Nathaniel Lichfield & Partners
Planning. Design. Economics.

Nos. 25-26 Redington Gardens

Daylight, Sunlight and Shadow Assessment

24 Redington Gardens LLP

February 2016

14680/MH/BK

Nathaniel Lichfield & Partners
14 Regent's Wharf
All Saints Street
London N1 9RL

nlpplanning.com

This document is formatted for double sided printing.

Registered Office:
14 Regent's Wharf
All Saints Street
London N1 9RL

Contents

Appendices

1.0 Introduction

1.1 This report considers the effects of the proposed redevelopment of the site at No. 24 Redington Gardens, Hampstead on the levels of daylight, sunlight and shadow received by nearby residential properties and gardens. It also considers the levels of natural light that will be experienced within the new residential accommodation and amenity space proposed at the site. The assessment has been prepared on behalf of 24 Redington Gardens LLP.

1.2 The proposal comprises the demolition of the existing house at the site and redevelopment to provide a new detached home of three storeys above basement and lower ground floor levels, plus a rear garden.

1.3 The daylight and sunlight assessment considers the effects of the proposal on residential properties situated adjacent to and opposite the site on Redington Gardens and Redington Road. It considers the levels of daylight and sunlight that will be received within the proposed accommodation across the development. The assessment also considers the levels of sunlight and shadow that will be experienced within existing and proposed rear gardens to the north of the new property.

1.4 The analysis considers the effects of the development in isolation (scenario 1) and the cumulative effects of the development and the approved neighbouring scheme at Nos. 25-26 Redington Gardens (scenario 2).

1.5 The quantitative assessment has been undertaken in accordance with the guidelines set out in the revised Building Research Establishment (BRE) report "*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*" (October 2011). The Guide is intended to be advisory and does not contain mandatory standards. The introduction states:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not 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 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."

1.6 This assessment considers the impacts of the development in terms of daylight and sunlight. It does not address rights to light, which is a legal matter rather than a material planning consideration.

1.7 This assessment has been carried out using the following information:

- Measured site survey drawings;

- The planning application drawings;
- Ordnance Survey Superplan digital mapping of the area;
- Aerial photography;
- A photographic survey of the site and surroundings.

1.8 The report is divided into the following subsequent sections:

- Section 2.0 provides a brief description of the site and surroundings and the nature of the proposed development, highlighting features of relevance to the assessment of daylight and sunlight levels;
- Section 3.0 outlines the scope of the assessment;
- Section 4.0 provides an assessment of the impacts of the proposal on levels of daylight;
- Section 5.0 considers the proposal's impacts in terms of sunlighting;
- Section 6.0 considers the scheme's overshadowing effects;
- Section 7.0 provides a summary of the assessment and our conclusions are drawn.

1.9 The assessment is supported by a series of reference plans and results tables at Appendices 1-8.

2.0 Site, surroundings and the proposal

Site and Surroundings

2.1 The application site is situated on the north western side of Redington Gardens between Redington Road and Templewood Gardens. It is currently occupied by a pair of diminutive semi-detached houses which rise to two storeys above ground. To the north west, these properties are each served by a long rear garden.

2.2 The site is situated in a predominantly residential area between Hampstead and Finchley Road. It is flanked to the north east by Nos. 25 and 26 Redington gardens, a pair of semi-detached dwellings. Planning permission has recently been granted for the redevelopment of this neighbouring site (LB Camden Rf. No. LPA ref. 2015/3200/P). As noted in the introduction, the assessment considers the effects of the 24 Redington Gardens development in isolation (scenario 1) and the cumulative effects of the two neighbouring schemes (scenario 2).

2.3 To the south west of the site is No. 7 Redington Gardens, beyond which is No. 36 Redington Road. Both of these properties are residential dwellings with large rear gardens. Opposite the site, the southern side of Redington Gardens is fronted by larger residential properties of between two and four storeys at Nos. 15-18 Redington Gardens.

2.4 On the basis of this review, the assessment of neighbouring properties has focused on the daylight and sunlight levels experienced by residential accommodation within Nos. 7, 15, 18 and 25-26 Redington Gardens and No. 36 Redington Road. Other buildings in the vicinity of the site will be less affected by the development in daylight and sunlight terms.

2.5 A complete description of the site and surroundings is provided in the submitted Planning Statement and Design and Access Statement.

The Proposal

2.6 The proposed development comprises the demolition of existing houses and redevelopment to provide a new dwelling rising to three storeys above basement and lower ground floor levels. A new private rear garden is proposed to the north west of the new house.

2.7 The layout of the site as existing, with the development in place and with both the proposed development and the neighbouring scheme in place are illustrated at Appendix 1.

3.0 Scope of Assessment

3.1 This section of the assessment provides an overview of the scope of the daylight, sunlight and shadow assessment in terms of the neighbouring properties, proposed units and amenity spaces assessed.

3.2 The scale and layout of the development and the locations of the window reference points and habitable rooms assessed are illustrated at Appendices 1 and 2.

Neighbouring Properties Assessed

3.3 The assessment has provided an analysis of the impacts of the development on natural light levels within neighbouring residential accommodation.

3.4 As outlined in the preceding section, the assessment has considered the effects of the development on the closest windows serving neighbouring residential accommodation within Nos. 7, 15, 18 and 25-26 Redington Gardens and No. 36 Redington Road. This comprises the following windows:

1 Two ground and first floor windows serving the existing building at Nos. 25-26 Redington Gardens.

2 Five north west and north east facing windows set at ground and first floor level within the rear and return elevations of No. 7 Redington Gardens;

3 Two north east facing ground floor windows set in the rear elevation of No. 36 Redington Road;

4 One south easternmost ground floor window set in the street elevation of No. 15 Redington Gardens.

5 Two ground floor windows set in the street elevation of No. 18 Redington Gardens.

6 Three north west and south east facing windows at lower ground floor level serving the approved development at Nos. 25-26 Redington Gardens.

3.5 The windows selected for analysis represented the windows serving the neighbouring residential properties that are most likely to be affected by the proposed development. They are closest to the application site and are most sensitive to its redevelopment in terms of natural light.

3.6 Other windows serving these properties and other properties in the area will be less affected by the development in daylight and sunlight terms. Consequently, the analysis of this accommodation enables inferences to be drawn regarding the wider effects of the development on other less sensitive neighbouring properties.

3.7 The windows identified for daylight assessment have been considered in terms of ambient daylight (Vertical Sky Component; VSC). The proportions/ uses of

the two rooms served by the windows assessed at Nos. 25-26 Redington Gardens are known. As such, these rooms have also been considered in terms of interior daylight (Average Daylight Factor and Daylight Distribution).

3.8 The majority of neighbouring properties will be unaffected by the development in terms of sunlight availability. All but one of the above windows are north facing. A single window serving the adjacent development has been assessed in terms of sunlight availability.

Proposed Units Assessed

3.9 The proposed dwelling will each include four residential storeys, between lower ground and second floor levels, plus an enclosed basement containing non habitable rooms. The lowest habitable rooms within the development will therefore be located at lower ground floor level and will receive natural light via lightwells at the front and rear of the property.

3.10 The assessment has considered the levels of light that will be received within all of the habitable rooms at lower ground, first and second floor levels in the development.

3.11 The windows serving these rooms have been assessed in terms of ambient daylight (VSC) levels. The rooms they serve have been assessed in terms of internal daylighting (Average Daylight Factor and Daylight Distribution). The south facing windows serving these rooms have been assessed in terms of annual and winter sunlight availability.

Overshadowing

3.12 The shadow analysis has considered the proportionate levels of sunlight and shadow received by the neighbouring garden at No. 25 Redington Gardens (both as existing and under the approved neighbouring development) and the rear garden serving the proposed house. Other neighbouring gardens are situated to the south of the site or are a sufficient distance from the development to remain unaffected by the scheme.

3.13 The gardens assessed have been considered in terms of the BRE two-hour sunlight contour analysis.

Development Scenarios:

3.14 The assessment has considered the effects of the development on a self-contained basis and the cumulative effects of the two neighbouring schemes.

- Scenario 1: Assessment of the effects of the proposed development at No. 24 Redington Gardens in isolation;
- Scenario 2: Assessment of the cumulative effects arising from the proposed development at No. 24 Redington Gardens and the approved development at Nos. 25-26 Redington Gardens.

4.0 Daylight

4.1 This section of the assessment assesses the impact of the proposed development on the level of daylight received at the aforementioned window reference points and rooms.

Methodology

4.2 The daylight assessment is based on the analysis of Vertical Sky Component (VSC), Average Daylight Factor (ADF) and Daylight Distribution (DD). Neighbouring properties have been considered in terms of VSC as the room layouts, room types and other parameters required for interior daylight analyses are frequently unknown. The rooms assessed within the proposed development and the recently approved adjacent development have been assessed in terms of VSC, ADF and DD.

4.3 The following sets out the methodology for calculating VSC, ADF and DD.

Vertical Sky Component

4.4 The level of ambient daylight received by a window is quantified in terms of its Vertical Sky Component (VSC), which represents the amount of vertical skylight falling on a vertical window. The daylight assessment has been based on three dimensional AutoCAD models constructed for the site and surroundings as existing and with the proposed development in place. The heights and locations of the surrounding buildings and the proposed development have been taken from measured site survey information, Ordnance Survey digital plan data, site observations, aerial photography of the site and surroundings and the application drawings.

4.5 The VSC level at each of the windows requiring assessment has been quantified using Waldram Tools daylight and sunlight software (MBS Software Ltd).

4.6 The BRE good practice guide outlines numerical guidelines that represent flexible targets for new developments in relation to the vertical sky component at nearby reference points. The document states that:

*"If the vertical sky component, with the new development in place, is **both** less than 27% **and** less than 0.8 times its former value, then the loss of light is likely to be noticeable." (our emphasis)*

4.7 The guidelines therefore require that either the VSC target or the degree of change in daylighting are met (i.e. if the 27% target is adhered to, there is no requirement under the BRE guidelines for the resultant VSC level to remain at 0.8 times the former VSC level).

Average Daylight Factor

4.8 The BRE guide advises that the calculation of Average Daylight Factor (ADF) provides an alternative means of assessing the level of daylight received by the interior of the room served by a window. It is an appropriate means of assessment for proposed accommodation where the parameters required for the ADF calculations are known.

4.9 The calculation of ADF provides a more sophisticated method of calculating the daylight level experienced within a room than VSC as it takes into account the size and reflectance of room's surfaces and the number, size and transmittance of its window(s), as well as the ambient daylight level (VSC) received at the window(s).

4.10 The Average Daylight Factor (df) is defined as the average internal illuminance as a percentage of the unobstructed external illuminance under standard overcast conditions.

4.11 ADF can be calculated using the following formula (amended in the updated BRE guide, 2011):

$$df = \frac{TA_W\theta}{A(1-R^2)} \quad \%$$

Where:

T is the diffuse visible transmittance of the glazing (a value of 0.65 is typical for double glazed clear glass; a value of 0.18 is used for obscured glazing);

A_w is the net glazed area of the window (m^2);

θ is the angle of visible sky in degrees;

A is the total area of the room surfaces: ceiling, floor, walls and windows (m^2);

R is the average reflectance (a value of 0.7 is applicable for new/proposed accommodation with light internal surface treatments[1]).

4.12 The updated BRE guide (2011) introduces a separate procedure for floor to ceiling windows and glazed doors. It states that areas of glazing below the working plane should be treated as a separate window and an extra factor is applied to it to take account of the reduced effectiveness of low level glazing in lighting the room. The BRE states that a value equivalent to the floor

[1] A 0.7 reflectance value assumes white painted walls and ceiling (0.85) and a medium wooden floor (0.3).

reflectance can be taken for this factor. An adjustment factor of 0.3 is appropriate for medium timber floors and has been used in this case.

4.13 The approach to assessing internal daylighting using the ADF method is set out at Appendix C of the BRE guide. The BRE guide and British Standard BS8206 set the following minimum recommended ADF levels for different room types:

- Kitchens: 2%;
- Living rooms: 1. 5%;
- Bedrooms: 1%.

Daylight Distribution

4.14 Finally, the analysis of daylight distribution considers the area of a room which can receive an unobstructed view of the sky. It is quantified at working plane height (+0.85m).

4.15 The BRE (2011) guide states:

"If, following construction of a new development, a no-sky line moves so that the area of the existing room which does not receive direct skylight is reduced to less than 0.8 times its former value, this will be noticeable to the occupants."

4.16 Again, the analysis of daylight distribution provides a more sophisticated method of assessing daylight than VSC as it takes into account the size of a room and the size and number of its windows. DD has again been utilised in the analysis of the proposed units and neighbouring buildings/developments where internal layouts are known.

Daylight Results: Neighbouring Properties

4.17 The following tables provide a summary of the VSC results obtained for the neighbouring properties assessed under the two development scenarios. The results are set out in full at Appendices 3, 4, 5 and 6.

Address	No. windows/ rooms assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
25-26 Redington Gardems (existing)	2 windows	2 (100%)	0 (0%)
7 Redington Gardens	5 windows	4 (8%)	1 (20%) *[marginal effect]*
36 Redington Road	2 windows	2 (100%)	0 (0%)
15 Redington Gardens.	1 windows	1 (100%)	0 (0%)
18 Redington Gardens	2 windows	2 (100%)	0 (0%)
Total	*13 windows*	*24 (100%)*	0 (0%)

Table 4.1: Summary of Daylight Results for Neighbouring Properties: Scenario 1 – Independent Effects

Address	No. windows/ rooms assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
25-26 Redington Gardems (approved scheme)	3 windows	3 (100%)	0 (0%)
7 Redington Gardens	5 windows	4 (8%)	1 (20%) *[marginal effect]*
36 Redington Road	2 windows	2 (100%)	0 (0%)
15 Redington Gardens.	1 windows	1 (100%)	0 (0%)
18 Redington Gardens	2 windows	2 (100%)	0 (0%)
Total	*13 windows*	*24 (100%)*	0 (0%)

Table 4.2: Summary of Daylight Results for Neighbouring Properties: Scenario 2 – Cumulative Effects

4.18 The results of the daylight analysis under each scenario (Tables 4.1 and 4.2) illustrate that all of the windows assessed serving Nos. 15 Redington Gardens 18 Redington Gardens and 36 Redington Road will achieve the BRE guide levels for VSC when assessed in relation to the proposed development (scenario 1) and the cumulative effects of the two developments at Nos. 24 and 25-26 Redington Gardens. The existing building at Nos. 25-26 Redington Gardens and the approved scheme at that neighbouring site will also both achieve the BRE guide levels with the scheme in place. The development is, therefore, fully compliant with the BRE guidance in relation to the daylight levels received by these neighbouring dwellings.

