding of how the proposed development height affects the neighbouring properties, while balancing the need for easy access and site

conditions, the test was also run with the proposed building dug 320mm into the ground. The results of this test are summarised in Table 6.3.

Amenity area	Percentage of area lit for 2 hours or more on the 21st March		Ratio of change	Compliant with BRE criteria?
	Existing	Proposed		
74 Westfields Avenue	75%	64%	0.85	Yes
76 Westfields Avenue	74%	49%	0.67	No
78 Westfields Avenue	60%	56%	0.92	Yes
80 Westfields Avenue	68%	62%	0.92	Yes
82 Westfields Avenue	72%	52%	0.72	Yes
84 Westfields Avenue	66%	44%	0.67	No
86 Westfields Avenue	73%	57%	0.78	Yes
88 Westfields Avenue	74%	68%	0.91	Yes
50 Railway Side	64%	64%	n/a	Yes
51 Railway Side	58%	58%	n/a	Yes
52 Railway Side	58%	58%	n/a	Yes
53 Railway Side	61%	61%	n/a	Yes
54 Railway Side	57%	57%	n/a	Yes
55 Railway Side	68%	68%	n/a	Yes
56 Railway Side	63%	63%	n/a	Yes

Table 6.3 – Results of the Sun on Ground analysis – proposed lowered by 320mm

From the above results in Tables 6.2 and 6.3, it can be seen that with the proposed scheme in place, the amenity areas of Nos. 76, 82, and 84 Westfield Avenue are noticeably affected during the 21st March test. This is not uncommon in urban areas, where the low angle of the sun in the sky at this time of year makes urban gardens very sensitive to any change in sky obstruction. Of the properties falling short of meeting the recommended levels, it can be observed that when the building is lowered, the ratio of change is improved for all gardens and the rear garden of No. 82 will receive 2 hours or more sun to over half of the area, hereby meeting the BRE recommendations. To gain an understanding of the degree of overshadowing during the time when these gardens are most in use, the same test has been applied for the 21st June at the original ground level. The results of this are included in Table 6.4 below and from these it is evident that the impact at this time of year is negligible.

Amenity area	Percentage of area lit for 2 hours or more on the 21st June		Ratio of change	Compliant with BRE criteria?
	Existing	Proposed		
74 Westfields Avenue	94%	93%	0.98	Yes
76 Westfields Avenue	96%	94%	0.97	Yes
78 Westfields Avenue	95%	95%	n/a	Yes
80 Westfields Avenue	95%	95%	n/a	Yes
82 Westfields Avenue	94%	92%	0.97	Yes
84 Westfields Avenue	91%	89%	0.98	Yes
86 Westfields Avenue	95%	95%	0.99	Yes
88 Westfields Avenue	96%	96%	n/a	Yes
50 Railway Side	98%	98%	n/a	Yes
51 Railway Side	94%	94%	n/a	Yes
52 Railway Side	93%	93%	n/a	Yes
53 Railway Side	93%	93%	n/a	Yes
54 Railway Side	99%	99%	n/a	Yes
55 Railway Side	100%	100%	n/a	Yes
56 Railway Side	94%	94%	n/a	Yes

Table 6.4 – Results of the Sun on Ground analysis

From the above results, it can be seen that with the proposed scheme in place, the amenity areas benefit from two hours or more of direct sunlight to well over 50% of their area on the 21st June. In addition, it can be seen that as a result of the proposed development, the sunlight available to these amenity areas will not be reduced by more than 20% at this time of year which is the acceptable reduction limit prescribed by the BRE Guidelines.

Consequently, it can be concluded that the proposed development will not result in a noticeable increase in overshadowing to the neighbouring gardens during summer.

6.3 Transient Overshadowing

Where amenity areas are used at specific times of day or year, it is useful and illustrative to comment on the overshadowing that will occur throughout the day and at different times of the year. However, with traditional rear gardens and public open spaces that are potentially used all year round, it is acknowledged by the BRE Guidelines that the 21st March equinox is used, as this represents a much worst case than an assessment during the summer when shadows are shorter and impacts of new development are less magnified.

It is also worth highlighting that whilst the BRE Guidelines do not provide any thresholds or assessment criteria for overshadowing analysis carried out at any date other than the 21st March. All that is quoted in the Guidelines is an acknowledgement that some degree of transient overshadowing should be expected from new development. Consequently, unless there is a specific reason to assess overshadowing at a specific time of day, the use of transient shadow plots is not recommended by the BRE Guidelines.

In this situation, it is not considered that any of the amenity areas that are potentially affected by the proposed development would be described as being sensitive to overshadowing at any particular time of day. Consequently, transient overshadowing is not considered appropriate for this assessment.

6.4 Solar Glare

Solar glare or dazzle can affect neighbouring buildings and pose potential hazards for road users under certain circumstances. The BRE Guidelines highlight two particular cases where this can be a problem; these being where there are large areas of reflective glass or cladding on the façade, or where large areas of glass or cladding slope back such that high-altitude sunlight can be reflected along the ground.

When the proposed design is considered, it can be seen that the building does not slope back, nor does it include large areas of reflective glass or cladding. Given the building design and the BRE Guideline's stance on this matter, it is not considered necessary or appropriate to incorporate an analysis of solar glare.

7 Conclusions

The detailed analysis undertaken as part of this assessment has examined the impact of the proposed development at Barnes Primary School, Cross Street, London, on the amount of daylight enjoyed by the neighbouring buildings. Thirteen properties have been identified as sensitive receptors for this study, Nos. 74 – 84 (even numbers) Westfield Avenue and Nos. 50 – 56 Railway Side, and therefore, the habitable rooms and the windows serving these rooms have been tested.

In line with the assessment criteria prescribed by the BRE Guideline, it has been shown that the reduction in daylighting to the windows/rooms of the neighbouring buildings will be within the acceptable limits set out within the BRE Guidelines. Consequently, it is possible to conclude that any changes to the daylight received by the habitable rooms of the neighbouring buildings will not be significant and is unlikely to be noticeable by the occupants.

The assessment of the impact of the proposed development on the sunlight enjoyed by the neighbouring buildings has also shown that despite some reductions seen in the number of probable sunlight hours enjoyed by these windows/rooms, these are again within the limits prescribed by the BRE Guidelines as being acceptable. Furthermore, the assessment of the sunlight available to the neighbouring amenity areas indicates that all of the amenity areas will experience no change to the excellent sunlight levels they currently enjoy during the summer months.

In summary, the development proposals have been appraised in line with the guidelines set out in the BRE document. When assessed against the criteria for establishing whether the proposed development will have a significant impact, it has been possible to conclude that the development will not result in a notable reduction in the amount of either daylight or sunlight enjoyed by the neighbouring buildings.

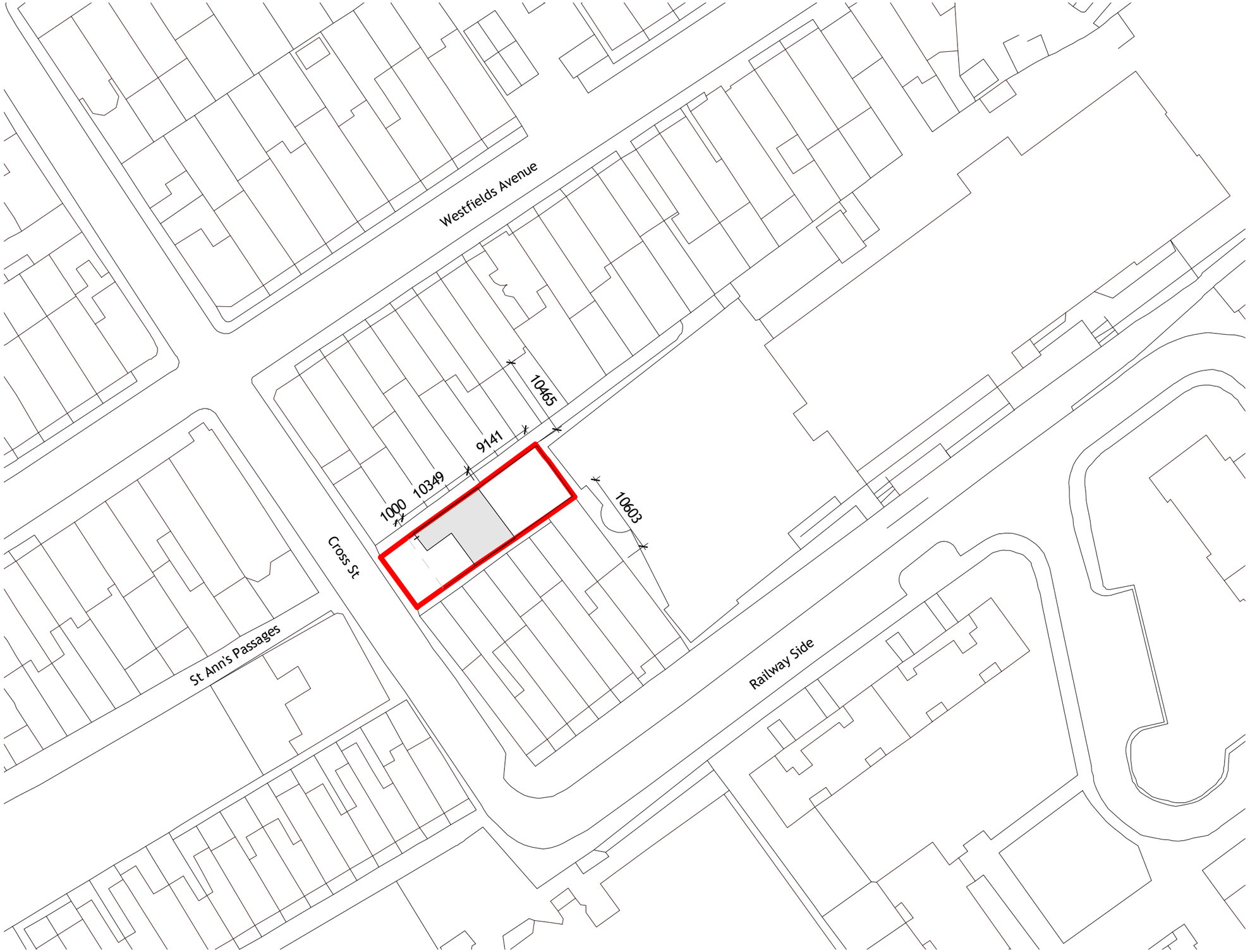
A Appendices

Appendix A.1 – Scheme Drawings

Appendix A.2 – Graphical Model Outputs

Appendix A.3 – Tabulated Results for Daylight & Sunlight Calculations

Appendix A.1 – Scheme Drawings



1 Site Location Plan

1 : 500

0 5 10 15 20 25

Scale Bar

Revision	Amendment	Date
P1	Issue for Information	20/02/20

Drawn by	Reviewed by	Approved by
TG	LF	MB
MCB Number	Date Created	Scale @ A3
61020	20/02/20	1 : 500 @ A3

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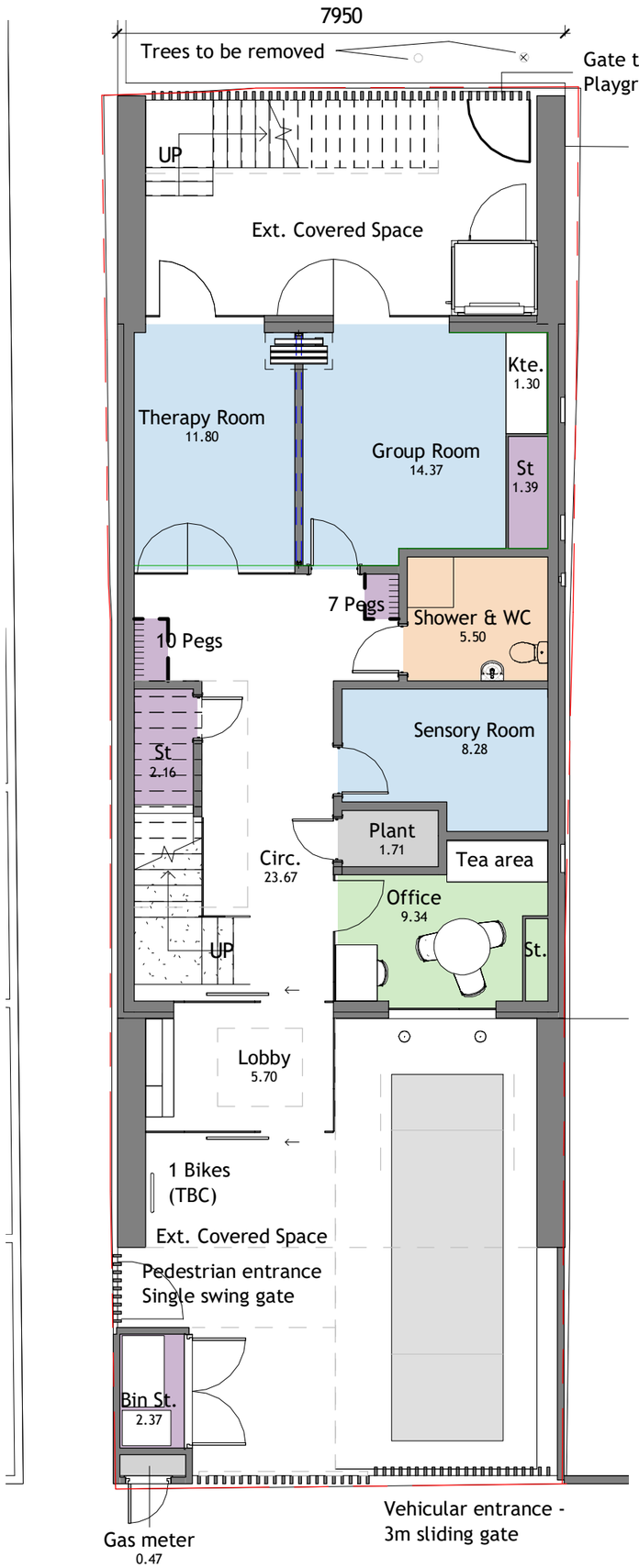
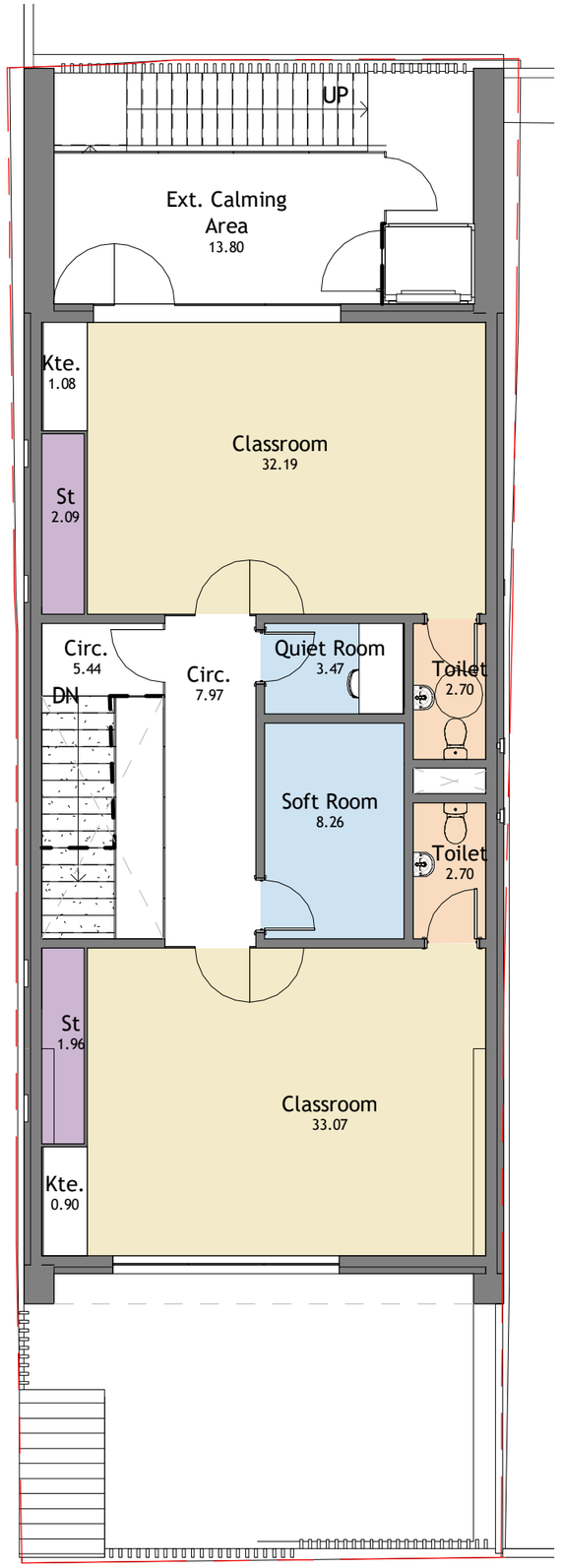
Drawing Title
SITE LOCATION PLAN

