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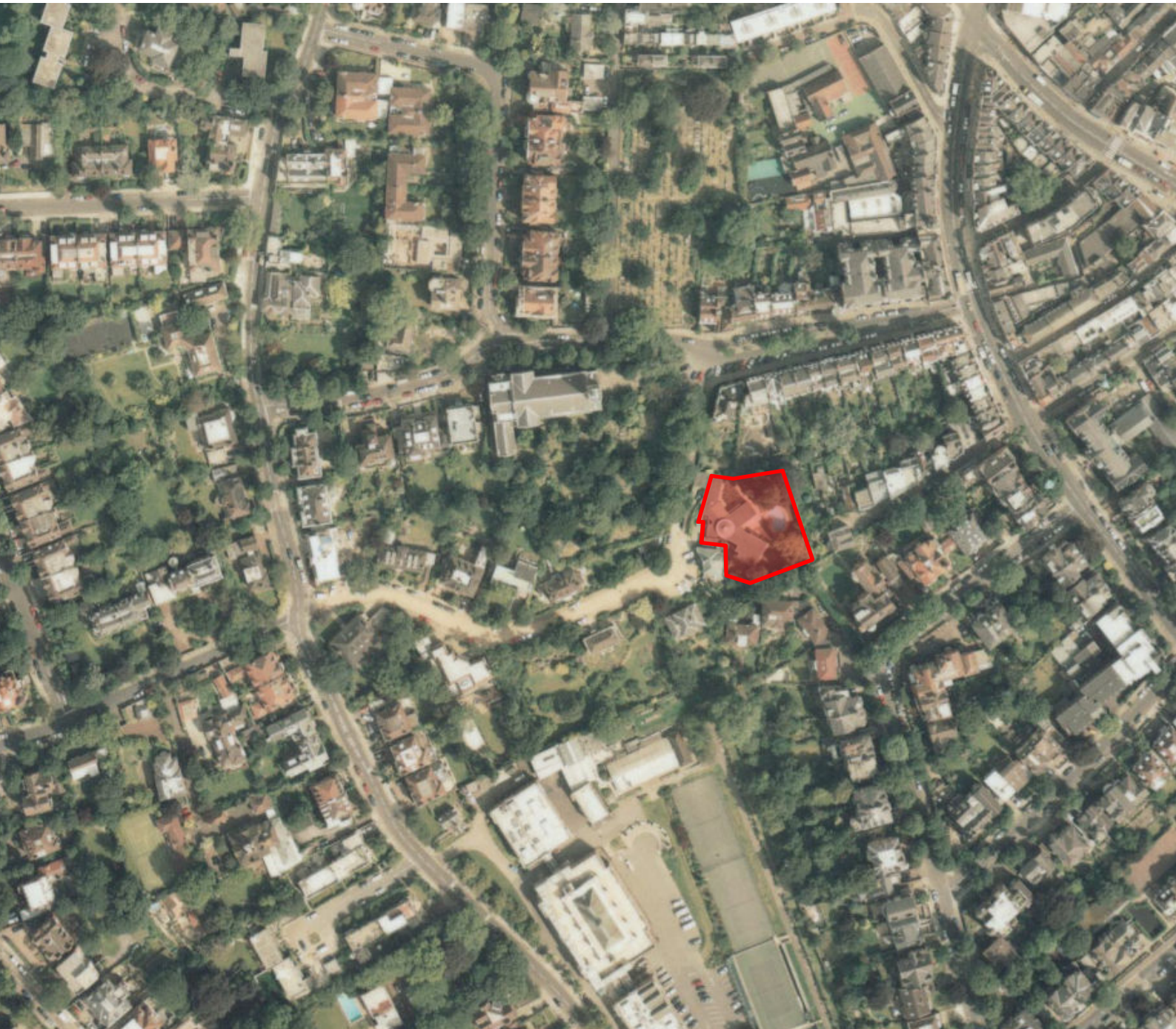
Daylight and Sunlight Report
22 Frognal Way
London
NW3 6XE

01 June 2015



Deloitte.

