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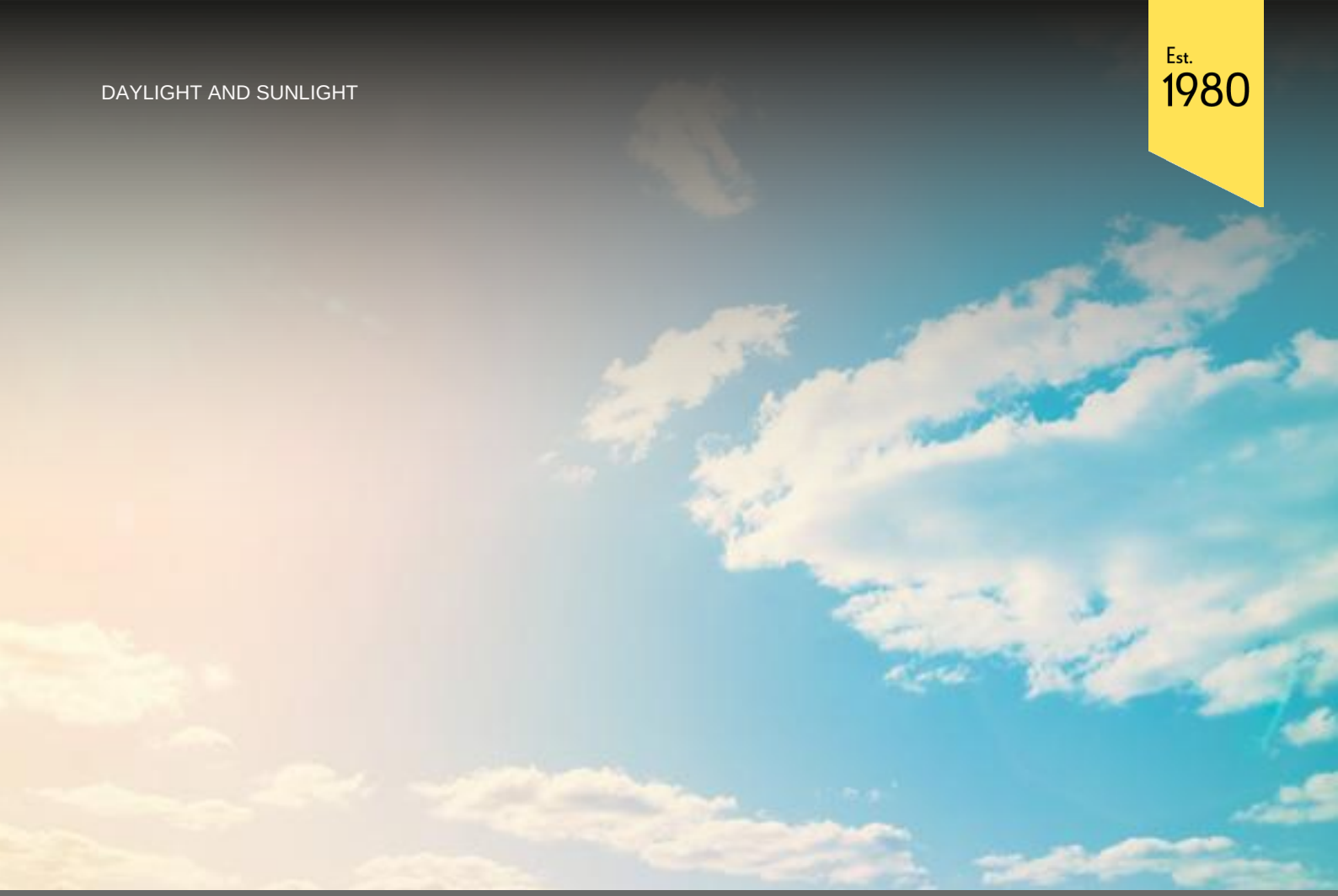

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Daylight and Sunlight Report

23 March 2022

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CONTENTS

1. Introduction....3
2. Planning policy and guidance....4
3. Acceptability of daylight/sunlight levels and impacts....10
4. Assessment methodology and numerical guidelines....11
5. Flexible application of the guidelines and alternative target values....13
6. Scope of the assessment....16
7. Information used in our technical study....17
8. Baseline condition for neighbouring properties....18
9. Effects of the proposed development on neighbouring properties....19
10. Conclusion....21

APPENDICES

Appendix 1 - Assessment methodology and glossary

Appendix 2 - Location drawings

Appendix 3 - Daylight and sunlight results for neighbouring buildings

1. Introduction

1.1. Delva Patman Redler LLP ("we") have been engaged by the Applicant to assess daylight and sunlight for a planning application for proposed development at 15 Elliott Square ("the Site"). We have been instructed to assess the potential effects on neighbouring properties.

1.2. Our daylight and sunlight study has been carried out using the assessment methodology recommended in the Building Research Establishment (BRE) Report 209, *'Site Layout Planning for Daylight and Sunlight: A guide to good practice'* (second edition, 2011) ("the BRE guide") and the Professional Guidance Note, *'Daylighting and sunlighting'* (1st edition, 2012), published by the Royal Institution of Chartered Surveyors.

1.3. The Site is located within the London Borough of Camden. The Site is shown central to 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)

1.4. The proposed development is illustrated in spot-height drawings in Appendix 2. It comprises the upward extension of the building to create a new third floor.

1.5. This report is accompanied by Appendices explaining the BRE assessment methodology and containing drawings and tabulated results, as listed on the Contents page.

2. Planning policy and guidance

National Planning Policy and Guidance

National Planning Policy Framework (July 2021)

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.

2.2. Chapter 11 of the NPPF, entitled *"Making effective use of land"*, promotes the effective use of land in meeting the need for homes and other uses. It gives examples such as developing under-utilised land and buildings, especially if this would help to meet identified needs for housing where land supply is constrained and available sites could be used more effectively, and upward extensions to create new homes, where they would be consistent with the prevailing height and form of neighbouring properties and the overall street scene.

2.3. In particular, paragraph 125 of the NPPF states:

> *Area-based character assessments, design guides and codes and masterplans can be used to help ensure that land is used efficiently while also creating beautiful and sustainable places. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities, and ensure that developments make optimal use of the potential of each site. In these circumstances:*
>
> *c) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards).*

BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2011)

2.4. 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*' (second edition, 2011). It is referred to in the development plan documents or supplementary planning documents of most planning authorities.

2.5. The BRE guide states:

> *(Its) main aim is … to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.*
>
> *The guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the report should not be seen as a part of planning policy. Its aim is to help rather than constrain the designer.*
>
> *Although it gives numerical guidelines, these should be interpreted flexibly because 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.*

British Standard, BS EN 17037:2019, 'Daylight in buildings'

2.6. British Standard, BS EN 17037:2019, *'Daylight in buildings'* provides a standard and methodology by which to assess daylight and sunlight in new buildings. It does not deal with sunlight to open spaces or the effects of development on daylight and sunlight to existing neighbouring buildings.

Regional planning policy and guidance

The London Plan (March 2021)

2.7. 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.

2.8. 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'*

2.9. 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'*

2.10. 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…*

Policy D6 *'Housing quality and standards'*

2.11. Policy D6 states:

> *C Housing development should maximise the provision of dual aspect dwellings and normally avoid the provision of single aspect dwellings. A single aspect dwelling should only be provided where it is considered a more appropriate design solution to meet the requirements of Part B in Policy D3 'Optimising site capacity through the design-led approach' than a dual aspect dwelling, and it can*

be demonstrated that it will have adequate passive ventilation, daylight and privacy, and avoid overheating.

D The design of development should provide sufficient daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space.