4.19 Similarly, four of the five windows assessed serving No. 7 Redington Gardens will comply with the BRE guide levels while a single window set towards the rear of the building's return elevation will experience a small breach of the guidance under each scenario. This is an isolated and marginal effect and the window in question appears to serve a stair rather than a habitable room, though has been included in the analysis for completeness.

4.20 On this basis, the effects of the development on the daylight levels experienced by all neighbouring properties are acceptable in the context of the BRE guidance and relevant policy.

Daylight Results: Proposed Units

4.21 The development has been designed to ensure that daylight levels within the proposed units are maximised. The following table summarises the VSC, ADF and DD results obtained for the proposed residential accommodation within the development. The results are again contained in full at Appendices 3-6.

Vertical Sky Component (VSC)*			
Floor	**No. windows assessed**	**No. (%) Above BRE Guide Levels**	**No. (%) Below BRE Guide Levels**
Lower Ground	2 windows	1 (50%)	1 (50%)
Ground	3 windows	3 (100%)	0 (0%)
First	3 windows	2 (66.7%)	1 (33.3%)
Second	2 windows	2 (100%)	0 (0%)
Total	*10 windows*	*8 (80%)*	2 (2%)
Average Daylight Factor (ADF)			
Floor	**No. windows assessed**	**No. (%) Above BRE Guide Levels**	**No. (%) Below BRE Guide Levels**
Lower Ground	2 rooms	2 (100%)	0 (0%)
Ground	2 rooms	2 (100%)	0 (0%)
First	2 rooms	2 (100%)	0 (0%)
Second	2 rooms	2 (100%)	0 (0%)
Total	*8 rooms*	*8 (100%)*	0 (0%)
Daylight Distribution (DD)			
Floor	**No. windows assessed**	**No. (%) Above BRE Guide Levels**	**No. (%) Below BRE Guide Levels**
Lower Ground	2 rooms	2 (100%)	0 (0%)
Ground	2 rooms	2 (100%)	0 (0%)
First	2 rooms	2 (100%)	0 (0%)
Second	2 rooms	2 (100%)	0 (0%)
Total	*8 rooms*	*8 (100%)*	0 (0%)

Table 4.2: Proposed Units – Summary of Daylight Results [*comparable results for each development scenario]

4.22 The results of the daylight analyses for the proposed units show that all but two of the windows assessed will comply with the BRE guide levels for VSC. A single window each at lower ground floor and first floor level would experience a VSC level very marginally below the guide levels. These windows both serve bedrooms which are less sensitive than main habitable rooms in the assessment of daylight and, in any event, both rooms achieve the BS/BRE guide levels for ADF.

4.23 As discussed above, VSC merely provides a measure of the obstructions to skylight taken at the midpoint of each window. It does not take into account the size of each window aperture, the size, layout and nature of the room served by the window, or the number if windows serving a room. In contrast, the calculation of ADF provides a more sophisticated method of calculating the daylight conditions experienced within a room. ADF takes into account the size and reflectance of room's surfaces and the number, size and transmittance of its window(s), as well as the ambient daylight level (VSC) received at the window(s).

4.24 The ADF results for the proposed accommodation demonstrate that all of the rooms assessed will achieve high levels of interior daylight and will comply with

the BS/BRE guide levels for their respective room types. This full compliance with the guidance is unusual for an urban development project. The results of the ADF analyses are corroborated by the DD results which show good levels of daylight distribution across all of the proposed habitable rooms.

4.25 Overall, it is considered that the proposed residential units within the development will experience good levels of interior daylight for an urban development project in the context of the BS/BRE guidance.

5.0 Sunlight

5.1 This section of the report assesses the effects of the proposed development on levels of sunlight at the window reference points. As noted at Section 3, only one of the neighbouring windows assessed is orientated due south and requires assessment in terms of sunlight availability.

5.2 The south facing windows serving the proposed property also require assessment in terms of sunlight availability under the BRE guidance.

5.3 The methodology is summarised below.

Methodology

5.4 The levels of sunlight availability at the window reference points assessed have been calculated based on the three dimensional AutoCAD models of the site and surroundings with the development in place, using the Waldram Tools daylight and sunlight software. The calculations provide the percentage year round sunlight availability and the percentage of sunlight availability received during the winter months.

5.5 The BRE good practice guide states that the sunlighting experienced by a south facing window should receive more than 25% of annual probable sunlight hours and more than 5% of annual probable sunlight hours during the winter months.

Sunlight Results: Neighbouring Properties

5.6 None of the windows requiring serving existing neighbouring properties are orientated within 90 degrees of due south and require assessment in terms of sunlight availability. As such, the scheme will not cause any material impacts on existing neighbours (i.e. under scenario 1) (Appendix 7).

5.7 When the cumulative effects and interactions between the two neighbouring developments and No. 24 and Nos. 25-26 Redington Gardens are considered, a single window serving the adjacent development requires assessment in terms of sunlight availability. The results are summarised below and contained at Appendix 8.

Address	No. windows/ rooms assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
25-26 Redington Gardems	1 window	1 (100%)	0 (0%)
7 Redington Gardens	0 windows	-	-
36 Redington Road	0 windows	-	-
15 Redington Gardens.	0 windows	-	-
18 Redington Gardens	0 windows	-	-

Table 5.1: Summary of Sunlight Results for Neighbouring Properties

5.8 The assessment demonstrates that the single neighbouring window serving the adjacent development that requires assessment in terms of annual and winter sunlight will be unaffected by the development.

Sunlight Results: Proposed Units

5.9 The following table contains the annual and winter sunlight results for the proposed residential accommodation. The results are again contained in full at Appendices 7 and 8.

Floor	No. windows assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
Lower Ground	1 window	1 (100%)	0 (0%)
Ground	1 window	1 (100%)	0 (0%)
First	1 window 1	1 (100%)	0 (0%)
Second	1 window	1 (100%)	0 (0%)
Total	*4 windows*	*4 (100%)*	*0 (0%)*

Table 5.2: Summary of Sunlight Results for Proposed Accommodation [*comparable results for each development scenario]

5.10 The results of the sunlight analyses for the proposed dwelling demonstrate that the south facing windows assessed will all achieve very high levels of annual and winter sunlight and will comply with the BRE guide levels whether considered as a self-contained development or alongside the adjacent approved development. The windows set in the building's rear elevation face north and do not require assessment under the BRE guidance.

5.11 Overall, the proposed accommodation will experience good levels of sunlighting.

6.0 Overshadowing

6.1 The effects of the development on the levels of sunlight experienced within the neighbouring garden serving Nos. 25 Redington Gardens (both as existing and under the approved neighbouring development) and the proposed garden within the 24 Redington Gardens development have been assessed. The areas assessed are illustrated at Appendix 2. The following outlines the methodology and results of this overshadowing assessment.

Methodology

6.2 The BRE 'test' for a development's overshadowing impacts relates to the area of an amenity space that receives more than two hours of sunlight on 21 March (the Spring Equinox). The guide states:

"…for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If, as a result of new development, an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 march is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable".

6.3 The assessment has, therefore, considered the areas of amenity space that can receive more than two hours of direct sunlight on this date.

Results

Neighbouring Garden

6.4 The following tables sets out the shadow results for the rear garden space to No. 25 Redington Gardens as existing and as approved under the adjacent development.

Amenity Space	Amenity Area (sqm)	Lit Area Existing (sqm)	Lit Area Proposed (sqm)	Change %	Above/Below BRE guide level
Rear garden to No. 25 Redington Gardens (as existing)	177.58sqm	166.67sqm (94%)	121.16sqm (68%)	72.7%	Above

Table 6.1: Overshadowing Results for Neighbouring Garden as existing (Scenario 1)

Amenity Space	Amenity Area (sqm)	Lit Area Existing (sqm)	Lit Area Proposed (sqm)	Change %	Above/Below BRE guide level
Rear garden to No. 25 Redington Gardens (approved development)	134.92sqm	116.4sqm (86%)	104.9sqm (78%)	90.1%	Above

Table 6.2: Overshadowing Results for Neighbouring Garden as approved (Scenario 2)

6.5 The results of the shadow analysis demonstrate that the neighbouring garden serving the existing property at No. 25 Redington Gardens and the

neighbouring garden proposed under the approved neighbouring development assessed will comply with the BRE guidance in terms of the proportion of sunlight and shadow each will experience following construction of the proposed development.

6.6 No other neighbouring gardens require assessment under the BRE guidance.

6.7 As a result, the development is fully compliant with the BRE guidance in terms of overshadowing of neighbouring gardens.

Proposed Garden

6.8 Within the proposed development, the private garden to the north west of the development has been assessed in terms of sunlight and shadow. The following table contains the results of the shadow analysis.

Amenity Space	Amenity Area (sqm)	Lit Area Proposed (sqm)	Above/Below BRE guide level
Proposed rear garden	131.2sqm	112.6sqm (86%)	Above

Table 6.2: Overshadowing Results for Proposed Garden

6.9 Again, the results of the shadow analysis illustrate that the rear garden within the development will comply with the BRE guidance in terms of the proportionate areas of direct sunlight and overshadowing it will receive. The garden will experience a sunlit area of 86%; well above the BRE guide level of 50%.

7.0 Summary and Conclusions

7.1 The results of the assessment demonstrate that the proposed development at No. 24 Redington Gardens will not cause any materially unacceptable daylight and sunlight effects in relation to neighbouring properties and their gardens.

7.2 The assessment of the proposed accommodation within the development, similarly, show that the habitable rooms assessed will achieve the BRE guide levels for internal daylighting (ADF) and sunlight availability. The overshadowing analysis for the proposed garden also demonstrates that the rear garden within the development will receive sunlit areas well above the relevant BRE guide levels.

7.3 The assessment has considered the effects of the development at No. 24 Redington Gardens on a self-contained basis (scenario 1) and in terms of the cumulative effects and interactions alongside the approved development at No. 25-26 Redington Gardens (scenario 2). In both cases, there are no materially unacceptable effects arising in terms of daylight, sunlight or shadow impacts.

7.4 In conclusion, the proposed development will not result in any materially unacceptable daylight or sunlight effects. The development is consistent with the objectives and requirements of the BRE guidance and relevant planning policy in relation to both neighbouring properties and their gardens and the proposed accommodation and amenity space in the scheme. We respectfully conclude that there are no reasons on which planning permission could reasonably be refused on daylight and sunlight impact grounds.

Nos. 25-26 Redington Gardens

Daylight, Sunlight and Shadow Assessment

24 Redington Gardens LLP

February 2016

14680/MH/BK

This document is formatted for double sided printing.

Registered Office:
14 Regent's Wharf
All Saints Street
London N1 9RL

Contents

Appendices

1.0 Introduction

1.1 This report considers the effects of the proposed redevelopment of the site at No. 24 Redington Gardens, Hampstead on the levels of daylight, sunlight and shadow received by nearby residential properties and gardens. It also considers the levels of natural light that will be experienced within the new residential accommodation and amenity space proposed at the site. The assessment has been prepared on behalf of 24 Redington Gardens LLP.

1.2 The proposal comprises the demolition of the existing house at the site and redevelopment to provide a new detached home of three storeys above basement and lower ground floor levels, plus a rear garden.

1.3 The daylight and sunlight assessment considers the effects of the proposal on residential properties situated adjacent to and opposite the site on Redington Gardens and Redington Road. It considers the levels of daylight and sunlight that will be received within the proposed accommodation across the development. The assessment also considers the levels of sunlight and shadow that will be experienced within existing and proposed rear gardens to the north of the new property.

1.4 The analysis considers the effects of the development in isolation (scenario 1) and the cumulative effects of the development and the approved neighbouring scheme at Nos. 25-26 Redington Gardens (scenario 2).

1.5 The quantitative assessment has been undertaken in accordance with the guidelines set out in the revised Building Research Establishment (BRE) report "*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*" (October 2011). The Guide is intended to be advisory and does not contain mandatory standards. The introduction states:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not 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 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."

1.6 This assessment considers the impacts of the development in terms of daylight and sunlight. It does not address rights to light, which is a legal matter rather than a material planning consideration.

1.7 This assessment has been carried out using the following information:

- Measured site survey drawings;

- The planning application drawings;
- Ordnance Survey Superplan digital mapping of the area;
- Aerial photography;
- A photographic survey of the site and surroundings.

1.8 The report is divided into the following subsequent sections:

- Section 2.0 provides a brief description of the site and surroundings and the nature of the proposed development, highlighting features of relevance to the assessment of daylight and sunlight levels;
- Section 3.0 outlines the scope of the assessment;
- Section 4.0 provides an assessment of the impacts of the proposal on levels of daylight;
- Section 5.0 considers the proposal's impacts in terms of sunlighting;
- Section 6.0 considers the scheme's overshadowing effects;
- Section 7.0 provides a summary of the assessment and our conclusions are drawn.

1.9 The assessment is supported by a series of reference plans and results tables at Appendices 1-8.

2.0 Site, surroundings and the proposal

Site and Surroundings

2.1 The application site is situated on the north western side of Redington Gardens between Redington Road and Templewood Gardens. It is currently occupied by a pair of diminutive semi-detached houses which rise to two storeys above ground. To the north west, these properties are each served by a long rear garden.