Real Estate

Deloitte
66 Shoe Lane
London
EC4A 3BQ
Tel: +44 (0) 20 7007 9000
Fax: +44 (0) 20 7583 1198
www.deloitte.co.uk

Direct: +44 (0) 207 007 1594
Mobile: 07942931066
craigrobinson@deloitte.co.uk

Ironside & Malone Design & Build 2 Limited
c/o BTP Group
48 Welbeck Street
London
W1G 9XL

19 March 2015

Dear Sirs

22 Frognal Way, London, NW3 6XE – Daylight and Sunlight Advice

We enclose our report ("the report") on 22 Frognal Way, London, NW3 6XE which has been prepared for the sole purpose of assisting and advising Ironside & Malone Design & Build 2 Limited in accordance with our engagement letter and contract addendum ("the engagement") dated 29 July 2014 and 17 February 2015. This report includes information provided by you, and your architects/consultants, details of which are clearly referenced on the drawings enclosed at Appendix A.

This report has been prepared for you and on the understanding that it will be made publically available on the London Borough of Camden's website. All copyright and other proprietary rights in the report remain the property of Deloitte LLP and any rights not expressly granted in these terms or in the Contract are reserved. No party other than Ironside & Malone Design & Build 2 Limited is entitled to rely on the report for any purpose whatsoever and thus we accept no liability to any other party who is shown or gains access to this document. The report makes use of a range of third party data sources. Whilst every reasonable care has been taken in compiling this report, Deloitte cannot guarantee its accuracy.

Neither the whole nor any part of this report nor any reference thereto may be included in any published document, circular or statement nor published in any way without our written approval as to the form and context in which it may appear.

We have not commented on the terms of any transaction with 22 Frognal Way, as this is outside our remit. We have not been asked to advise on cost, town planning or legal matters, although our work shall inevitably interface with these elements. As noted in the engagement, the focus of the review is limited to the 22 Frognal Way property only.

Yours faithfully

Deloitte LLP

Deloitte LLP

Contents

1 Introduction

1.1 Deloitte LLP has been instructed by Ironside & Malone Design & Build 2 Limited to report on the Daylight and Sunlight effects of the Proposed Development at 22 Frognal Way, London, NW3 6XE as per our Engagement Letter dated 29 July 2014 and Contract Addendum dated 17 February 2015.

1.2 This report is confidential to the addressees and prepared solely for the purpose(s) set out in our engagement letter. You should not refer to or use our name or the report for any other purpose, disclose them or refer to them in any prospectus or other document, or make them available or communicate them to any other party. No other party is entitled to rely on our report for any purpose whatsoever and we accept no duty of care or liability to any party who is shown or gains access to this report.

1.3 Our assessment has been based on a massing model, plans and elevations supplied by KSR Architects. The location and size of the surrounding windows have been based on land survey information for the surrounding properties prepared by Maxtrix Surveys.

1.4 KSR Architects were recently able to access Gracie Fields House, 20 Frognal Way and take photographs of the internal rooms. Since then, the home owner has provided KSR Architects with floor plans for this building. On 17 February 2015, KSR Architects provided us with annotated copies of these plans. In addition on 27 February 2015 they have also provided us with all photographs taken from their visit. We have incorporated these plans into our 3D model where relevant.

1.5 It should be noted that no sections or elevations were provided to confirm floor levels. Where room dimensions and layouts do not appear to fit exactly in our model, we have assumed reasonable dimensions from site inspections and photographs.

1.6 The following should be read in conjunction with the ‘Daylight, & Sunlight Methodology’, set out in Chapter 4 of this Report.

2 Executive Summary

2.1 The proposed site is located within the London Borough of Camden and the potential effects have therefore been assessed in accordance with Camden's current planning policies and the recommendations set out in the BRE Guide.

Daylight and Sunlight

2.2 The neighbouring property that we have considered in this report is 20 Frognal Way, Gracie Fields which is of residential use.

2.3 As recommended by the BRE Guide, the non-habitable rooms which face the Proposed Development have not been assessed. We have commented upon the room uses behind the relevant windows in more detail in Chapter 6 of the Report.

2.4 The only habitable room which is considered relevant for the assessment is W1 on the second floor which serves a bedroom. This window and room meets the BRE Guide in respect of the daylight and sunlight assessments and full BRE compliance is demonstrated.

Summary

2.5 The Proposed Development will not reduce the daylight and sunlight levels to the relevant room assessed within this property.