ARCHITECTURE

Drawing / Document Reference								Status	
LOND01 -	MCB -	XX -	ZZ -	DR -	A -	0200		S2 -	P1
Project Iden	Originator	Zone	Level	Type	Discipline	Number		Suitability	Revision



1 **Ground Floor Plan**
1 : 100



2 **First Floor Plan**
1 : 100

Room Schedule		
Name	Area	BB104 Recommended Areas for 14 pupils
Ext. Area		
A-Level 00-FFL		
Bin St.	2.37 m²	360l for recycling & 660l for waste
Gas meter	0.47 m²	
	2.84 m²	
	2.84 m²	
Net area		
A-Level 00-FFL		
Therapy Room	11.80 m²	12sqm for 4 (ambulant)
Group Room	14.37 m²	Multi-purpose room 31.8-48sqm. Dining 0.9-1.3/pupil
Sensory Room	8.28 m²	Sensory room 13-16sqm (ambulant)
Office	9.34 m²	9sqm for 2members of staff with adm.st
St	2.16 m²	1.5sq/per floor Mobility Equip. St
Coat & Bags	0.48 m²	0.1 sqm/pupil
Coat & Bags	0.66 m²	0.1 sqm/pupil
St	1.39 m²	
Kte.	1.30 m²	Kichenette 1800mm
	49.78 m²	
A-Level 01-FFL		
Classroom	32.19 m²	45.5 sq for 7pupils
Classroom	33.07 m²	45.5 sq for 7pupils
St	2.09 m²	1-3sqm - Teaching st
St	1.96 m²	1-3sqm - Teaching st
Kte.	1.08 m²	Kichenette 1800mm
Kte.	0.90 m²	Kichenette 1800mm
Soft Room	8.26 m²	24sqm
Quiet Room	3.47 m²	8sqm for one
	83.01 m²	
	132.79 m²	
Non-net area		
A-Level 00-FFL		
Shower & WC	5.50 m²	Part M compliant
Plant	1.71 m²	Less than 2% of the net area (2.9sqm)
Lobby	5.70 m²	22.5% of the net area (32.6sqm)
Circ.	23.67 m²	22.5% of the net area (32.6sqm)
	36.58 m²	
A-Level 01-FFL		
Toilet	2.70 m²	
Circ.	7.97 m²	22.5% of the net area (32.6sqm)
Toilet	2.70 m²	
Circ.	5.44 m²	22.5% of the net area (32.6sqm)
	18.81 m²	
	55.39 m²	
	191.02 m²	

Revision	Date	Amendment
P2	13/07/20	Issue for coordination
P1	16/11/19	Issue for Review+Comments

Drawn by	Reviewed by	Approved by
LF	AK	MB
MCB Number	Date Created	Scale @ A3
61020	22/11/19	1 : 100 @ A3

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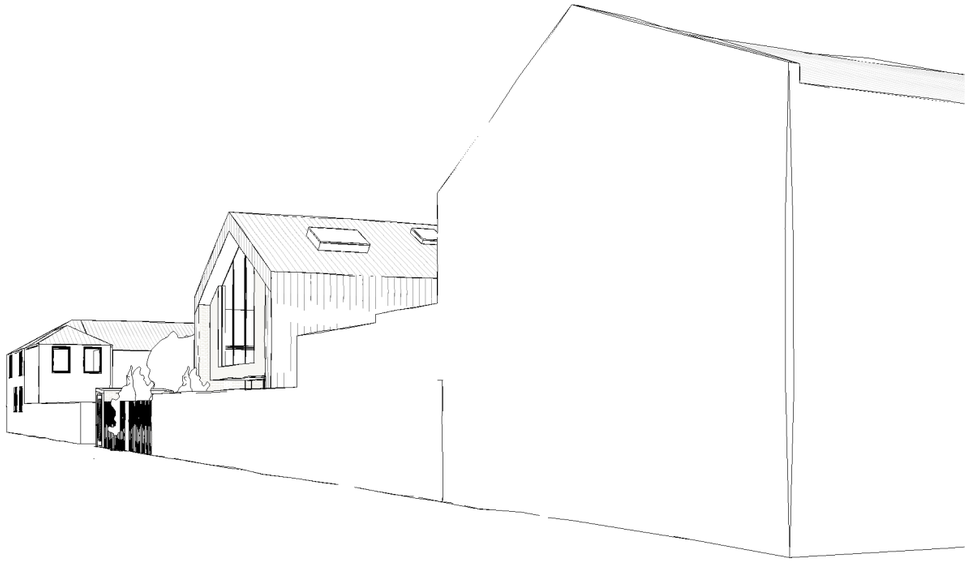
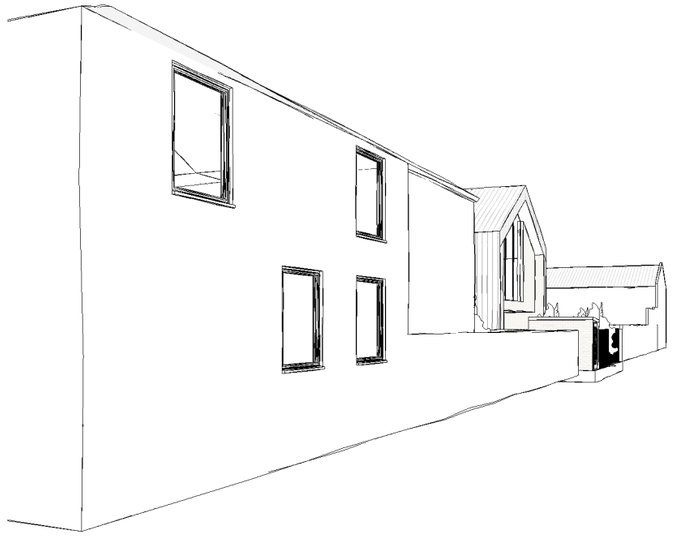
Drawing Title
FLOOR PLANS
OPTION EXTERNAL PLATFORM LIFT

ARCHITECTURE

Drawing / Document Reference								Status	
LOND01 -	MCB -	XX -	ZZ -	DR -	A -	SK03		S1 -	P2
Project Iden	Originator	Zone	Level	Type	Discipline	Number		Suitability	Revision



1 Street View 1



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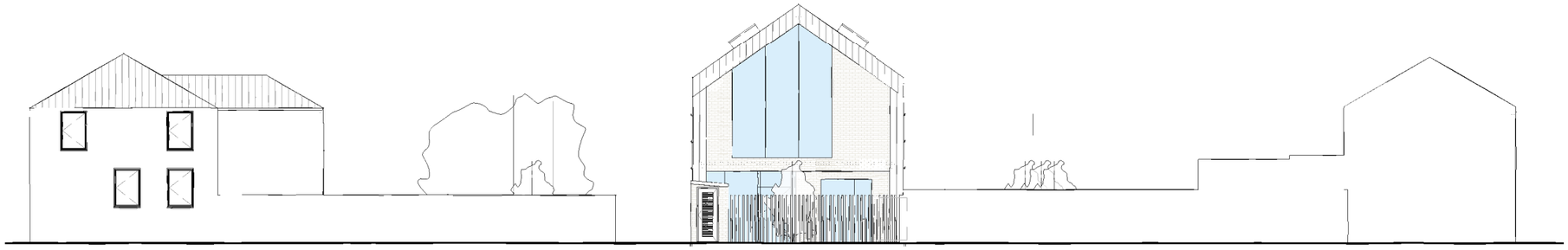
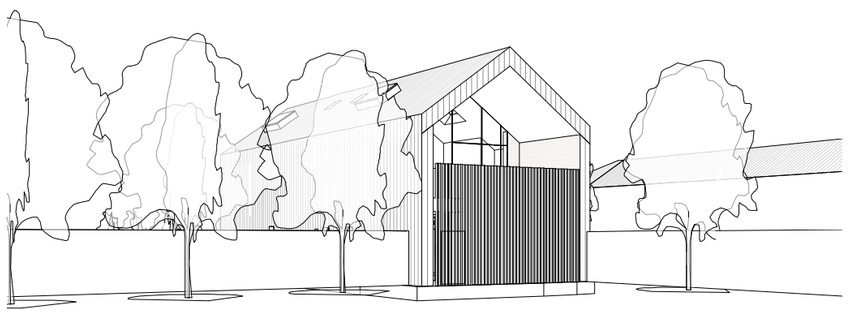
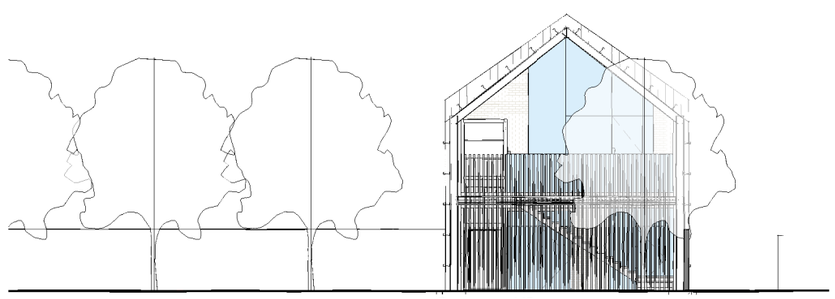


3 Cross St Elevation

1 : 200



4 Street View 3



5 Rear Elevation

1 : 200

P1 Issue for Information 21/02/20

Revision	Amendment	Date
LF	AK	MB
Drawn by	Reviewed by	Approved by
61020	20/02/20	1 : 200 @ A3
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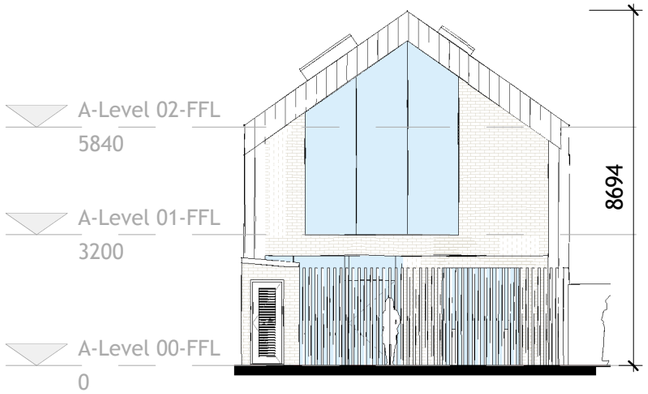
Project
BARNES PRIMARY SCHOOL

Drawing Title
MASSING AND ELEVATIONS

ARCHITECTURE

Drawing / Document Reference								Status	
LOND01 -	MCB	- XX -	ZZ	- DR -	A	-	SK10	S3	- P1
Project Iden	Originator	Zone	Level	Type	Discipline		Number	Suitability	Revision