2.2 The site is situated in a predominantly residential area between Hampstead and Finchley Road. It is flanked to the north east by Nos. 25 and 26 Redington gardens, a pair of semi-detached dwellings. Planning permission has recently been granted for the redevelopment of this neighbouring site (LB Camden Rf. No. LPA ref. 2015/3200/P). As noted in the introduction, the assessment considers the effects of the 24 Redington Gardens development in isolation (scenario 1) and the cumulative effects of the two neighbouring schemes (scenario 2).

2.3 To the south west of the site is No. 7 Redington Gardens, beyond which is No. 36 Redington Road. Both of these properties are residential dwellings with large rear gardens. Opposite the site, the southern side of Redington Gardens is fronted by larger residential properties of between two and four storeys at Nos. 15-18 Redington Gardens.

2.4 On the basis of this review, the assessment of neighbouring properties has focused on the daylight and sunlight levels experienced by residential accommodation within Nos. 7, 15, 18 and 25-26 Redington Gardens and No. 36 Redington Road. Other buildings in the vicinity of the site will be less affected by the development in daylight and sunlight terms.

2.5 A complete description of the site and surroundings is provided in the submitted Planning Statement and Design and Access Statement.

The Proposal

2.6 The proposed development comprises the demolition of existing houses and redevelopment to provide a new dwelling rising to three storeys above basement and lower ground floor levels. A new private rear garden is proposed to the north west of the new house.

2.7 The layout of the site as existing, with the development in place and with both the proposed development and the neighbouring scheme in place are illustrated at Appendix 1.

3.0 Scope of Assessment

3.1 This section of the assessment provides an overview of the scope of the daylight, sunlight and shadow assessment in terms of the neighbouring properties, proposed units and amenity spaces assessed.

3.2 The scale and layout of the development and the locations of the window reference points and habitable rooms assessed are illustrated at Appendices 1 and 2.

Neighbouring Properties Assessed

3.3 The assessment has provided an analysis of the impacts of the development on natural light levels within neighbouring residential accommodation.

3.4 As outlined in the preceding section, the assessment has considered the effects of the development on the closest windows serving neighbouring residential accommodation within Nos. 7, 15, 18 and 25-26 Redington Gardens and No. 36 Redington Road. This comprises the following windows:

1 Two ground and first floor windows serving the existing building at Nos. 25-26 Redington Gardens.

2 Five north west and north east facing windows set at ground and first floor level within the rear and return elevations of No. 7 Redington Gardens;

3 Two north east facing ground floor windows set in the rear elevation of No. 36 Redington Road;

4 One south easternmost ground floor window set in the street elevation of No. 15 Redington Gardens.

5 Two ground floor windows set in the street elevation of No. 18 Redington Gardens.

6 Three north west and south east facing windows at lower ground floor level serving the approved development at Nos. 25-26 Redington Gardens.

3.5 The windows selected for analysis represented the windows serving the neighbouring residential properties that are most likely to be affected by the proposed development. They are closest to the application site and are most sensitive to its redevelopment in terms of natural light.

3.6 Other windows serving these properties and other properties in the area will be less affected by the development in daylight and sunlight terms. Consequently, the analysis of this accommodation enables inferences to be drawn regarding the wider effects of the development on other less sensitive neighbouring properties.

3.7 The windows identified for daylight assessment have been considered in terms of ambient daylight (Vertical Sky Component; VSC). The proportions/ uses of

the two rooms served by the windows assessed at Nos. 25-26 Redington Gardens are known. As such, these rooms have also been considered in terms of interior daylight (Average Daylight Factor and Daylight Distribution).

3.8 The majority of neighbouring properties will be unaffected by the development in terms of sunlight availability. All but one of the above windows are north facing. A single window serving the adjacent development has been assessed in terms of sunlight availability.

Proposed Units Assessed

3.9 The proposed dwelling will each include four residential storeys, between lower ground and second floor levels, plus an enclosed basement containing non habitable rooms. The lowest habitable rooms within the development will therefore be located at lower ground floor level and will receive natural light via lightwells at the front and rear of the property.

3.10 The assessment has considered the levels of light that will be received within all of the habitable rooms at lower ground, first and second floor levels in the development.

3.11 The windows serving these rooms have been assessed in terms of ambient daylight (VSC) levels. The rooms they serve have been assessed in terms of internal daylighting (Average Daylight Factor and Daylight Distribution). The south facing windows serving these rooms have been assessed in terms of annual and winter sunlight availability.

Overshadowing

3.12 The shadow analysis has considered the proportionate levels of sunlight and shadow received by the neighbouring garden at No. 25 Redington Gardens (both as existing and under the approved neighbouring development) and the rear garden serving the proposed house. Other neighbouring gardens are situated to the south of the site or are a sufficient distance from the development to remain unaffected by the scheme.

3.13 The gardens assessed have been considered in terms of the BRE two-hour sunlight contour analysis.

Development Scenarios:

3.14 The assessment has considered the effects of the development on a self-contained basis and the cumulative effects of the two neighbouring schemes.

- Scenario 1: Assessment of the effects of the proposed development at No. 24 Redington Gardens in isolation;
- Scenario 2: Assessment of the cumulative effects arising from the proposed development at No. 24 Redington Gardens and the approved development at Nos. 25-26 Redington Gardens.

4.0 Daylight

4.1 This section of the assessment assesses the impact of the proposed development on the level of daylight received at the aforementioned window reference points and rooms.

Methodology

4.2 The daylight assessment is based on the analysis of Vertical Sky Component (VSC), Average Daylight Factor (ADF) and Daylight Distribution (DD). Neighbouring properties have been considered in terms of VSC as the room layouts, room types and other parameters required for interior daylight analyses are frequently unknown. The rooms assessed within the proposed development and the recently approved adjacent development have been assessed in terms of VSC, ADF and DD.

4.3 The following sets out the methodology for calculating VSC, ADF and DD.

Vertical Sky Component

4.4 The level of ambient daylight received by a window is quantified in terms of its Vertical Sky Component (VSC), which represents the amount of vertical skylight falling on a vertical window. The daylight assessment has been based on three dimensional AutoCAD models constructed for the site and surroundings as existing and with the proposed development in place. The heights and locations of the surrounding buildings and the proposed development have been taken from measured site survey information, Ordnance Survey digital plan data, site observations, aerial photography of the site and surroundings and the application drawings.

4.5 The VSC level at each of the windows requiring assessment has been quantified using Waldram Tools daylight and sunlight software (MBS Software Ltd).

4.6 The BRE good practice guide outlines numerical guidelines that represent flexible targets for new developments in relation to the vertical sky component at nearby reference points. The document states that:

*"If the vertical sky component, with the new development in place, is **both** less than 27% **and** less than 0.8 times its former value, then the loss of light is likely to be noticeable." (our emphasis)*

4.7 The guidelines therefore require that either the VSC target or the degree of change in daylighting are met (i.e. if the 27% target is adhered to, there is no requirement under the BRE guidelines for the resultant VSC level to remain at 0.8 times the former VSC level).

Average Daylight Factor

4.8 The BRE guide advises that the calculation of Average Daylight Factor (ADF) provides an alternative means of assessing the level of daylight received by the interior of the room served by a window. It is an appropriate means of assessment for proposed accommodation where the parameters required for the ADF calculations are known.

4.9 The calculation of ADF provides a more sophisticated method of calculating the daylight level experienced within a room than VSC as it takes into account the size and reflectance of room's surfaces and the number, size and transmittance of its window(s), as well as the ambient daylight level (VSC) received at the window(s).

4.10 The Average Daylight Factor (df) is defined as the average internal illuminance as a percentage of the unobstructed external illuminance under standard overcast conditions.

4.11 ADF can be calculated using the following formula (amended in the updated BRE guide, 2011):

$$df = \frac{TA_W\theta}{A(1-R^2)} \quad \%$$

Where:

T is the diffuse visible transmittance of the glazing (a value of 0.65 is typical for double glazed clear glass; a value of 0.18 is used for obscured glazing);

A_w is the net glazed area of the window (m^2);

θ is the angle of visible sky in degrees;

A is the total area of the room surfaces: ceiling, floor, walls and windows (m^2);

R is the average reflectance (a value of 0.7 is applicable for new/proposed accommodation with light internal surface treatments[1]).

4.12 The updated BRE guide (2011) introduces a separate procedure for floor to ceiling windows and glazed doors. It states that areas of glazing below the working plane should be treated as a separate window and an extra factor is applied to it to take account of the reduced effectiveness of low level glazing in lighting the room. The BRE states that a value equivalent to the floor

[1] A 0.7 reflectance value assumes white painted walls and ceiling (0.85) and a medium wooden floor (0.3).

reflectance can be taken for this factor. An adjustment factor of 0.3 is appropriate for medium timber floors and has been used in this case.

4.13 The approach to assessing internal daylighting using the ADF method is set out at Appendix C of the BRE guide. The BRE guide and British Standard BS8206 set the following minimum recommended ADF levels for different room types:

- Kitchens: 2%;
- Living rooms: 1. 5%;
- Bedrooms: 1%.

Daylight Distribution

4.14 Finally, the analysis of daylight distribution considers the area of a room which can receive an unobstructed view of the sky. It is quantified at working plane height (+0.85m).

4.15 The BRE (2011) guide states:

"If, following construction of a new development, a no-sky line moves so that the area of the existing room which does not receive direct skylight is reduced to less than 0.8 times its former value, this will be noticeable to the occupants."

4.16 Again, the analysis of daylight distribution provides a more sophisticated method of assessing daylight than VSC as it takes into account the size of a room and the size and number of its windows. DD has again been utilised in the analysis of the proposed units and neighbouring buildings/developments where internal layouts are known.

Daylight Results: Neighbouring Properties

4.17 The following tables provide a summary of the VSC results obtained for the neighbouring properties assessed under the two development scenarios. The results are set out in full at Appendices 3, 4, 5 and 6.

Address	No. windows/ rooms assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
25-26 Redington Gardems (existing)	2 windows	2 (100%)	0 (0%)
7 Redington Gardens	5 windows	4 (8%)	1 (20%) *[marginal effect]*
36 Redington Road	2 windows	2 (100%)	0 (0%)
15 Redington Gardens.	1 windows	1 (100%)	0 (0%)
18 Redington Gardens	2 windows	2 (100%)	0 (0%)
Total	*13 windows*	*24 (100%)*	0 (0%)

Table 4.1: Summary of Daylight Results for Neighbouring Properties: Scenario 1 – Independent Effects

Address	No. windows/ rooms assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
25-26 Redington Gardems (approved scheme)	3 windows	3 (100%)	0 (0%)
7 Redington Gardens	5 windows	4 (8%)	1 (20%) *[marginal effect]*
36 Redington Road	2 windows	2 (100%)	0 (0%)
15 Redington Gardens.	1 windows	1 (100%)	0 (0%)
18 Redington Gardens	2 windows	2 (100%)	0 (0%)
Total	*13 windows*	*24 (100%)*	0 (0%)

Table 4.2: Summary of Daylight Results for Neighbouring Properties: Scenario 2 – Cumulative Effects

4.18 The results of the daylight analysis under each scenario (Tables 4.1 and 4.2) illustrate that all of the windows assessed serving Nos. 15 Redington Gardens 18 Redington Gardens and 36 Redington Road will achieve the BRE guide levels for VSC when assessed in relation to the proposed development (scenario 1) and the cumulative effects of the two developments at Nos. 24 and 25-26 Redington Gardens. The existing building at Nos. 25-26 Redington Gardens and the approved scheme at that neighbouring site will also both achieve the BRE guide levels with the scheme in place. The development is, therefore, fully compliant with the BRE guidance in relation to the daylight levels received by these neighbouring dwellings.

4.19 Similarly, four of the five windows assessed serving No. 7 Redington Gardens will comply with the BRE guide levels while a single window set towards the rear of the building's return elevation will experience a small breach of the guidance under each scenario. This is an isolated and marginal effect and the window in question appears to serve a stair rather than a habitable room, though has been included in the analysis for completeness.

4.20 On this basis, the effects of the development on the daylight levels experienced by all neighbouring properties are acceptable in the context of the BRE guidance and relevant policy.

Daylight Results: Proposed Units

4.21 The development has been designed to ensure that daylight levels within the proposed units are maximised. The following table summarises the VSC, ADF and DD results obtained for the proposed residential accommodation within the development. The results are again contained in full at Appendices 3-6.

Vertical Sky Component (VSC)*			
Floor	**No. windows assessed**	**No. (%) Above BRE Guide Levels**	**No. (%) Below BRE Guide Levels**
Lower Ground	2 windows	1 (50%)	1 (50%)
Ground	3 windows	3 (100%)	0 (0%)
First	3 windows	2 (66.7%)	1 (33.3%)
Second	2 windows	2 (100%)	0 (0%)
Total	*10 windows*	*8 (80%)*	2 (2%)
Average Daylight Factor (ADF)			
Floor	**No. windows assessed**	**No. (%) Above BRE Guide Levels**	**No. (%) Below BRE Guide Levels**
Lower Ground	2 rooms	2 (100%)	0 (0%)
Ground	2 rooms	2 (100%)	0 (0%)
First	2 rooms	2 (100%)	0 (0%)
Second	2 rooms	2 (100%)	0 (0%)
Total	*8 rooms*	*8 (100%)*	0 (0%)
Daylight Distribution (DD)			
Floor	**No. windows assessed**	**No. (%) Above BRE Guide Levels**	**No. (%) Below BRE Guide Levels**
Lower Ground	2 rooms	2 (100%)	0 (0%)
Ground	2 rooms	2 (100%)	0 (0%)
First	2 rooms	2 (100%)	0 (0%)
Second	2 rooms	2 (100%)	0 (0%)
Total	*8 rooms*	*8 (100%)*	0 (0%)

Table 4.2: Proposed Units – Summary of Daylight Results [*comparable results for each development scenario]

4.22 The results of the daylight analyses for the proposed units show that all but two of the windows assessed will comply with the BRE guide levels for VSC. A single window each at lower ground floor and first floor level would experience a VSC level very marginally below the guide levels. These windows both serve bedrooms which are less sensitive than main habitable rooms in the assessment of daylight and, in any event, both rooms achieve the BS/BRE guide levels for ADF.

