32 ROSSLYN HILL

LONDON NW3 1NH

ANALYSIS

of

SITE LAYOUT

for

DAYLIGHT AND SUNLIGHT

For

AS STUDIOS LIMITED

ARCHITECTUAL & DESIGN SERVICES

2 MAGDENLEN MEWS

LONDON NW3 5HB

OCTOBER 2015.

by

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ANALYSIS OF SITE LAYOUT WITH REGARD TO DAYLIGHT AND SUNLIGHT

1. Introduction

This report relates to extension of the flat occupying first to fourth floor of the terraced house at 32 Rosslyn Hill.

An extension is proposed at the rear of the house at second floor level.

2. Description of the Site.

The development is to the flat is on the first to 4th floors of the house at 32 Rosslyn Hill. The front of the house faces south west towards Rosslyn Hill.

The proposed extension is at second floor to the rear above the existing rear addition.

The extension will be visible from a building at 1b Downshire Hill which is currently in use as doctor's offices.

To the north east of the extension is 34 Rosslyn Hill for which daylight to some windows will be impaired to some extent.

To the south east is 30 Rosslyn Hill for which a similar extension has planning consent under planning application 2015/2740/P but is not yet constructed. The consented scheme extends to the same line as the proposed extension at 32 so that there will be no loss of daylight to the consented scheme.

The proposed scheme is shown on the planning application drawings by AS Architectural Services Ltd:

2032(PLA) 002 Existing and Proposed Block Plans
2032(PLA) 01 First Floor Plans
2032(PLA) 02 Second Floor Plans
2032(PLA) 03 Third Floor Plans
2032(PLA) 200 Proposed Rear Elevation 1
2032(PLA) 201_202 Proposed Rear Elevations 2 and 3
2032(EX) 200 Ex2032(PLA) 002 Existing Rear Elevation 1
2032(EX) 201_202 Existing Rear Elevations 2 and 3
2032(PLA) 300 Proposed Section AA
2032(EX) 300 Existing Section AA

3. Planning Requirements

London Borough of Camden provides guidance on daylight to buildings in the Camden Planning Guidance 6 Amenity Overlooking and Privacy.

Section 6 gives requirements for Daylight and Sunlight.

6.3 says that the Council expects all developments to receive adequate daylight and 6.4 says a sunlight and daylight report should assess impact following the methodology of the BRE "Guide Site Layout Planning for Daylight and Sunlight: a guide to good practice"

The current version of the BRE guide is the second edition published in 2011. This document is referred to as the Guide in this report.

4. General Effects of New Development on Light to Nearby Buildings.

The BRE Guide recommends that the following analyses are carried out for windows likely to be affected by the development.

The availability of natural daylight.

The sunlight availability.

Figure 1 attached to this report is a site plan showing the location of the proposed extension in relation to nearby buildings.

Figure 2 is an elevation looking towards the rear of the terrace of houses from 30 to 34 Rosslyn Hill and Figure 3 is an elevation of the side of the building at 1b Downshire Hill that faces towards the development.

Windows in the nearby buildings are numbered for reference in this report.

None of the windows in 30 Rosslyn Hill will be affected in any way.

The windows at the rear of 32 and 34 numbered W1 to W5 face within 90 degrees of north and do not need to be analysed for sunlight.

There is a window at the ground floor of 32 Rosslyn Hill numbered W1 in Figure 2 that is in the rear part of the (Carluccio's) restaurant at ground floor. This window has been blanked off and is no longer in use. It is however analysed.

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W2 in figure 2 is a window in the same flat as the proposed development, There is no requirement within the BRE Guide to analyse daylight as if it were a separate ownership but analysis of the average daylight factor within the room is analysed in this report.

Windows at the rear of 34 Rosslyn Hill are numbered W3, W4 and W5. W3 is closest to the proposed development but is shielded from it by the existing 600 mm square kitchen extract duct and will therefore incur no loss of daylight as a result of he proposed extension.

W4 is affected to some extent and is analysed for daylight in this report.

W5 is a door leading to the equipment on the roof of number 34. It is affected to a less extent than W4 and is therefore not analysed in this report.

W6 is a small window in the flank wall of 34. It is to a store room or toilet in Carluccio's restaurant for which the BRE Guide recommends no analysis is necessary.

