

50-51 RUSSELL SQUARE, BLOOMSBURY, LONDON, WC1

Daylight and Sunlight Effects Report (Neighbouring Properties)

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APPENDICES

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1. Introduction

- 1.1. Delva Patman Redler LLP have been engaged by the Applicant to assess the potential effects of the proposed development at 50-51 Russell Square ("the Site") on daylight and sunlight to neighbouring properties. This report has been prepared to accompany the Applicant's planning application.
- 1.2. The Site is shown in the aerial photograph in Figure 1 below and on the location plan in Appendix 2.



Figure 1 - Aerial photo of the Site and neighbouring buildings (© Google)

- 1.3. The Site is located within the London Borough of Camden
- 1.4. The proposed development and surrounding context is replicated in our 3D computer analysis model shown in the plan and 3D view drawings in Appendix 2.
- 1.5. The development comprises the retention, redevelopment and re-cladding of the main building with a remodelling of the fifth floor, side extension rebuilt with an additional storey and the existing car park infilled to provide additional office accommodation.
- 1.6. Our daylight and sunlight study has been carried out using the assessment methodologies recommended in 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (BR209, 2022 edition) published by the Building Research Establishment and the Professional Guidance Note, 'Daylighting and sunlighting' (1st edition, 2012), published by the Royal Institution of Chartered Surveyors.
- 1.7. This report is accompanied by the Appendices listed on the Contents page, including an explanation of the BRE assessment methodologies, a glossary of technical terms, drawings, and tabulated results.

2. Planning policy and guidance

National Planning Policy and Guidance

National Planning Policy Framework (September 2023)

- 2.1. The National Planning Policy Framework (NPPF) sets out the Government's planning policies and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. It places an emphasis on sustainable development and delivery of housing.

National Design Guide (January 2021)

- 2.2. The National Design Guide is part of a suite of planning practice guidance that supports the NPPF. The National Design Guide outlines the Government's priorities for well-designed places.
- 2.3. Paragraph 71 of the guidance dealing with built form states:

Proposals for tall buildings (and other buildings with a significantly larger scale or bulk than their surroundings) require special consideration. This includes their location and siting; relationship to context; impact on local character, views and sight lines; composition - how they meet the ground and the sky; and environmental impacts, such as sunlight, daylight, overshadowing and wind. These need to be resolved satisfactorily in relation to the context and local character.

- 2.4. Paragraphs 126 and 130 of the guidance dealing with homes and buildings state:

Well-designed homes and communal areas within buildings provide a good standard and quality of internal space. This includes room sizes, floor-to-ceiling heights, internal and external storage, sunlight, daylight and ventilation. The quality of internal space needs careful consideration in higher density developments, particularly for family accommodation, where access, privacy, daylight and external amenity space are also important.

Well-designed private or shared external spaces are fit for purpose and incorporate planting wherever possible. The appropriate size, shape and position for an external amenity space can be defined by considering:

- *how the associated building sits in the wider context, including access to public and open spaces;*
- *how the amenity space will be used, what for, and by whom;*
- *environmental factors that may affect its usability, such as sunlight and shade, noise or pollution;*
- *wider environmental factors affecting its quality or sustainability, such as a green corridor or drainage.*

National Model Design Code (June 2021)

- 2.5. The National Model Design Code provides detailed guidance on the production of design codes, guides and policies to promote successful design.
- 2.6. Paragraphs 114 to 117 of section B.2. dealing with built form states:

Building height may also have an impact on local environmental conditions in neighbouring properties, amenity spaces and public spaces in terms of daylight, sunlight, overshadowing, wind and micro-climate. The placing of tall buildings needs to maximise user comfort of spaces between buildings by taking into account their impact on orientation and overshadowing of public and private spaces, quality of external spaces at ground level, wind tunnel effect, noise pollution and enable safe dispersion of pollutants.

Tall buildings can be considered in design codes. It may be appropriate to include criteria for the locations of tall buildings in some area types.... Tools that can assist with this include ... characterisation studies and design strategies, dealing with issues such as urban form, historic character, building typologies, prevailing sunlight and daylight levels, green infrastructure, amenity space and quality of external spaces at ground level.

2.7. Paragraph 188 of section H.2 dealing with health and wellbeing states:

The built environment has a significant impact on people's health and wellbeing. This relates across the design code with regard to walkable neighbourhoods, access to greenery and recreation, attractive buildings and public spaces, space standards, and strong communities. There are also specific elements relating to the impact of the design of homes and buildings that affect wellbeing including daylight, aspect and privacy, noise mitigation, security and access to private outdoor space.

Good quality housing creates a pleasant indoor environment with adequate levels of natural lighting, and sunlight, without problems of overheating, good quality ventilation, privacy from overlooking and minimal noise impact.

BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2022)

2.8. The leading publication providing national guidance on the provision of daylight and sunlight to new development, and the impacts of development on daylight and sunlight to neighbouring buildings and open spaces, is BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (third edition, 2022). It is referred to in the development plan documents or supplementary planning documents of most planning authorities. This guide supersedes the 2011 edition, which is now withdrawn.

2.9. The BRE guide states:

Summary

This guide gives advice on site layout planning to achieve good sunlighting and daylighting, both within buildings and in the open spaces between them. It is intended to be used in conjunction with the interior daylight recommendations for new buildings in the British Standard, 'Daylight in buildings', BS EN 17037. It contains guidance on site layout to provide good natural lighting within a new development; safeguarding of daylight and sunlight within existing buildings nearby; and the protection of daylighting of adjoining land for future development. It is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location...

Introduction

(Its) main aim is ... to help to ensure good conditions in the local environment considered broadly, with enough sunlight and daylight on or between the buildings for good interior and exterior conditions.

This guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of the many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings... The calculation methods ... are entirely flexible in this respect...

Regional planning policy and guidance***The London Plan (March 2021)***

- 2.10. The London Plan 2021 is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the Mayor's vision for Good Growth. Its policies should inform decisions on planning applications across the capital.
- 2.11. The Plan notes that if London is to meet the challenges of the future, all parts of London will need to embrace and manage change. In many places, change will occur incrementally, especially in outer London, where the suburban pattern of development has significant potential for appropriate intensification over time, particularly for additional housing. The areas that will see the most significant change are identified as Opportunity Areas, many of which are already seeing significant development. London's Central Activities Zone (CAZ) and town centre network have a crucial role to play in supporting London's growth.

Policy GG2 'Making the best use of land'

- 2.12. Policy GG2 states:

To create successful sustainable mixed-use places that make the best use of land, those involved in planning and development must:

- B prioritise sites which are well-connected by existing or planned public transport*
- C proactively explore the potential to intensify the use of land to support additional homes and workspaces, promoting higher density development, particularly in locations that are well-connected to jobs, services, infrastructure and amenities by public transport, walking and cycling*
- D applying a design-led approach to determine the optimum development capacity of sites*

Policy D3 'Optimising site capacity through the design-led approach'

- 2.13. Policy D3 states:

- A All development must make the best use of land by following a design-led approach that optimises the capacity of sites, including site allocations. Optimising site capacity means ensuring that development is of the most appropriate form and land use for the site...*
- B Higher density developments should generally be promoted in locations that are well connected to jobs, services, infrastructure and amenities by public transport, walking and cycling...*

Local planning policy and guidance***Camden Local Plan 2017***

- 2.1. The Camden Local Plan (adopted 3 July 2017) contains the following policies that are relevant to daylight and sunlight.
- 2.2. Policy A1 'Managing the impact of development' states:

The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.