4.23 As discussed above, VSC merely provides a measure of the obstructions to skylight taken at the midpoint of each window. It does not take into account the size of each window aperture, the size, layout and nature of the room served by the window, or the number if windows serving a room. In contrast, the calculation of ADF provides a more sophisticated method of calculating the daylight conditions experienced within a room. ADF takes into account the size and reflectance of room's surfaces and the number, size and transmittance of its window(s), as well as the ambient daylight level (VSC) received at the window(s).

4.24 The ADF results for the proposed accommodation demonstrate that all of the rooms assessed will achieve high levels of interior daylight and will comply with

the BS/BRE guide levels for their respective room types. This full compliance with the guidance is unusual for an urban development project. The results of the ADF analyses are corroborated by the DD results which show good levels of daylight distribution across all of the proposed habitable rooms.

4.25 Overall, it is considered that the proposed residential units within the development will experience good levels of interior daylight for an urban development project in the context of the BS/BRE guidance.

5.0 Sunlight

5.1 This section of the report assesses the effects of the proposed development on levels of sunlight at the window reference points. As noted at Section 3, only one of the neighbouring windows assessed is orientated due south and requires assessment in terms of sunlight availability.

5.2 The south facing windows serving the proposed property also require assessment in terms of sunlight availability under the BRE guidance.

5.3 The methodology is summarised below.

Methodology

5.4 The levels of sunlight availability at the window reference points assessed have been calculated based on the three dimensional AutoCAD models of the site and surroundings with the development in place, using the Waldram Tools daylight and sunlight software. The calculations provide the percentage year round sunlight availability and the percentage of sunlight availability received during the winter months.

5.5 The BRE good practice guide states that the sunlighting experienced by a south facing window should receive more than 25% of annual probable sunlight hours and more than 5% of annual probable sunlight hours during the winter months.

Sunlight Results: Neighbouring Properties

5.6 None of the windows requiring serving existing neighbouring properties are orientated within 90 degrees of due south and require assessment in terms of sunlight availability. As such, the scheme will not cause any material impacts on existing neighbours (i.e. under scenario 1) (Appendix 7).

5.7 When the cumulative effects and interactions between the two neighbouring developments and No. 24 and Nos. 25-26 Redington Gardens are considered, a single window serving the adjacent development requires assessment in terms of sunlight availability. The results are summarised below and contained at Appendix 8.

Address	No. windows/ rooms assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
25-26 Redington Gardems	1 window	1 (100%)	0 (0%)
7 Redington Gardens	0 windows	-	-
36 Redington Road	0 windows	-	-
15 Redington Gardens.	0 windows	-	-
18 Redington Gardens	0 windows	-	-

Table 5.1: Summary of Sunlight Results for Neighbouring Properties

5.8 The assessment demonstrates that the single neighbouring window serving the adjacent development that requires assessment in terms of annual and winter sunlight will be unaffected by the development.

Sunlight Results: Proposed Units

5.9 The following table contains the annual and winter sunlight results for the proposed residential accommodation. The results are again contained in full at Appendices 7 and 8.

Floor	No. windows assessed	No. (%) Above BRE Guide Levels	No. (%) Below BRE Guide Levels
Lower Ground	1 window	1 (100%)	0 (0%)
Ground	1 window	1 (100%)	0 (0%)
First	1 window 1	1 (100%)	0 (0%)
Second	1 window	1 (100%)	0 (0%)
Total	*4 windows*	*4 (100%)*	*0 (0%)*

Table 5.2: Summary of Sunlight Results for Proposed Accommodation [*comparable results for each development scenario]

5.10 The results of the sunlight analyses for the proposed dwelling demonstrate that the south facing windows assessed will all achieve very high levels of annual and winter sunlight and will comply with the BRE guide levels whether considered as a self-contained development or alongside the adjacent approved development. The windows set in the building's rear elevation face north and do not require assessment under the BRE guidance.

5.11 Overall, the proposed accommodation will experience good levels of sunlighting.

6.0 Overshadowing

6.1 The effects of the development on the levels of sunlight experienced within the neighbouring garden serving Nos. 25 Redington Gardens (both as existing and under the approved neighbouring development) and the proposed garden within the 24 Redington Gardens development have been assessed. The areas assessed are illustrated at Appendix 2. The following outlines the methodology and results of this overshadowing assessment.

Methodology

6.2 The BRE 'test' for a development's overshadowing impacts relates to the area of an amenity space that receives more than two hours of sunlight on 21 March (the Spring Equinox). The guide states:

"…for it to appear adequately sunlit throughout the year, at least half of a garden or amenity area should receive at least two hours of sunlight on 21 March. If, as a result of new development, an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21 march is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable".

6.3 The assessment has, therefore, considered the areas of amenity space that can receive more than two hours of direct sunlight on this date.

Results

Neighbouring Garden

6.4 The following tables sets out the shadow results for the rear garden space to No. 25 Redington Gardens as existing and as approved under the adjacent development.

Amenity Space	Amenity Area (sqm)	Lit Area Existing (sqm)	Lit Area Proposed (sqm)	Change %	Above/Below BRE guide level
Rear garden to No. 25 Redington Gardens (as existing)	177.58sqm	166.67sqm (94%)	121.16sqm (68%)	72.7%	Above

Table 6.1: Overshadowing Results for Neighbouring Garden as existing (Scenario 1)

Amenity Space	Amenity Area (sqm)	Lit Area Existing (sqm)	Lit Area Proposed (sqm)	Change %	Above/Below BRE guide level
Rear garden to No. 25 Redington Gardens (approved development)	134.92sqm	116.4sqm (86%)	104.9sqm (78%)	90.1%	Above

Table 6.2: Overshadowing Results for Neighbouring Garden as approved (Scenario 2)

6.5 The results of the shadow analysis demonstrate that the neighbouring garden serving the existing property at No. 25 Redington Gardens and the

neighbouring garden proposed under the approved neighbouring development assessed will comply with the BRE guidance in terms of the proportion of sunlight and shadow each will experience following construction of the proposed development.

6.6 No other neighbouring gardens require assessment under the BRE guidance.

6.7 As a result, the development is fully compliant with the BRE guidance in terms of overshadowing of neighbouring gardens.

Proposed Garden

6.8 Within the proposed development, the private garden to the north west of the development has been assessed in terms of sunlight and shadow. The following table contains the results of the shadow analysis.

Amenity Space	Amenity Area (sqm)	Lit Area Proposed (sqm)	Above/Below BRE guide level
Proposed rear garden	131.2sqm	112.6sqm (86%)	Above

Table 6.2: Overshadowing Results for Proposed Garden

6.9 Again, the results of the shadow analysis illustrate that the rear garden within the development will comply with the BRE guidance in terms of the proportionate areas of direct sunlight and overshadowing it will receive. The garden will experience a sunlit area of 86%; well above the BRE guide level of 50%.

7.0 Summary and Conclusions

7.1 The results of the assessment demonstrate that the proposed development at No. 24 Redington Gardens will not cause any materially unacceptable daylight and sunlight effects in relation to neighbouring properties and their gardens.

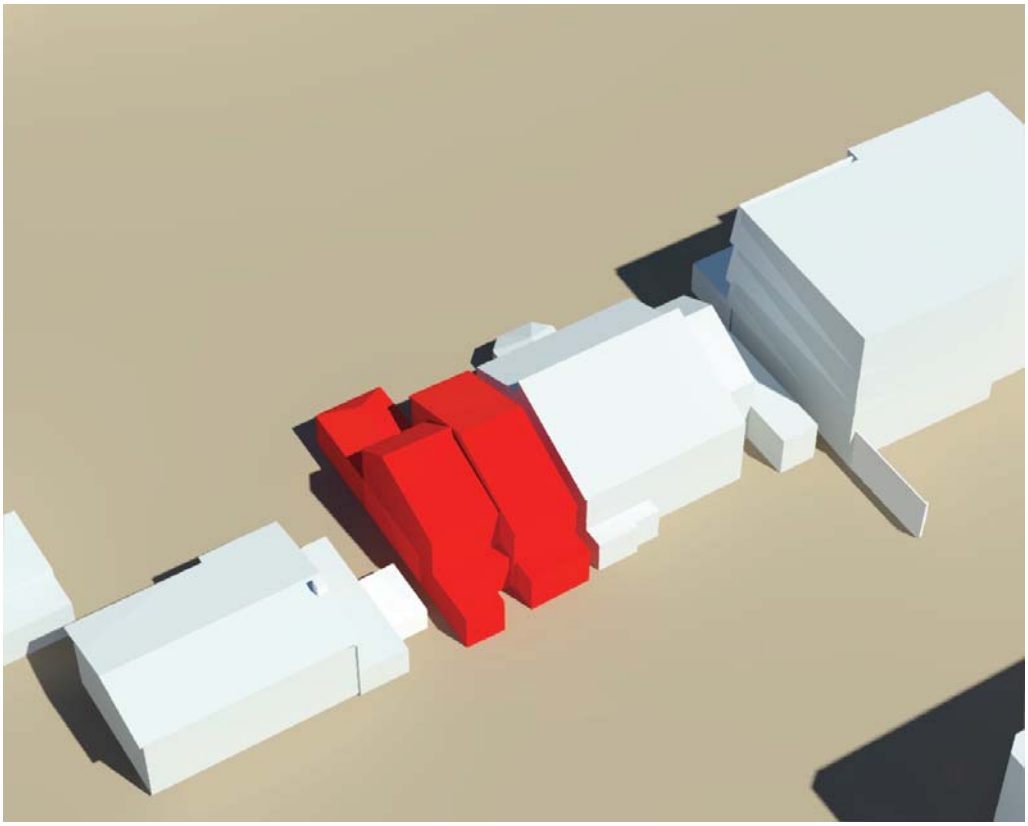
7.2 The assessment of the proposed accommodation within the development, similarly, show that the habitable rooms assessed will achieve the BRE guide levels for internal daylighting (ADF) and sunlight availability. The overshadowing analysis for the proposed garden also demonstrates that the rear garden within the development will receive sunlit areas well above the relevant BRE guide levels.

7.3 The assessment has considered the effects of the development at No. 24 Redington Gardens on a self-contained basis (scenario 1) and in terms of the cumulative effects and interactions alongside the approved development at No. 25-26 Redington Gardens (scenario 2). In both cases, there are no materially unacceptable effects arising in terms of daylight, sunlight or shadow impacts.

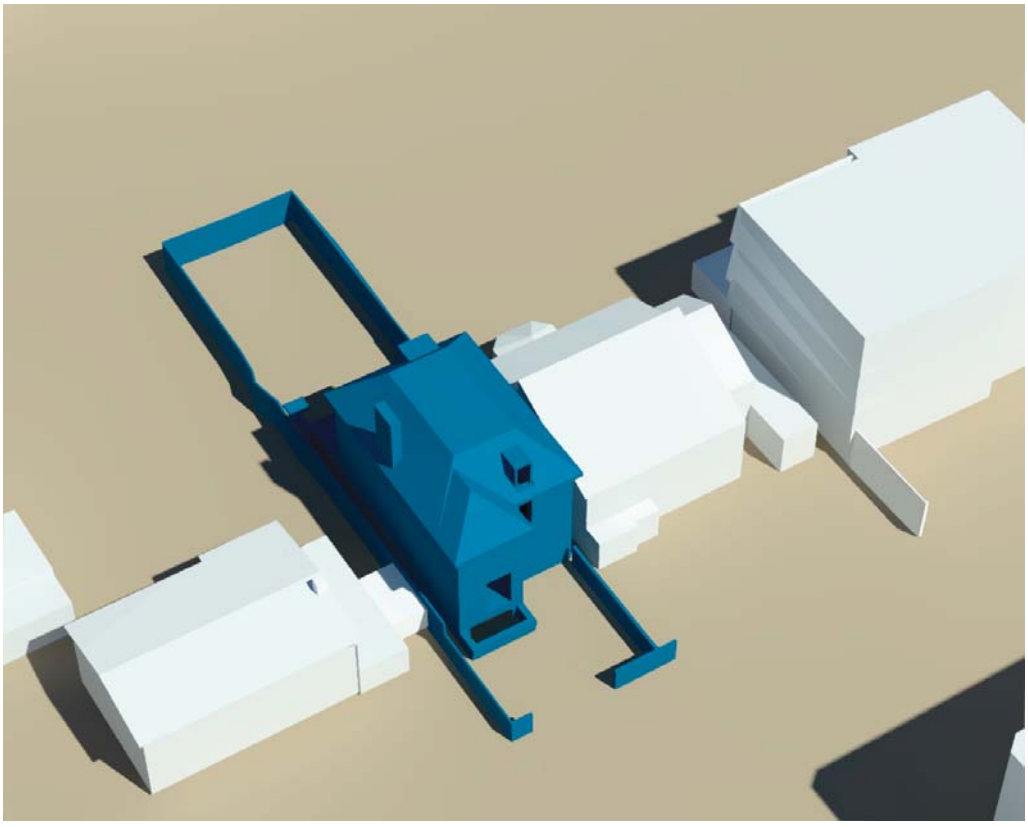
7.4 In conclusion, the proposed development will not result in any materially unacceptable daylight or sunlight effects. The development is consistent with the objectives and requirements of the BRE guidance and relevant planning policy in relation to both neighbouring properties and their gardens and the proposed accommodation and amenity space in the scheme. We respectfully conclude that there are no reasons on which planning permission could reasonably be refused on daylight and sunlight impact grounds.