3 Planning Policy & Guidance

3.1 The impact of the Proposed Development surrounding daylight and sunlight amenity has been considered with reference to London Borough of Camden's Planning Guide (CPG) and Camden Core Strategy. In particular the proposals have been considered against the **Amenity Guidance CPG, Section 6 of the CPG** which states:

This guidance relates to:

- Camden Core Strategy policy CS5 - Managing the Impact of Growth and Development;
- Core Strategy policy CS14 - Promoting high quality places and conserving our heritage; and
- Policy DP26 – Managing the impact of development on occupiers and neighbours of the Camden Development Policies.

3.2 The Guidance continues to state that "A daylight and sunlight report should assess the impact of the development following the methodology set out in the most recent version of Building Research Establishment's (BRE) "Site layout planning for daylight and sunlight: A guide to good practice".

4 Daylight & Sunlight Methodology

4.1 When assessing any potential effects on the surrounding properties, the BRE Guide suggests that only those windows that have a reasonable expectation of daylight or sunlight need be assessed. In particular the BRE Guide at paragraph 2.2.2 states:

> "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."

4.2 Further to the above statement, it is considered that the vast majority of commercial properties do not have a reasonable expectation of daylight or sunlight. This is because they are generally designed to rely on electric lighting rather than natural daylight or sunlight.

4.3 If a property is considered to have a reasonable expectation of daylight or sunlight the following methodology to assess the impacts has been used.

Daylight

4.4 Where the internal arrangements are not known, the BRE Guide sets out three methods for assessing the daylight impacts on neighbouring properties. These methods are summarised below.

4.5 The first of these methods is to strike a line at an angle of 25º from the centre of the lowest existing windows. If the profile of the proposed development sits beneath the 25º angle line then the development is unlikely to have a substantial effect on the daylight enjoyed by the existing building. This test is known as the 25° a ngle test.

4.6 If the proposed development protrudes past the 25º angle line then the second test needs to be applied. For this assessment, the first method has not been used as it does not always reflect the differing heights and layouts of the buildings in the local area.

4.7 The second method calculates the Vertical Sky Component (VSC) at the centre point of each affected window on the outside face of the wall. The VSC is an external daylighting calculation that measures the amount of direct daylight to a specific window point on the outside of a property. The calculations fundamentally assess the amount of blue sky that you will see, converting results into a percentage. A window looking into an empty field will achieve a maximum value of 40%. However, the BRE suggests that 27% VSC is a good level of daylight. If a window does not achieve 27% VSC in the proposed scenario, then the third test is used.

4.8 The third method involves calculating the VSC at the window in the existing situation, i.e. before redevelopment. If the reduction of VSC is less than 0.8 times its former value, then the occupants of the adjoining building are likely to notice the reduction in daylight.

4.9 In conjunction with the VSC tests, the BRE Guide and British Standard 8206-2:2008 suggest that the distribution of daylight is assessed using the No Sky Line (NSL) test. This test separates those areas of the working plane that can receive direct skylight and those that cannot.

4.10 The BRE Guide suggest that the daylight distribution test is undertaken to existing surrounding properties when the internal arrangements are known. To assess the impact of any reduction the BRE Guide suggest:

> If, following construction of a new development, the no sky line moves so that the area of the existing room, which does receive direct skylight, is 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.

4.11 Where the internal arrangements are known, an additional method of Average Daylight Factor (ADF) should be considered. The ADF calculation combines the VSC from each window serving the room with various characteristics such as room and window size to provide value that can give an approximate expression to the amount of daylight within the room.

4.12 The daylighting calculations use the formula as set out in the British Standard document "Lighting for Buildings – Part 2: Code of practice for daylight" BS 8206-2:2008. The recommended minimal values of the ADF in dwellings are 1% for bedrooms, 1.5% for living rooms and 2% for kitchens.

4.13 Furthermore, the BRE Guide suggests that ADF analysis is appropriate to consider the impact upon surrounding properties where an area is subject to systematic development, where a new series of new buildings are being built one after the other – as part of a larger group / regeneration – as is the case here. Where ADF has been used NSL has been disregarded as ADF accounts for the distribution of daylight into a room (whereas VSC does not).

Sunlight

4.14 The amount of direct sunlight a window can enjoy is dependent on its orientation and the extent of any external obstructions. For example a window that faces directly North, no matter what external obstructions are present, will not be able to enjoy good levels of sunlight throughout the year. However, a window that faces directly South with no obstructions will enjoy very high levels of sunlight throughout the year. As the potential to receive sunlight is dependent on a window's orientation, the BRE Guide state:

> 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.