We will:

- a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;*
- ...*

The factors we will consider include:

... f. sunlight, daylight and overshadowing;

2.3. The supporting text states, at paragraph 6.5:

Loss of daylight and sunlight can be caused if spaces are overshadowed by development. To assess whether acceptable levels of daylight and sunlight are available to habitable, outdoor amenity and open spaces, the Council will take into account the most recent guidance published by the Building Research Establishment (currently the Building Research Establishment's Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011). Further detail can be found within our supplementary planning document Camden Planning Guidance on amenity.

Camden Planning Guidance, 'Amenity'

2.4. Camden's Planning Guidance on Amenity (adopted January 2021) contains supplementary planning guidance of relevance to daylight and sunlight. It states:

The Council expects applicants to consider the impact of development schemes on daylight and sunlight levels. Where appropriate a daylight and sunlight assessment should be submitted which should follow the guidance in the BRE's 'Site layout planning for daylight and sunlight: A guide to good practice'.

Levels of reported daylight and sunlight will be considered flexibly taking into account site-specific circumstances and context.

The Council aims to protect the quality of life of occupiers and neighbours through Local Plan policy A1 Managing the Impact of Development, which seeks to ensure that development does not cause unacceptable harm to amenity, including in terms of daylight and sunlight.

Major developments and proposals for new dwellings are expected to provide daylight and sunlight reports. These should always include the daylight and sunlight levels to any proposed new residential units. The reports should also include any nearby existing residential properties that may be affected. Although it is normally only residential uses that are assessed, there may also be non-residential uses, existing nearby or proposed as part of the application, that are particularly sensitive to light and so justify a report.

To help determine whether a daylight and sunlight report is needed for other types of development, the Council will have regard to several tests, taken from the BRE guidance. These are referred to as the 45-degree test and the 25-degree test.

The BRE guidance should form the basis for daylight and sunlight reports. They should be prepared by a specialist surveyor or consultant and assess the following:

1. *Levels of daylight and sunlight that occupiers are likely to experience within the proposed development and gardens and open spaces (where relevant); and*
2. *The extent that the proposed development is likely to cause on levels of daylight and sunlight entering windows of neighbouring properties, gardens and open spaces (where relevant)*

Daylight and sunlight reports should also demonstrate how the design has taken into consideration the guidance contained in the BRE document on passive solar design; and have optimised solar gain.

The Council will expect daylight and sunlight reports to report daylight and sunlight levels using the tools cited in the BRE guidance. The most common tools used are:

- *Vertical Sky Component (VSC)*
- *No Sky Line (NSL) also referred to as Daylight Distribution (DD)*
- *Average Daylight Factor (ADF)*

- *Annual Probable Sunlight Hours (APSH)*

Flexible consideration of daylight and sunlight

The Council notes the intentions of the BRE document is to provide advice to developers and decision makers and therefore it should be regarded as a guide rather than policy.

While we support the aims of the BRE methodology for assessing sunlight and daylight we will consider the outcomes of the assessments flexibly where appropriate, taking into account site specific circumstances and context. For example, to enable new development to respect the existing layout and form in some historic areas, or dense urban environments, it may be necessary to consider exceptions to the recommendations cited in the BRE guidance. Any exceptions will be assessed on a case-by-case basis.

3. Acceptability of daylight/sunlight levels and effects

- 3.1. The assessment of the effects of development on daylight and sunlight amenity is a two-part process¹: first, as a matter of calculation, whether there would be a material deterioration in conditions by reference to the BRE guidelines; and second, as a matter of judgment, whether that deterioration would be acceptable in the circumstances.
- 3.2. The first stage can be addressed by applying the BRE assessment methodology and numerical guidelines. The second stage brings into play much wider considerations, such as:
- i) Whether the neighbouring building stands unusually close to the site boundary, including the highway, taking more than its fair share of light, such that a greater reduction in light may be unavoidable if one site is not to be prejudiced by how another has been developed. (A 'mirror-image' study can be informative in such cases.)
 - ii) Whether windows in neighbouring buildings are self-obstructed by overhanging or inset balconies or other projections such as to make relatively larger reductions unavoidable even if there is a modest new obstruction opposite - in effect themselves taking away more than their fair share of light. (A 'without balconies' study can be informative in such cases.)
 - iii) In historic city centres or areas characterised by modern tall buildings, high density and close proximity, a higher degree of obstruction may be unavoidable if new buildings are to match the height and proportion of existing buildings.
 - iv) In areas that are designated by planning authorities for substantial growth or providing opportunities for change and sustainable regeneration, the sort of change that would be brought about by the introduction of taller, denser development is to be expected, including reductions in daylight and sunlight levels, closer proximity, loss of outlook, etc.
- 3.3. Where a higher degree of obstruction may be unavoidable it is appropriate to consider the reasonableness of the retained levels of daylight and sunlight with the proposed development in place.

¹ Rainbird, R (on the application of) v The Council of the London Borough of Tower Hamlets [2018]

4. Assessment methodology and numerical guidelines

- 4.1. The technical assessments that underpin this daylight and sunlight study have been carried out in accordance with the assessment methodology recommended in the BRE guide.
- 4.2. The principal assessments and numerical criteria are summarised below. A fuller explanation of the assessment methodology is given at Appendix 1 of this report.

Daylight to neighbouring buildings

- 4.3. The BRE guidelines are intended for use for rooms in adjoining dwellings where daylight is required. Living rooms, dining rooms and kitchens have a greater requirement for daylight. Bedrooms should also be analysed but are less important. Bathrooms, stairwells and other areas without a requirement for daylight need not be assessed. (See BRE paragraphs 2.2.2 and 2.2.10).
- 4.4. If the head of the new development subtends an angle of more than 25° measured from the centre of the lowest affected window in an existing neighbouring building in a plane perpendicular to the window wall, then a more detailed check is needed to find the loss of skylight.
- 4.5. The more detailed tests are:
 - i) vertical sky component (**VSC**) at the centre of each main window, which measures the total amount of skylight available; and
 - ii) no-sky line (**NSL**) on the working plane inside a room, where room layouts are known, which measures the area that can receive direct skylight and assesses the distribution of daylight around the room.
- 4.6. The NSL test need only be run where room layouts are known, for example if they are available from the local planning authority's portal (see BRE paragraph 2.2.10).
- 4.7. Loss of daylight resulting from development will be noticeable if either:
 - the VSC at the centre of the window will be reduced to both less than 27% and less than 0.80 times its former value, or
 - the area of the working plane in a room that is enclosed by the no-sky line (NSL) and can receive direct skylight will be reduced to less than 0.80 times its former value.
- 4.8. For a bay window, the centre window facing directly outwards can be taken as the main window for the VSC calculation.
- 4.9. If there would be a significant loss of light to the main window but the room has one or more smaller windows, an overall VSC may be derived by weighting each VSC element in accordance with the proportion of the total glazing area represented by its window.
- 4.10. It is important to note that these numerical guidelines are purely advisory. The BRE guide (paragraph 2.2.3) states:

Note that numerical values given here are purely advisory. Different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

Sunlight to neighbouring buildings

- 4.11. In designing new development, care should be taken to safeguard the access to sunlight for existing dwellings and any nearby non-domestic buildings where there is a particular requirement for sunlight.
- 4.12. Obstruction to sunlight may become an issue if part of the development is situated within 90° of due south of a main window wall of an existing building, and in the section drawn perpendicular to this existing window wall, the new development subtends an angle greater than 25° to the horizontal measured from the centre of the lowest window to a main living room.