Appendix 1

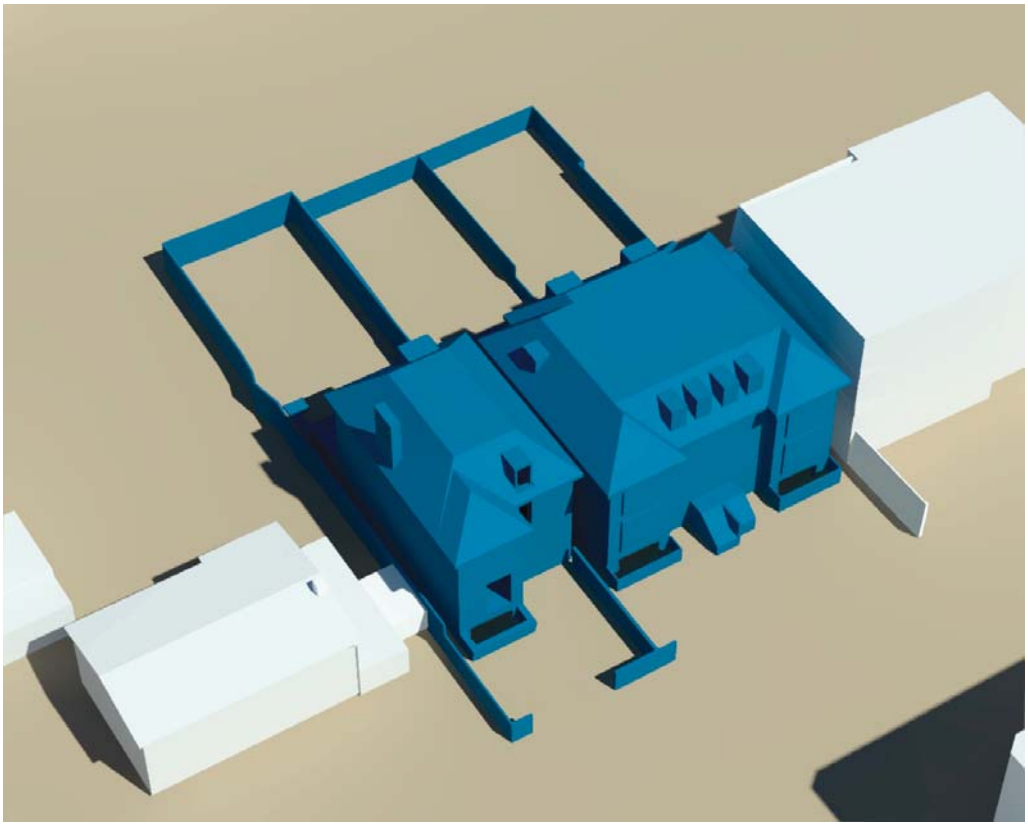
Assessment Model



Model as Existing



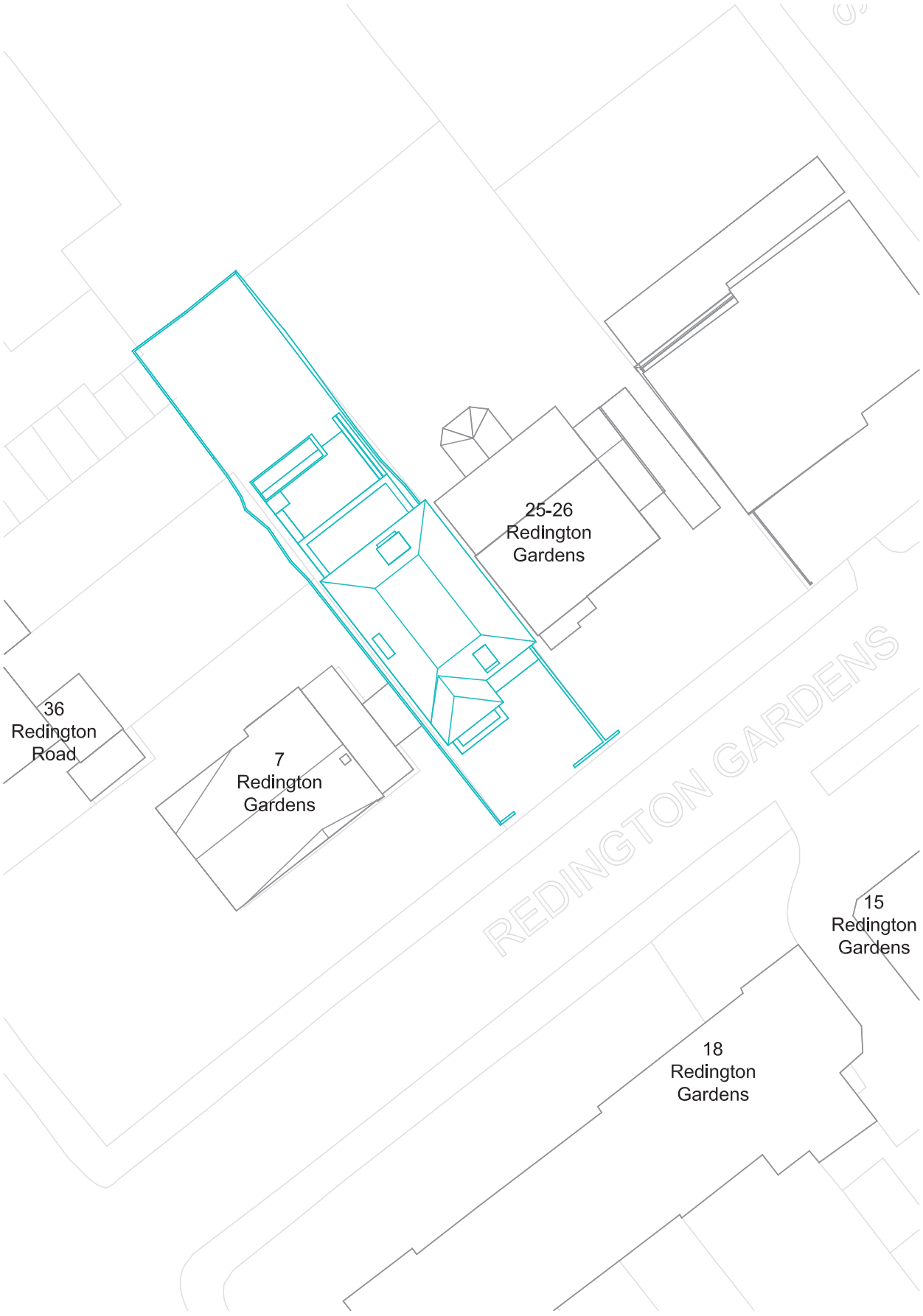
Model as Proposed - Scenario 1: Self-contained Development



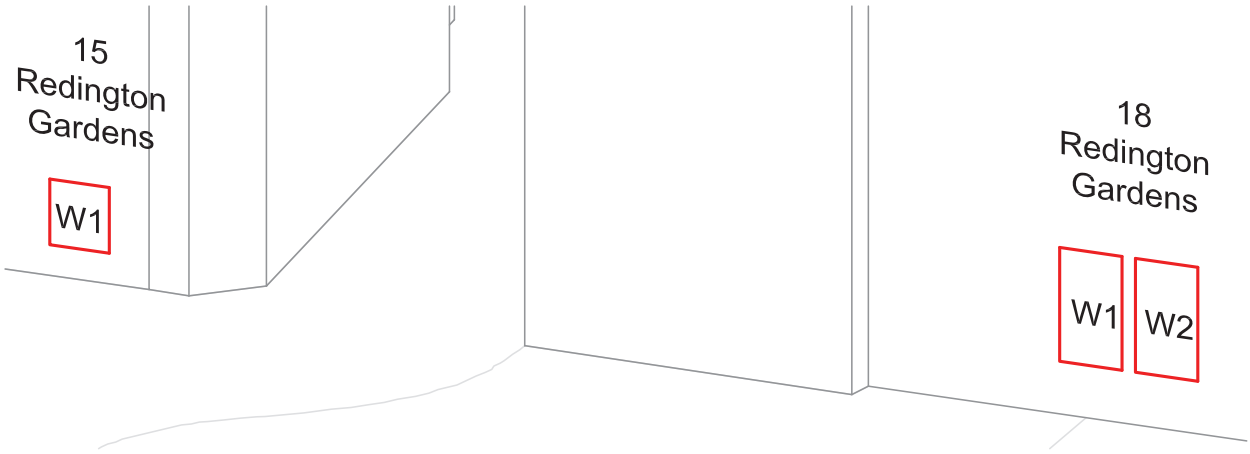
Model as Proposed with Approved Development at 25-26 Redington Gardens - Scenario 2: Cumulative Effects