1 Front Elevation (SW) - Option 01

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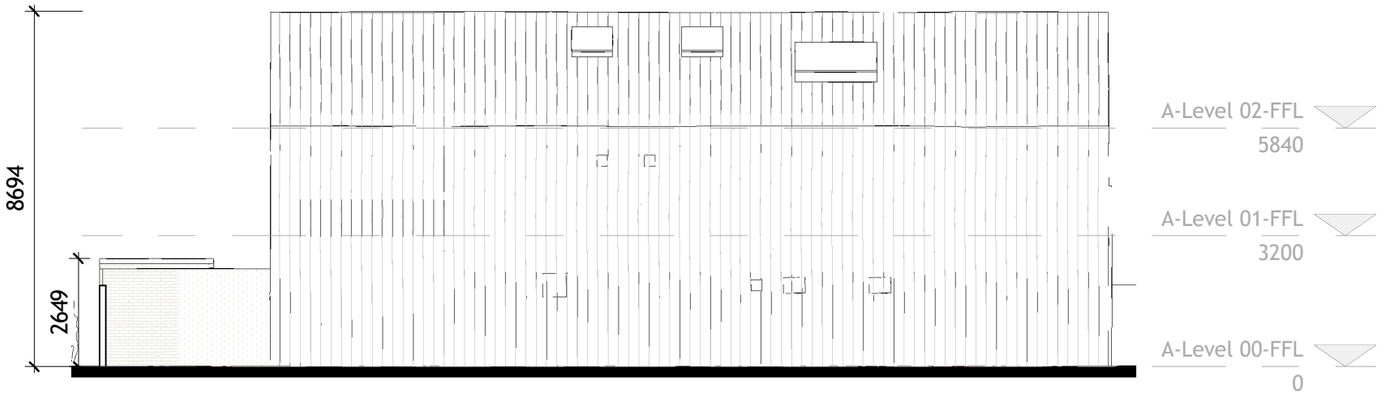

3 Flank Elevation (SE) - Option 01

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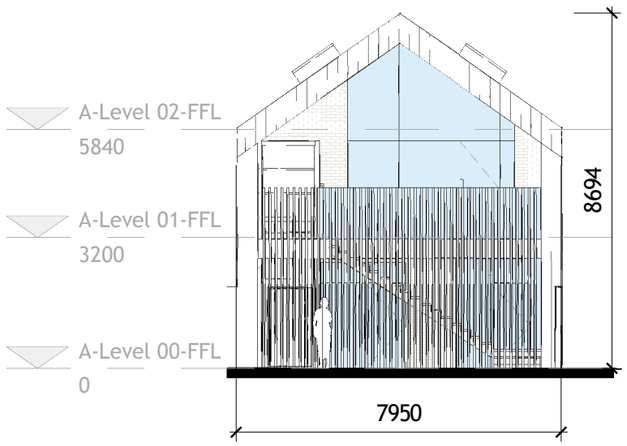

2 Rear Elevation (NE) - Option 01

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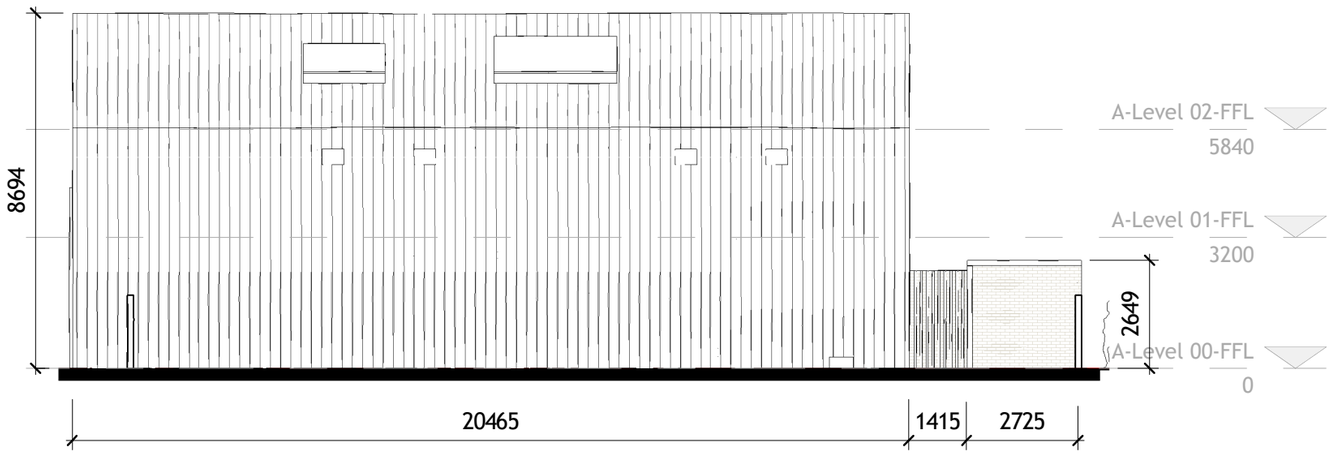

4 Flank Elevation (NW) - Option 01

1 : 150

0 2 5 15

Scale Bar

Revision	Amendment	Date
P1	Issue for coordination	15/07/20

Drawn by	Reviewed by	Approved by
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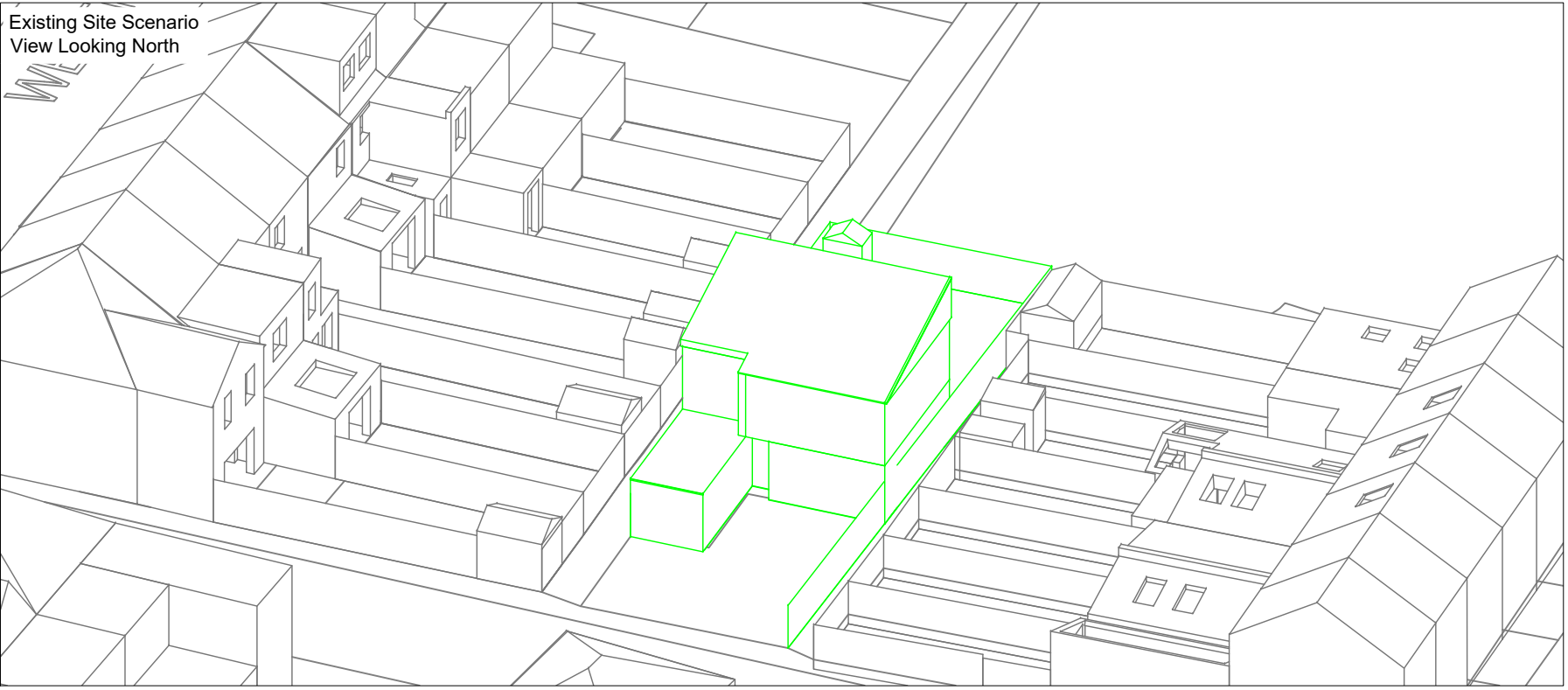
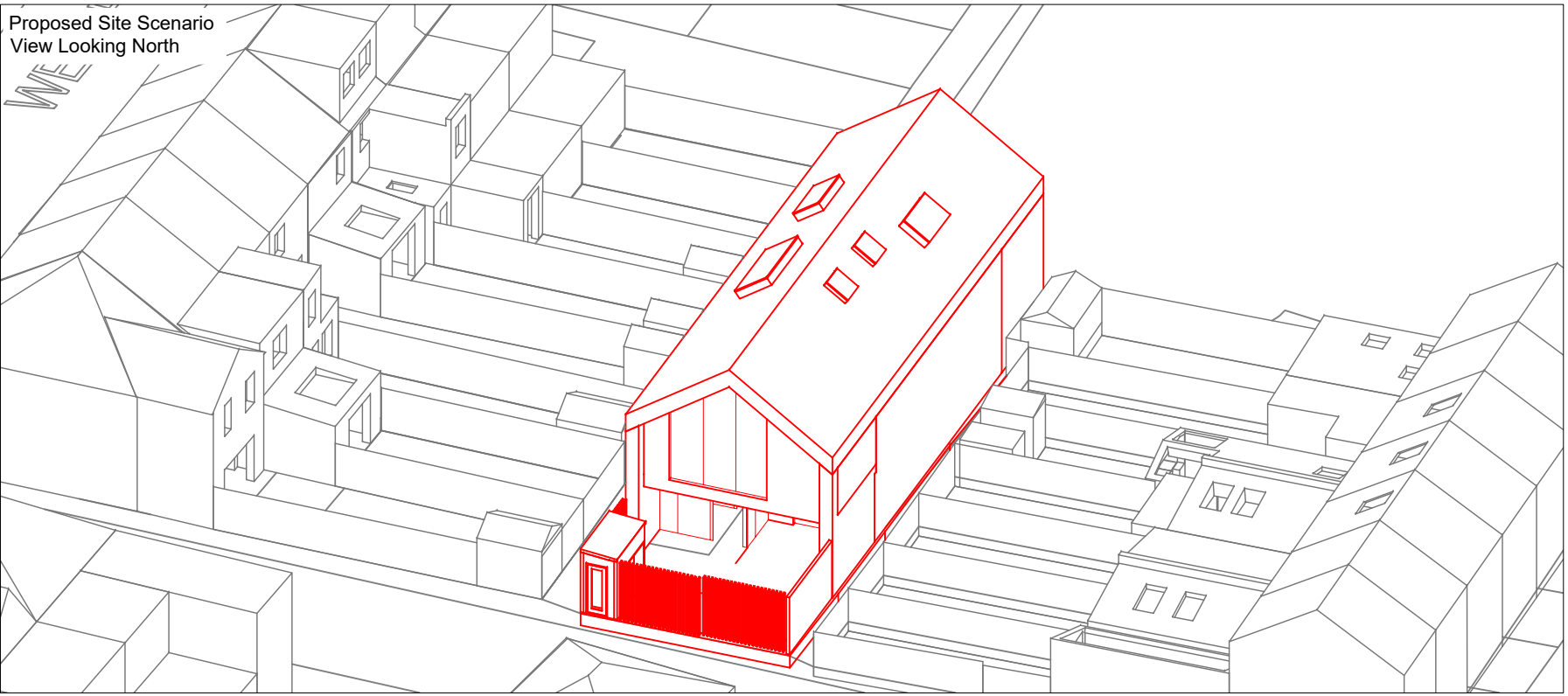
Drawing Title
ELEVATIONS
OPTION 01

ARCHITECTURE

Drawing / Document Reference							Status	
LOND01 -	MCB -	XX -	ZZ -	DR -	A -	SK11	S1 -	P1
Project Iden	Originator	Zone	Level	Type	Discipline	Number	Suitability	Revision

Appendix A.2 – Graphical Model Outputs





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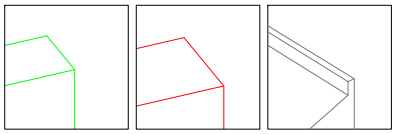
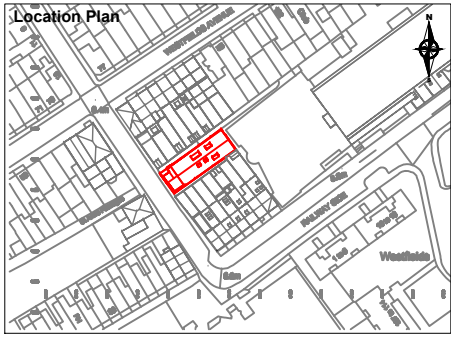
Legend



Location Plan



Rev	Description	Date
00	First issue	31/07/2020

CLIENT
McBains

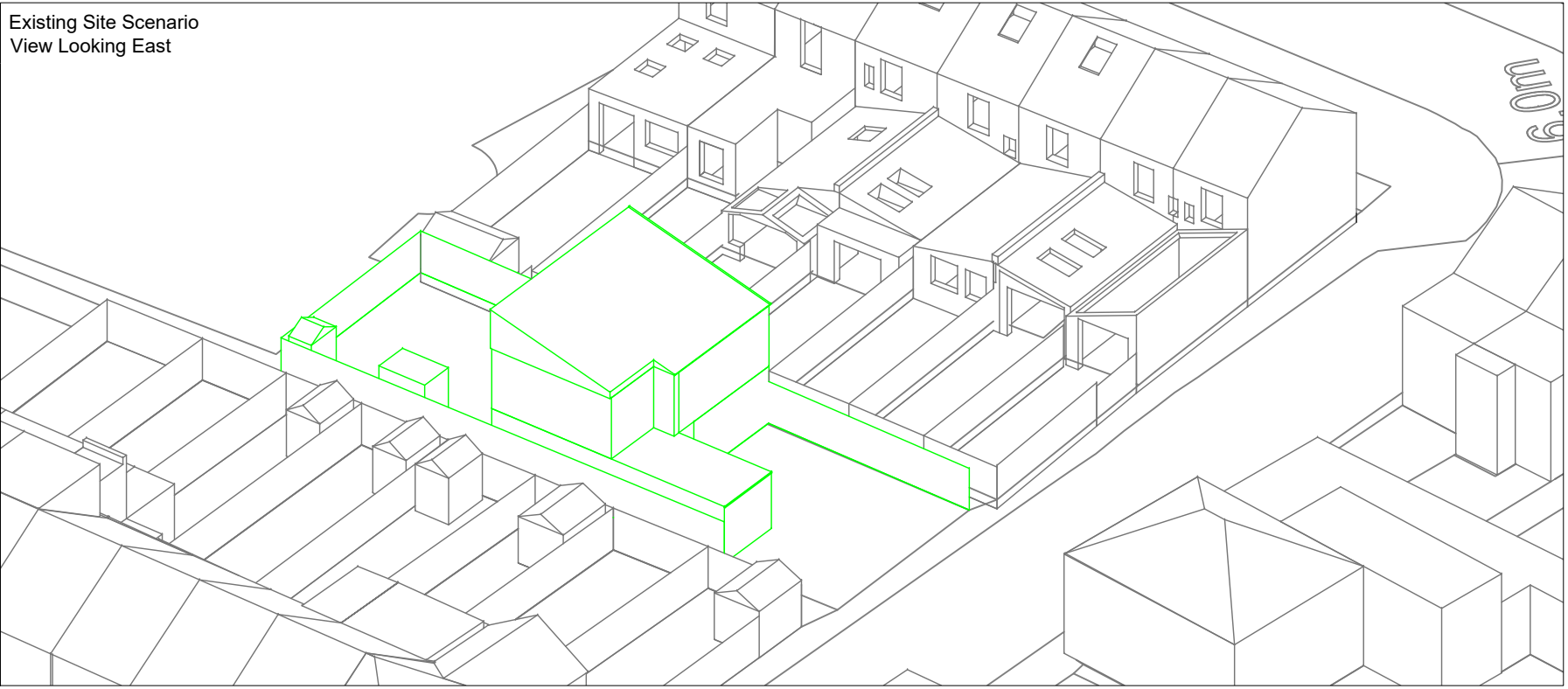
PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