- 4.13. In housing, the main requirement for sunlight is in living rooms and it is also required in conservatories, but it is viewed as less important in bedrooms and in kitchens. All main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Normally loss of sunlight need not be analysed to kitchens and bedrooms, except those that also comprise a living space. (See BRE paragraphs 3.1.2 and 3.2.3). Our assessment has therefore assessed the loss of sunlight to living rooms only.
- 4.14. The amount of sunlight reaching a room is measured by calculating the percentage of annual probable sunlight hours (**APSH**) at the centre of its windows.
- 4.15. If, following development, the APSH will be greater than 25%, including at least 5% of APSH in the winter months between 21 September and 21 March, then the room should still receive enough sunlight.
- 4.16. Sunlight will be adversely affected if the centre of the window will:
- receive less than 25% APSH or less than 5% APSH during the winter months (21 September to 21 March); and
 - less than 0.80 times its former sunlight hours during either period; and
 - the reduction in sunlight over the whole year will be greater than 4% APSH.

5. Scope of the assessment of neighbouring properties

- 5.1. The principal recommendations in the BRE guide relate to residential buildings. Its guidelines on daylight are intended for use for rooms in neighbouring dwellings where daylight is required, including living rooms, kitchens and bedrooms (BRE paragraph 2.2.2). Its guidelines on sunlight apply to all main living rooms of neighbouring dwellings and conservatories that have a window facing within 90° of due south (BRE paragraph 3.2.3).
- 5.2. Consequently, our assessment has been scoped to include nearby residential accommodation, as is common practice for studies for planning applications.
- 5.3. We identified properties with residential use from a site visit and online research, including the Valuation Office Agency council tax list, local authority planning records, and estate agency websites.
- 5.4. We have run the BRE daylight and sunlight tests in the existing baseline and proposed development scenarios. This establishes the levels that would be retained in the proposed development condition and the degree to which they could change from the existing baseline.

6. Information used in our technical study

- 6.1. We have undertaken our technical study using a 3D computer model built in AutoCAD and specialist analysis software, which runs the assessments recommended in the BRE guide.
- 6.2. We compiled our 3D computer model from the following information:
 - 6.2.1. 3D computer model of the existing buildings on the Site and the contextual massing produced from photogrammetry (aerial photography) supplied by AccuCities Ltd, subsequently enhanced by us with the more detailed information listed below
 - 6.2.2. Measured survey model point cloud produced by our in-house measured survey team in November 2023
 - 6.2.3. Floor plans for neighbouring buildings, where available
 - 6.2.4. Proposed development: 3D model supplied by Garnett Architecture in November 2023 (file name:0937-GAR-XX-ZZ-M3-A_50-51_Russell_Square_201117_InterimCoordinationModel.rvt)
- 6.3. Our 3D computer model is illustrated in our spot-height drawings at Appendix 2.
- 6.4. To aid accuracy of the assessment and interpretation of the results, we carried out online searches to obtain the floor plans for the neighbouring buildings referred to above, including from online planning application records and general estate agency websites. This is the approach recommended in the Professional Guidance Note, 'Daylighting and sunliting' (1st edition, 2012), published by the Royal Institution of Chartered Surveyors, which states:

As a minimum, and subject to any limitations relating to a client instruction, surveyors should undertake searches of the local authority's planning portal to establish existing or proposed room layouts of neighbouring properties if they are available. This will ensure a robust approach and enable the surveyor to produce reliable information for daylight distribution analysis, ... Surveyors should also use the internet to search for other relevant information, including estate agent details, which commonly include plans of properties that can also be useful in determining a room layout or use.

- 6.5. Our research yielded the information listed in Table 1 below. The plan ref. refers to the numbering on the location plan at Appendix 2.

Table 1 - Information on internal layouts of neighbouring properties

Plan ref.	Neighbouring building / property	Information used
1	20 Bedford Place	Plans from planning consent ref. LSX0105173R1
2	19 Bedford Place	Plans from planning consent ref. LSX0105173R1

- 6.6. Where we found plans for neighbouring properties, we used them to model their rooms.

Limitations and assumptions

- 6.7. In compiling our 3D computer model for our technical study, we have sought to be as accurate as reasonably possible within the scope of our instruction. We have relied upon the information noted above.
- 6.8. Whilst we have used plans for neighbouring buildings where available, we have typically made reasonable assumptions as to their internal floor levels and wall thicknesses.
- 6.9. We have used proven and trusted specialist computer software (Waldram Tools for AutoCAD®) to run the calculations recommended in the BRE guide.
- 6.10. To the best of our knowledge, the information and advice contained in this report is accurate at the date of issue, based on the information provided to or procured by us prior to its production.

7. Effects of the proposed development on neighbouring properties

- 7.1. The proposed development scenario is illustrated on spot-height drawing no. PR_001 at Appendix 2.
- 7.2. Daylight and sunlight levels in the proposed development scenario are shown in the results tables at Appendix 3 in the columns headed “Prop.” (an abbreviation of “Proposed”). The difference between the existing and proposed levels is shown in the columns headed “Loss”. The relative impact is shown in the columns headed “Pro./Ex.” (an abbreviation of “Proposed/Existing”) and is expressed as a ratio or factor of former value (e.g. 0.80 times former value). Any potential impacts outside the BRE guidelines are identified in **red font**.

Daylight to neighbouring properties

- 7.3. The results of the VSC and NSL analyses of the neighbouring buildings/properties are tabulated in Appendix 3 and summarised in Table 2 and Table 3 below.

Table 2 – Summary of VSC impacts to neighbouring windows

Property address	No. of windows tested	VSC (windows)				
		No. windows inside guidelines	No. windows outside guidelines			Sub-total
			Low reduction	Medium reduction	High reduction	
19 Bedford Place	13	13	0	0	0	0
20 Bedford Place	13	13	0	0	0	0
Totals:	26	26	0	0	0	0
		100%	0%	0%	0%	0%

Table 3 - Summary of NSL impacts to neighbouring rooms

Property address	No. of rooms tested	NSL (rooms)				
		No. rooms inside guidelines	No. rooms outside guidelines			Sub-total
			Low reduction	Medium reduction	High reduction	
19 Bedford Place	8	8	0	0	0	0
20 Bedford Place	8	8	0	0	0	0
Totals:	16	16	0	0	0	0
		100%	0%	0%	0%	0%

- 7.4. In the proposed development condition, the daylight impacts would be inside the BRE guidelines to 26 out of 26 windows (100%) for VSC and 16 out of 16 rooms (100%) for NSL.

Sunlight to neighbouring properties

- 7.5. The results of the annual and winter sunlight analyses are tabulated in Appendix 3 and summarised in Table 4 below.

Table 4 - Summary of APSH impacts to neighbouring rooms

Property address	No. of rooms tested	No. inside annual & winter guidelines	APSH - annual (rooms)				APSH - winter (rooms)			
			No. outside annual guidelines				No. outside winter guidelines			
			Low reduction	Medium reduction	High reduction	Sub-total	Low reduction	Medium reduction	High reduction	Sub-total
20 Bedford Place	1	1	0	0	0	0	0	0	0	0
Totals:	1	1	0	0	0	0	0	0	0	0
		100%	0%	0%	0%	0%	0%	0%	0%	0%

- 7.6. In the proposed development condition, the sunlight impacts would be fully inside the BRE guidelines (annual and winter sunlight) to the single living room considered.