Appendix 2

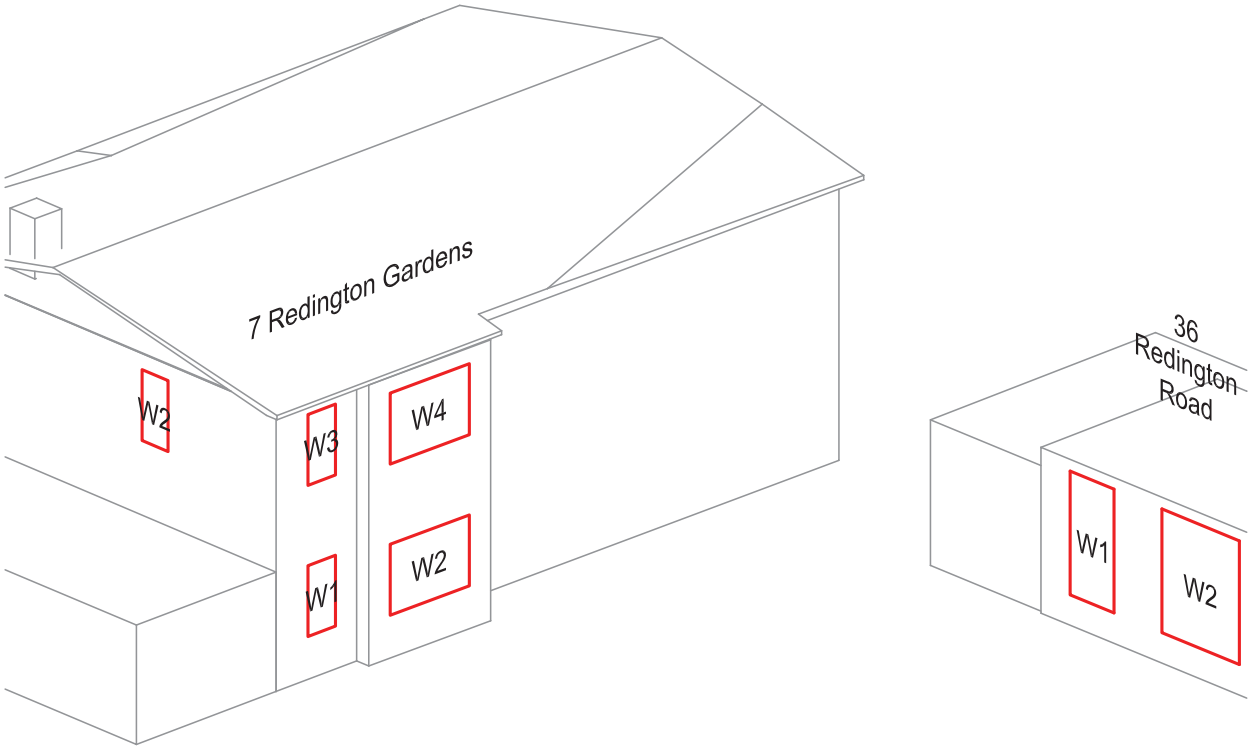
Room and Window Layouts



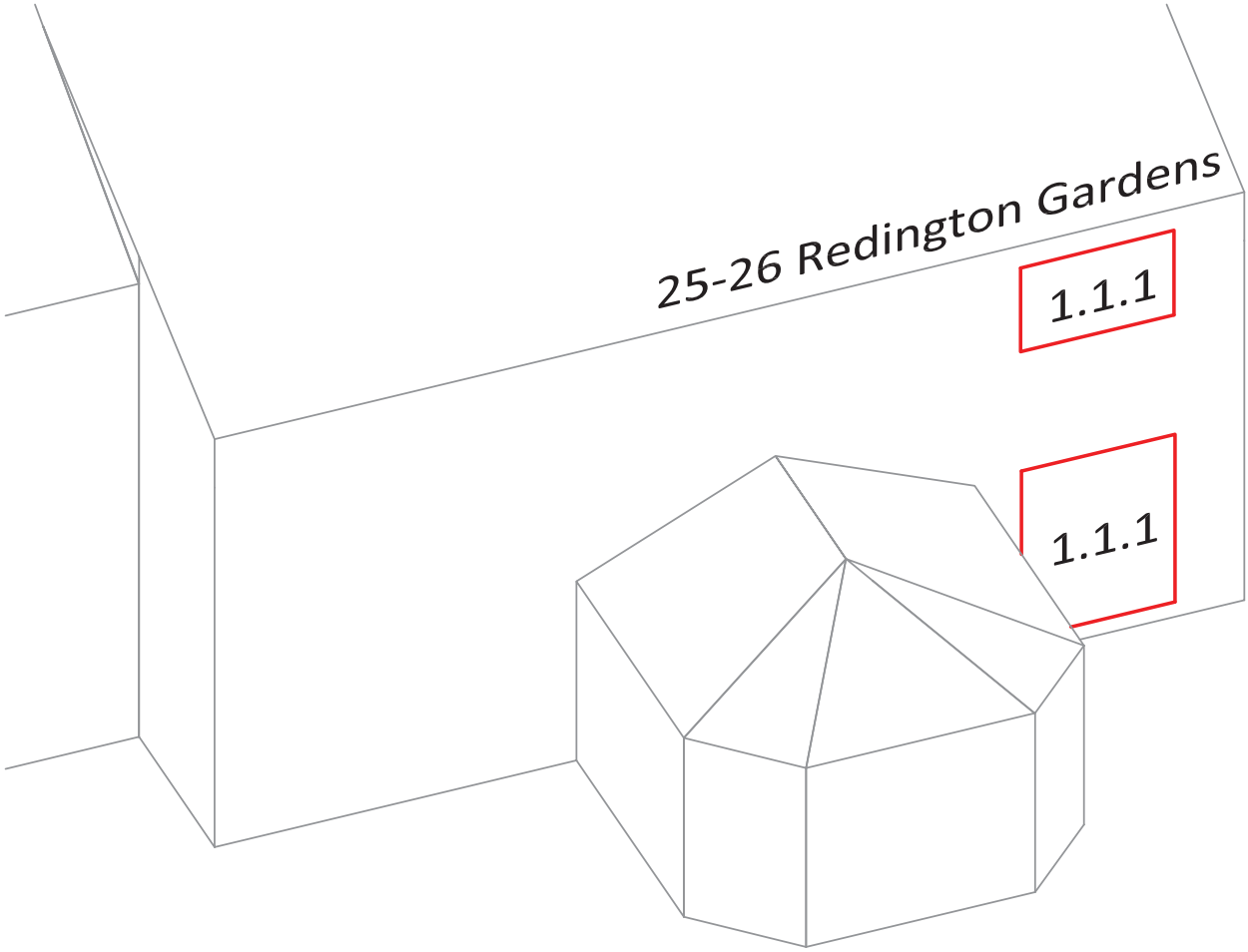
Neighbouring Properties Assessed



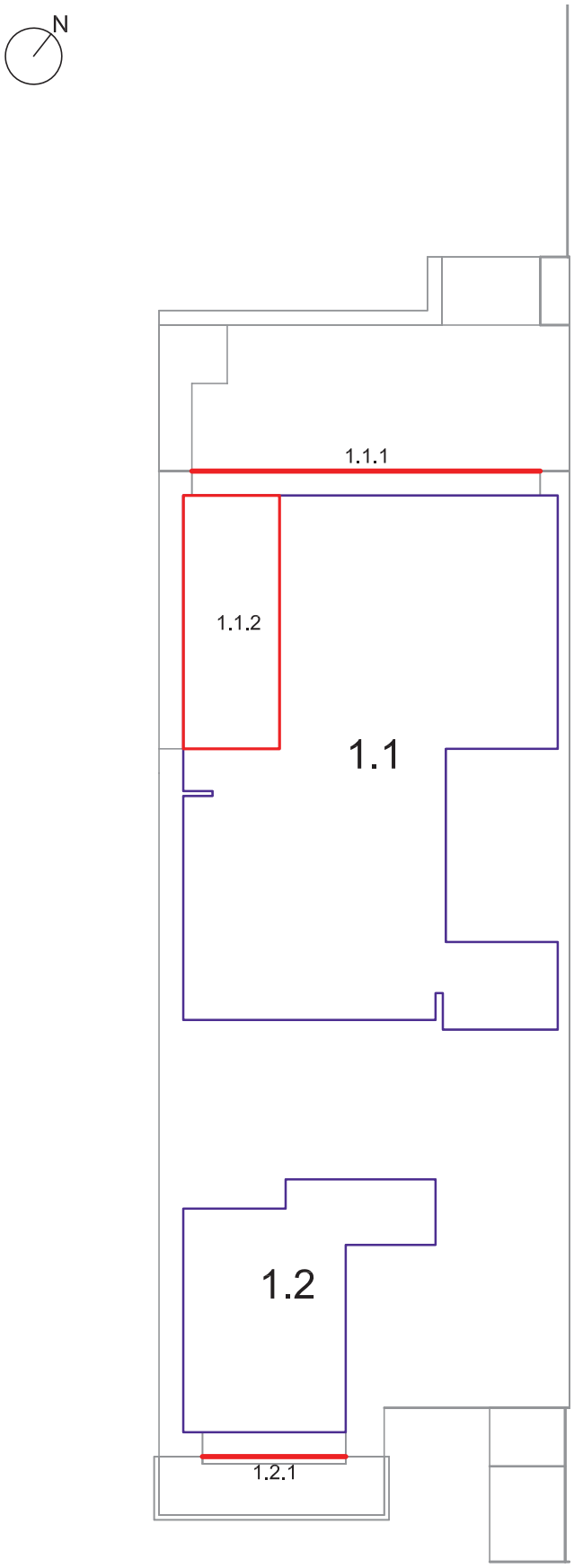
Neighbouring Window Maps



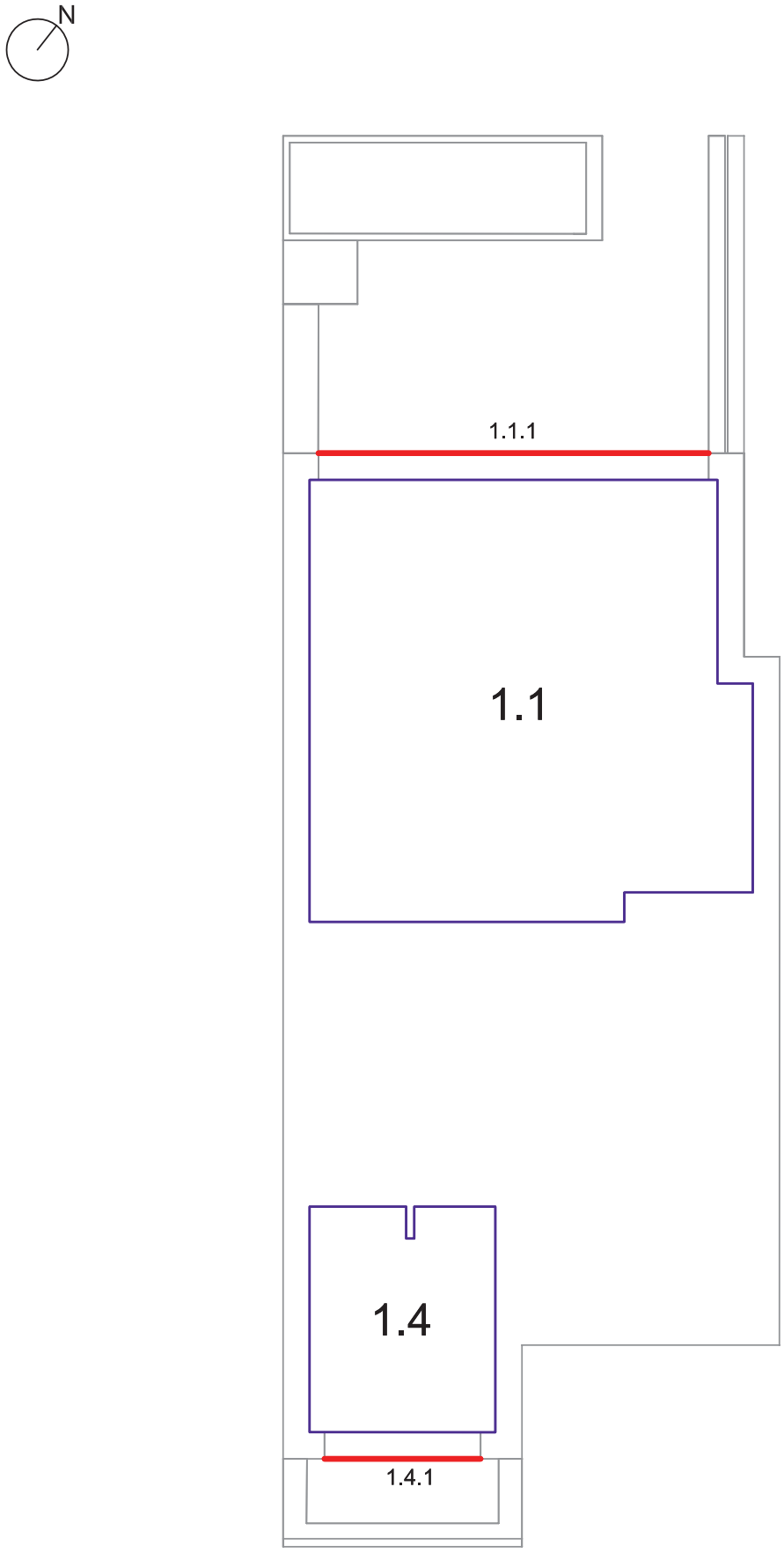
Neighbouring Window Maps



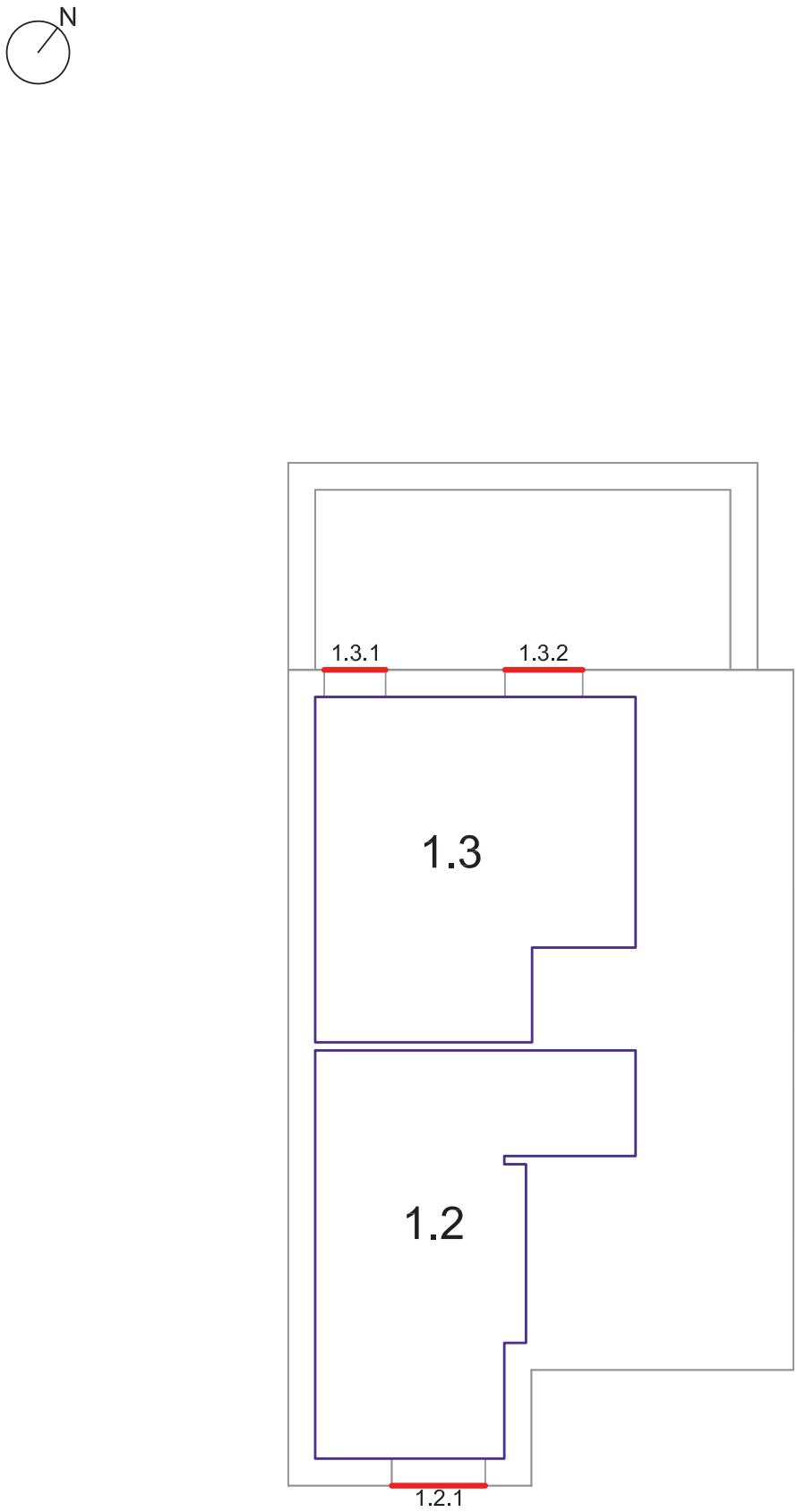
Neighbouring Window Maps



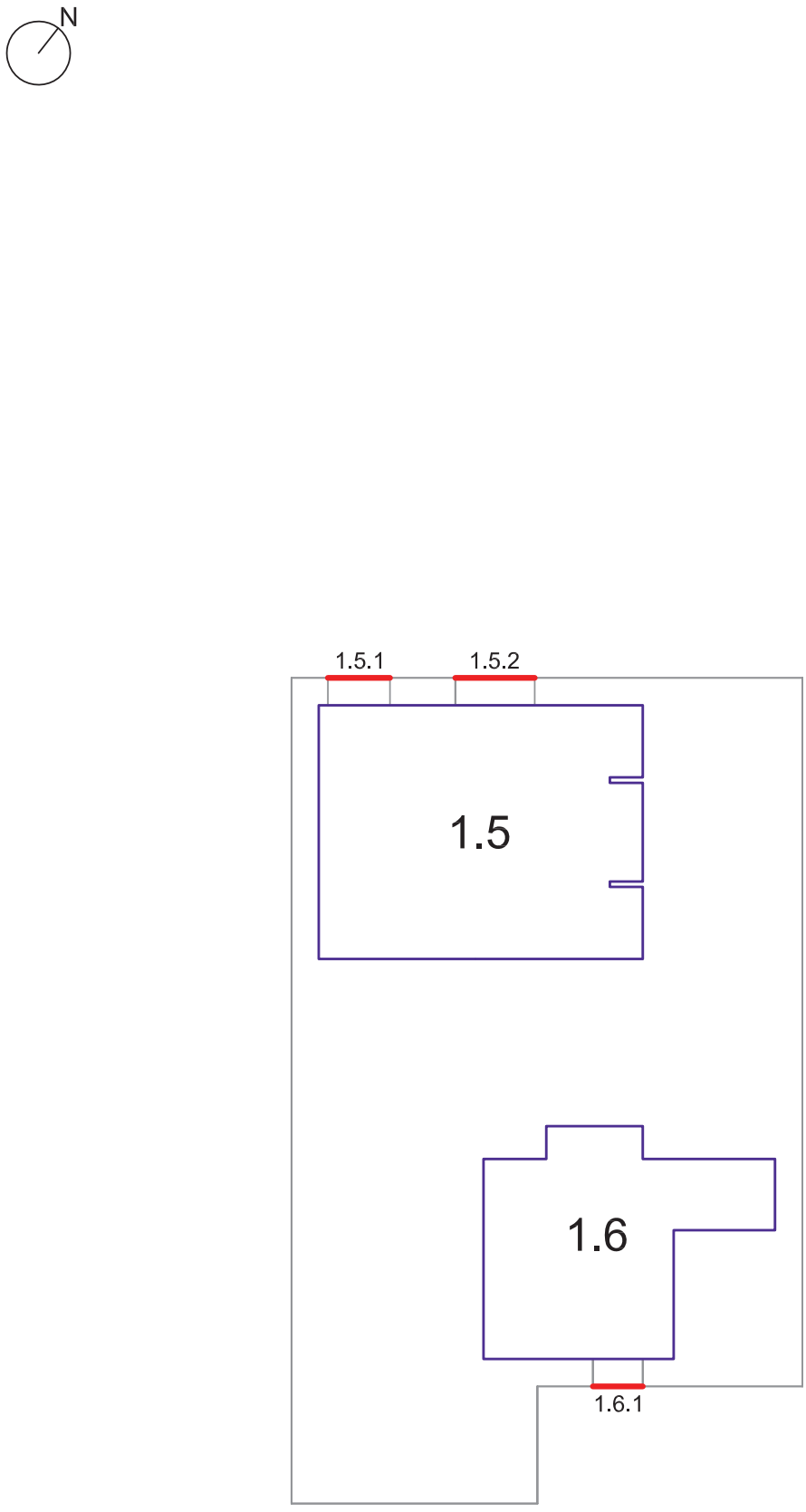
25-26 Redington Gardens (Approved Development), Lower Ground Floor Windows and Rooms Assessed