4.15 To assess the potential effect on existing windows the BRE Guide set out three methods. These methods are summarised below.

4.16 The first test is to apply the 25° angle test a s detailed above. If the profile of the proposed development sits beneath the 25º angle line then the development is unlikely to have a substantial effect on the sunlight enjoyed by the existing building. If the proposed development protrudes past the 25º angle line then the second test needs to be applied.

4.17 As for the daylight assessments, the 25° angle t est has not been used for this assessment as it does not always reflect the differing heights and layouts of the buildings in the local area.

4.18 For the second sunlight test the BRE Guide suggest calculating the Annual Probable Sunlight Hours (APSH) at the centre of each window on the outside face of the window wall. The BRE Guide suggest that:

> "If this window point can receive more than one quarter of APSH (see section 3.1), including at least 5% of APSH in the winter months between 21st September and 21st March, then the room should still receive enough sunlight".

4.19 The third method involves calculating the APSH at the window in the existing situation, i.e. before redevelopment. If the reduction of APSH between the existing and proposed situations is less than 0.8 times its former value for either the total APSH or in the winter months; and greater than 4% for the total APSH, then the occupants of the adjoining building are likely to notice the reduction in sunlight.

5 Surrounding Residential Properties

5.1 The following property has been identified and assessed for daylight and sunlight impacts:

- 20 Frognal Way, Gracie Fields

5.2 All other surrounding properties are considered too remote to require a detailed assessment.

6 Daylight & Sunlight to Surrounding Properties

20 Frognal Way, Gracie Fields

6.1 This residential property is located to the south-west of the Proposed Development.

6.2 The plans and photographs that we have been provided with show that there are a number of non-habitable rooms being hallways, staircases, storage rooms, bathrooms and water closets (WC), which face the Proposed Development.

6.3 As recommended by the BRE Guide *'The guidelines 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 garaged need not to be analysed'.*

6.4 The window map enclosed at Appendix A identifies the location of the windows set out below. Given the above, we have discounted the following windows:

- Lower ground floor – W1 (WC) and W2 (storage room)
- Ground floor – W1 (hallway) and W2 (WC)
- First floor – W1 and W2 (bathroom), W3 (staircase), W4 and W5 (hallway), W6, W7 and W8 (bathroom)
- Second floor – W2 (WC)

6.5 The only habitable room which is considered relevant for the assessment is W1 on the second floor which serves a bedroom. We have commented upon this room below.

Sunlight

6.6 The bedroom (R1) on the second floor assessed within this property meets the BRE Guide in respect of the sunlight assessment and full BRE compliance is demonstrated.

Daylight

6.7 The bedroom (R1) on the second floor assessed within this property meets the BRE Guide in respect of the VSC and NSL assessments for daylight and full BRE compliance is demonstrated.