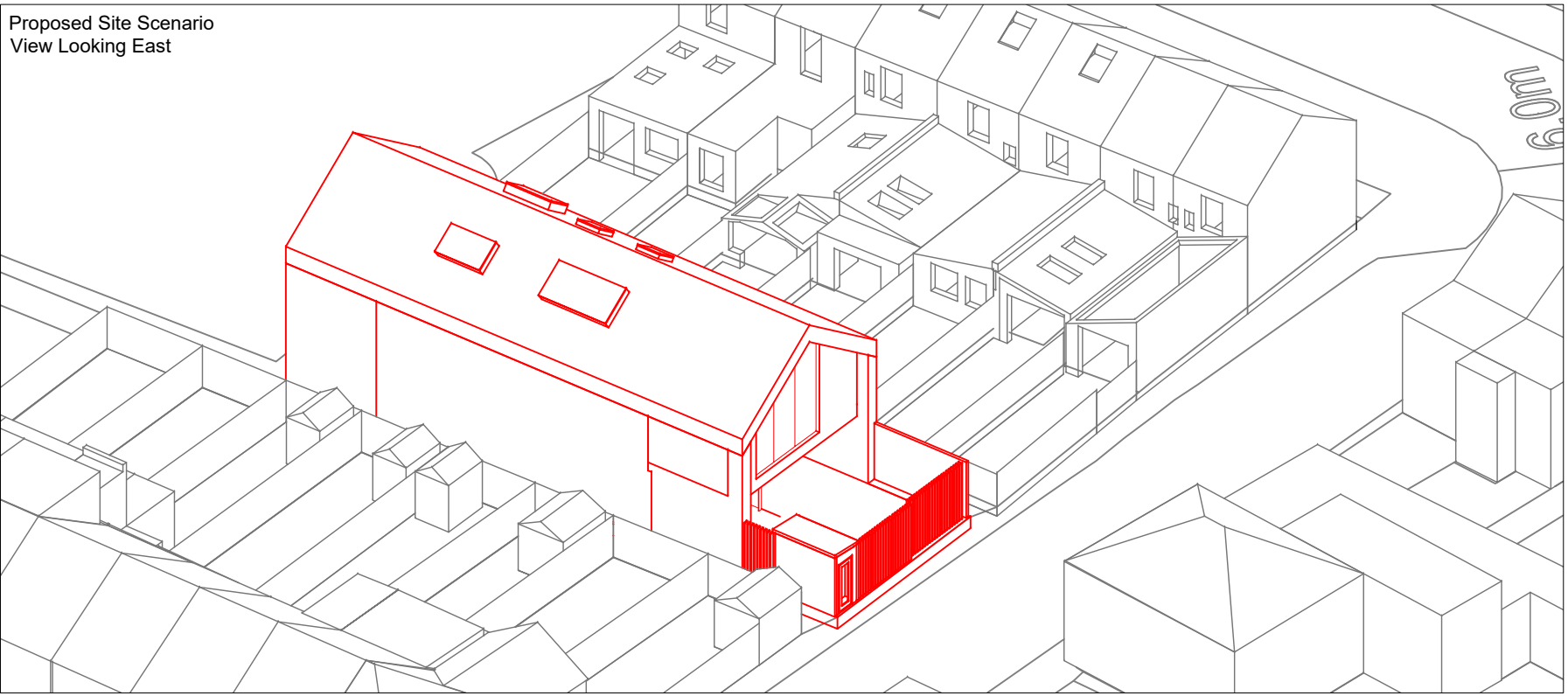
DWG REF.
3D Model - Existing & Proposed Site Scenarios.

DWG No.
2816_01

Existing Site Scenario
View Looking East



Proposed Site Scenario
View Looking East



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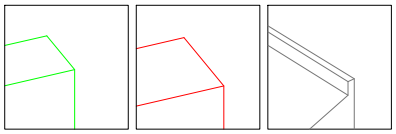
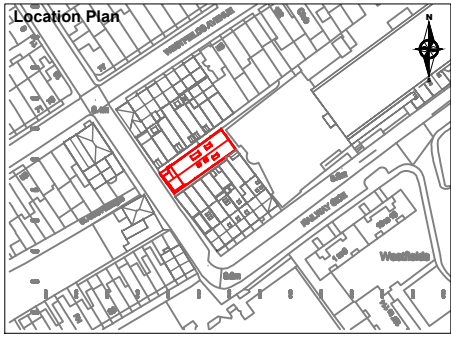
Legend



Existing Buildings | Proposed Buildings | Surrounding Buildings

Location Plan



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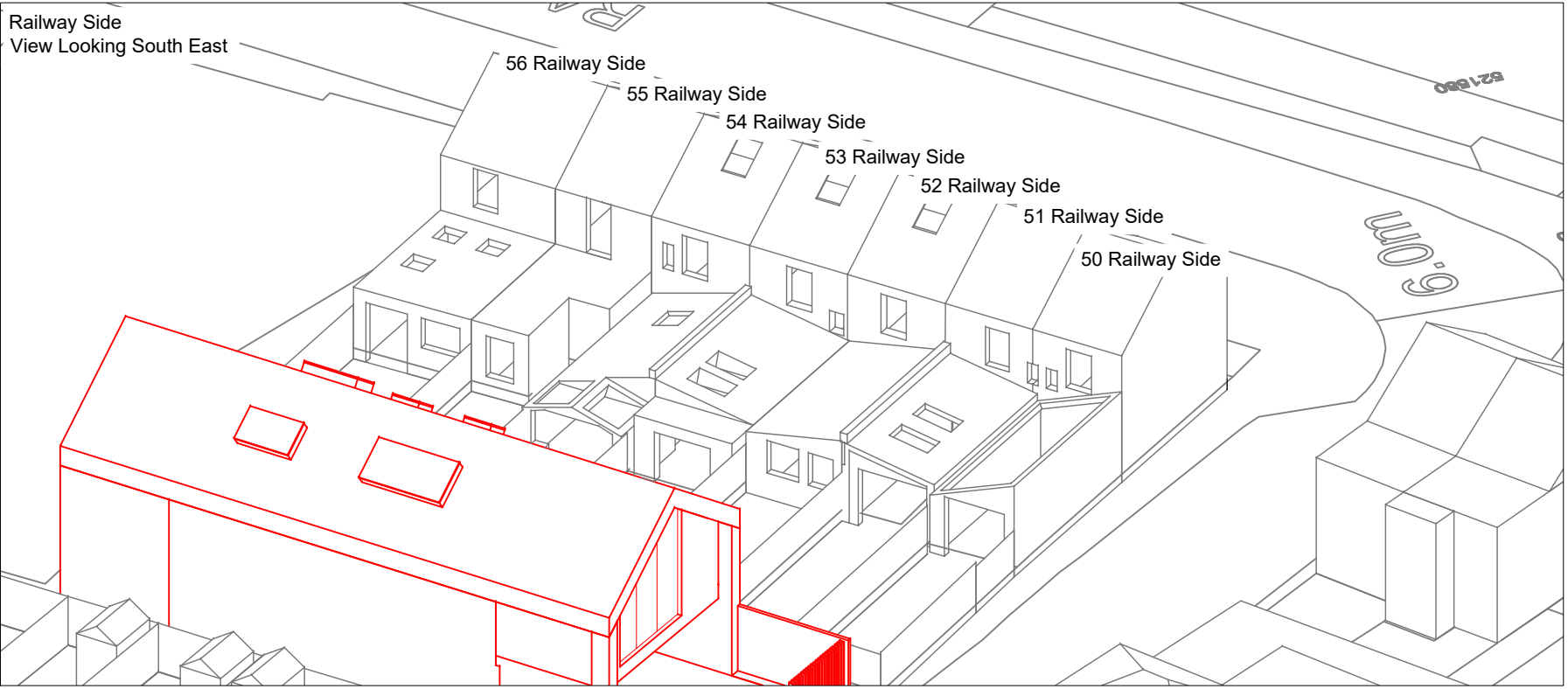
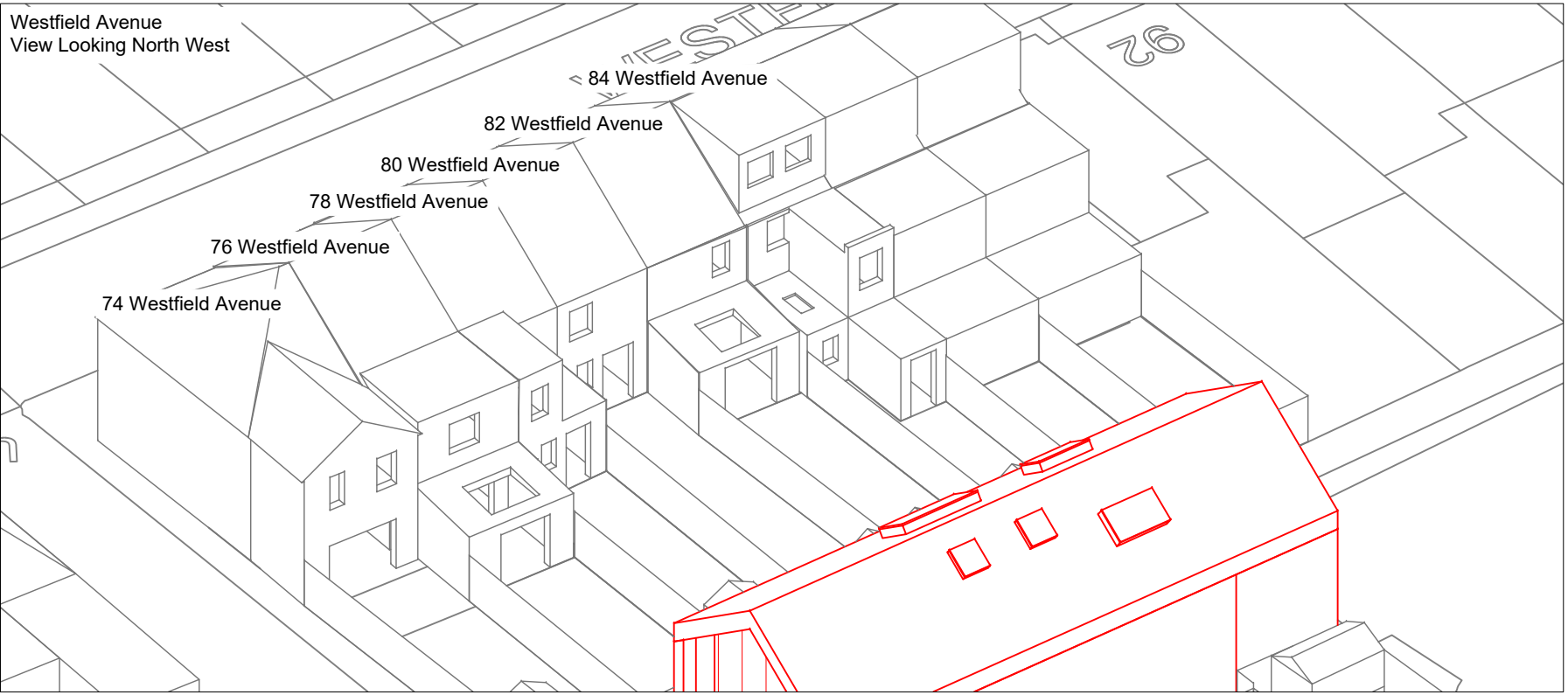
PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
3D Model - Existing & Proposed Site Scenarios.

DWG No.
2816_02





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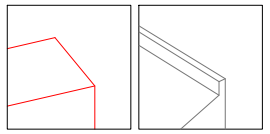
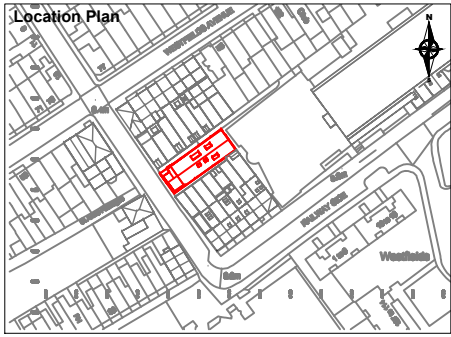
Legend



Proposed Buildings | Surrounding Buildings

Location Plan



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PROJECT: Barnes Primary School, Cross Street, Barnes

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DWG REF.: Identification of Neighbouring Properties.