2.12. The supporting text notes that dual aspect dwellings with opening windows on at least two sides have many inherent benefits, including better daylight, a greater chance of direct sunlight for longer periods, natural cross-ventilation, etc. It notes that the design of single aspect dwellings must demonstrate that all habitable rooms and the kitchen are provided with adequate daylight, and that the orientation enhances amenity, including views. Single aspect dwellings that are north facing should be avoided. Having bay windows can optimise daylight and sunlight and allow buildings to be closer together than can otherwise be achieved.

2.13. The Mayor intends to produce a single guidance document on housing design standards which need to be met in order to implement Policy D6 *'Housing quality and standards'*. This will include guidance on daylight and sunlight standards and will build on the guidance set out in the 2016 Housing SPG.

Mayor of London's Housing Supplementary Planning Guidance (March 2016)

2.14. The Mayor of London's *'Housing Supplementary Planning Guidance'* (March 2016) was developed to support previous versions of the London Plan but remains relevant for the implementation of the London Plan 2021.

2.15. Part 1.3 of the SPG deals with optimising housing potential in development opportunities. At paragraphs 1.3.45 and 1.3.46 it states:

Policy 7.6Bd requires new development to avoid causing 'unacceptable harm' to the amenity of surrounding land and buildings, particularly in relation to privacy and overshadowing and where tall buildings are proposed. An appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts of new development on surrounding properties, as well as within new developments themselves. Guidelines should be applied sensitively to higher density development, especially in opportunity areas, town centres, large sites and accessible locations, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances; the need to optimise housing capacity; and scope for the character and form of an area to change over time.

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

Good Quality Homes for all Londoners - consultation draft (October 2020)

2.16. *'Good Quality Homes for All Londoners'* is consultation draft guidance on housing design and delivery. The consultation ended in January 2021 and the final guidance is awaited. It illustrates the direction of travel for standards and guidance for housing design in London, including daylight and sunlight guidance.

2.17. The consultation draft contains the following draft housing standards:

C5.2 Aspect and outlook

C5.2.1 All new dwellings should be dual aspect, unless there are exceptional circumstances that justify the inclusion of any single-aspect homes. Single-aspect dwellings that are north facing, contain three or more

bedrooms, or are exposed to noise levels with significant adverse effects on health and quality of life, should not be permitted.

C5.2.2 Where single-aspect dwellings are proposed (by exception), the design team should demonstrate how good levels of ventilation, daylight, privacy and thermal comfort will be provided to each habitable room and the kitchen.

C5.3 Daylight, sunlight and overshadowing

C5.3.1 New dwellings should achieve a minimum average daylight factor (ADF) target value of 1 per cent for a bedroom and 1.5 per cent for a living room.

C5.3.2 Proposed development should maximise quality and availability of sunlight and natural light in outdoor spaces, particularly in winter. Outdoor spaces should benefit from at least two hours of daylight on 21st March into 50 per cent of space in line with BRE guidance.

C5.3.3 All homes must 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.

2.18. The supporting text on daylight, sunlight and overshadowing states:

Balancing natural light

Providing good levels of natural light makes for a more pleasant internal environment, improving wellbeing as well as reducing the energy required for artificial lighting. This document prioritises good daylight to the home in determining suitable development capacity…

…Natural light can be restricted in densely developed areas. However, an appropriate degree of flexibility needs to be applied when using BRE guidelines to assess the daylight and sunlight impacts within proposed new homes, as well as the impact that proposed development would have on surrounding homes and open spaces.

Applying BRE guidelines in relation to neighbouring homes

Decision-makers should recognise that fully optimising housing potential on sites may necessitate standards which depart from those presently experienced, but which still achieve satisfactory levels of residential amenity and avoid unacceptable harm.

Guidelines should be applied sensitively to higher density development, where BRE advice suggests considering the use of alternative targets. This should take into account local circumstances, the need to optimise housing capacity, and the scope for the character and form of an area to change over time.

The BRE guidelines apply nationwide, and the default numerical targets provided are purely advisory. These are based on a uniform, 25-degree development angle (vertical obstruction angle) typical of a low-rise suburban location. This corresponds to the Vertical Sky Component (VSC) target of 27 per cent cited in the guidelines. Typical development angles in a city or central urban location are considerably higher. In Central London, development angles of 40 degree or 50 degree are common and can, if well planned, deliver successful schemes. A uniform development angle of 40 degree corresponds to a VSC target of 18 per cent, and 50 degree gives a VSC target of 13 per cent. Such daylight levels have been accepted in many desirable central areas for well over a century. Module A: Optimising Site Capacity - A Design-led Approach therefore adopts a 50-degree development angle to determine offset distances.

Even with access to good levels of daylight on the outside of a building, it is possible to have low levels of daylight within a building due to design features such as small windows, recessed windows, poor placement of balconies or deep rooms. Therefore, consideration of the retained target VSC should be the principal consideration. Where this is not met in accordance with BRE guidance, it should not be less than 0.8 times its former value (which protects areas that already have low daylight levels).

Less weight should be given to the room-based measures of daylight such as 'no-sky line' or average daylight factor as these are dependent on the design of the neighbouring property. Except in exceptional circumstances, design features of neighbouring properties (referred to above) should not hamper the development potential of a site.

Local planning policy

Camden Local Plan 2017

2.19. The Camden Local Plan (adopted 3 July 2017) contains the following policies that are relevant to daylight and sunlight.

Camden Planning Guidance, 'Amenity'

2.20. 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 submitted which should be 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 assessed on a case-by-case basis.

Camden Planning Guidance, 'Housing'

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

Layout

In general, the internal layout should seek to ensure the main living room and other frequently used rooms are on the south side and rooms that require less sunlight (bathrooms, utility rooms) are on the north side. Kitchens are better positioned on the north side to avoid excessive heat gain.

Additionally, it is preferable that permanent partitions are present between eating and sleeping areas; and between kitchens and living rooms. Combined kitchens and living areas can be acceptable where sufficient floor area allows a greater range of activity.

- *Dual aspect – Proposals should achieve good dual aspect [London Housing SPG 2016 Standard 29]. Habitable rooms should also have suitable outlook.*

- *Natural light, Daylight/sunlight - All the habitable rooms must have direct natural light, particularly the main living room. The applicant must ensure that the levels of daylight and sunlight that enter habitable rooms comply with BRE standards and that the report for 'Daylight and Sunlight' is submitted with the proposal [London Housing SPG 2016 Standard 32; CPG for Amenity].*

Amenity

- *Amenity of neighbours – The proposal should not have a significant detrimental impact to neighbouring amenity in terms of neighbouring outlook, privacy, sunlight, daylight, noise or vibration. Additionally, the proposal should not result in any overlooking into neighbouring habitable rooms. [Local Plan Policy A1; CPG for Design and for Amenity].*

3. Acceptability of daylight/sunlight levels and impacts

3.1. The assessment of impact on daylight and sunlight amenity is a two-part process[1]: 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.

4.3. British Standard, BS EN 17037:2019, *'Daylight in buildings'* provides an alternative method for assessing daylight and sunlight in new buildings; however, it does not cover impacts on existing neighbouring buildings or sunlight to open spaces. The BRE guide does and is the leading publication providing national guidance and is referred to in development plan documents or supplementary planning documents of most planning authorities. We have therefore followed the methodologies in the BRE guide.

Existing neighbouring buildings and amenity spaces

Daylight to neighbouring buildings

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. 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 0.8 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 0.8 times its former value.

4.7. In respect of these numerical guidelines, the BRE guide 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.*

4.8. In respect of the windows and rooms to be assessed, the BRE guide states:

> *The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms.*

4.9. In housing, 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.

4.10. For a bay window, the centre window facing directly outwards can be taken as the main window for the VSC calculation. If a room has two or more windows of equal size, the mean of their VSCs may be taken.

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. The amount of sunlight reaching a room is measured by calculating the percentage of annual probable sunlight hours (**APSH**) at the centre its windows.

4.14. 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.