8. Conclusion

- 8.1. The Site is in an urban location located on the junction of Russell Square and Bedford Place.
- 8.2. We assessed the potential effects of the proposed development on daylight and sunlight to surrounding residential properties.
- 8.3. We ran our assessments using methodologies recommended in the BRE guide.
- 8.4. The advice contained in the BRE guide is not mandatory and its numerical guidelines should be interpreted flexibly.
- 8.5. All windows and rooms considered for daylight and sunlight comfortably meet the BRE guidelines.
- 8.6. In conclusion, it is submitted that the layout of the proposed development is consistent with the Council's local planning policy on daylight and sunlight.



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Appendix 1

Assessment methodology and glossary

1. This appendix explains the daylight and sunlight assessment methodology recommended in BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2022 edition) and provides a glossary of the terminology used.

Assessment methodology

Daylight and sunlight to neighbouring buildings and amenity spacesDaylight to neighbouring buildings

2. The BRE guide states:

In designing a new development or extension to a building, it is important to safeguard the daylight to nearby buildings. A badly planned development may make adjoining properties gloomy and unattractive.

The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas, and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices.

3. To quantify the impact of development on daylight to a building, the BRE guide recommends two tests:
 - a) calculating the vertical sky component (**VSC**) at the centre of each main window on the outside plane of the window wall, to measure the total amount of skylight available to the window; and
 - b) plotting the no-sky line (**NSL**) on the working plane inside a room, where layouts are known, and measuring the area that can receive direct skylight, to assess the distribution of daylight around the room.

4. The VSC measures the skylight available at the window. The guide states:

Any reduction in the total amount of skylight can be calculated by finding the VSC at the centre of each main window ... For a bay window, the centre window facing directly outwards can be taken as the main window. If a room has two or more windows of equal size, the mean of their VSCs may be taken. The reference point is in the external plane of the window wall. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

5. The NSL test is described thus:

Where room layouts are known (for example if they are available on the local authority's planning portal), the impact on the daylighting distribution in the existing building should be found by plotting the no sky line in each of the main rooms. For houses this would include living rooms, dining rooms and kitchens; bedrooms should also be analysed although they are less important. In non-domestic buildings each main room where daylight is expected should be investigated. The no sky line divides points on the working plane which can and cannot see the sky.

6. If, following development, the VSC to a neighbouring window will be greater than 27% then enough skylight should still be reaching the window. Any reduction below this level should be kept to a minimum. If the VSC will be both less than 27% and less than 0.80 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear more gloomy and electric lighting will be needed more of the time.

7. If, following development, the no-sky line moves so that the area of the existing room that can receive direct skylight will be reduced to less than 0.80 times its former value, this will be noticeable to the occupants and more of the room will appear poorly lit. This is also true if the no-sky line encroaches on key areas like kitchen sinks and worktops.

Glossary of terms

8. The daylight and sunlight terminology used in our report is explained below.

Term	Meaning
Annual probable sunlight hours (APSH)	The long-term average of the total number of hours during a year in which direct sunlight is expected to shine on the unobstructed ground, allowing for average levels of cloudiness for the location in question.
Daylight	Combined skylight and sunlight.
No-sky line (NSL)	The outline on the working plane of the area from which no sky can be seen. It divides points on the working plane which can and cannot see the sky.
Obstruction angle	The angular altitude of the top of an obstruction above the horizontal, measured from a reference point in a vertical plane in a section perpendicular to the vertical plane.
Sky factor	Ratio of the parts of illuminance at a point on a given plane that would be received directly through unglazed openings from a sky of uniform luminance, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The sky factor does not include reflected light, either from outdoor or indoor surfaces.
Sun on ground (SOG)	The measure of sunlight potential to gardens and amenity spaces. It is measured in hours on the spring equinox (21 March) at a point on the ground accounting for the latitude of the site location. Sunlight below an altitude of 10° is usually discounted as it is likely to be prevented from reaching the ground by fences, plants or other low-level obstructions.
Vertical sky component (VSC)	<p>The amount of daylight falling on a vertical wall or window. It is the ratio of that part of illuminance, at a point on a given vertical plane (e.g. window), that is received directly from a CIE standard overcast sky, to simultaneous illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The VSC does not include reflected light, either from the ground or from other buildings.</p> <p>The ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall.</p>
Working plane	Horizontal, vertical or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 0.85 m above the floor in housing.

Appendix 2

Location drawings

Site location plan
Spot-height drawings
Window maps



NEIGHBOURING
PROPERTIES CONSIDERED
FOR ANALYSIS

- 1: 20 Bedford Place
Drwg No: 23580-LOC-001
- 2: 19 Bedford Place
Drwg No: 23580-LOC-001

NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:	
	Existing
	Consented
	Proposed
	Cumulative
	Neighboring Property
	Cutback Envelope

SOURCE DATA:
Existing and surrounding buildings
AccuCities
3D context model
DPR
3D measured survey
2023-11-13-23580-23596-Russell Square,
Bloomsbury,London_MASTER MODEL.dwg

NOTES:

REV	Description	Drawn	Date

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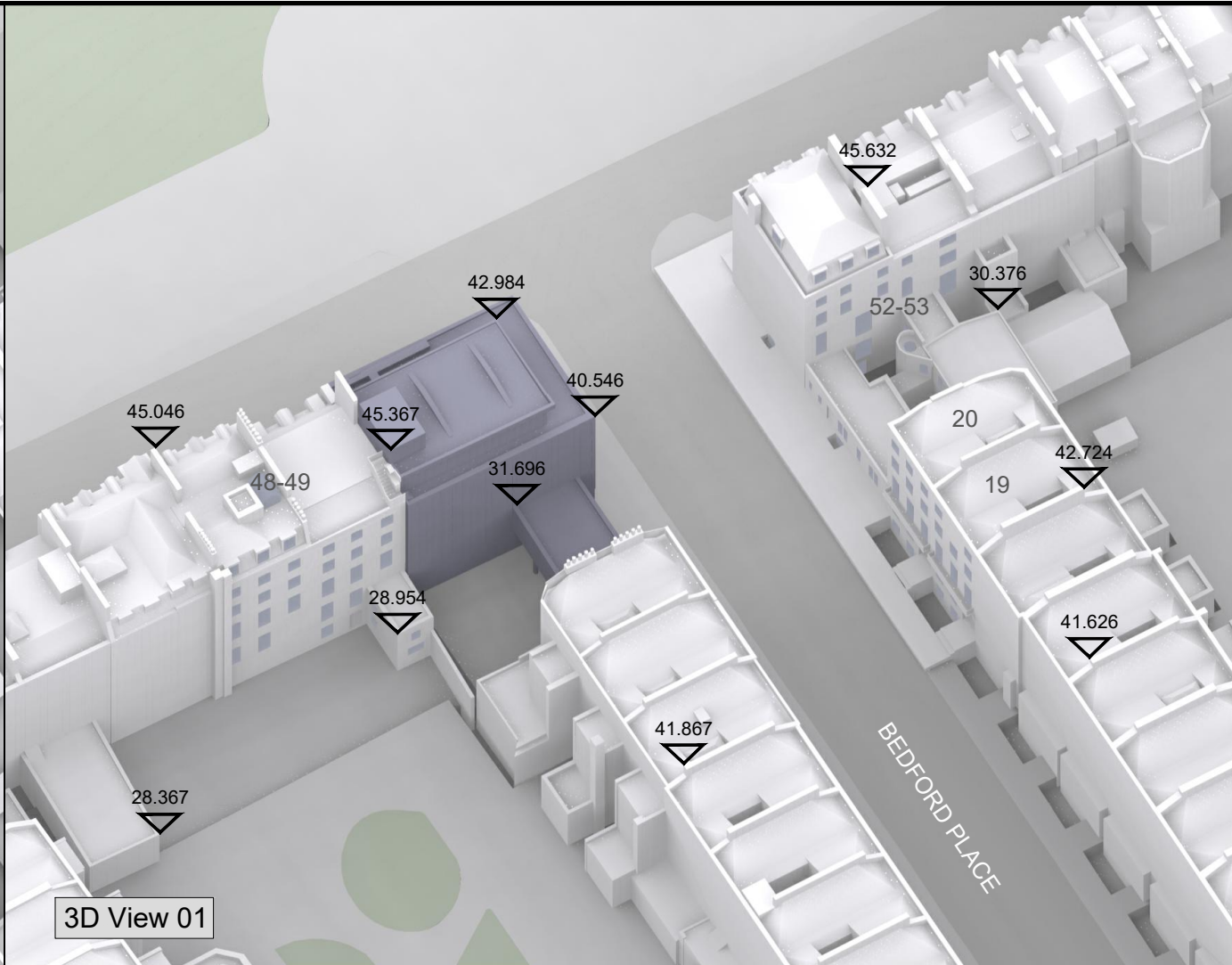
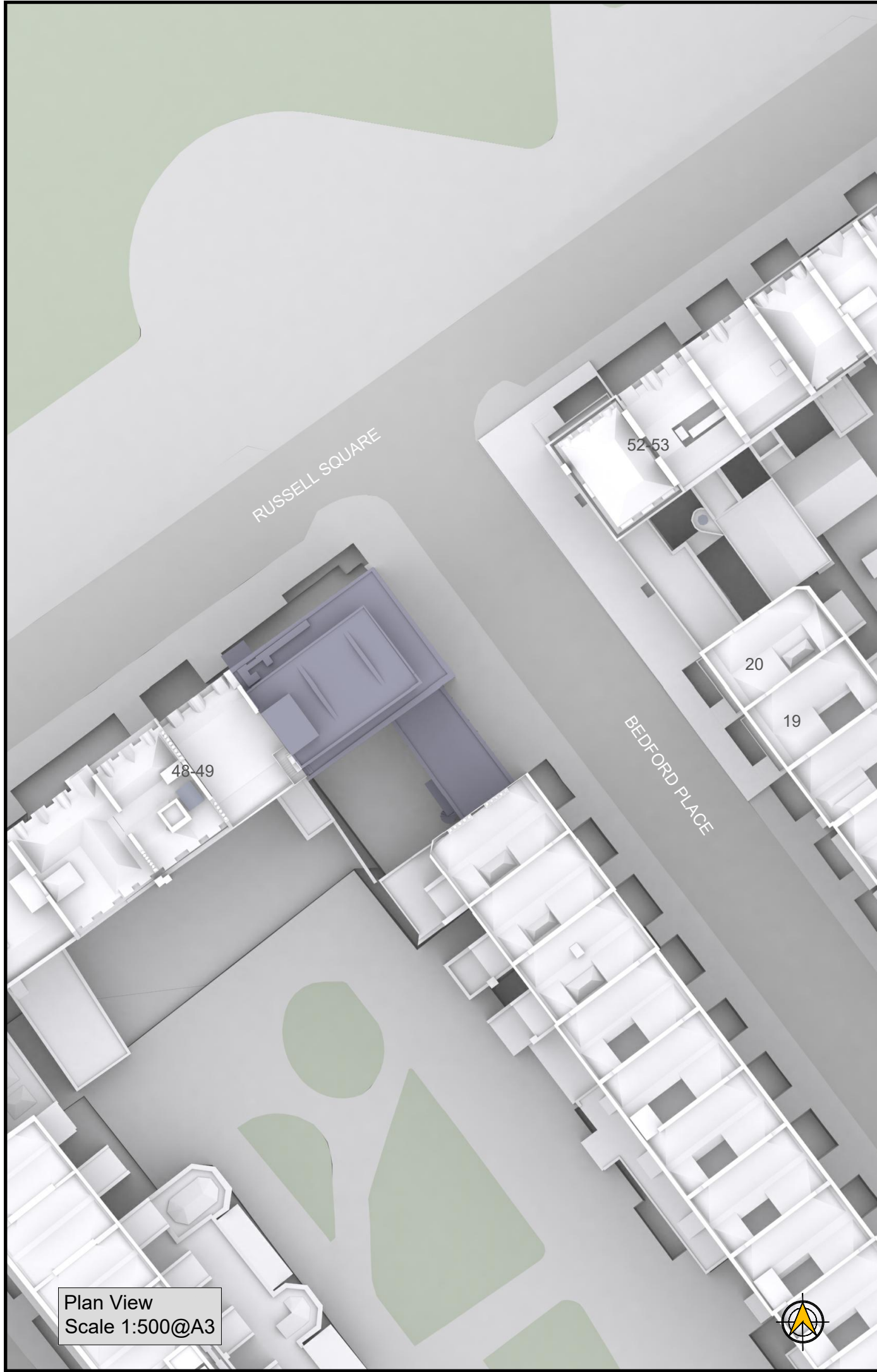
London 020 7936 3668
Liverpool 0151 242 0980
Bristol 0117 450 9703

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info@delvapatmanredler.co.uk

TITLE:
50-51 RUSSELL SQUARE
LONDON, WC1B 4JA

DRAWING:
LOCATION PLAN

DRAWN: IM		JOB NBR: 23580
SCALE: 1:500@A3		
DATE: 13.12.2023		
DWG NO: LOC-DS-001		REV: -



NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

Existing	Consented
Proposed	Cumulative
Neighboring Property	Cutback Envelope

SOURCE DATA:
Existing and surrounding buildings
AccuCities
3D context model
DPR
3D measured survey
2023-11-13-23580-23596-Russell Square,
Bloomsbury,London_MASTER MODEL.dwg