DWG No.: 2816_03

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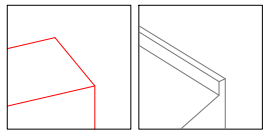
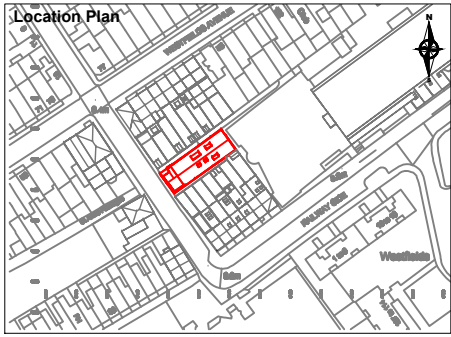


Location Plan



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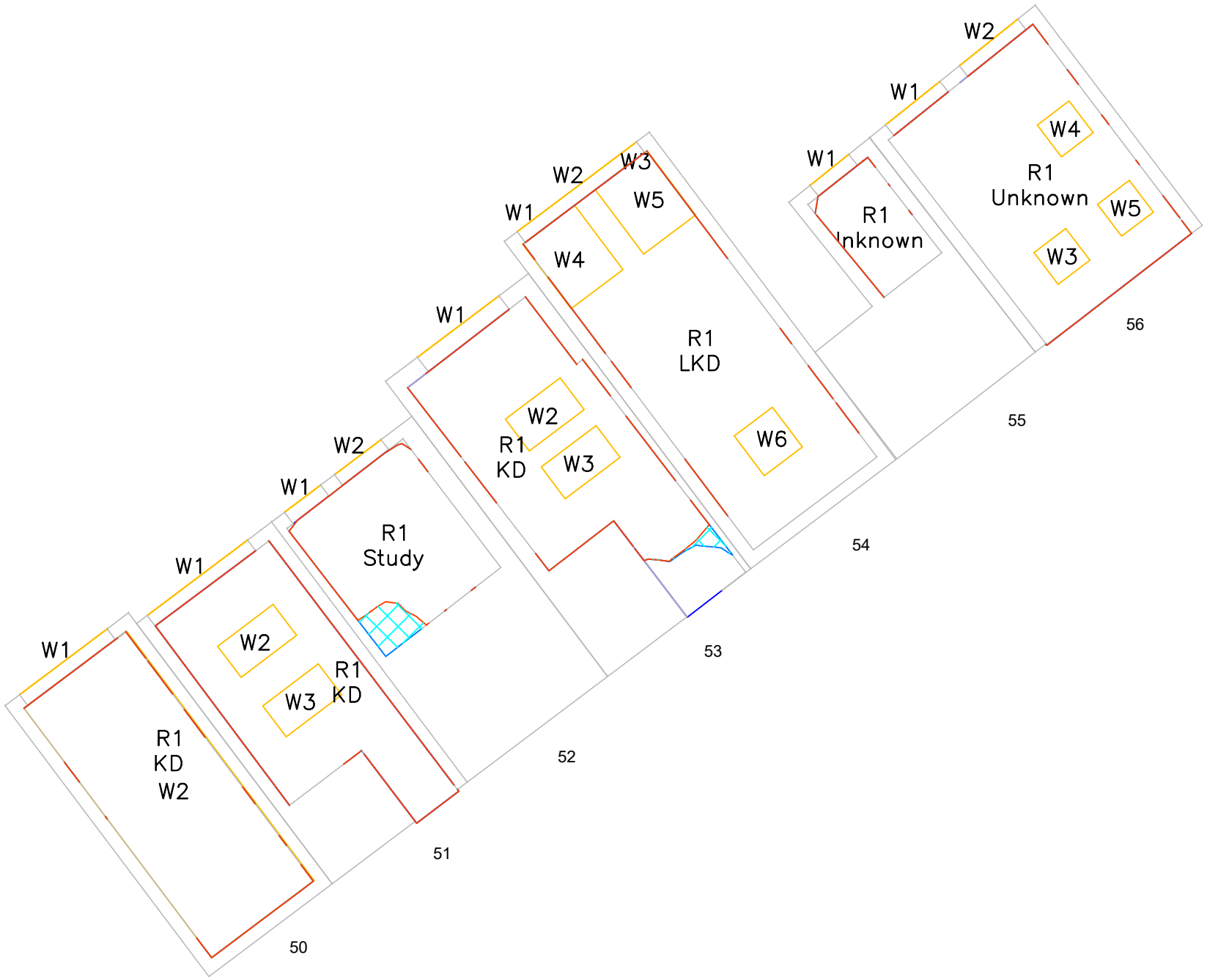
PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
Location of Window Receptors.

DWG No.
2816_04

Railway Side
Ground Floor



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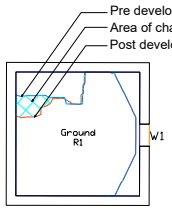
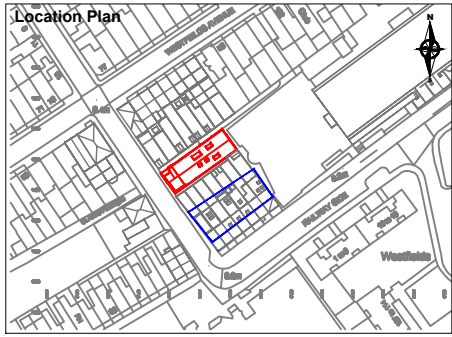


Location Plan



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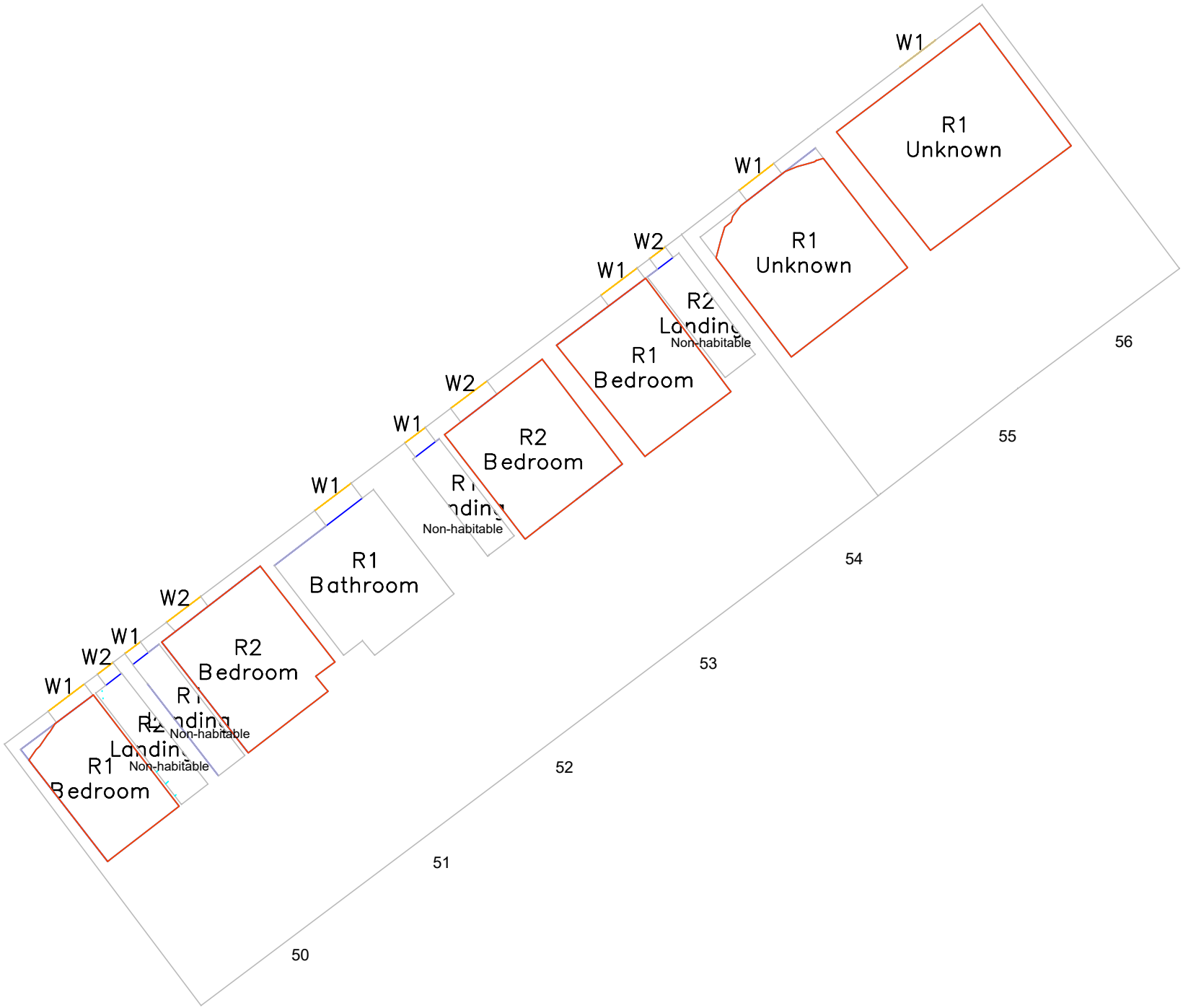
PROJECT: Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.: NSL contours.

DWG No.: 2816_05

Railway Side
First Floor



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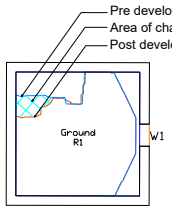
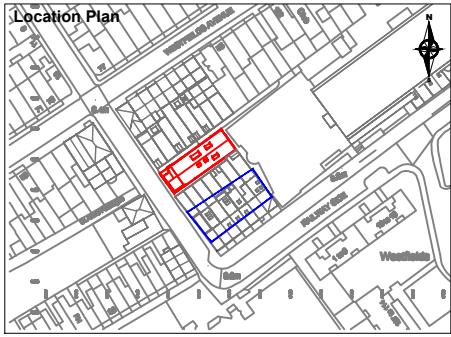


Location Plan



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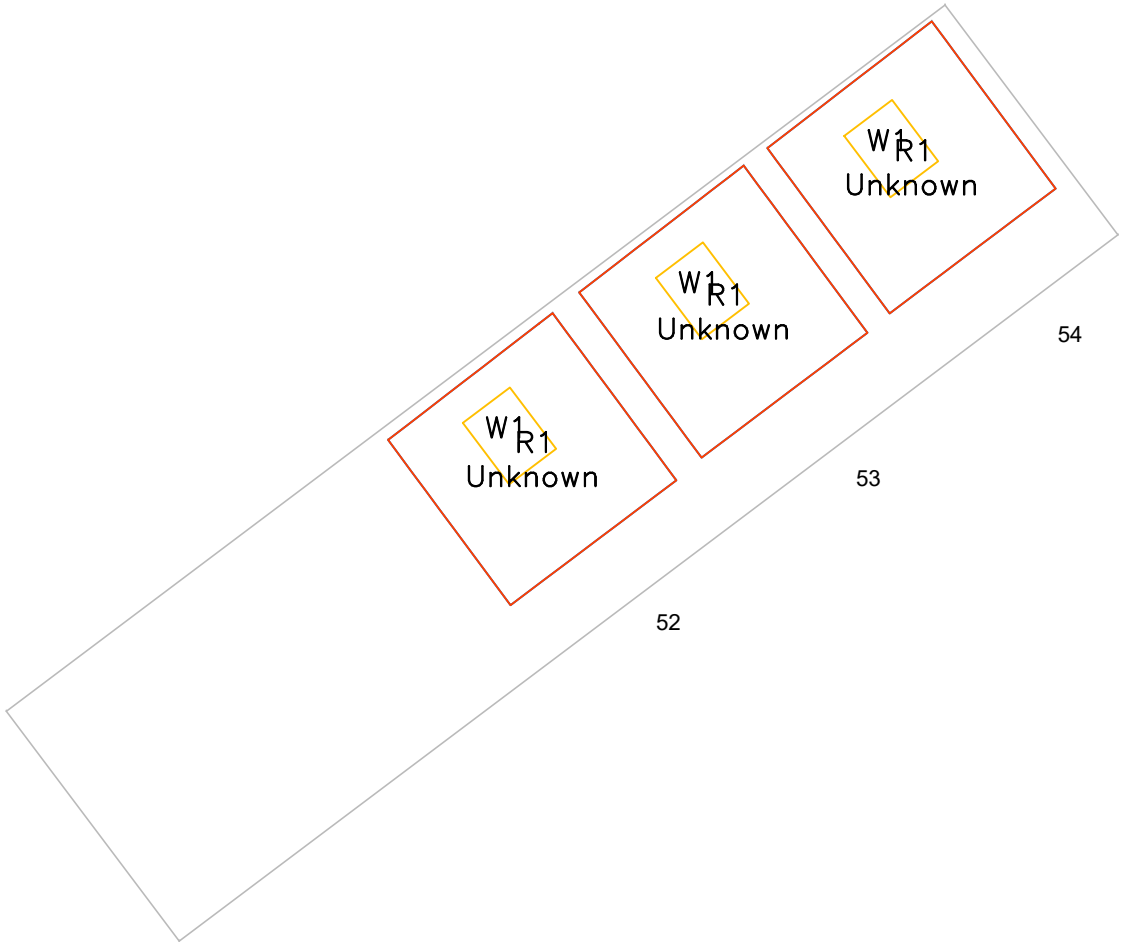
PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
NSL contours.