4.15. 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 0.8 times its former sunlight hours during either period; and
- the reduction in sunlight over the whole year will be greater than 4% APSH.

4.16. All main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90˚of due south.

4.17. When asked to clarify whether bedrooms should be assessed, the author of the BRE guide, Dr Paul Littlefair, wrote:

> *"The BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice' recommends that 'all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.' Normally we would not include loss of sunlight to bedrooms in a detailed analysis; and loss of sunlight to bedrooms would not be treated as a material issue except in bedrooms that also comprised a living space, for example a bed sitting room in an old people's home. Loss of diffuse daylight to bedrooms does need to be taken into account, as stated in paragraph 2.2.2 of the BRE Report."* [2]

4.18. Our assessment has therefore assessed the loss of sunlight to living rooms, where identified as appropriate.

[2] BRE letter dated 16 December 2014

5. Flexible application of the guidelines and alternative target values

5.1. As noted in paragraph 2.4 above, the BRE guide states that its default numerical guidelines are not mandatory and must be interpreted flexibly because natural lighting is only one of many factors in site layout design. In certain circumstances, such as city centres or areas 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.

5.2. Paragraph 5.14 of the Hackney Local Plan acknowledges that the BRE guide's default numerical guidelines were developed with lower density suburban context in mind and that it may be difficult to meet them in denser inner-urban contexts such as in Hackney.

5.3. We set out below some examples of a flexible approach to applying the BRE guidelines that are of relevance.

Reasonableness of retained values in a site's context

5.4. One example of flexible application of the guidelines was demonstrated in the Inspector's appeal decision for a development of the Whitechapel Estate site between Varden Street and Ashfield Street, London E1 in the London Borough of Tower Hamlets in February 2018 (Appeal Ref: APP/E5900/W/17/3171437).

5.5. In the aforementioned case the Inspector found that materially adverse impacts on daylight were nonetheless acceptable. He noted that development that resulted in a proportion of residual VSC values in the mid-teens, with a smaller proportion in the bands below 15% VSC, have been found acceptable in major developments across London. More specifically, the Inspector stated:

> *108. The BRE document offers guidance on generally acceptable standards of daylight and sunlight, but advises that numerical values are not to be rigidly applied and recognises the importance of the specific circumstances of each case. Inner city development is one of the examples where a different approach might be justified. This is specifically endorsed by the [Mayor of London's] Housing SPG, which calls for guidelines to be applied sensitively to higher density developments, especially in (among others) opportunity areas and accessible locations, taking into account local circumstances, the need to optimise housing capacity, and the scope for the character and form of an area to change over time. … I agree with the appellants that blanket application of the BRE guide optimum standards, which are best achieved in relatively low-rise well spaced layouts, is not appropriate in this instance.*
>
> *109. The SPG advises that the daylight impact on adjacent properties should be assessed drawing on "broadly comparable residential typologies within the area and of a similar nature across London"...*
>
> *112. The figures [from comparable typologies from a range of example sites across Central London analysed by the appellants, comprising both traditional urban streets and recently permitted areas of significant development] show that a proportion of residual Vertical Sky Component ('VSC') values in the mid-teens have been found acceptable in major developments across London. This echoes the Mayor's endorsement in the preSPG decision at Monmouth House, Islington that VSC values in the mid-teens are acceptable in an inner urban environment. They also show a smaller proportion in the bands below 15%...*
>
> *113. I acknowledge that a focus on overall residual levels could risk losing sight of individual problem areas. It is accepted that light is only one factor in assessing overall levels of amenity, but I consider that the trade-off with other factors, such as access to public transport or green space, is likely to be of more relevance to an occupier of new development than to an existing neighbour whose long-enjoyed living conditions would be adversely affected by new buildings. However, I also consider that Inner London is an area where there should generally be a high expectation of development taking place. This is particularly so in the case of the appeal site, where the Whitechapel Vision Masterplan and the City Fringe Opportunity Area Planning Framework have flagged the*

desirability of high density development. Existing residents would in my view be prepared for change and would not necessarily expect existing standards of daylight and sunlight to persist after development.

5.6. Ultimately, it is for the planning authority to judge whether affected properties would be left with acceptable levels of daylight and sunlight in their neighbourhood context, having regard to all relevant planning policies and guidance and balanced against the merits of the proposed development.

Proximity of neighbouring building to site boundary

5.7. Another important issue is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light. Appendix F of the BRE guide gives further guidance. This involves setting alternative target values generated from the layout dimensions of the existing neighbouring building and its position relative to the boundary. To ensure that new development matches the height and proportions of existing buildings, the VSC and APSH targets for the neighbouring windows could be set to those for a 'mirror-image' building of the same height and size, an equal distance away on the other side of the boundary.

5.8. In the Inspector's appeal decision for a development at Enterprise House, 21 Buckle Street, London E1 8NN in the London Borough of Tower Hamlets dated 17 December 2018 (Appeal Ref: APP/E5900/W/17/3191757) he interpreted this as applying to buildings built at the back edge of pavement and whose windows were therefore "effectively on the site boundary". He stated:

19. … The BRE Guide recognises that windows that are unusually close to the boundary take more than their fair share of light. This is an acknowledgement that the first built scheme of a local cluster could otherwise prevent the full potential of adjacent sites from being realised.

20. In such inequitable circumstances the Rainbird judgement found that 'If an existing building has been so designed that, whether by the inclusion of balconies or overhangs, it makes relatively larger reductions in daylight unavoidable even if there is a modest new obstruction opposite, that design could be seen as taking for the existing building 'more than their fair share of light' in the same way the BRE Guide regards a building that has windows that 'are unusually close to the site boundary' as doing; in each case, a greater reduction in daylight and sunlight may be unavoidable if one site is not to be unfairly prejudiced by how another has been developed.'[3]

21. In such a situation the BRE Guide advises that 'To ensure that new development matches the height and proportion of existing buildings, the VSC and APSH targets for these windows could be set to those for a 'mirror-image' building of the same height and size, an equal distance away on the other side of the boundary.[4]

22. The appellants carried out an assessment of the impact on all affected windows through a range of criteria, including a mirror image exercise with the 28 storey Altitude/Goldpence Apartments building…

23. The mirror-image exercise, although not quite to the letter of the guidelines, gives a clear indication that overall, in this more equitable arrangement, many more flats in the Altitude/Goldpence Apartments building would be affected and many more in the upper storeys would have a material deterioration in daylight and sunlight levels similar to those in the lower storeys. Such an impact would be considered acceptable, in terms of a fair share of light. In my view this provides a reasonable justification for a greater reduction in daylight and sunlight levels in the surrounding buildings as a result of this proposal than might otherwise be considered appropriate. By strictly applying the BRE guidelines, development of the site would be unfairly prejudiced.

[3] Rainbird, R (on the application of) v The Council of the London Borough of Tower Hamlets [2018]
[4] Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2nd Edition, 2011) - Appendix F para F5.

Self-obstructing balconies, wings and other projections

5.9. Balconies and projecting wings to existing neighbouring buildings obstruct the available daylight and sunlight and can therefore cause relative reductions in light to be amplified. The BRE guide states:

> *2.2.11 Existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC, and on the area receiving direct skylight. One way to demonstrate this would be to carry out an additional calculation of the VSC and area receiving direct skylight, for both the existing and proposed situations, without the balcony in place. For example, if the proposed VSC with the balcony was under 0.8 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of light.*
>
> *2.2.12 A larger relative reduction in VSC may also be unavoidable if the existing window has projecting wings on one or both sides of it, or is recessed into the building so that it is obstructed on both sides as well as above.*
>
> *3.2.9 Balconies and overhangs above an existing window tend to block sunlight, especially in summer. Even a modest obstruction opposite may result in a large relative impact on the sunlight received. One way to demonstrate this would be to carry out an additional calculation of the APSH, for both the existing and proposed situations, without the balcony in place. For example, if the proposed APSH with the balcony was under 0.8 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of sunlight.*

5.10. Clearly, balconies, wings and other projections from buildings can be a factor in the relative light loss to such buildings. In such instances it can be helpful to run a supplementary assessment with the projections removed, in order to understand the degree to which they contribute to the relative light loss.