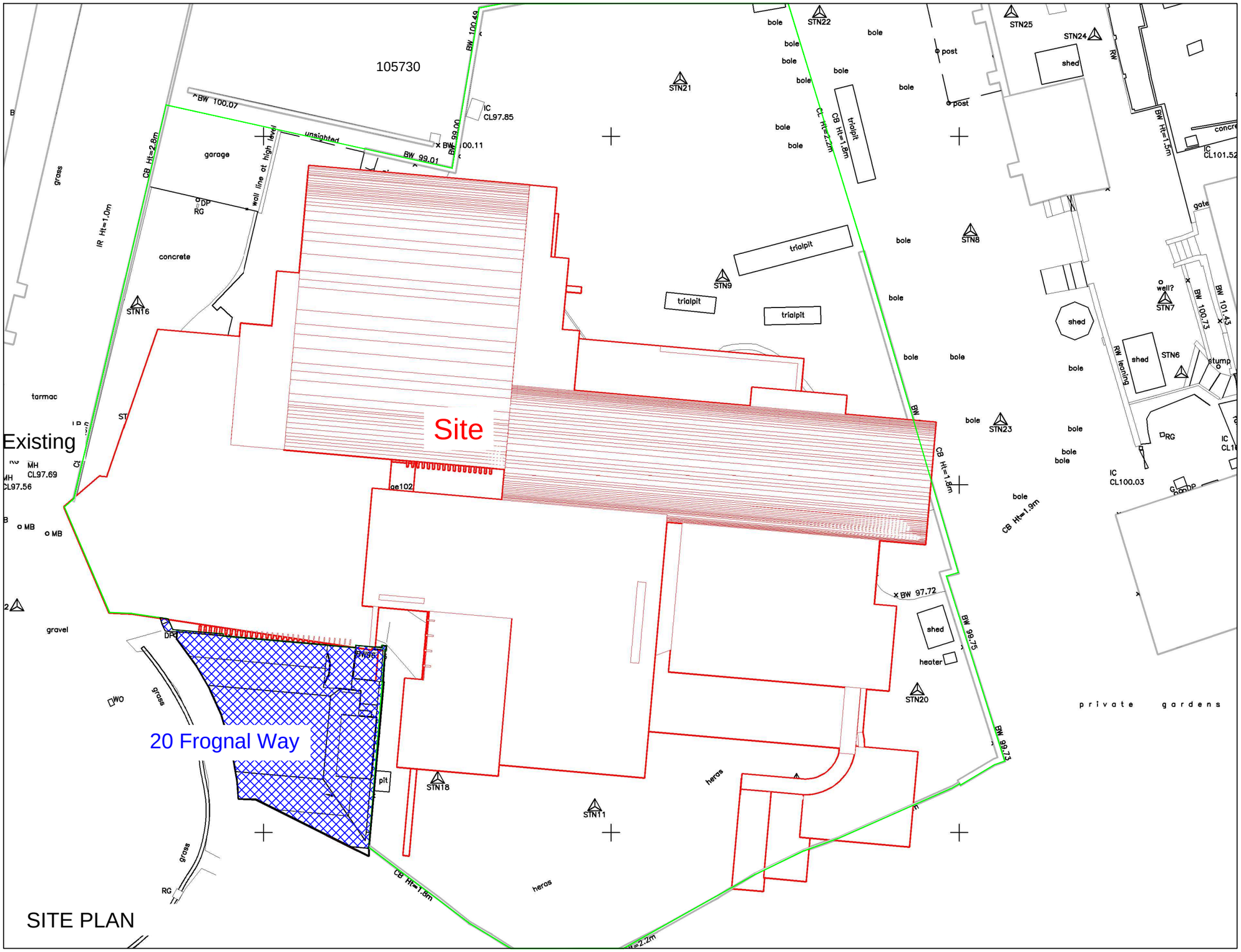
Summary

6.8 As recommended by the BRE Guide, we have only assessed the relevant habitable room, being a bedroom on the second floor.

6.9 This window and room meets the BRE Guide in respect of the daylight and sunlight assessments and full BRE compliance is demonstrated.

6.10 The Proposed Development will not reduce the daylight and sunlight levels to the relevant room assessed within this property.

Appendix A – 3D Site Images



For identification purposes only. All dimensions to be checked on site and used in preference to those given or scaled from the drawing, and must be brought to the attention of the Surveyor.