NOTES:
All heights given in m AOD

REV	Description	Drawn	Date

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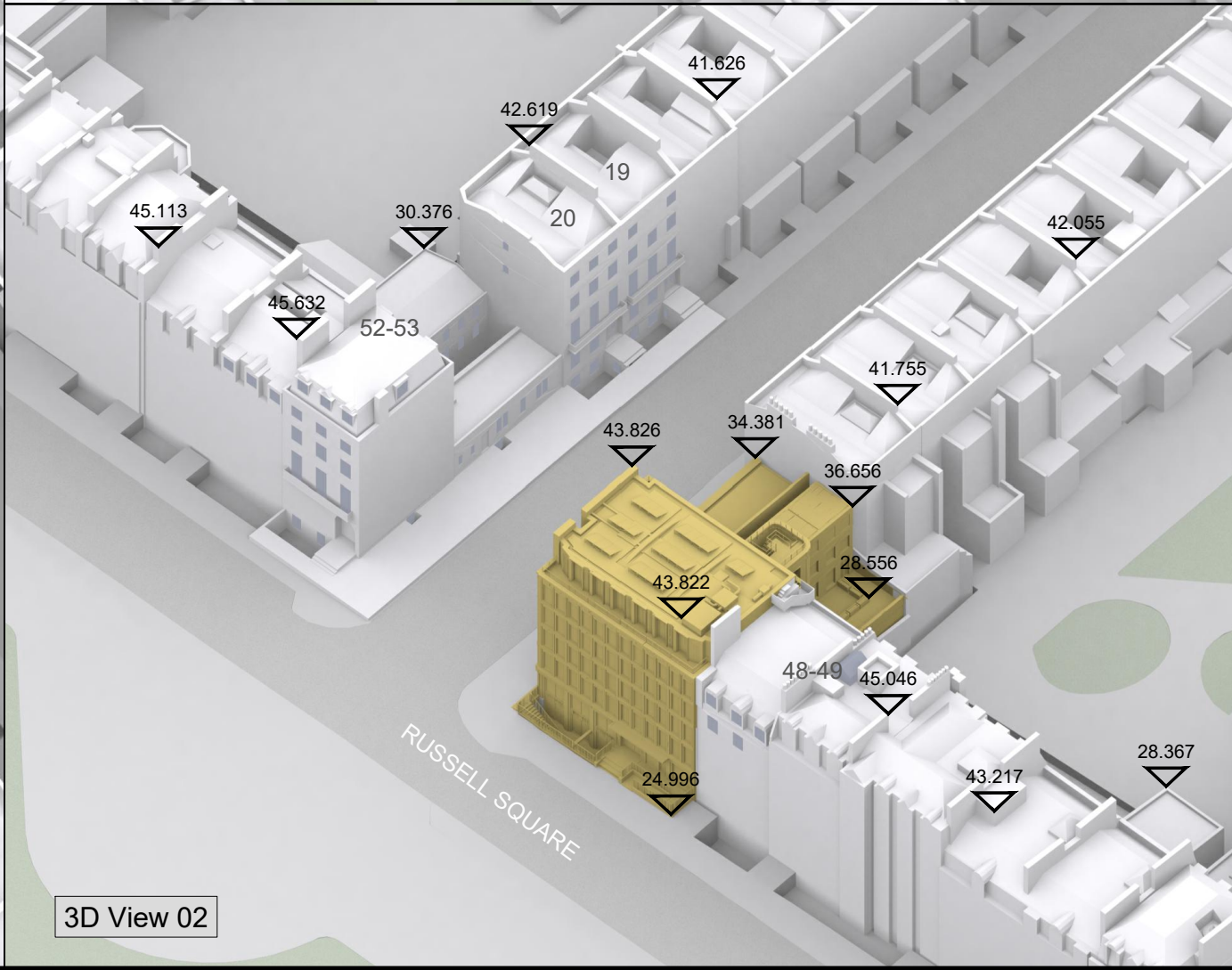