6. Scope of the assessment

Neighbouring buildings

6.1. 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).

6.2. Consequently, our assessment has been scoped to include nearby residential accommodation, as is common practice for studies for planning applications.

6.3. We identified the properties that are in 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.

6.4. 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 change from the existing baseline.

7. Information used in our technical study

7.1. 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.

7.2. We compiled our 3D computer model from the following information:

7.2.1. 3D computer model of the existing buildings on the Site and the contextual massing produced from photogrammetry (aerial photography) supplied by ZMapping Ltd, subsequently enhanced by us with the more detailed information listed below

7.2.2. Floor plans for neighbouring buildings, where available

7.2.3. Proposed development: 2D drawings & 3D model supplied by Burd Haward Architects in February 2022 (3D file name: 3D_10-15ES and 2D drawings 2115_15_P02, P03 & P04)

7.3. 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 sunlighting' (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, or if average daylight factor (ADF) tests are appropriate … 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.*

7.4. 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 property	Information used
01	143 Adelaide Road	Plans from planning consent ref. 2016_4190_P, Ground, roof plan, sections & elevations

Where we found plans for neighbouring properties, we used them to model their rooms. Where we were been unable to find plans, we modelled their rooms based on estimated dimensions, typically adopting a generic 4m-deep room for residential premises, unless the style of building suggested otherwise.

7.5. Our 3D computer model is shown on our spot-height drawings at Appendix 2.

Limitations and assumptions

7.6. 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.

7.7. 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.

7.8. We have used proven and trusted specialist computer software (Waldram Tools for AutoCAD®) to run the calculations recommended in the BRE guide.

7.9. 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.

8. Baseline condition for neighbouring properties

8.1. We have assessed the impacts of the proposed development relative to the existing baseline condition.

8.2. The existing baseline scenario and the proposed development scenario are shown on our spot-height drawing no. SPT_001 respectively at Appendix 2.

8.3. The daylight and sunlight levels in the existing baseline and proposed development conditions are shown in the results tables Appendix 3.

8.4. The levels in the proposed scenario are then compared with those in the baseline scenario so that the loss of natural light can be quantified and compared with the BRE numerical guidelines.

8.5. Window maps for the assessed buildings are attached at Appendix 2.

9. Effects of the proposed development on neighbouring properties

9.1. We assessed the effects of the proposed development on the following properties:

- 3 & 4 Elsworthy Rise
- 111 Adelaide Road
- 143 Adelaide Road
- 16 Elliott Square

9.2. Windows within 3 & 4 Elsworthy Rise to the south and 111 Adelaide Road to the north are sufficiently distant from 15 Elliott Square such that these will subtend to an angle below 25º to the proposed extension and so will not experience any material light reduction and have been discounted from more detailed further consideration.

Daylight to neighbouring properties

VSC and NSL

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

Table 2 *– Summary of VSC and NSL effects as a result of the proposed development*

Property address	No. of windows tested	No. of rooms tested	VSC (windows)					NSL (rooms)				
			No. windows inside guidelines	No. windows outside guidelines				No. rooms inside guidelines	No. rooms outside guidelines			
				Low reduction	*Medium reduction*	*High reduction*	Sub-total		*Low reduction*	*Medium reduction*	*High reduction*	Sub-total
143 Adelaide Road	30	9	28	2	-	-	2	9	-	-	-	-
16 Elliott Square	6	3	6	-	-	-	-	3	-	-	-	-
Totals:	**36**	**12**	**34**	**2**	**0**	**0**	**2**	**12**	**0**	**0**	**0**	**0**
			94%	6%	0%	0%	6%	100%	0%	0%	0%	0%

9.4. Of the 36 windows serving 12 habitable rooms assessed in the 2 neighbouring properties, 34 (94%) would satisfy the VSC guidelines and 12 (100%) would satisfy with the NSL guidelines.

9.5. The impacts on VSC and NSL would fully satisfy the BRE guidelines for the following properties:

- 16 Elliott Square

9.6. The impacts on VSC and NSL would not fully satisfy the BRE guidelines for the following properties, and are examined in further detail:

- 143 Adelaide Road

9.7. There will be a single infringement of the VSC to a ground floor and first floor window. These infringements are isolated to single windows and are both only marginally beyond the 0.8 times VSC criteria.

9.8. In both instances the rooms each have 3 other windows which will comfortably comply with the VSC assessment criteria and the supporting NSL assessments demonstrated that the amount of retained light within the rooms will remain at 98% or above.

9.9. The infringements therefor are of very low significance and not considered material.

Sunlight to neighbouring properties

9.10. The results of the annual and winter sunlight analyses are tabulated in Appendix B and summarised Table 3 below.

Table 3 *– Number of rooms experiencing APSH effects as a result of the proposed development*

Property address	No. of rooms tested	No. inside **APSH 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
143 Adelaide Road	9	9	-	-	-	-	-	-	-	-
16 Elliott Square	-	-	-	-	-	-	-	-	-	-
Totals:	**9**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		100%	0%	0%	0%	0%	0%	0%	0%	0%

9.11. Table 3 shows that all of the 9 (100%) windows assessed in 143 Adelaide Road would satisfy the BRE guidelines for both annual and winter APSH.

9.12. The orientation of 16 Elliott Square is such that it does not qualify for assessment.

10. Conclusion

10.1. The Site is in an urban location in the London Borough of Camden. Buildings within the vicinity of the estate are typically 3 stories although recent development and planning consents demonstrate that 4 stories are accepted by planning officers.

10.2. We have assessed the potential effects of the proposed development on daylight and sunlight to surrounding residential properties.

10.3. We ran our assessments using methodologies recommended in the BRE guide.

10.4. The advice contained in the BRE guide is not mandatory and its numerical guidelines should be interpreted flexibly.

10.5. The analysis demonstrates a very high level of compliance with the primary daylight and sunlight assessment criteria. Where there are infringements, these are isolated to individual windows whereas the effects on these rooms as a whole demonstrates that the rooms as a whole will remain well lit and comfortably compliant with e BRE assessment criteria.

10.6. 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.

Delva Patman Redler LLP
Chartered Surveyors

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'* (2011) and provides a glossary of the terminology used.

Assessment methodology

Daylight and sunlight to neighbouring buildings and amenity spaces

Daylight 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.*
>
> *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, the impact on the daylighting distribution in the existing building can 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 0.8 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 0.8 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.

Sunlight to neighbouring buildings

8. The BRE guide states:

> *To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90˚of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.*
>
> *A point at the centre of the window on the outside face of the window wall may be taken [as the calculation point].*

9. To quantify the available sunlight, the BRE guide advises measuring the percentage of annual probable sunlight hours (**APSH**), which is defined as follows:

> *'probable sunlight hours' means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question.*

10. The assessment calculates the percentage of APSH over the whole year (annual sunlight) and between 21 September and 21 March (winter sunlight).

11. If, following development, the APSH to a neighbouring window 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. Any reduction in sunlight access below this level should be kept to a minimum.

12. If the available sunlight hours will be both less than the above amounts and less than 0.8 times their former value, either over the whole year or just in the winter months, then the occupants of the building will notice the loss of sunlight; if the overall annual loss is greater than 4% of APSH, the room may appear colder and less cheerful and pleasant.

Sunlight to neighbouring gardens and amenity spaces

13. Sunlight should be assessed on the equinox (21 March) to 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.

14. The assessment measures the percentage of each area that can receive at least two hours of sunlight on 21 March - the 'two-hours sun-on-ground' (**SOG**) test.