Notes

Drawings Used

Survey:- matrix surveys

Architects:- KSRARCHICTECTS

Site Boundary

Proposed Massing

Building analyzed

Date *Revision*

Drawing No. 0257948/Site/01 *Revision*

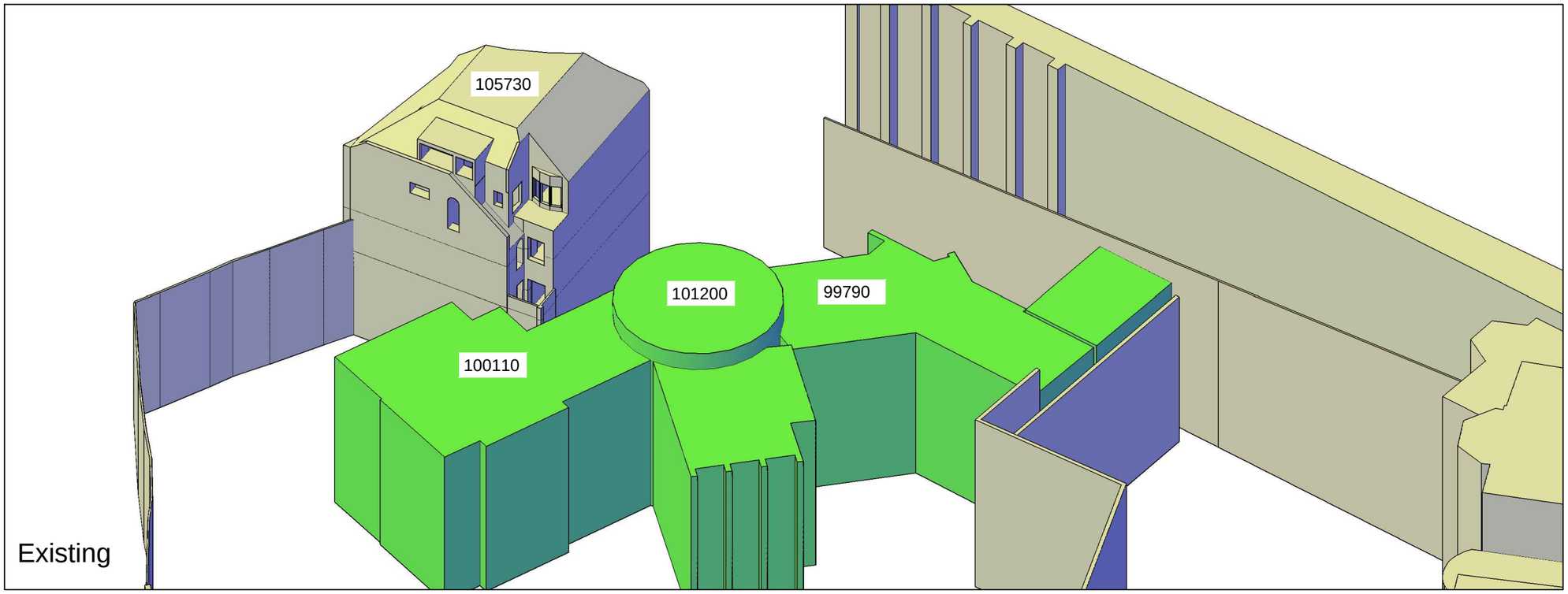
Address.
22 Frognal way
London

Title.
Site Plan

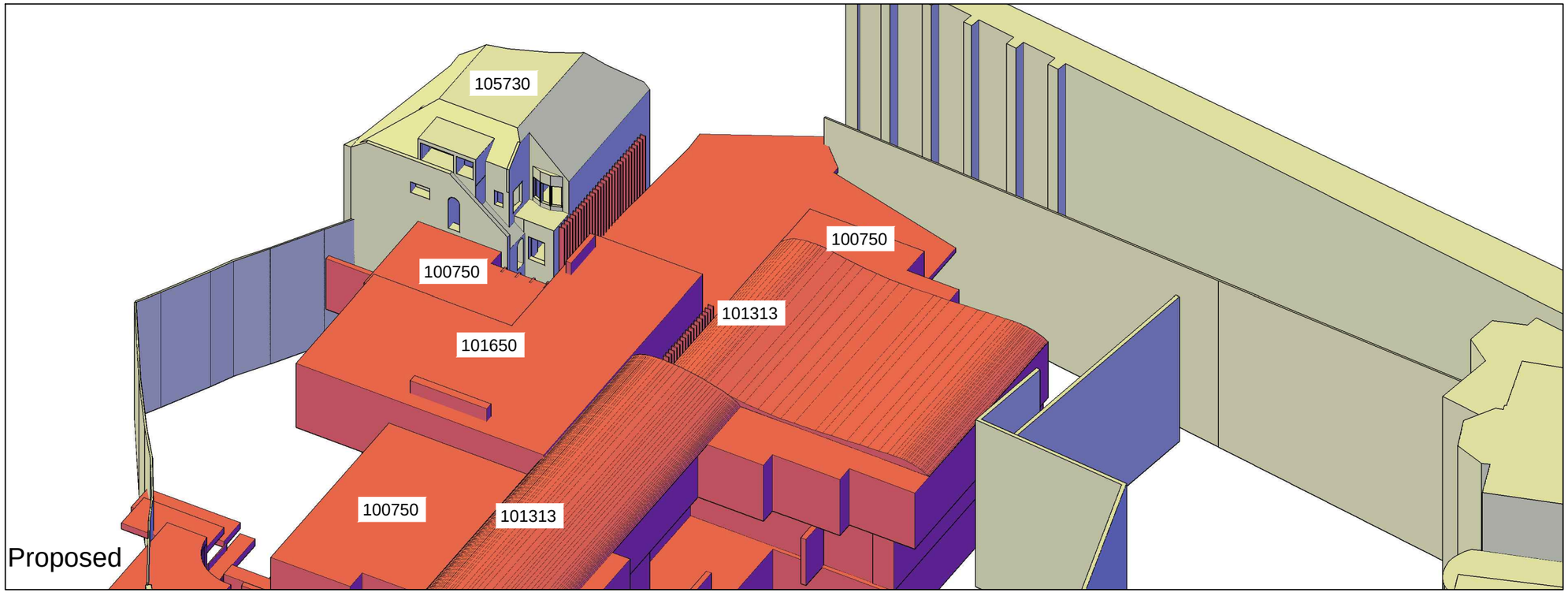
Client
Ironside and Malone
Design and Build