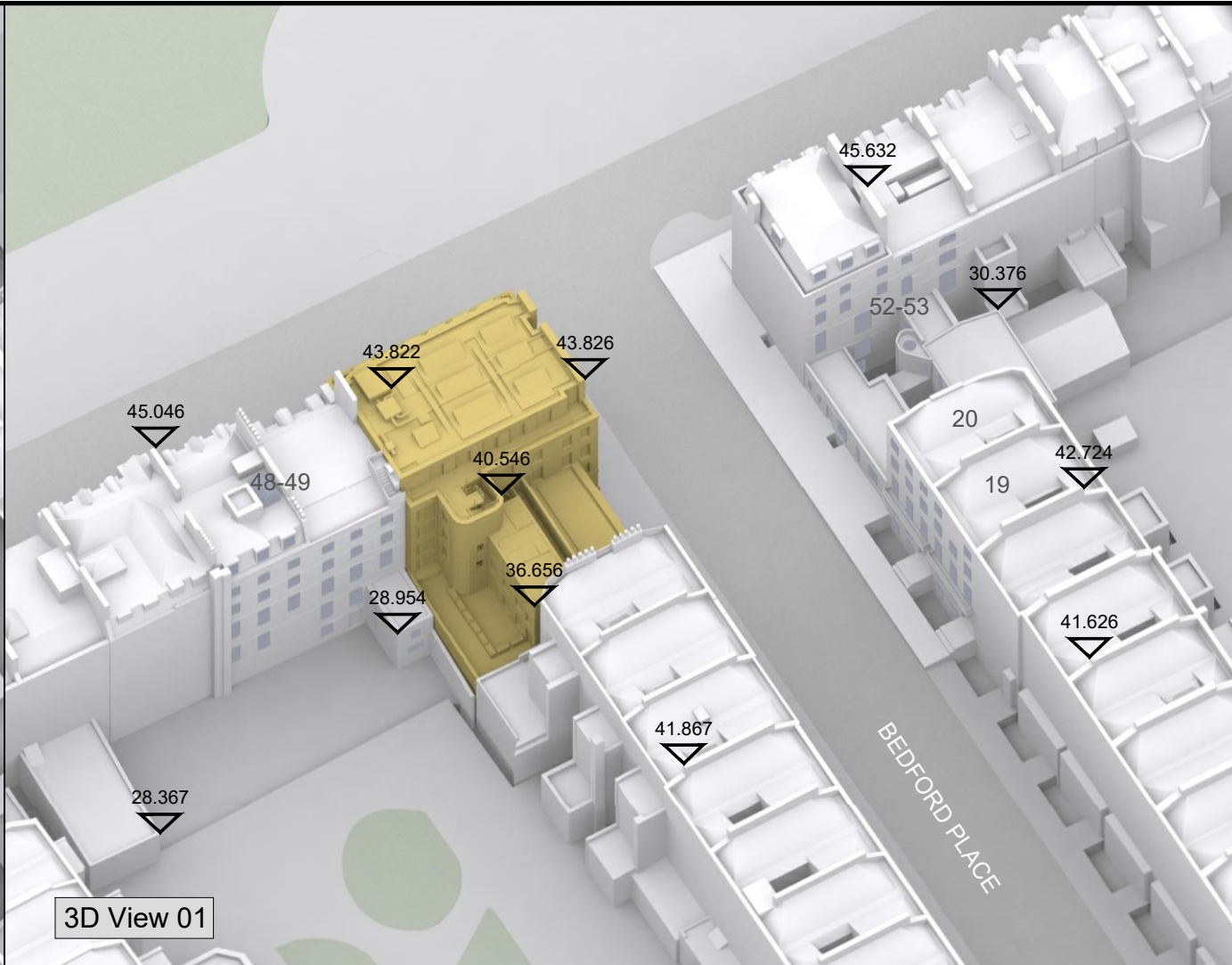
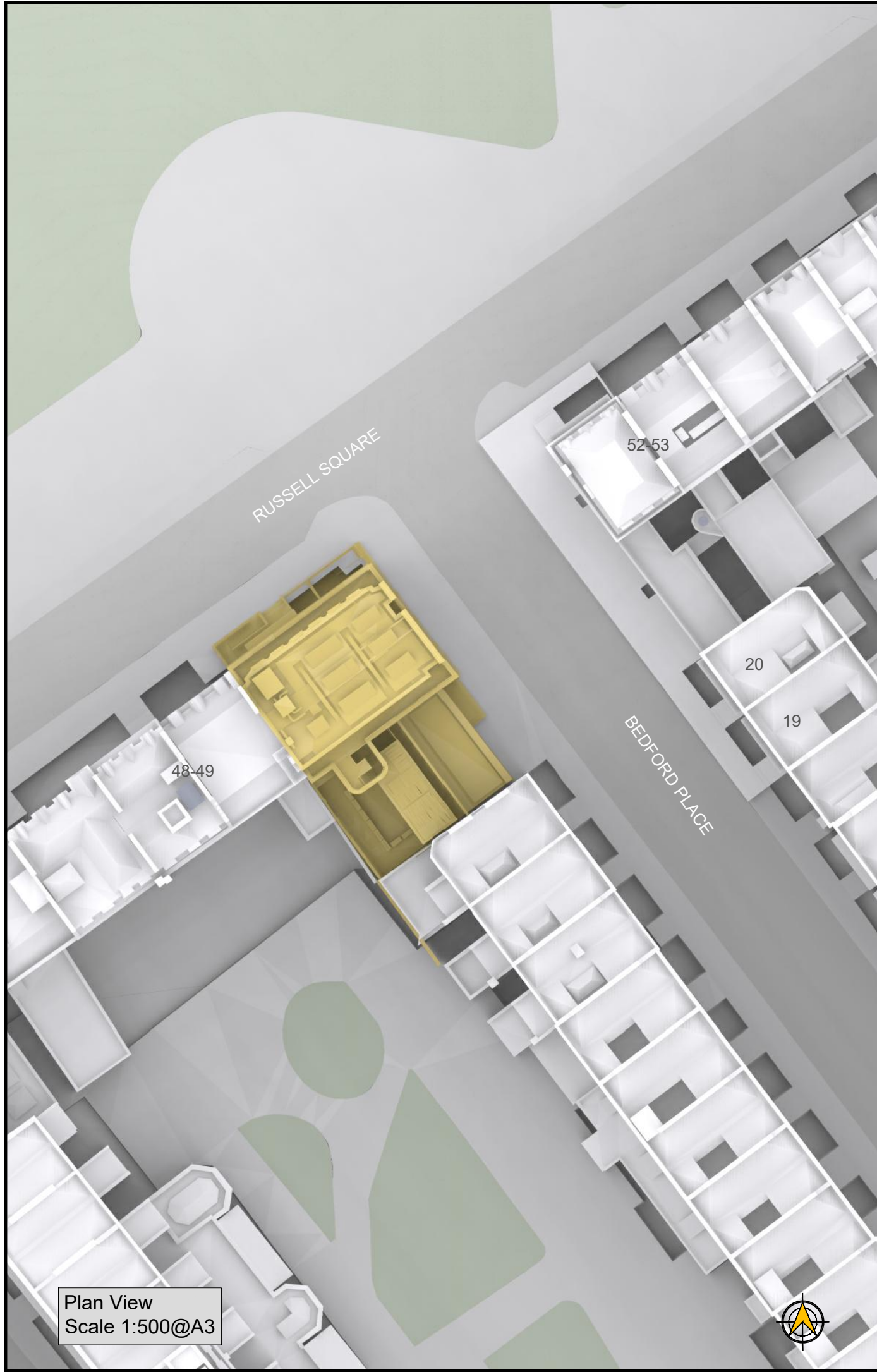
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TITLE:
50-51 RUSSELL SQUARE
LONDON, WC1B 4JA