15. It is recommended that at least half of the area of a garden or amenity space should be able to receive at least two hours of sunlight on 21 March. If such a space is already heavily obstructed, then any further loss of sunlight should be kept to a minimum. In this poorly sunlit case, if, following development, the area which can receive two hours of direct sunlight on 21 March is reduced to less than 0.8 times its former size, this loss of sunlight is likely to be noticeable. In such cases the garden or amenity area will tend to look more heavily overshadowed.

16. Sunlight at an altitude of 10° or less is ignored, because it is likely to be blocked by planting, and fences or walls less than 1.5 metres high can also be ignored. Front gardens, driveways and hard standing for cars are usually omitted. 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.

Glossary of terms

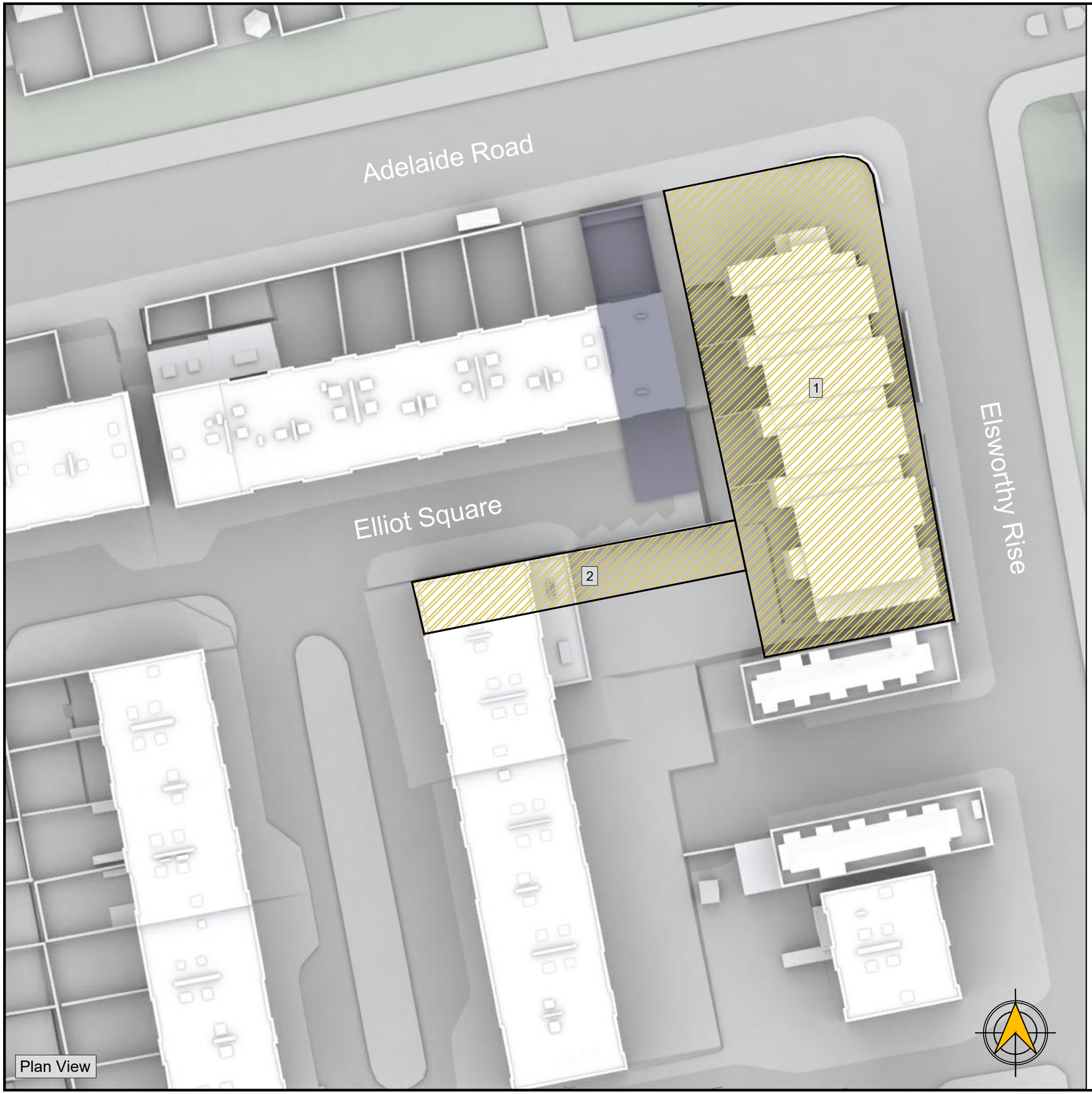
17. The daylight and sunlight terminology used in our report is explained below.

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.
Average daylight factor (**ADF**)	Ratio of total daylight flux incident on the working plane to the area of the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky. Thus a 1% ADF would mean that the average indoor illuminance would be one hundredth the outdoor unobstructed illuminance.
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.
Room depth criterion (**RDC**)	The limiting depth of a room for good daylighting, where it is lit from one side only. The limiting depth is a factor of the window head height above floor level, the room width, and the average reflectance of surfaces in the rear half of the room (away from the window). Sunlight below an angle of
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**)	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. The ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall.
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: 143 Adelaide Road:
Dwg No: 22081_LOC_001

2: 16 Elliott Square:
Dwg No: 22081_LOC_002

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:
- Existing
- Surrounding
- Neighbouring Property

SOURCE DATA:
Drawings Used:

Existing & Surrounding Buildings:

- ZMapping 3D Model.

- Kalkwarf Architects:
Dwg No: 15233_P003 Rev B, P006 Rev C, P007 Rev D, P008 Rev B.

NOTES:
Relevant neighbouring properties considered for analysis

REV	Description	Drawn	Date

DELVA PATMAN REDLER
Chartered Surveyors

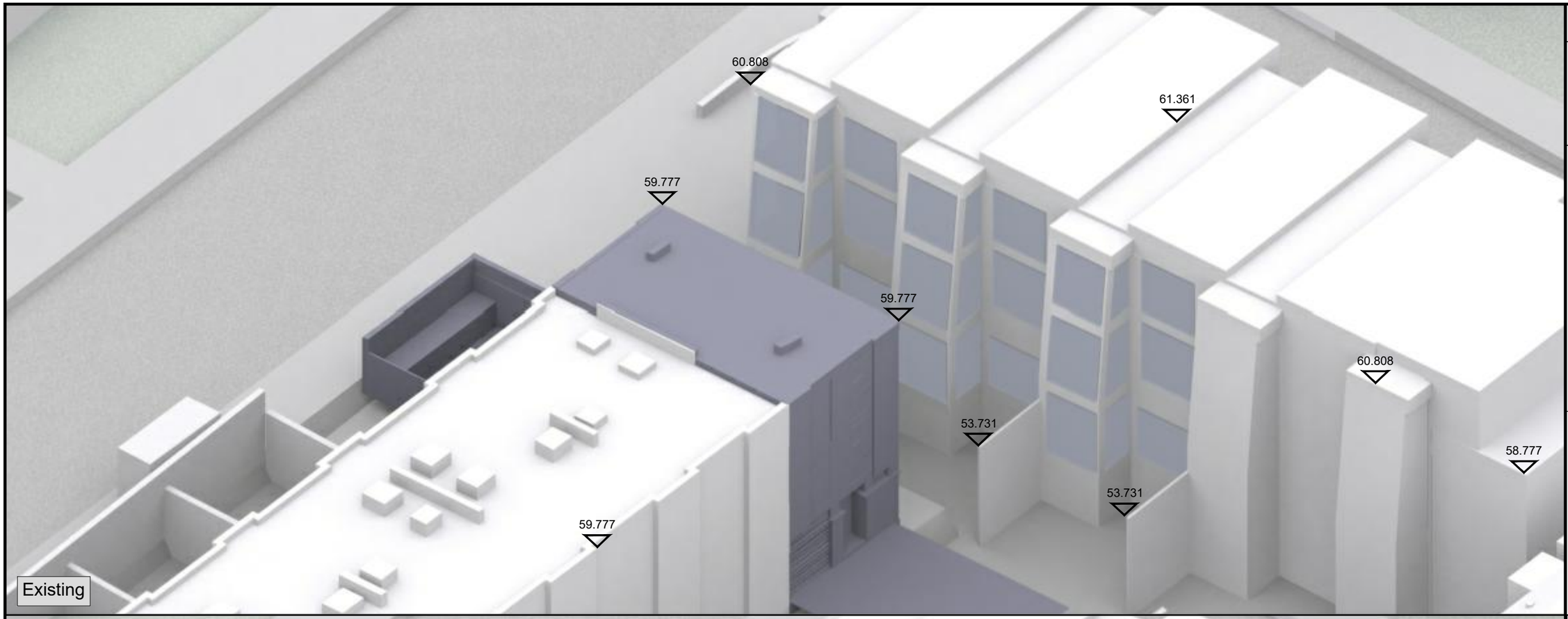
Thavies Inn House
3-4 Holborn Circus
London EC1N 2HA
020 7936 3668
www.delvapatmanredler.co.uk