Date	*Drawn by* IKA	*Scale A3 @*
05/03/2014	*File No.* 0257948	NTS

Deloitte.
Real Estate
Athene Place, 66 Shoe Lane,
London EC4A 3BQ
Telephone 020-7007 9000 Fax 020-7583 1198



Existing



Proposed

For identification purposes only. All dimensions to be checked on site and used in preference to those given or scaled from the drawing, and must be brought to the attention of the Surveyor.

Notes

Drawings Used

Survey:- matrix surveys

Architects:- KSRARCHICTECTS

Drawings Used:-

FGW-PP-080 - BASEMENT LEVEL.dwg
FGW-PP-090 - LIVING LEVEL.dwg
FGW-PP-100 - BEDROOM LEVEL.dwg
FGW-PP-110 - ROOF LEVEL.dwg
FGW-PP-201 - SECTION A-A.dwg
FGW-PP-202 - SECTION B-B.dwg
FGW-PP-301 - NORTH ELEVATION.dwg
FGW-PP-302 - SOUTH ELEVATION.dwg
FGW-PP-303 - WEST ELEVATION.dwg
FGW-PP-304 - EAST ELEVATION.dwg

FGW-Model-2014-08-07 dwgv2010.dwg

Surrounding

Existing massing

Proposed massing

Date | Revision

Drawing No. 0257948/3D/01 *Revision*

Address.
22 Frognal way
London

Title.
3D Views
Existing/Proposed

Client
Ironside and Malone
Design and Build

Date	*Drawn by* IKA	*Scale A3 @*
05/03/2014	*File No.* 0257948	NTS

Deloitte.
Real Estate
Athene Place, 66 Shoe Lane,
London EC4A 3BQ
Telephone 020-7007 9000 Fax 020-7583 1198

Window Map
20 Frognal way

20 Frognal Way

Building analysed

Notes

Drawings Used

Survey:- matrix surveys

Architects:- KSRARCHICTECTS

Drawings Used:-

FGW-PP-080 - BASEMENT LEVEL.dwg
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FGW-PP-303 - WEST ELEVATION.dwg
FGW-PP-304 - EAST ELEVATION.dwg

FGW-Model-2014-08-07 dwgv2010.dwg

Date *Revision*

Drawing No. 0257948/WM/01 *Revision*

Address.
22 Frognal way
London

Title.
Window Map

Client
Ironside and Malone
Design and Build

Date	*Drawn by* IKA	*Scale A3 @*
05/03/2014	*File No.* 0257948	NTS

Deloitte.
Real Estate
Athene Place, 66 Shoe Lane,
London EC4A 3BQ
Telephone 020-7007 9000 Fax 020-7583 1198

Appendix B – Surrounding Results

Project Name: 150225_3D Model
Report Title: Daylight And Sunlight
Date of Analysis: 05/03/2015

20 Frognal Way

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Available Sunlight Hours Annual %	Diff %	Winter %	Diff %
Second	R1	Bedroom	W1	Existing	36.88	100%	0	0%	0	0%
				Proposed	36.88		0		0	

Project Name: 150225_3D Model
Report Title: Daylight Distribution
Date of Analysis: 05/03/2015

20 Frognal Way

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Difference %
Second	R1	Bedroom	Area m2	11.06	10.67	10.67	100%
			% of room		96.47%	96.47%	