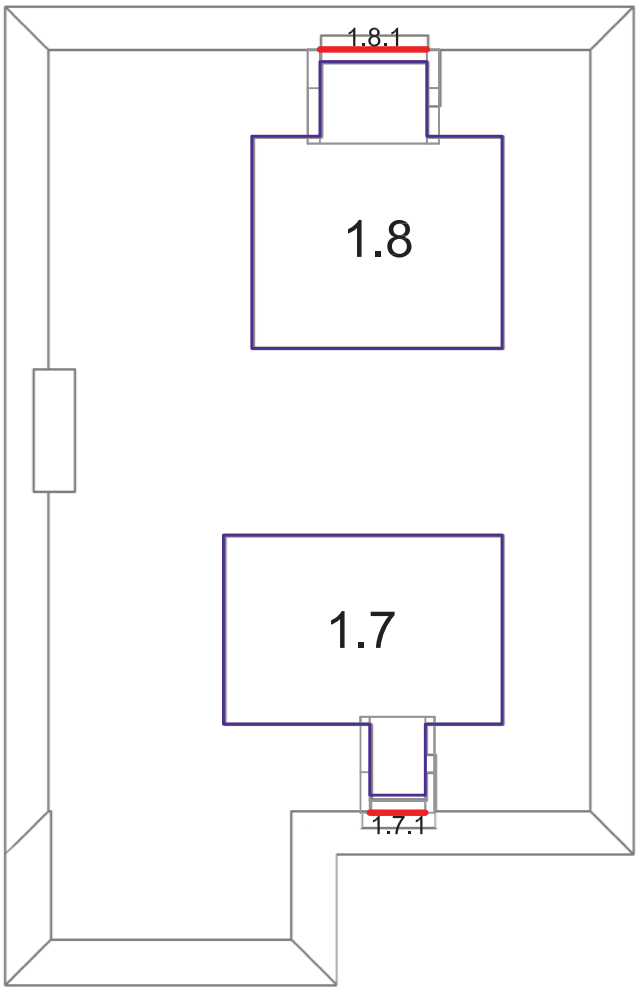
Proposed Scheme, Lower Ground Floor Windows and Rooms Assessed



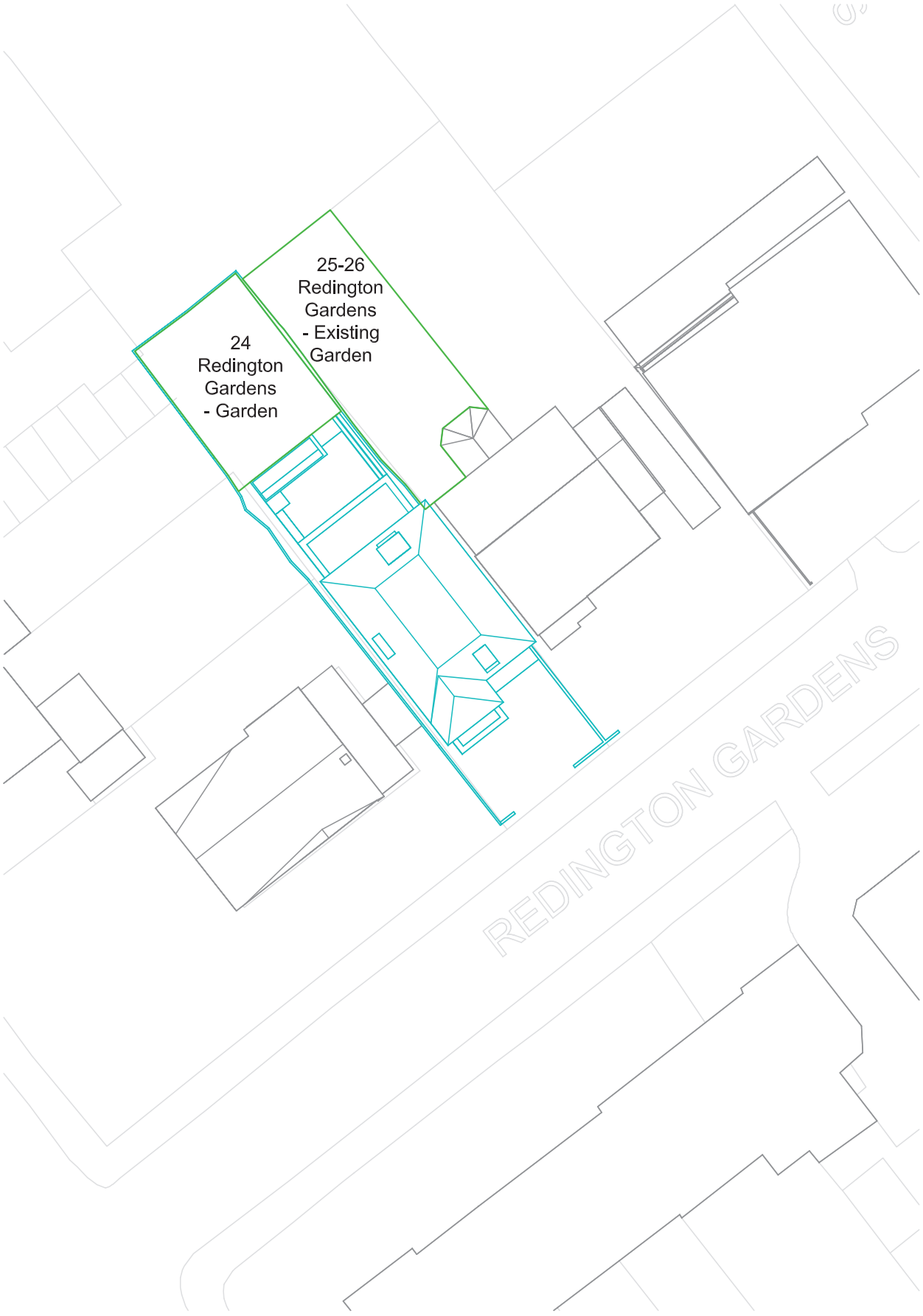
Proposed Scheme, Ground Floor Windows and Rooms Assessed



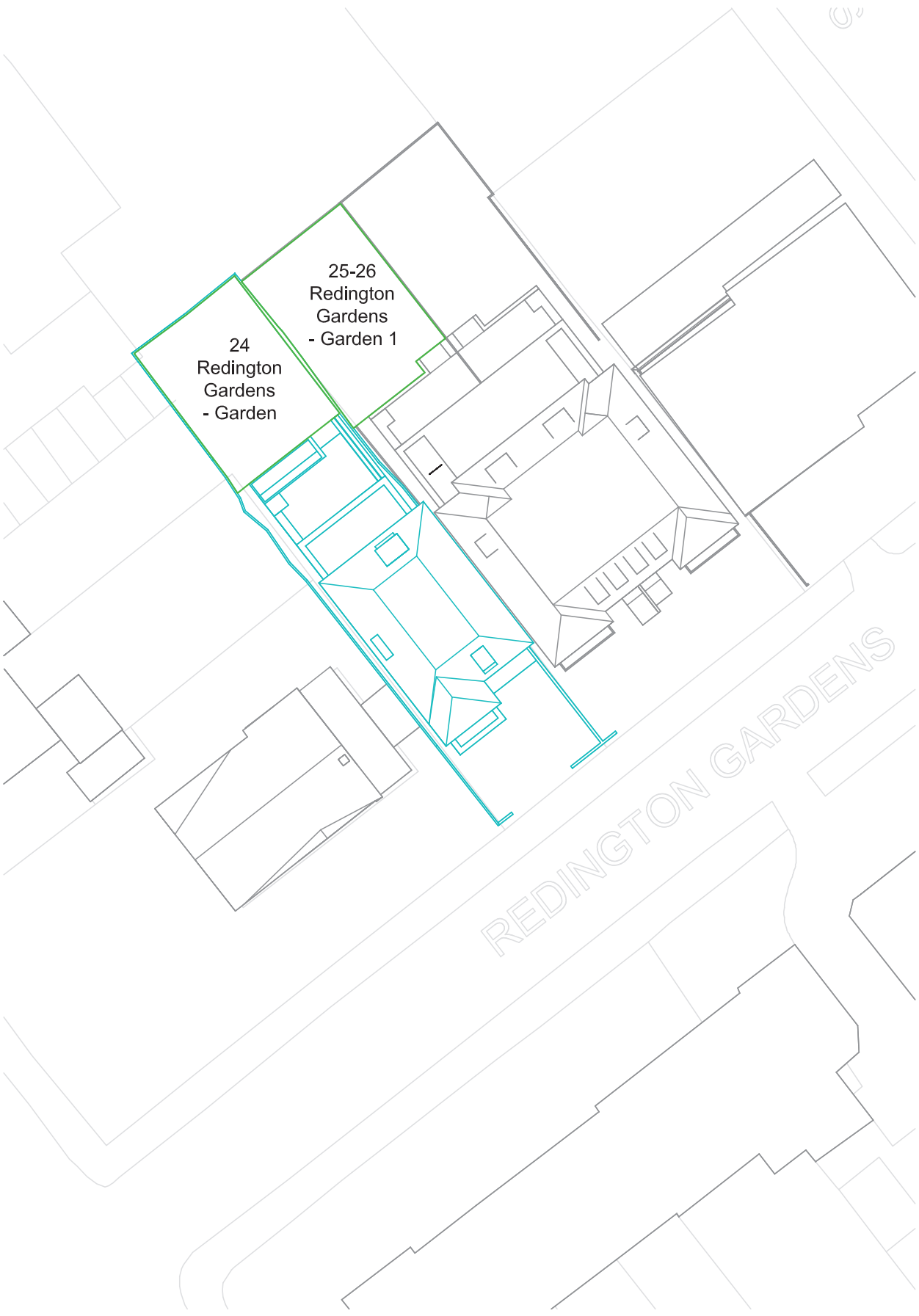
Proposed Scheme, First Floor Windows and Rooms Assessed



Proposed Scheme,Second Floor Windows and Rooms Assessed



Gardens Assessed for Overshadowing - Scenario 1: Self-contained Development



Gardens Assessed for Overshadowing - Scenario 2: Cumulative Effects

Appendix 3

VSC Results for Neighbouring Properties and Proposed Accommodation

Scenario 1: Self-contained Development

Appendix 3 - VSC Results for Neighbouring Properties and Proposed Accommodation

Scenario 1: Self-contained Development

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Above / Below
7 Redington Gardens							
Ground	N/A	-	W1	Existing	33.03	0.96	Above
				Proposed	31.75		
Ground	N/A	-	W2	Existing	34.07	0.98	Above
				Proposed	33.37		
First	N/A	-	W2	Existing	31.96	0.66	Below (M)
				Proposed	21.24		
First	N/A	-	W3	Existing	33.35	0.96	Above
				Proposed	32.09		
First	N/A	-	W4	Existing	36.37	0.98	Above
				Proposed	35.75		
15 Redington Gardens							
Basement	N/A	-	W1	Existing	34.24	0.98	Above
				Proposed	33.63		
18 Redington Gardens							
Ground	N/A	-	W1	Existing	35.96	0.98	Above
				Proposed	35.38		
Ground	N/A	-	W2	Existing	36.1	0.98	Above
				Proposed	35.53		
25-26 Redington Gardens							
Ground	N/A	-	1.1.1	Existing	34.17	0.940591	Above
				Proposed	32.14		
First	N/A	-	1.1.1	Existing	37.25	1.00	Above
				Proposed	37.09		
36 Redington Road							
Ground	N/A	-	W1	Existing	32.8	0.95	Above
				Proposed	31.19		
Ground	N/A	-	W2	Existing	33.88	0.95	Above
				Proposed	32.34		

Appendix 3 - VSC Results for Neighbouring Properties and Proposed Accommodation

Scenario 1: Self-contained Development

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Above / Below
24 Redington Gardens							
Lower Ground	1.1	Kitchen	1.1.1	Existing	N/A	N/A	Above
				Proposed	30.34		
Lower Ground	1.4	Bedroom	1.4.1	Existing	N/A	N/A	Below
				Proposed	20.88		
Ground	1.2	Living room	1.2.1	Existing	N/A	N/A	Above
				Proposed	34.37		
Ground	1.3	Living room	1.3.1	Existing	N/A	N/A	Above
				Proposed	36.48		
Ground	1.3	Living room	1.3.2	Existing	N/A	N/A	Above
				Proposed	36.54		
First	1.5	Bedroom	1.5.1	Existing	N/A	N/A	Above
				Proposed	34.19		
First	1.5	Bedroom	1.5.2	Existing	N/A	N/A	Above
				Proposed	34.08		
First	1.6	Bedroom	1.6.1	Existing	N/A	N/A	Below (M)
				Proposed	26.7		
Second	1.7	Bedroom	1.7.1	Existing	N/A	N/A	Above
				Proposed	38.59		
Second	1.8	Bedroom	1.8.1	Existing	N/A	N/A	Above
				Proposed	38.84		