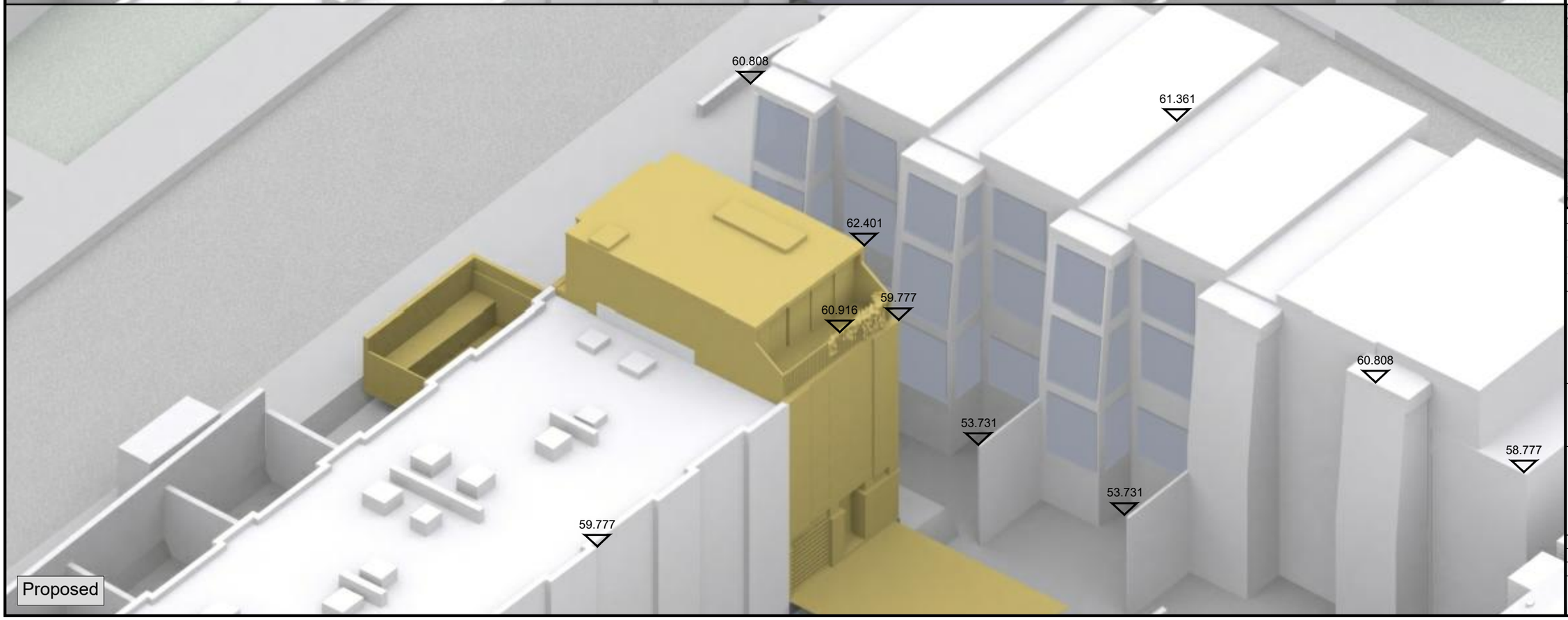
The Plaza
100 Old Hall Street
Liverpool L3 9QJ
0151 242 0980
info@delvapatmanredler.co.uk

TITLE:
15 ELLIOT SQUARE
LONDON, NW3 3SU

DRAWING:
LOCATION PLAN
Daylight and Sunlight

DRAWN: RM	JOB NBR: 22081
SCALE: NTS	
DATE: 23.03.2022	
DWG NO: LOC_DS_001	REV: -





NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Proposed

SOURCE DATA:

Drawings Used:

Existing & Surrounding Buildings:

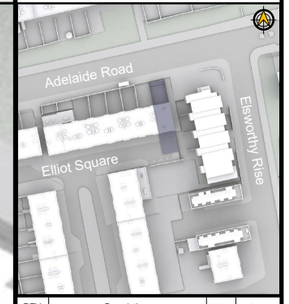
- ZMapping 3D Model.

- Kalkwarf Architects:
Dwg No: 15233_P003 Rev B, P006 Rev C, P007 Rev D, P008 Rev B.

Proposed:
-3D model received on 15.02.2022 - 3D_10-15ES.skp

NOTES:

All heights given in metres AOD



REV	Description	Drawn	Date

DELVA PATMAN REDLER
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Thavies Inn House
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The Plaza
100 Old Hall Street
Liverpool L3 9QJ
0151 242 0980
info@delvapatmanredler.co.uk

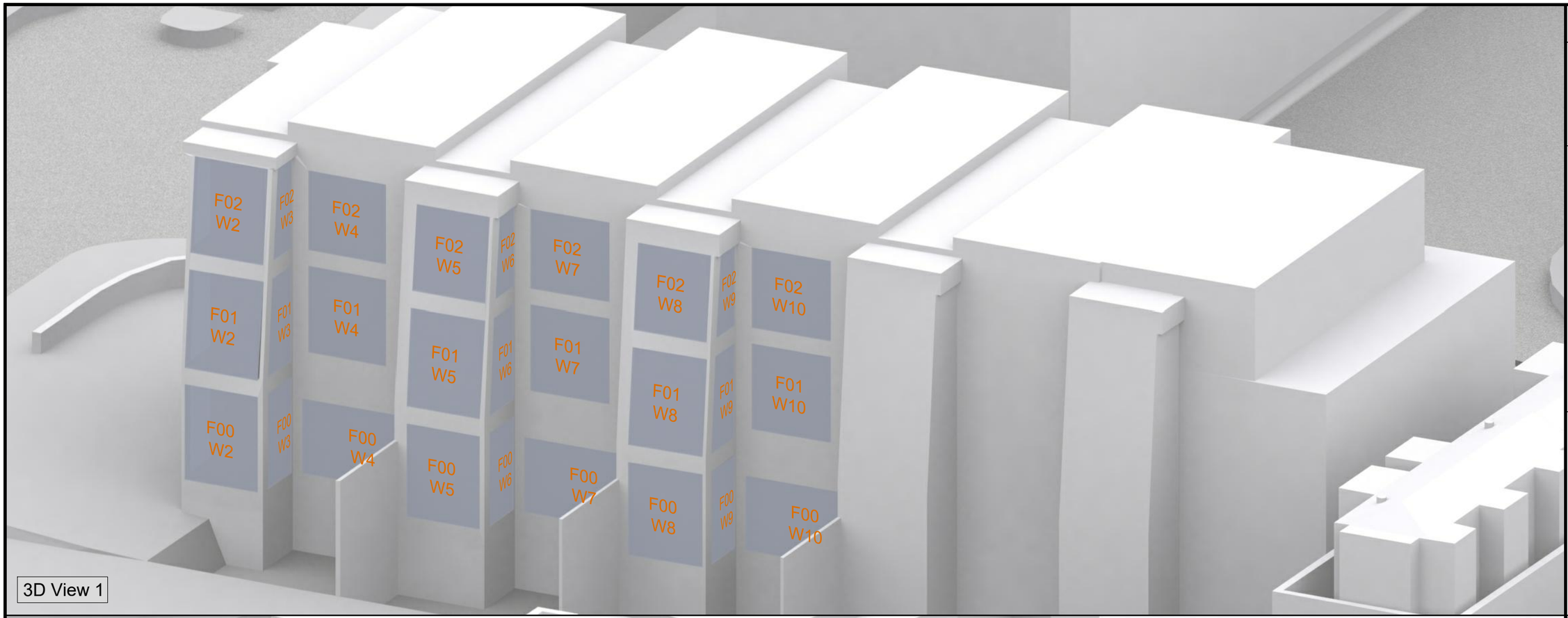
TITLE:

15 ELLIOT SQUARE
LONDON, NW3 3SU

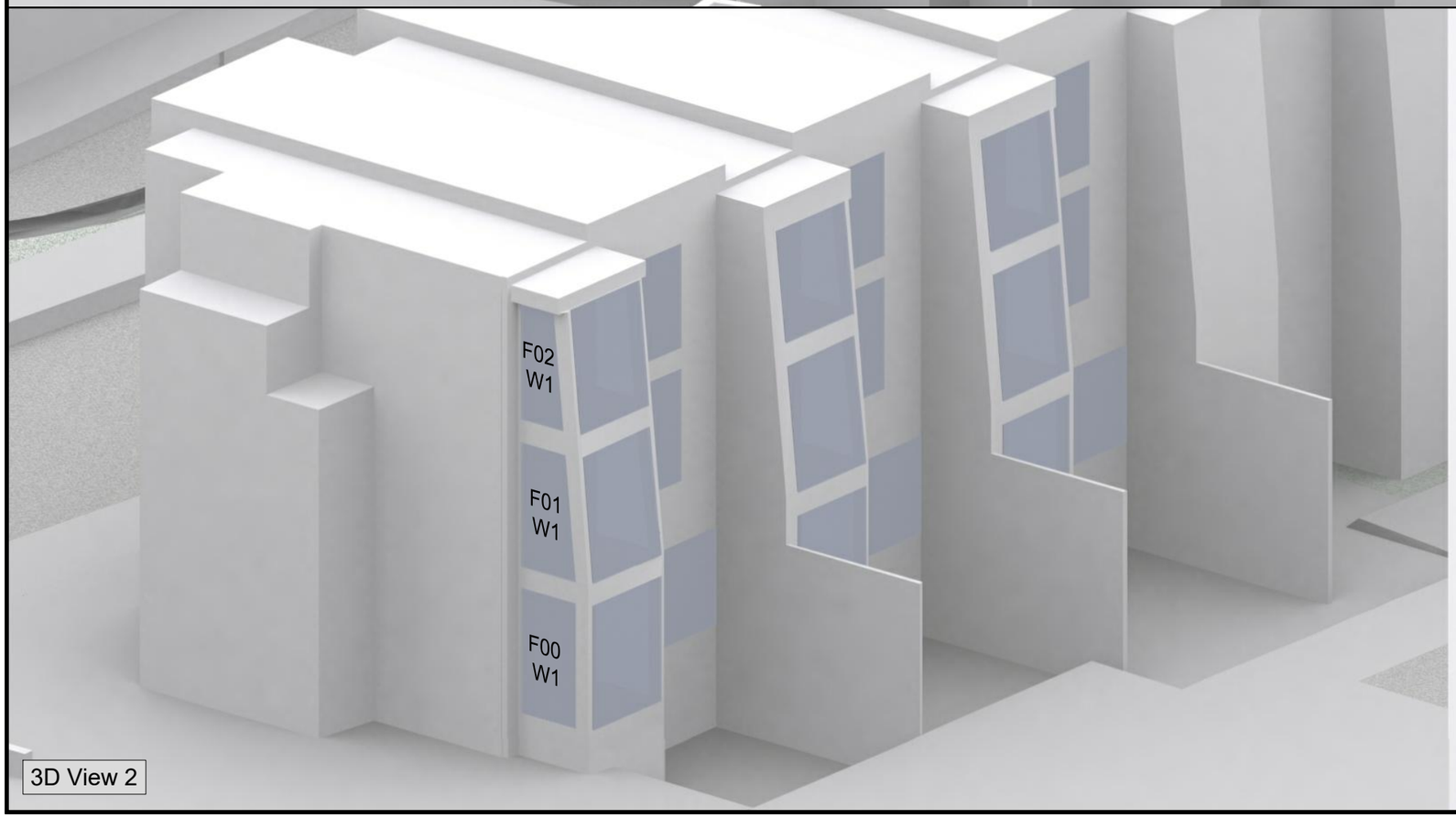
DRAWING:

EXISTING & PROPOSED SCENARIOS
Plan and 3D Views

DRAWN: RM	JOB NBR: 22081
SCALE: NTS	
DATE: 23.03.2022	
DWG NO: SPT_001	REV: -



3D View 1



3D View 2

NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighboring Property
- Notional Partition
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:

Existing & Surrounding Buildings:

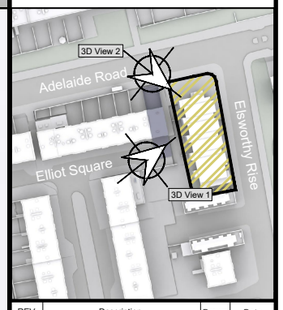
- ZMapping 3D Model.

- Kalkwarf Architects:
Dwg No: 15233_P003 Rev B, P006 Rev C, P007 Rev D, P008 Rev B.

NOTES:

Kalkwarf Architects:
Dwg No: 15233_P003 Rev B, P006 Rev C, P007 Rev D, P008 Rev B.

First and second floor layouts assumed from ground floor.