DWG No.
2816_06

Railway Side
Second Floor



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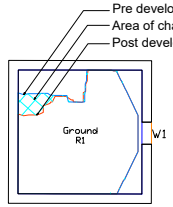
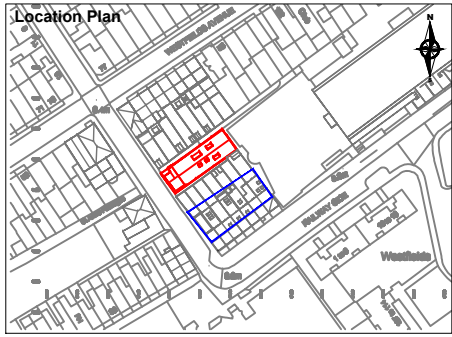


Location Plan



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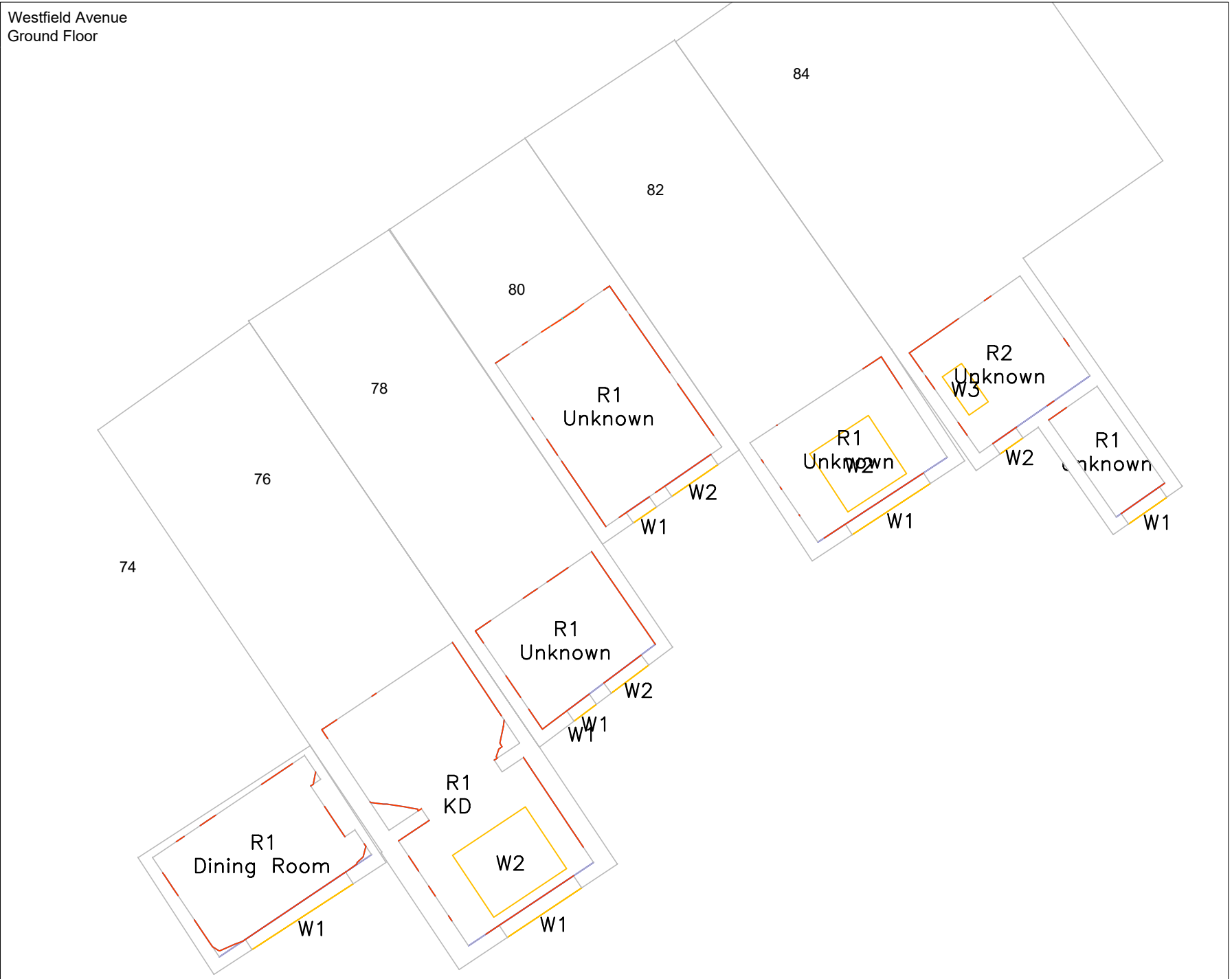
PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.	DWG No.
NSL contours.	2816_07

Westfield Avenue
Ground Floor



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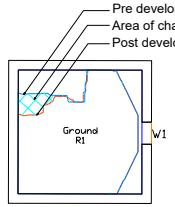
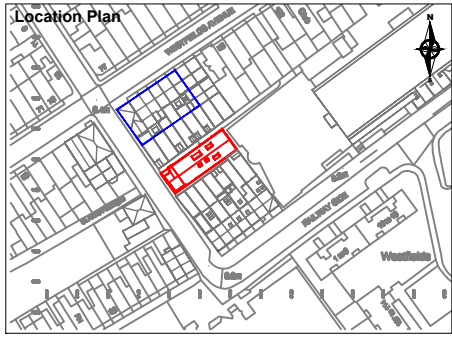


Location Plan



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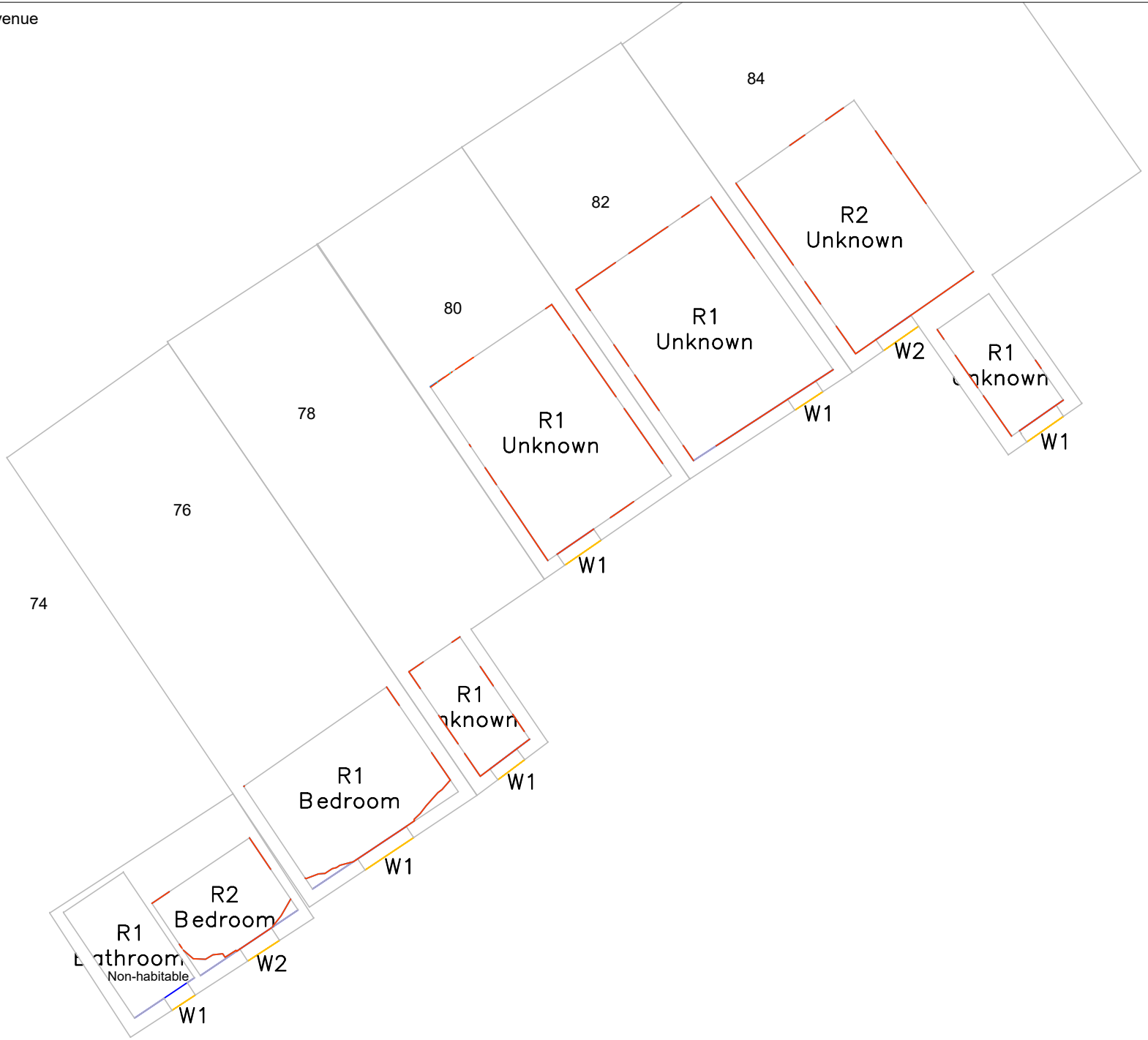
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
NSL contours.

DWG No.
2816_08

Westfield Avenue
First Floor



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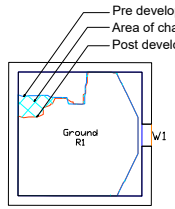
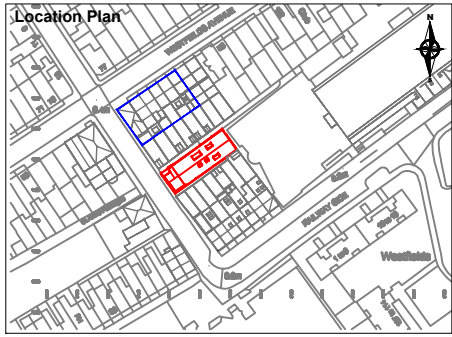


Location Plan



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PROJECT
Barnes Primary School, Cross Street, Barnes

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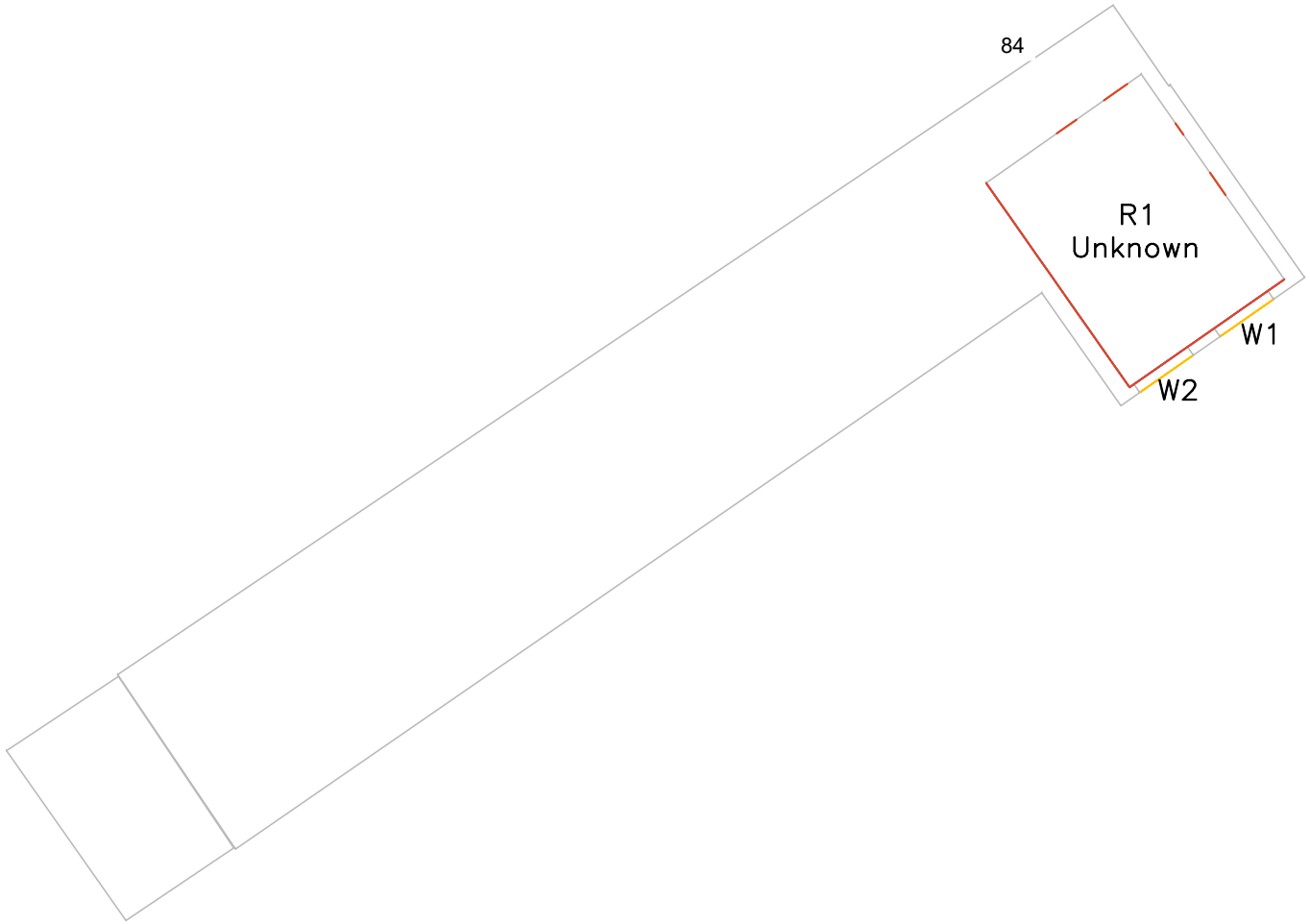
Not to scale	2816	SM	SM

DWG REF.	DWG No.
NSL contours.	2816_09

Westfield Avenue
Second Floor



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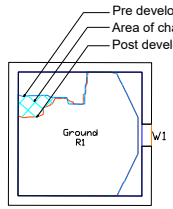
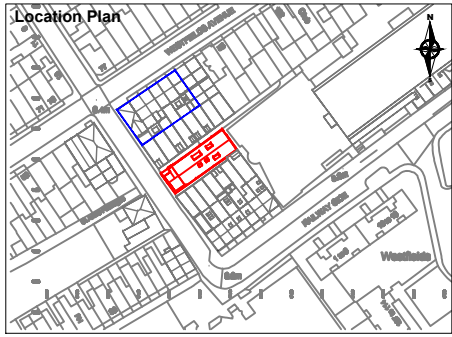


Location Plan



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Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.	DWG No.
NSL contours.	2816_10

Westfield Avenue
Amenity Areas

88 Westfields Avenue
Rear Garden

86 Westfields Avenue
Rear Garden

84 Westfields Avenue
Rear Garden

82 Westfields Avenue
Rear Garden

80 Westfields Avenue
Rear Garden

78 Westfields Avenue
Rear Garden

76 Westfields Avenue
Rear Garden

74 Westfields Avenue
Rear Garden

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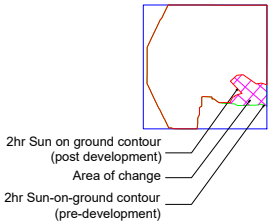
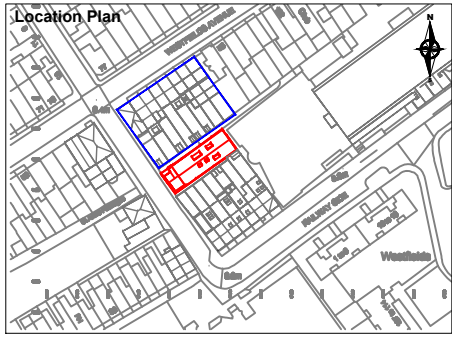


Location Plan



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PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
2hr SoG amenity contours.