Appendix 4

VSC Results for Neighbouring Properties / Developments and Proposed Accommodation

Scenario 2: Cumulative Effects

Appendix 4 - VSC Results for Neighbouring Properties/Developments and Proposed Accommodation

Scenario 2: Cumulative Effects

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Above / Below
7 Redington Gardens							
Ground	N/A	-	W1	Existing	33.03	0.96	Above
				Proposed	31.75		
Ground	N/A	-	W2	Existing	34.07	0.98	Above
				Proposed	33.37		
First	N/A	-	W2	Existing	31.96	0.66	Below (M)
				Proposed	21.24		
First	N/A	-	W3	Existing	33.35	0.96	Above
				Proposed	32.09		
First	N/A	-	W4	Existing	36.37	0.98	Above
				Proposed	35.75		
15 Redington Gardens							
Basement	N/A	-	W1	Existing	34.24	0.95	Above
				Proposed	32.38		
18 Redington Gardens							
Ground	N/A	-	W1	Existing	35.96	0.97	Above
				Proposed	34.76		
Ground	N/A	-	W2	Existing	36.1	0.97	Above
				Proposed	34.95		
25-26 Redington Gardens (Approved Neighbouring Development)							
Lower Ground	1.1	Kitchen	1.1.1	Existing	33.5	0.97	Above
				Proposed	32.63		
Lower Ground	1.1	Kitchen	1.1.2	Existing	10.96	0.99	Above
				Proposed	10.89		
Lower Ground	1.2	Bedroom	1.2.1	Existing	27.5	0.99	Above
				Proposed	27.17		
36 Redington Road							
Ground	N/A	-	W1	Existing	32.8	0.95	Above
				Proposed	31.19		
Ground	N/A	-	W2	Existing	33.88	0.95	Above
				Proposed	32.34		

Appendix 4 - VSC Results for Neighbouring Properties/Developments and Proposed Accommodation

Scenario 2: Cumulative Effects

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	VSC	Difference	Above / Below
24 Redington Gardens							
Lower Ground	1.1	Kitchen	1.1.1	Existing	N/A	N/A	Above
				Proposed	30.34		
Lower Ground	1.4	Bedroom	1.4.1	Existing	N/A	N/A	Below
				Proposed	20.88		
Ground	1.2	Living room	1.2.1	Existing	N/A	N/A	Above
				Proposed	34.37		
Ground	1.3	Living room	1.3.1	Existing	N/A	N/A	Above
				Proposed	36.48		
Ground	1.3	Living room	1.3.2	Existing	N/A	N/A	Above
				Proposed	36.54		
First	1.5	Bedroom	1.5.1	Existing	N/A	N/A	Above
				Proposed	34.19		
First	1.5	Bedroom	1.5.2	Existing	N/A	N/A	Above
				Proposed	34.08		
First	1.6	Bedroom	1.6.1	Existing	N/A	N/A	Below (M)
				Proposed	26.7		
Second	1.7	Bedroom	1.7.1	Existing	N/A	N/A	Above
				Proposed	38.59		
Second	1.8	Bedroom	1.8.1	Existing	N/A	N/A	Above
				Proposed	38.84		

Appendix 5

ADF Results for Proposed Accommodation

Appendix 5 - ADF Results for Proposed Accommodation

Floor	Room	Room Use.	Window	Glass Transmittance	Glazed Area	Clear Sky Angle Existing	Clear Sky Angle Proposed	Room Surface Area	Average Surface Reflectance	Below Working Plane Factor	ADF Existing	ADF Proposed	Req'd Value	Difference	Above / Below
24 Redington Gardens															
Lower Ground	1.1	Kitchen	1.1.1-L	0.68	4.92	N/A	62.57	220.34	0.70	0.30	N/A	0.56			
			1.1.1-U	0.68	10.92	N/A	69.75	220.34	0.70	1.00	N/A	4.61			
											0.00	5.17	2	0.00	Above
Lower Ground	1.4	Bedroom	1.4.1-L	0.68	1.97	N/A	29.90	74.37	0.70	0.30	N/A	0.32			
			1.4.1-U	0.68	3.43	N/A	54.09	74.37	0.70	1.00	N/A	3.33			
											0.00	3.65	1	0.00	Above
Ground	1.2	Living room	1.2.1-L	0.68	1.16	N/A	74.97	143.64	0.70	0.30	N/A	0.24			
			1.2.1-U	0.68	2.78	N/A	76.77	143.64	0.70	1.00	N/A	1.98			
											0.00	2.22	1.5	0.00	Above
Ground	1.3	Living room	1.3.1-L	0.68	0.49	N/A	77.48	138.79	0.70	0.30	N/A	0.11			
			1.3.1-U	0.68	1.78	N/A	79.49	138.79	0.70	1.00	N/A	1.36			
			1.3.2-L	0.68	0.62	N/A	79.19	138.79	0.70	0.30	N/A	0.14			
			1.3.2-U	0.68	2.25	N/A	80.51	138.79	0.70	1.00	N/A	1.74			
											0.00	3.35	1.5	0.00	Above
First	1.5	Bedroom	1.5.1-L	0.68	0.54	N/A	79.55	114.36	0.70	0.30	N/A	0.15			
			1.5.1-U	0.68	1.55	N/A	74.02	114.36	0.70	1.00	N/A	1.34			
			1.5.2-L	0.68	0.69	N/A	80.27	114.36	0.70	0.30	N/A	0.19			
			1.5.2-U	0.68	2.01	N/A	74.26	114.36	0.70	1.00	N/A	1.74			
											0.00	3.42	1	0.00	Above
First	1.6	Bedroom	1.6.1-L	0.68	0.45	N/A	62.28	81.07	0.70	0.30	N/A	0.14			
			1.6.1-U	0.68	1.24	N/A	60.41	81.07	0.70	1.00	N/A	1.24			
											0.00	1.37	1	0.00	Above
Second	1.7	Bedroom	1.7.1	0.68	1.25	N/A	81.79	72.52	0.70	1.00	N/A	1.89			
											0.00	1.89	1	0.00	Above
Second	1.8	Bedroom	1.8.1	0.68	2.14	N/A	84.37	74.42	0.70	1.00	N/A	3.23			
											0.00	3.23	1	0.00	Above

Appendix 6

DD Results for Proposed Accommodation

Appendix 6 - DD Results for Proposed Accommodation

Floor	Room	Room Use.	Window	Room Area	Lit Area Existing	Lit Area Proposed	Difference	Above / Below
24 Redington Gardens								
Lower Ground	1.1	Kitchen	Area m2 % of room	65.27	0 0.00%	65.17 99.85%	0.00	Above
Lower Ground	1.4	Bedroom	Area m2 % of room	14.7	0 0.00%	14.69 99.93%	0.00	Above
Ground	1.2	Living room	Area m2 % of room	32.35	0 0.00%	28.09 86.83%	0.00	Above
Ground	1.3	Living room	Area m2 % of room	34.37	0 0.00%	33.73 98.14%	0.00	Above
First	1.5	Bedroom	Area m2 % of room	27.24	0 0.00%	26.29 96.51%	0.00	Above
First	1.6	Bedroom	Area m2 % of room	16.13	0 0.00%	13.03 80.78%	0.00	Above
Second	1.7	Bedroom	Area m2 % of room	15.13	0 0.00%	9.74 64.38%	0.00	Below (M)
Second	1.8	Bedroom	Area m2 % of room	16.25	0 0.00%	15.47 95.20%	0.00	Above

Appendix 7

Sunlight Results for Neighbouring Properties and Proposed Development

Scenario 1: Self-contained Development

Appendix 7 - Sunlight Results for Neighbouring Properties and Proposed Development

Scenario 1: Self-contained Development

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	Available Sunlight Hours					
					Annual %	Diff	Above / Below	Winter %	Diff	Above / Below
7 Redington Gardens										
Ground	N/A	-	W1	Existing	*North Facing					
				Proposed						
Ground	N/A	-	W2	Existing	*North Facing					
				Proposed						
First	N/A	-	W2	Existing	*North Facing					
				Proposed						
First	N/A	-	W3	Existing	*North Facing					
				Proposed						
First	N/A	-	W4	Existing	*North Facing					
				Proposed						
15 Redington Gardens										
Basement	N/A	-	W1	Existing	*North Facing					
				Proposed						
18 Redington Gardens										
Ground	N/A	-	W1	Existing	*North Facing					
				Proposed						
Ground	N/A	-	W2	Existing	*North Facing					
				Proposed						
25-26 Redington Gardens										
Ground	N/A	-	1.1.1	Existing	*North Facing					
				Proposed						
First	N/A	-	1.1.1	Existing	*North Facing					
				Proposed						
36 Redington Road										
Ground	N/A	-	W1	Existing	*North Facing					
				Proposed						
Ground	N/A	-	W2	Existing	*North Facing					
				Proposed						

Appendix 7 - Sunlight Results for Neighbouring Properties and Proposed Development

Scenario 1: Self-contained Development

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	Available Sunlight Hours					
					Annual %	Diff	Above / Below	Winter %	Diff	Above / Below
24 Redington Gardens										
Lower Ground	1.1	Kitchen	1.1.1	Existing	*North Facing					
				Proposed						
Lower Ground	1.4	Bedroom	1.4.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	45			6		
Ground	1.2	Living room	1.2.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	75			25		
Ground	1.3	Living room	1.3.1	Existing	*North Facing					
				Proposed						
Ground	1.3	Living room	1.3.2	Existing	*North Facing					
				Proposed						
First	1.5	Bedroom	1.5.1	Existing	*North Facing					
				Proposed						
First	1.5	Bedroom	1.5.2	Existing	*North Facing					
				Proposed						
First	1.6	Bedroom	1.6.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	47			9		
Second	1.7	Bedroom	1.7.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	76			26		
Second	1.8	Bedroom	1.8.1	Existing	*North Facing					
				Proposed						

Appendix 8

Sunlight Results for Neighbouring Properties / Developments and Proposed Accommodation

Scenario 2: Cumulative Effects

Appendix 8 - Sunlight Results for Neighbouring Properties/Developments and Proposed Accommodation

Scenario 2: Cumulative Effects

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	Available Sunlight Hours					
					Annual %	Diff	Above / Below	Winter %	Diff	Above / Below
7 Redington Gardens										
Ground	N/A	-	W1	Existing	*North Facing					
				Proposed						
Ground	N/A	-	W2	Existing	*North Facing					
				Proposed						
First	N/A	-	W2	Existing	*North Facing					
				Proposed						
First	N/A	-	W3	Existing	*North Facing					
				Proposed						
First	N/A	-	W4	Existing	*North Facing					
				Proposed						
15 Redington Gardens										
Basement	N/A	-	W1	Existing	*North Facing					
				Proposed						
18 Redington Gardens										
Ground	N/A	-	W1	Existing	*North Facing					
				Proposed						
Ground	N/A	-	W2	Existing	*North Facing					
				Proposed						
25-26 Redington Gardens (Approved Neighbouring Development)										
Lower Ground	1.1	Kitchen	1.1.1	Existing	*North Facing					
				Proposed						
Lower Ground	1.1	Kitchen	1.1.2	Existing	*North Facing					
				Proposed						
Lower Ground	1.2	Bedroom	1.2.1	Existing	64	0.98	Above	16	0.94	Above
				Proposed	63			15		
36 Redington Road										
Ground	N/A	-	W1	Existing	*North Facing					
				Proposed						
Ground	N/A	-	W2	Existing	*North Facing					
				Proposed						

Appendix 8 - Sunlight Results for Neighbouring Properties/Developments and Proposed Accommodation

Scenario 2: Cumulative Effects

Floor Ref.	Room Ref.	Room Use.	Window Ref.	Scenario	Available Sunlight Hours					
					Annual %	Diff	Above / Below	Winter %	Diff	Above / Below
24 Redington Gardens										
Lower Ground	1.1	Kitchen	1.1.1	Existing	*North Facing					
				Proposed						
Lower Ground	1.4	Bedroom	1.4.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	45			6		
Ground	1.2	Living room	1.2.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	75			25		
Ground	1.3	Living room	1.3.1	Existing	*North Facing					
				Proposed						
Ground	1.3	Living room	1.3.2	Existing	*North Facing					
				Proposed						
First	1.5	Bedroom	1.5.1	Existing	*North Facing					
				Proposed						
First	1.5	Bedroom	1.5.2	Existing	*North Facing					
				Proposed						
First	1.6	Bedroom	1.6.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	44			9		
Second	1.7	Bedroom	1.7.1	Existing	N/A	N/A	Above	N/A	N/A	Above
				Proposed	75			26		
Second	1.8	Bedroom	1.8.1	Existing	*North Facing					
				Proposed						

Nathaniel Lichfield & Partners
Planning. Design. Economics.

Planning Consultancy of the Year 2011-2014 RTPI

- Applications & Appeals
- Climate Change & Sustainability
- Community Engagement
- Daylight & Sunlight
- Economics & Regeneration
- Environmental Assessment
- Expert Evidence
- GIS & Spatial Analytics
- Graphic Design
- Heritage
- Property Economics
- Site Finding & Land Assembly
- Strategy & Appraisal
- Urban Design

Bristol
0117 403 1980

Cardiff
029 2043 5880

Edinburgh
0131 285 0670

Leeds
0113 397 1397

London
020 7837 4477

Manchester
0161 837 6130

Newcastle
0191 261 5685

Thames Valley
0118 334 1920

nlpplanning.com