REV	Description	Drawn	Date

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London EC1N 2HA
020 7936 3668
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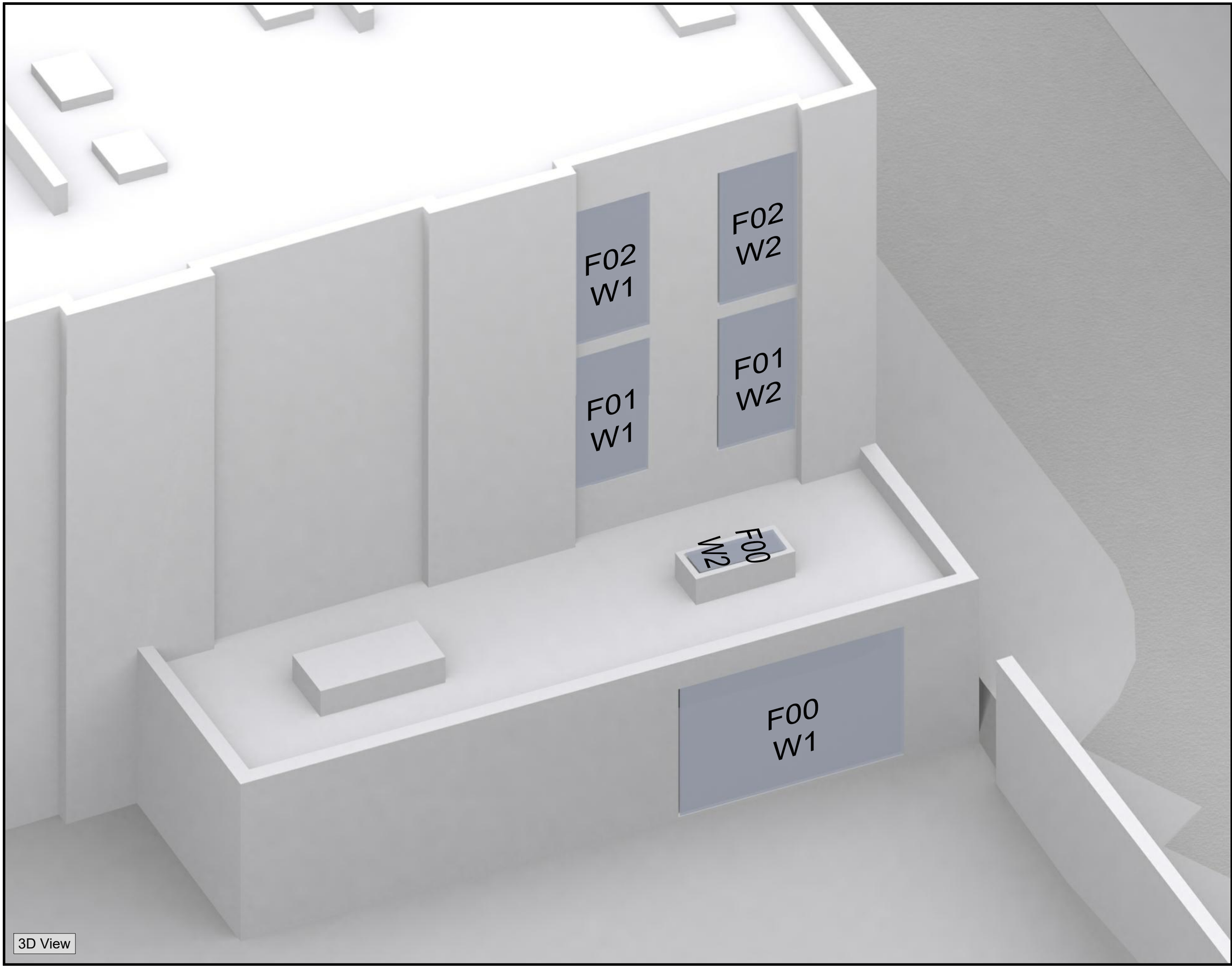
The Plaza
100 Old Hall Street
Liverpool L3 9QJ
0151 242 0980
info@delvapatmanredler.co.uk

TITLE:
15 ELLIOT SQUARE
LONDON, NW3 3SU

DRAWING:
KEY WINDOW LOCATIONS
Plan and 3D Views

143 Adelaide Road

DRAWN: RM	JOB NBR: 22081
SCALE: NTS	
DATE: 23.03.2022	
DWG NO: LOC_001	REV: -



NO DIMENSIONS TO BE SCALED FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Neighboring Property
- Notional Partition
- W1 Windows tested Daylight only
- W1 Windows tested Daylight & Sunlight

SOURCE DATA:

Drawings Used:

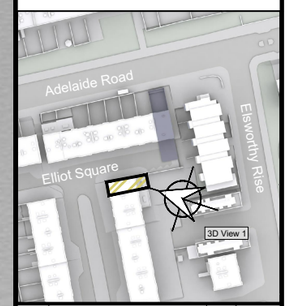
Existing & Surrounding Buildings:

- ZMapping 3D Model.

- Kalkwarf Architects:
Dwg No: 15233_P003 Rev B, P006 Rev C, P007 Rev D, P008 Rev B.

NOTES:

Layouts and window positions assumed from neighbouring property (39 Elliot Square).



REV	Description	Drawn	Date

DELVA PATMAN REDLER
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Thavies Inn House
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London EC1N 2HA
020 7936 3668
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Liverpool L3 9QJ
0151 242 0980
info@delvapatmanredler.co.uk

TITLE:

15 ELLIOT SQUARE
LONDON, NW3 3SU

DRAWING:

KEY WINDOW LOCATIONS
Plan and 3D Views

16 Elliot Square

DRAWN: RM	JOB NBR: 22081
SCALE: NTS	
DATE: 23.03.2022	
DWG NO: LOC_002	REV: -

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.	Pro./Ex
143 Adelaide Road																		
F00	R1	Living Room	W1 ↑	28.8	28.8	N/A	N/A											
		Living Room	W2 ←	20.9	19.1	1.7	0.92											
		Living Room	W3 ↓	9.8	8.9	0.9	0.91											
		Living Room	W4 ←	11.2	8.9	2.3	0.79	99%	99%	0.00	1.00	29	24	5	0.83	6	6	N/A
	R2	Living Room	W5 ←	16.5	14.3	2.2	0.86											
		Living Room	W6 ↓	13.0	12.9	0.1	0.99											
		Living Room	W7 ←	16.5	14.8	1.7	0.90	100%	100%	0.02	1.00	38	38	N/A	N/A	13	13	N/A
	R3	Living Room	W8 ←	26.4	25.2	1.2	0.95											
		Living Room	W9 ↓	13.6	13.6	0.0	1.00											
		Living Room	W10 ←	21.3	20.8	0.5	0.98	100%	100%	0.00	1.00	42	42	N/A	N/A	13	13	N/A
F01	R1	Living Room	W1 ↑	30.5	30.5	N/A	N/A											
		Living Room	W2 Inc	31.8	27.7	N/A	N/A											
		Living Room	W3 ↓	14.7	13.2	1.6	0.89											
		Living Room	W4 ←	20.2	15.6	4.5	0.77	98%	98%	0.18	0.99	45	38	N/A	N/A	10	9	N/A
	R2	Living Room	W5 Inc	30.3	25.0	5.3	0.83											
		Living Room	W6 ↓	16.7	16.6	0.1	0.99											
		Living Room	W7 ←	23.6	21.2	2.4	0.90	98%	93%	1.30	0.95	46	42	N/A	N/A	14	14	N/A
	R3	Living Room	W8 Inc	37.0	35.2	N/A	N/A											
		Living Room	W9 ↓	17.1	17.1	0.0	1.00											
		Living Room	W10 ←	26.9	26.8	0.2	0.99	98%	98%	0.00	1.00	50	50	N/A	N/A	14	14	N/A
F02	R1	Living Room	W1 ↑	30.7	30.7	N/A	N/A											
		Living Room	W2 Inc	40.1	34.6	N/A	N/A											
		Living Room	W3 ↓	21.8	19.9	1.8	0.92											
		Living Room	W4 ←	30.1	24.5	5.6	0.82	99%	99%	0.00	1.00	58	55	N/A	N/A	18	16	N/A
	R2	Living Room	W5 Inc	39.9	33.6	N/A	N/A											
		Living Room	W6 ↓	21.6	21.4	0.2	0.99											

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.	Pro./Ex
		Living Room	W7 ←	30.9	27.9	N/A	N/A	99%	99%	0.00	1.00	59	55	N/A	N/A	19	19	N/A
	R3	Living Room	W8 Inc	41.1	39.7	N/A	N/A											
		Living Room	W9 ↓	21.6	21.6	0.0	1.00											
		Living Room	W10 ←	31.6	31.3	N/A	N/A	99%	99%	0.00	1.00	60	60	N/A	N/A	19	19	N/A
16 Elliott Square																		
F00	R1	Living Room	W1 →	26.2	25.9	0.2	0.99											
		Living Room	W2 Hz	64.0	63.9	N/A	N/A	99%	99%	0.00	1.00	N/R	N/R	N/R	N/R	N/R	N/R	N/R
F01	R1	Living Room	W1 →	31.6	31.5	N/A	N/A											
		Living Room	W2 →	31.4	31.1	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A
F02	R1	Living Room	W1 →	34.7	34.5	N/A	N/A											
		Living Room	W2 →	34.5	34.2	N/A	N/A	99%	99%	0.00	1.00	North	North	N/A	N/A	North	North	N/A