Windows in the building at 1b Downshire Hill. Keats Group Practice are numbered 7 to 17 in Figure 4 of this report. Window W11 is affected by the proposed development to a greater extent than any other window and is therefore analysed in this report.

5 Daylight Analysis of Windows W1, W4 and W11

In the case of W4 the angle subtended above the horizon by the proposed extension is less than 25 degrees. There will therefore be no significant reduction in daylight. No further analysis of daylight is required by the BRE Guide for this window.

Figures 5 and 6 are Waldram skylight diagrams for the windows W1 and W11 showing sky lines before and after development.

The angles plotted on the diagram are derived from the salient points on the roofs of the proposed building as shown in Figure 1.

The proportion of visible sky is calculated from the area of the chart in accordance with the methods described in the Guide.

Note that the maximum available sky is 40% for unobstructed vertical window.

The results are given in the following table:

	VSC Before	VSC as Proposed	BRE recommended Minimum VSC	Alternative Criterion where VSC < 27%		Pass or fail
				% Before to Proposed	BRE recommended Min Ratio	
W1	11.6%	10.6%	27%	91%	80%	Pass
W11	18.4%	18.25%	27%	99 %	80%	Pass

The Guide recommends (Paragraph 2.2.7) that the daylight and sunlight is satisfactory provided the Vertical Sky Component is greater than 27%. A lower Vertical Sky Component is acceptable provided it is not less than 80% of the former value.

The 80% criterion of the Guide will therefore be met for windows W1and W11 after the proposed building is constructed. Window W4 meets the alternative requirement for 27% .

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6. Sunlight to Windows in 1b Downshire Hill; Keats Group Practice

Figure 6 is sunlight availability indicators from Appendix A of the BRE Guide for window W11. The shadow lines are derived by superimposing the distance to height ratios of the surrounding buildings by the methods described in the Guide

The amount of sunlight available at the window is estimated by counting the number of dots between the window and the shadow lines.

Each dot represents a sunlight availability of 1% of the Annual Unobstructed Sunlight Availability which is 1466 hours in the London area.

For W11 as existing for the whole year there are 41 dots. This equates to 41% of available sunlight For the winter period only dots that lie south of the equinox line are counted, in this case there are 31 dots equating to 31% of maximum available.

The proposed extension will reduce the available sunlight be 1% in both summer and winter.

Paragraph 3.2.5 of the Guide recommends that windows buildings should receive at least 25% of the 1466 hours for whole year and 5% in winter months.

These results are summarised in the following table:

	Sunlight whole year APSH	Sunlight Winter APSH	BRE Recommended min Whole year	BRE Recommended min Winter	Pass or Fail
W11 Existing	41 %	31%	25%	5%	Pass
W11 Proposed	40 %	30%	25%	5%	Pass

Thus the criteria for sunlight to windows of neighbouring properties are met by a substantial margin. Sunlight to other windows in the building at 1b Downshire Hill will be affected to a lesser degree and will also be compliant with the recommendations of the BRE Guide.

7 Daylight to Lower Floor of Same Flat W2

The requirements of the BRE Guide are not normally applied to windows within the same occupancy. In this case the local authority may wish to be assured that adequate daylight is retained in the room behind W2 (Figure 2)

The commonly used factor for estimating adequacy of daylight within a room is the Average Daylight Factor.

For this report the methods described in Appendix C of the BRE Guide are used.

The Average Daylight Factor is a function of the vertical sky component which is established using the appropriate Waldram diagram as Appendix B of the Guide.
The Average Daylight Factor $Df=Aw\ T\ \Theta / A(1-R^2)$

Where,

Df = Daylight factor
Aw = window area
A = Sum of areas of walls, floors and ceilings
R = Average reflectance of walls floors and ceilings taken as 0.5.
Θ = Angle from Table C1 of the 2011 Guide based upon the Vertical Sky Component.
T = Transmittance of the glass taken as 0.8.

The extension reduces the VSC for W2 from 35% to 25.5% . By table C1 of the Guide Θ in the equation is reduced from 80 to 65 .

The ADF in room behind W2 is therefore reduced from 1.3 to 1.1, which is 85% of former value.

The BRE Guide recommends that daylight should not be reduced below 80%. This criterion is satisfied by this development,

8 Conclusion

This development has very little affect upon the daylight and sunlight to nearby buildings.