DRAWING:
EXISTING SCENARIO
Plan and 3D Views

DRAWN: IM	JOB NBR:
SCALE: NTS	23580
DATE: 27.11.2023	

DWG NO:	REV:
EX-001	-



NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

Existing	Consented
Proposed	Cumulative
Neighboring Property	Cutback Envelope

SOURCE DATA:

Existing and surrounding buildings
AccuCities
3D context model
DPR
3D measured survey
2023-11-13-23580-23596-Russell Square,
Bloomsbury,London_MASTER MODEL.dwg

Proposed scheme
Garrett Architecture
3D model received 20.11.2023
0937-GAR-XX-ZZ-M3-A_50-51_Russell
Square_201117_InterimCoordinationModel.rvt

NOTES:

All heights given in m AOD

REV	Description	Drawn	Date

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TITLE:

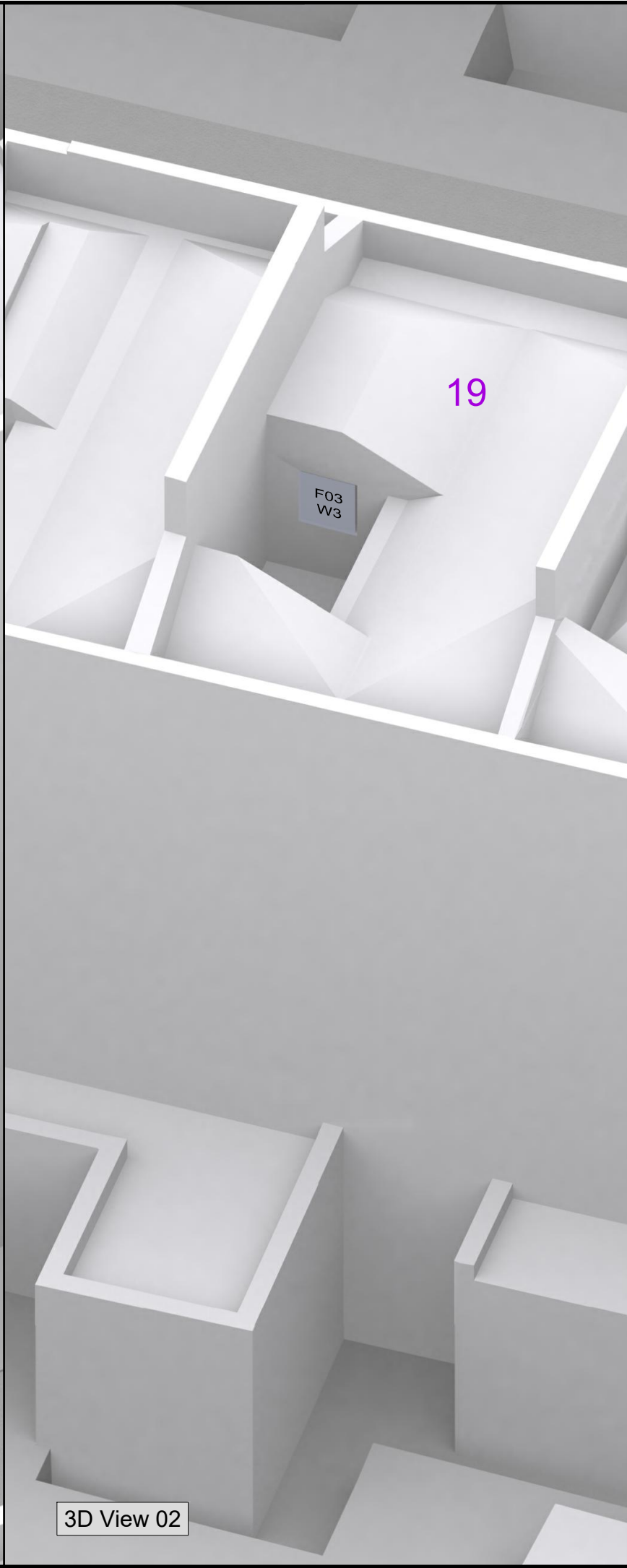
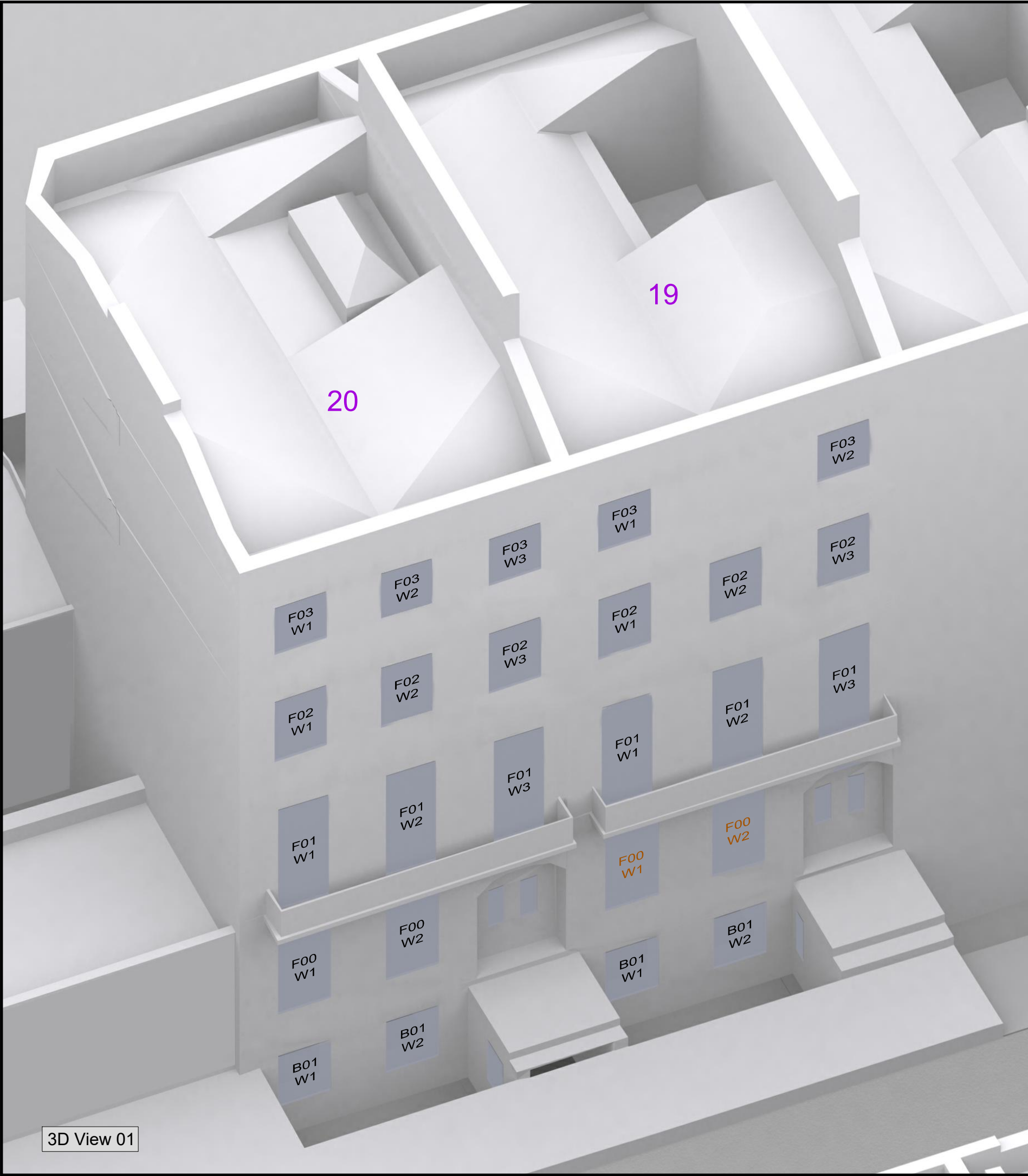
50-51 RUSSELL SQUARE
LONDON, WC1B 4JA

DRAWING:

PROPOSED SCENARIO
Plan and 3D Views

DRAWN: IM	JOB NBR:
SCALE: NTS	23580
DATE: 27.11.2023	

DWG NO:	REV:
PR-001	-



NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

W1 Windows tested
Daylight only

W1 Windows tested
Daylight & Sunlight

SOURCE DATA:

Existing and surrounding buildings
AccuCities
3D context model
DPR
3D measured survey
2023-11-13-23580-23596-Russell Square,
Bloomsbury,London_MASTER MODEL.dwg

NOTES:

Layouts obtained from local
authority website

REV	Description	Drawn	Date

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TITLE:

50-51 RUSSELL SQUARE
LONDON, WC1B 4JA

DRAWING:

KEY WINDOW LOCATIONS
20 and 19 Bedford Place

DRAWN: IM	JOB NBR:
SCALE: NTS	23580
DATE: 13.12.2023	

DWG NO:	REV:
LOC-001	-

Appendix 3

Daylight and sunlight results for neighbouring buildings

Property, room & window attributes				VSC				NSL				APSH (room)							
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% rm)	Prop. (% rm)	Loss (m ²)	Pro./Ex. ratio	Annual (%APSH)				Winter (%APSH)			
												Exis.	Prop.	Loss	Pro./Ex.	Exis.	Prop.	Loss	Pro./Ex.
Note: Red = outside BRE guidelines; Blue = gain in light																			
20 Bedford Place																			
B01	R1	Bedroom	W1	↙	21.6	20.8	0.8	0.96											
		Bedroom	W2	↙	20.6	20.0	0.6	0.97	80%	65%	2.68	0.82	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F00	R1	Bedroom	W1	↙	23.4	22.6	0.8	0.97											
		Bedroom	W2	↙	22.2	21.7	0.5	0.98	97%	97%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F01	R1	Bedroom	W1	↙	30.4	29.8	N/A	N/A											
		Bedroom	W2	↙	29.9	29.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3	↙	29.6	29.4	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F02	R1	Bedroom	W1	↙	34.1	33.9	N/A	N/A											
		Bedroom	W2	↙	33.9	33.7	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3	↙	33.8	33.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F03	R1	Bedroom	W1	↙	36.8	36.6	N/A	N/A											
		Bedroom	W2	↙	36.7	36.6	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3	↙	36.7	36.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
19 Bedford Place																			
B01	R1	Bedroom	W1	↙	19.2	19.1	0.1	0.99											
		Bedroom	W2	↙	19.0	18.8	0.2	0.99	55%	51%	0.59	0.94	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F00	R1	Living Room	W1	↙	21.7	21.5	0.2	0.99											
		Living Room	W2	↙	21.4	21.2	0.2	0.99	81%	81%	0.00	1.00	40	40	N/A	N/A	13	13	N/A
F01	R1	Bedroom	W1	↙	29.4	29.2	N/A	N/A											
		Bedroom	W2	↙	29.3	29.2	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3	↙	29.2	29.1	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F02	R1	Bedroom	W1	↙	33.7	33.6	N/A	N/A											
		Bedroom	W2	↙	33.7	33.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W3	↙	33.7	33.6	N/A	N/A	98%	98%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F03	R1	Bedroom	W1	↙	36.7	36.6	N/A	N/A	93%	93%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	R2	Bedroom	W2	↙	36.7	36.7	N/A	N/A											
		Bedroom	W3	↗	16.5	16.5	0.0	1.00	96%	96%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R

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