DWG No.
2816_11

Railway Side
Amenity Areas

56 Railway Side
Rear Garden

55 Railway Side
Rear Garden

54 Railway Side
Rear Garden

53 Railway Side
Rear Garden

52 Railway Side
Rear Garden

51 Railway Side
Rear Garden

50 Railway Side
Rear Garden

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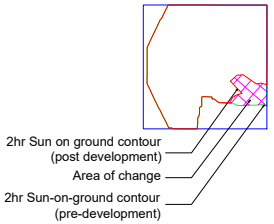
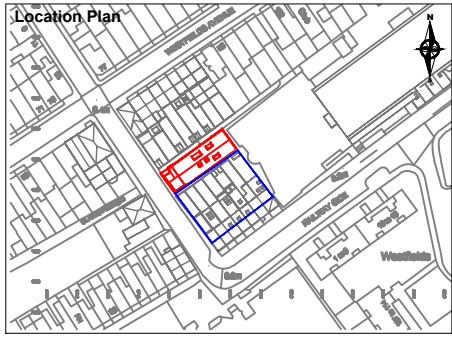


Location Plan



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PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
2hr SoG amenity contours.

DWG No.
2816_12

Westfield Avenue
Amenity Areas

88 Westfields Avenue
Rear Garden

86 Westfields Avenue
Rear Garden

84 Westfields Avenue
Rear Garden

82 Westfields Avenue
Rear Garden

80 Westfields Avenue
Rear Garden

78 Westfields Avenue
Rear Garden

76 Westfields Avenue
Rear Garden

74 Westfields Avenue
Rear Garden

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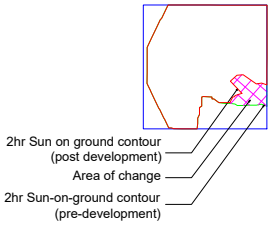
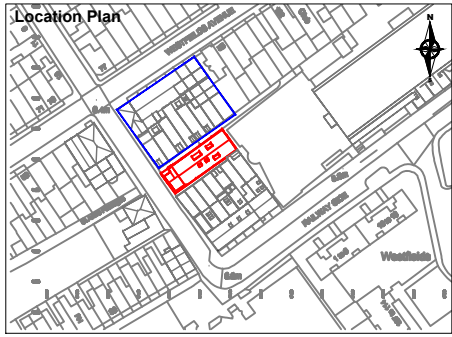


Location Plan



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PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
2hr SoG amenity contours - Building lowered by 320mm.

DWG No.
2816_13

Railway Side
Amenity Areas

56 Railway Side
Rear Garden

55 Railway Side
Rear Garden

54 Railway Side
Rear Garden

53 Railway Side
Rear Garden

52 Railway Side
Rear Garden

51 Railway Side
Rear Garden

50 Railway Side
Rear Garden

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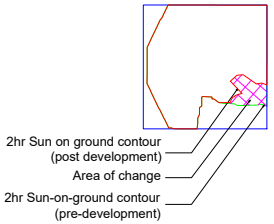
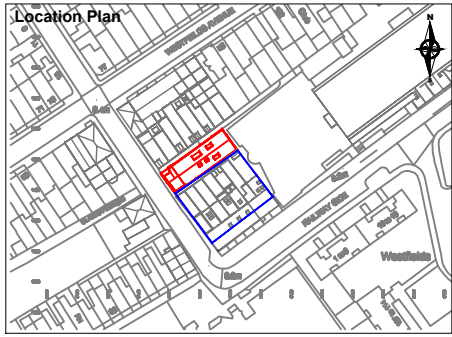


Location Plan



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PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
2hr SoG amenity contours - Building lowered by 320mm.

DWG No.
2816_14

Westfield Avenue
Amenity Areas

88 Westfields Avenue
Rear Garden

86 Westfields Avenue
Rear Garden

84 Westfields Avenue
Rear Garden

82 Westfields Avenue
Rear Garden

80 Westfields Avenue
Rear Garden

78 Westfields Avenue
Rear Garden

76 Westfields Avenue
Rear Garden

74 Westfields Avenue
Rear Garden

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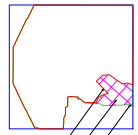
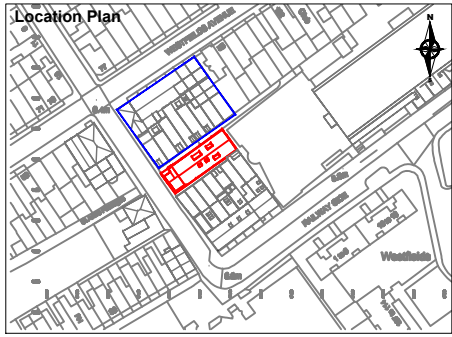


Location Plan



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PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
2hr SoG amenity contours - 21st June.

DWG No.
2816_15

Railway Side
Amenity Areas

56 Railway Side
Rear Garden

55 Railway Side
Rear Garden

54 Railway Side
Rear Garden

53 Railway Side
Rear Garden

52 Railway Side
Rear Garden

51 Railway Side
Rear Garden

50 Railway Side
Rear Garden

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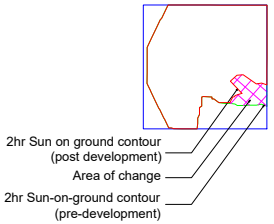
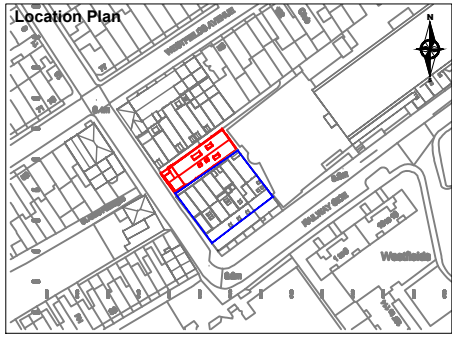


Location Plan



Rev	Description	Date
00	First issue	31/07/2020

CLIENT
McBains

PROJECT
Barnes Primary School, Cross Street, Barnes

SCALE	PROJ REF	ANALYST	DRAWN BY
Not to scale	2816	SM	SM

DWG REF.
2hr SoG amenity contours - 21st June.

DWG No.
2816_16

Appendix A.3 – Tabulated Results for Daylight and Sunlight Calculations

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight & Sunlight Assessment- Neighbour Analysis Test
Date of Analysis: 29/07/2020
VSC & APSH Analysis

herrington CONSULTING LIMITED

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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
74 Westfields Avenue																			
Ground	R1	Residential	Dining Room	W1	Existing	30.53	0.94	YES	147°	65	0.98	YES	21	0.95	YES				
					Proposed	28.82				64			20						
																65		21	
																64	YES	20	YES
First	R1	Residential	Bathroom *Non-habitable*	W1			N/A		147°			N/A			N/A				
																	N/A		N/A
	R2	Residential	Bedroom	W2	Existing	38.11	0.95	YES	147°	82	0.98	YES	28	0.93	YES				
					Proposed	36.12				80			26						
																82		28	
																80	YES	26	YES
76 Westfields Avenue																			
Ground	R1	Residential	KD	W1	Existing	31.31	0.89	YES	146°	71	0.92	YES	22	0.82	YES				
					Proposed	27.99				65			18						
				W2	Existing	82.53	0.99	YES	146° Inc	84	0.98	YES	25	0.92	YES				
					Proposed	81.43				82			23						
																84		25	
																82	YES	23	YES
First	R1	Residential	Bedroom	W1	Existing	38.11	0.93	YES	146°	78	1.00	YES	25	1.00	YES				
					Proposed	35.57				78			25						
																78		25	
																78	YES	25	YES
78 Westfields Avenue																			
Ground	R1	Residential	Unknown	W1	Existing	31.21	0.88	YES	143°	63	0.89	YES	14	0.57	YES				
					Proposed	27.39				56			8						
				W2	Existing	28.38	0.91	YES	143°	58	0.93	YES	14	0.71	YES				
					Proposed	25.78				54			10						
																68		17	
																60	YES	10	YES
First	R1	Residential	Unknown	W1	Existing	38.15	0.92	YES	143°	78	0.99	YES	27	0.96	YES				
					Proposed	35.01				77			26						
																78		27	
																77	YES	26	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight & Sunlight Assessment- Neighbour Analysis Test
Date of Analysis: 29/07/2020
VSC & APSH Analysis

herrington CONSULTING LIMITED

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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
80 Westfields Avenue																			
Ground	R1	Residential	Unknown	W1	Existing	28.36	0.89	YES	145°	52	0.90	YES	13	0.62	YES				
					Proposed	25.31				47			8						
				W2	Existing	24.26	0.90	YES	145°	47	0.91	YES	15	0.73	YES				
					Proposed	21.84				43			11						
																61		18	
																55	YES	12	YES
First	R1	Residential	Unknown	W1	Existing	36.38	0.93	YES	145°	74	0.97	YES	21	0.90	YES				
					Proposed	33.74				72			19						
																74		21	
																72	YES	19	YES
82 Westfields Avenue																			
Ground	R1	Residential	Unknown	W1	Existing	31.75	0.89	YES	147°	69	0.97	YES	19	0.89	YES				
					Proposed	28.20				67			17						
				W2	Existing	80.16	0.99	YES	147° Inc	85	0.94	YES	27	0.81	YES				
					Proposed	79.09				80			22						
																86		27	
																81	YES	22	YES
First	R1	Residential	Unknown	W1	Existing	36.96	0.94	YES	147°	79	1.00	YES	27	1.00	YES				
					Proposed	34.64				79			27						
																79		27	
																79	YES	27	YES
84 Westfields Avenue																			
Ground	R1	Residential	Unknown	W1	Existing	28.65	0.86	YES	145°	63	0.92	YES	19	0.74	YES				
					Proposed	24.57				58			14						
																63		19	
																58	YES	14	YES
	R2	Residential	Unknown	W2	Existing	24.90	0.88	YES	145°	54	0.93	YES	17	0.76	YES				
					Proposed	21.85				50			13						
				W3	Existing	54.76	0.99	YES	90° Hz	68	0.94	YES	25	0.84	YES				
					Proposed	54.14				64			21						
																69		25	
																65	YES	21	YES
First	R1	Residential	Unknown	W1	Existing	38.20	0.93	YES	145°	82	1.00	YES	28	1.00	YES				
					Proposed	35.62				82			28						
																82		28	
																82	YES	28	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight & Sunlight Assessment- Neighbour Analysis Test
Date of Analysis: 29/07/2020
VSC & APSH Analysis

herrington CONSULTING LIMITED

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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
	R2	Residential	Unknown	W2	Existing	27.22	0.93	YES	145°	60	1.00	YES	24	1.00	YES				
					Proposed	25.43				60			24						
																60		24	
																60	YES	24	YES
Second	R1	Residential	Unknown	W1	Existing	39.59	0.97	YES	145°	82	1.00	YES	28	1.00	YES				
					Proposed	38.44				82			28						
				W2	Existing	39.59	0.97	YES	145°	82	1.00	YES	28	1.00	YES				
					Proposed	38.37				82			28						
																82		28	
																82	YES	28	YES
50 Railway Side																			
Ground	R1	Residential	KD	W1	Existing	31.45	0.92	YES	323°N		*North*			*North*					
					Proposed	28.85													
				W2	Existing	88.75	0.99	YES	53°N		*North*			*North*					
					Proposed	87.79													
																North	*North*	*North*	*North*
First	R1	Residential	Bedroom	W1	Existing	37.68	0.96	YES	323°N		*North*			*North*					
					Proposed	36.05													
																North	*North*	*North*	*North*
	R2	Residential	Landing *Non-habitable*	W2				N/A	323°N			N/A			N/A				
																	N/A		N/A
51 Railway Side																			
Ground	R1	Residential	KD	W1	Existing	30.06	0.90	YES	323°N		*North*			*North*					
					Proposed	26.94													
				W2	Existing	94.25	0.99	YES	233° Inc	78	1.00	YES	16	1.00	YES				
					Proposed	93.68				78			16						
				W3	Existing	92.48	1.00	YES	233° Inc	75	1.00	YES	13	1.00	YES				
					Proposed	92.04				75			13						
																79		16	
																79	YES	16	YES
First	R1	Residential	Landing *Non-habitable*	W1				N/A	323°N			N/A			N/A				
																	N/A		N/A
	R2	Residential	Bedroom	W2	Existing	37.64	0.95	YES	323°N		*North*			*North*					
					Proposed	35.68													

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight & Sunlight Assessment- Neighbour Analysis Test
Date of Analysis: 29/07/2020
VSC & APSH Analysis

herrington CONSULTING LIMITED

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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
																North	*North*	*North*	*North*
52 Railway Side																			
Ground	R1	Residential	Study	W1	Existing	32.29	0.86	YES	323°N		*North*			*North*					
					Proposed	27.69													
				W2	Existing	31.66	0.85	YES	323°N		*North*			*North*					
					Proposed	26.93													
																North	*North*	*North*	*North*
First	R1	Residential	Bathroom *Non-habitable*	W1				N/A	323°N			N/A			N/A		N/A		N/A
Second	R1	Residential	Unknown	W1	Existing	89.04	0.99	YES	323°N		*North*			*North*					
					Proposed	88.34													
																North	*North*	*North*	*North*
53 Railway Side																			
Ground	R1	Residential	KD	W1	Existing	25.79	0.85	YES	323°N		*North*			*North*					
					Proposed	22.00													
				W2	Existing	94.13	0.99	YES	233° Inc	80	0.99	YES	16	1.00	YES				
					Proposed	93.03				79			16						
				W3	Existing	93.01	0.99	YES	233° Inc	76	0.99	YES	13	1.00	YES				
					Proposed	92.11				75			13						
																80		16	
																79	YES	16	YES
First	R1	Residential	Landing *Non-habitable*	W1				N/A	323°N			N/A			N/A		N/A		N/A
	R2	Residential	Bedroom	W2	Existing	37.60	0.93	YES	323°N		*North*			*North*					
					Proposed	34.90													
																North	*North*	*North*	*North*
Second	R1	Residential	Unknown	W1	Existing	89.04	0.99	YES	323°N		*North*			*North*					
					Proposed	88.27													
																North	*North*	*North*	*North*

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight & Sunlight Assessment- Neighbour Analysis Test
Date of Analysis: 29/07/2020
VSC & APSH Analysis

herrington CONSULTING LIMITED

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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
54 Railway Side																			
Ground	R1	Residential	LKD	W1	Existing	25.74	0.82	YES	323°N		*North*			*North*					
					Proposed	21.05													
				W2	Existing	26.45	0.80	YES	323°N		*North*			*North*					
					Proposed	21.26													
				W3	Existing	12.95	1.00	YES	143°	30	1.00	YES	5	1.00	YES				
					Proposed	12.95				30			5						
				W4	Existing	89.93	0.98	YES	233° Inc	80	0.99	YES	14	1.00	YES				
					Proposed	88.29				79			14						
				W5	Existing	93.15	0.98	YES	53°N		*North*			*North*					
					Proposed	90.99													
				W6	Existing	80.61	0.99	YES	53°N		*North*			*North*					
					Proposed	79.76													
																86		19	
																85	YES	19	YES
First	R1	Residential	Bedroom	W1	Existing	37.58	0.93	YES	323°N		*North*			*North*					
					Proposed	34.98													
	R2	Residential	Landing	W2				N/A	323°N			N/A			N/A	*North*	*North*	*North*	*North*
			Non-habitable														N/A		N/A
Second	R1	Residential	Unknown	W1	Existing	89.04	0.99	YES	323°N		*North*			*North*					
					Proposed	88.27													
																North	*North*	*North*	*North*
55 Railway Side																			
Ground	R1	Residential	Unknown	W1	Existing	31.70	0.85	YES	321°N		*North*			*North*					
					Proposed	27.09													
																North	*North*	*North*	*North*
First	R1	Residential	Unknown	W1	Existing	37.60	0.94	YES	322°N		*North*			*North*					
					Proposed	35.41													
																North	*North*	*North*	*North*

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight & Sunlight Assessment- Neighbour Analysis Test
Date of Analysis: 29/07/2020
VSC & APSH Analysis

herrington CONSULTING LIMITED

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	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
56 Railway Side																			
Ground	R1	Residential	Unknown	W1	Existing	34.24	0.88	YES	321°N		*North*			*North*					
					Proposed	30.10													
				W2	Existing	29.01	0.87	YES	321°N		*North*			*North*					
					Proposed	25.35													
				W3	Existing	79.00	0.99	YES	90° Hz	38	0.97	YES	5	1.00	YES				
					Proposed	78.43				37			5						
				W4	Existing	95.93	0.99	YES	90° Hz	81	0.98	YES	15	1.00	YES				
					Proposed	95.26				79			15						
				W5	Existing	81.86	0.99	YES	90° Hz	47	0.96	YES	5	1.00	YES				
					Proposed	81.35				45			5						
																82		15	
																81	YES	15	YES
First	R1	Residential	Unknown	W1	Existing	37.87	0.95	YES	323°N		*North*			*North*					
					Proposed	36.13													
																North	*North*	*North*	*North*

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight Assessment - Neighbour Test
Date of Analysis: 29/07/2020
No Sky Line Analysis

herrington CONSULTING LIMITED

Floor Ref.	Room Ref.	Property Type	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
74 Westfields Avenue									
Ground	R1	Residential	Dining Room	Area m2	9.72	9.62	9.62		
				% of room		99%	99%	100.00%	YES
First	R1	Residential	Bathroom						
			Non-habitable						N/A
	R2	Residential	Bedroom	Area m2	4.14	3.90	3.90		
				% of room		94%	94%	100.00%	YES
76 Westfields Avenue									
Ground	R1	Residential	KD	Area m2	17.97	17.51	17.51		
				% of room		97%	97%	100.00%	YES
First	R1	Residential	Bedroom	Area m2	9.01	8.70	8.70		
				% of room		97%	97%	100.00%	YES
78 Westfields Avenue									
Ground	R1	Residential	Unknown	Area m2	7.48	7.34	7.34		
				% of room		98%	98%	100.00%	YES
First	R1	Residential	Unknown	Area m2	3.13	3.10	3.10		
				% of room		99%	99%	100.00%	YES
80 Westfields Avenue									
Ground	R1	Residential	Unknown	Area m2	12.55	12.48	11.98		
				% of room		99%	95%	96.00%	YES
First	R1	Residential	Unknown	Area m2	12.55	11.93	11.50		
				% of room		95%	92%	96.00%	YES
82 Westfields Avenue									
Ground	R1	Residential	Unknown	Area m2	8.60	8.60	8.60		
				% of room		100%	100%	100.00%	YES
First	R1	Residential	Unknown	Area m2	14.00	12.94	12.94		
				% of room		92%	92%	100.00%	YES
84 Westfields Avenue									
Ground	R1	Residential	Unknown	Area m2	3.21	3.20	3.20		
				% of room		100%	100%	100.00%	YES
	R2	Residential	Unknown	Area m2	7.55	7.54	7.54		
				% of room		100%	100%	100.00%	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight Assessment - Neighbour Test
Date of Analysis: 29/07/2020
No Sky Line Analysis

herrington CONSULTING LIMITED

Floor Ref.	Room Ref.	Property Type	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
First	R1	Residential	Unknown	Area m2	3.31	3.30	3.30		
				% of room		100%	100%	100.00%	YES
	R2	Residential	Unknown	Area m2	12.15	11.75	11.75		
				% of room		97%	97%	100.00%	YES
Second	R1	Residential	Unknown	Area m2	11.09	11.09	11.09		
				% of room		100%	100%	100.00%	YES
50 Railway Side									
Ground	R1	Residential	KD	Area m2	16.03	16.03	16.03		
				% of room		100%	100%	100.00%	YES
First	R1	Residential	Bedroom	Area m2	5.32	5.20	5.20		
				% of room		98%	98%	100.00%	YES
	R2	Residential	Landing						
			Non-habitable						N/A
51 Railway Side									
Ground	R1	Residential	KD	Area m2	14.80	14.79	14.79		
				% of room		100%	100%	100.00%	YES
First	R1	Residential	Landing						
			Non-habitable						N/A
	R2	Residential	Bedroom	Area m2	7.08	6.80	6.80		
				% of room		96%	96%	100.00%	YES
52 Railway Side									
Ground	R1	Residential	Study	Area m2	9.52	9.49	8.69		
				% of room		100%	91%	92.00%	YES
First	R1	Residential	Bathroom						
			Non-habitable						N/A
Second	R1	Residential	Unknown	Area m2	9.29	8.97	8.97		
				% of room		96%	96%	100.00%	YES
53 Railway Side									
Ground	R1	Residential	KD	Area m2	17.86	16.31	16.12		
				% of room		91%	90%	99.00%	YES
First	R1	Residential	Landing						
			Non-habitable						N/A
	R2	Residential	Bedroom	Area m2	6.76	6.50	6.50		
				% of room		96%	96%	100.00%	YES
Second	R1	Residential	Unknown	Area m2	9.29	9.29	9.29		
				% of room		100%	100%	100.00%	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: Daylight Assessment - Neighbour Test
Date of Analysis: 29/07/2020
No Sky Line Analysis

herrington CONSULTING LIMITED

Floor Ref.	Room Ref.	Property Type	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
54 Railway Side									
Ground	R1	Residential	LKD	Area m2	23.87	23.87	22.82		
				% of room		100%	96%	96.00%	YES
First	R1	Residential	Bedroom	Area m2	6.47	6.23	6.23		
				% of room		96%	96%	100.00%	YES
	R2	Residential	Landing						
			Non-habitable						N/A
Second	R1	Residential	Unknown	Area m2	9.29	9.29	9.29		
				% of room		100%	100%	100.00%	YES
55 Railway Side									
Ground	R1	Residential	Unknown	Area m2	3.62	3.59	3.59		
				% of room		99%	99%	100.00%	YES
First	R1	Residential	Unknown	Area m2	9.16	8.84	8.84		
				% of room		97%	97%	100.00%	YES
56 Railway Side									
Ground	R1	Residential	Unknown	Area m2	19.36	19.34	19.34		
				% of room		100%	100%	100.00%	YES
First	R1	Residential	Unknown	Area m2	11.22	10.64	10.64		
				% of room		95%	95%	100.00%	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: 2hr Sun on Ground Assessment to Neighbouring Gardens on 21st Ma
Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis

herrington CONSULTING LIMITED

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
74 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	41.86	31.54 75%	26.47 63%	0.84	YES
76 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	34.19	25.39 74%	16.39 48%	0.65	NO
78 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	29.16	17.61 60%	15.58 53%	0.88	YES
80 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	44.85	30.39 68%	26.62 59%	0.88	YES
82 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	36.75	26.51 72%	18.18 49%	0.69	NO
84 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	24.73	16.25 66%	10.12 41%	0.62	NO

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: 2hr Sun on Ground Assessment to Neighbouring Gardens on 21st Ma
Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis

herrington CONSULTING LIMITED

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
86 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	27.49	20.06 73%	15.06 55%	0.75	YES
88 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	30.92	22.91 74%	20.91 68%	0.91	YES
50 Railway Side							
Ground	Rear Garden	Area m2 Percentage	24.09	15.53 64%	15.53 64%	1.00	YES
51 Railway Side							
Ground	Rear Garden	Area m2 Percentage	25.53	14.89 58%	14.89 58%	1.00	YES
52 Railway Side							
Ground	Rear Garden	Area m2 Percentage	26.44	15.33 58%	15.33 58%	1.00	YES
53 Railway Side							
Ground	Rear Garden	Area m2 Percentage	24.57	14.93 61%	14.93 61%	1.00	YES
54 Railway Side							
Ground	Rear Garden	Area m2 Percentage	14.44	8.25 57%	8.25 57%	1.00	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: 2hr Sun on Ground Assessment to Neighbouring Gardens on 21st Ma
Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis

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Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
55 Railway Side							
Ground	Rear Garden	Area m2	28.91	19.73	19.73	1.00	YES
		Percentage		68%	68%		
56 Railway Side							
Ground	Rear Garden	Area m2	33.49	21.19	21.19	1.00	YES
		Percentage		63%	63%		

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: 2hr Sun on Ground Assessment to Neighbouring Gardens on 21st Ma
Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis - Proposed Building lowered by 320mm

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Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
74 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	41.86	31.54 75%	26.81 64%	0.85	YES
76 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	34.19	25.39 74%	16.91 49%	0.67	NO
78 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	29.16	17.61 60%	16.26 56%	0.92	YES
80 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	44.85	30.39 68%	27.92 62%	0.92	YES
82 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	36.75	26.51 72%	19.08 52%	0.72	YES
84 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	24.73	16.25 66%	10.87 44%	0.67	NO

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Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis - Proposed Building lowered by 320mm

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Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
86 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	27.49	20.06 73%	15.63 57%	0.78	YES
88 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	30.92	22.91 74%	21.14 68%	0.92	YES
50 Railway Side							
Ground	Rear Garden	Area m2 Percentage	24.09	15.53 64%	15.53 64%	1.00	YES
51 Railway Side							
Ground	Rear Garden	Area m2 Percentage	25.53	14.89 58%	14.89 58%	1.00	YES
52 Railway Side							
Ground	Rear Garden	Area m2 Percentage	26.44	15.33 58%	15.33 58%	1.00	YES
53 Railway Side							
Ground	Rear Garden	Area m2 Percentage	24.57	14.93 61%	14.93 61%	1.00	YES
54 Railway Side							
Ground	Rear Garden	Area m2 Percentage	14.44	8.25 57%	8.25 57%	1.00	YES

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Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis - Proposed Building lowered by 320mm

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Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
55 Railway Side							
Ground	Rear Garden	Area m2 Percentage	28.91	19.73 68%	19.73 68%	1.00	YES
56 Railway Side							
Ground	Rear Garden	Area m2 Percentage	33.49	21.19 63%	21.19 63%	1.00	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: 2hr Sun on Ground Assessment to Neighbouring Gardens on 21st Ju
Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis - 21st June

herrington CONSULTING LIMITED

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
74 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	41.86	39.48 94%	38.74 93%	0.98	YES
76 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	34.19	32.94 96%	31.98 94%	0.97	YES
78 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	29.16	27.68 95%	27.63 95%	1.00	YES
80 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	44.85	42.78 95%	42.76 95%	1.00	YES
82 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	36.75	34.57 94%	33.64 92%	0.97	YES
84 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	24.73	22.57 91%	22.10 89%	0.98	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: 2hr Sun on Ground Assessment to Neighbouring Gardens on 21st Jun
Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis - 21st June

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Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
86 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	27.49	26.25 95%	26.06 95%	0.99	YES
88 Westfields Avenue							
Ground	Rear Garden	Area m2 Percentage	30.92	29.67 96%	29.67 96%	1.00	YES
50 Railway Side							
Ground	Rear Garden	Area m2 Percentage	24.09	23.61 98%	23.61 98%	1.00	YES
51 Railway Side							
Ground	Rear Garden	Area m2 Percentage	25.53	23.88 94%	23.88 94%	1.00	YES
52 Railway Side							
Ground	Rear Garden	Area m2 Percentage	26.44	24.48 93%	24.48 93%	1.00	YES
53 Railway Side							
Ground	Rear Garden	Area m2 Percentage	24.57	22.90 93%	22.90 93%	1.00	YES
54 Railway Side							
Ground	Rear Garden	Area m2 Percentage	14.44	14.35 99%	14.35 99%	1.00	YES

Project Name: Cross Street, Barnes
Project No.: 2816
Report Title: 2hr Sun on Ground Assessment to Neighbouring Gardens on 21st Ju
Date of Analysis: 29/07/2020
Two Hour Sun on Ground Analysis - 21st June

herrington CONSULTING LIMITED

Floor Ref.	Amenity Ref.		Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
55 Railway Side							
Ground	Rear Garden	Area m2 Percentage	28.91	28.77 100%	28.77 100%	1.00	YES
56 Railway Side							
Ground	Rear Garden	Area m2 Percentage	33.49	31.52 94%	31.52 94%	1.00	YES