The only windows that might be affected to some extent are first floor windows in Carluccios at 34 Rosslyn Hill, a ground floor window, now boarded up in the building below and windows in the building some distance to the north east at 1b Downshire Hill.

The effect on sunlight and daylight to all these windows is small and well within the criteria recommended in the BRE Guide

The only window affected within the development flat is that of the kitchen below. The BRE Guide does not recommend rooms within the development site need be analysed but calculation of average daylight factor for that room shows it be in compliance with the Guide.

Terence A Rook Bsc C.Eng., MIMechE, FCIBSE 29th October 2015.

References:
Camden Local Development Framework. Camden Planning Guidance CPG 6.
Building Research Establishment publication 'Site layout and planning for daylight and sunlight, a guide to good practice' published in 2011.

Attachments:

Figure 1	Site plan
Figure 2	Rear Elevation
Figure 3	Section
Figure 4	View of building at 1b Downshire Hill
Figure 5	Waldram sky diagram W1
Figure 6	Waldram sky diagram W11
Figure 7	Sunlight availability diagram for W11.

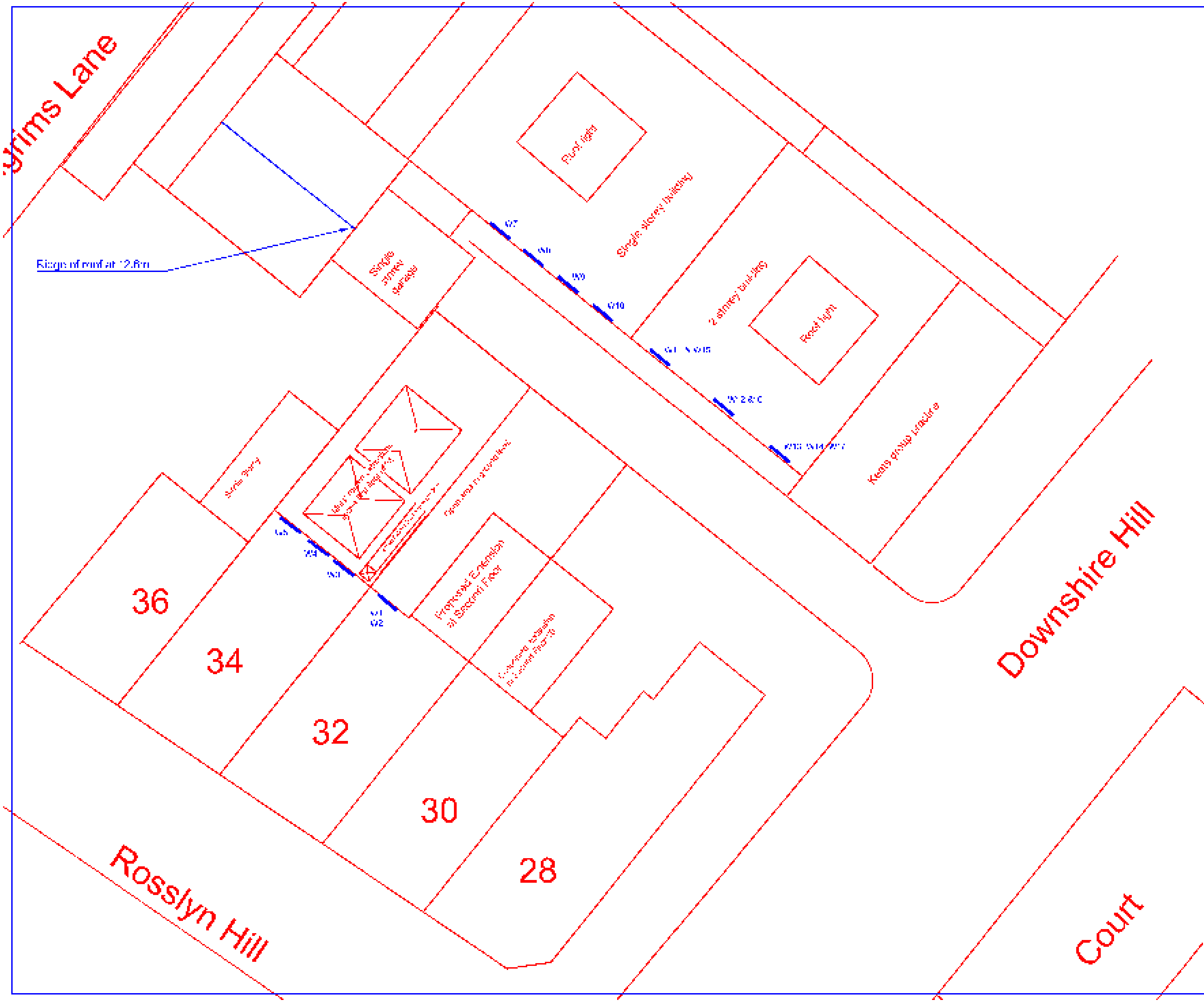


Figure 1 Site plan
Proposed with
Existing Marked at X

1:250 at A4

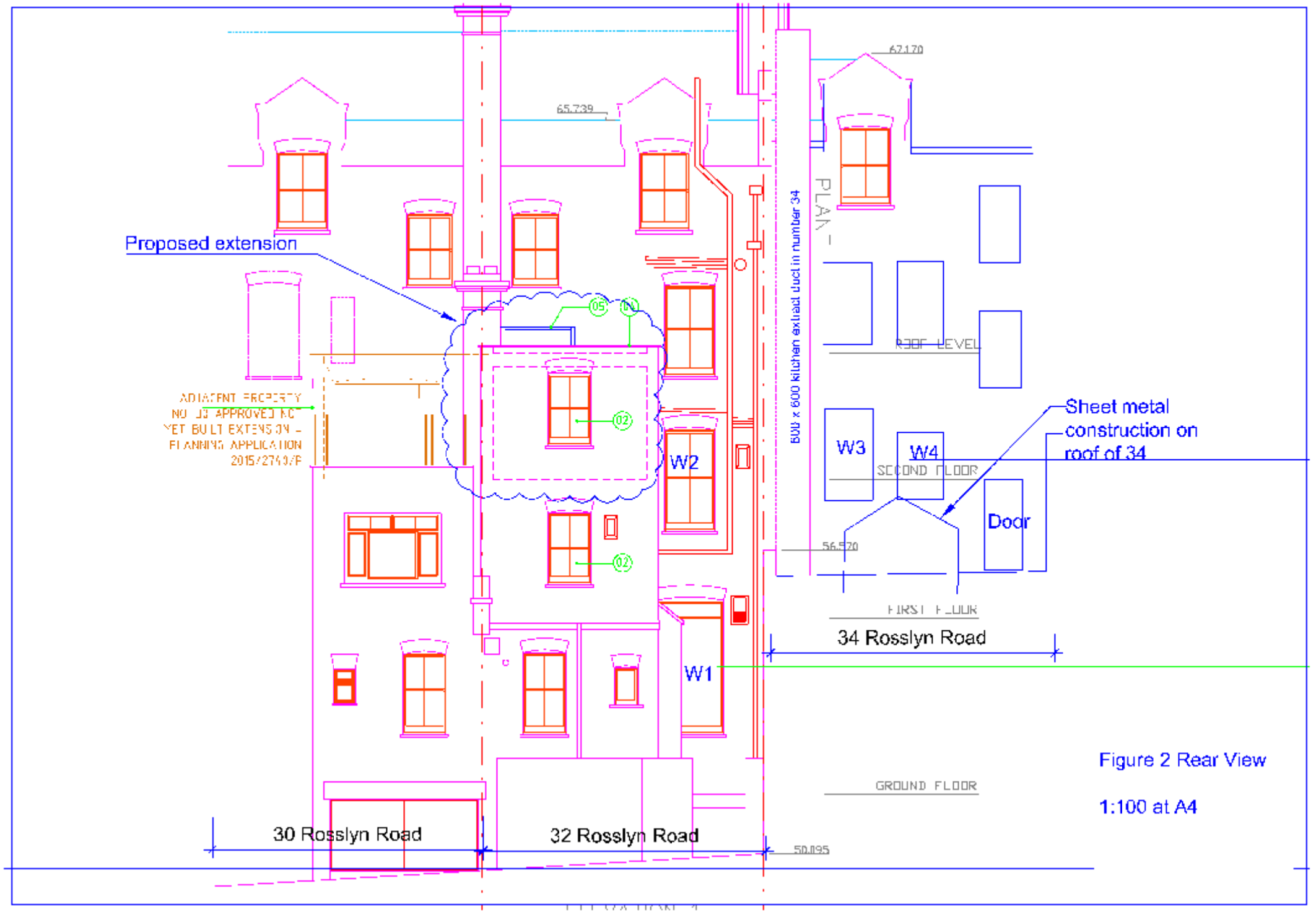
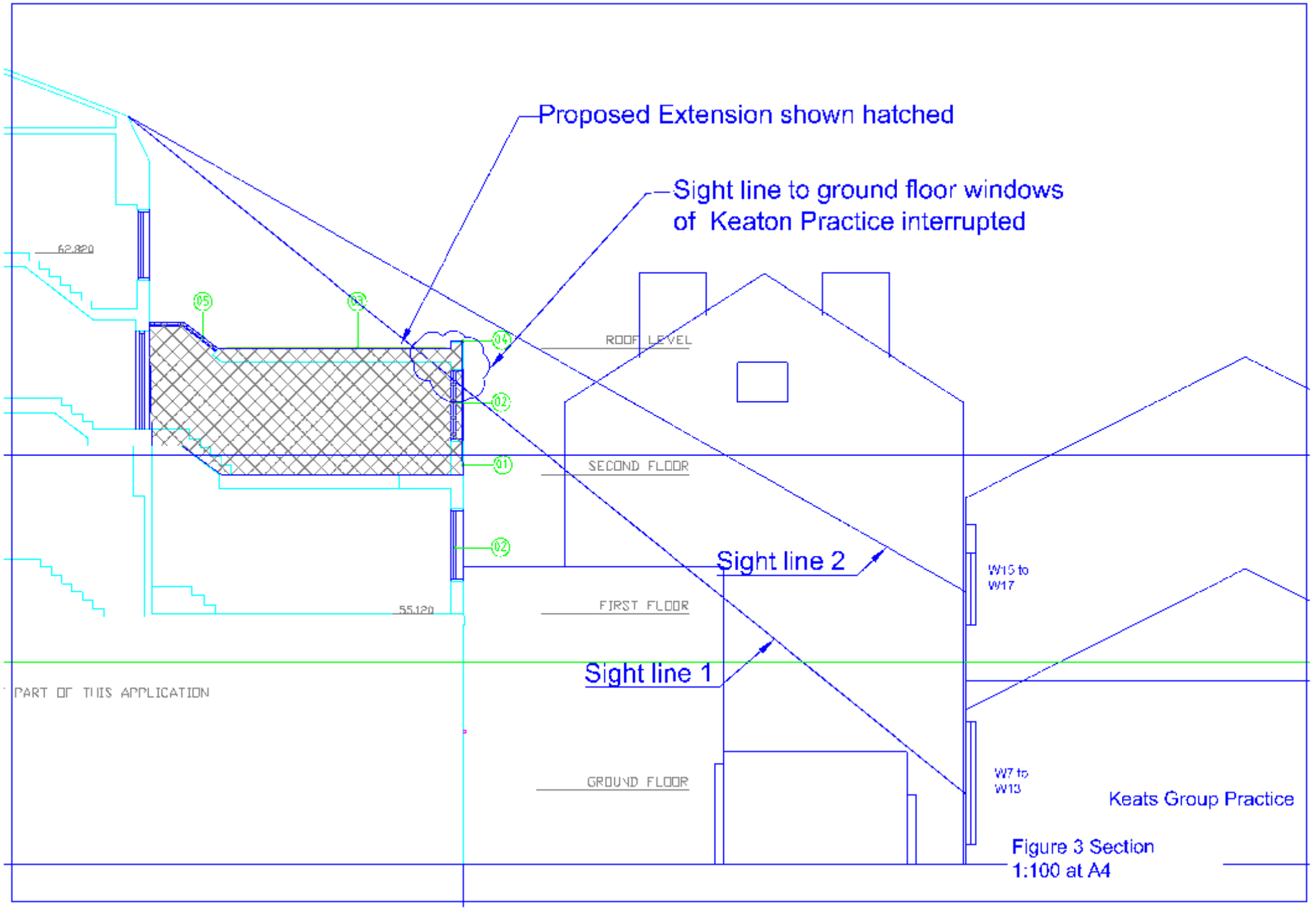
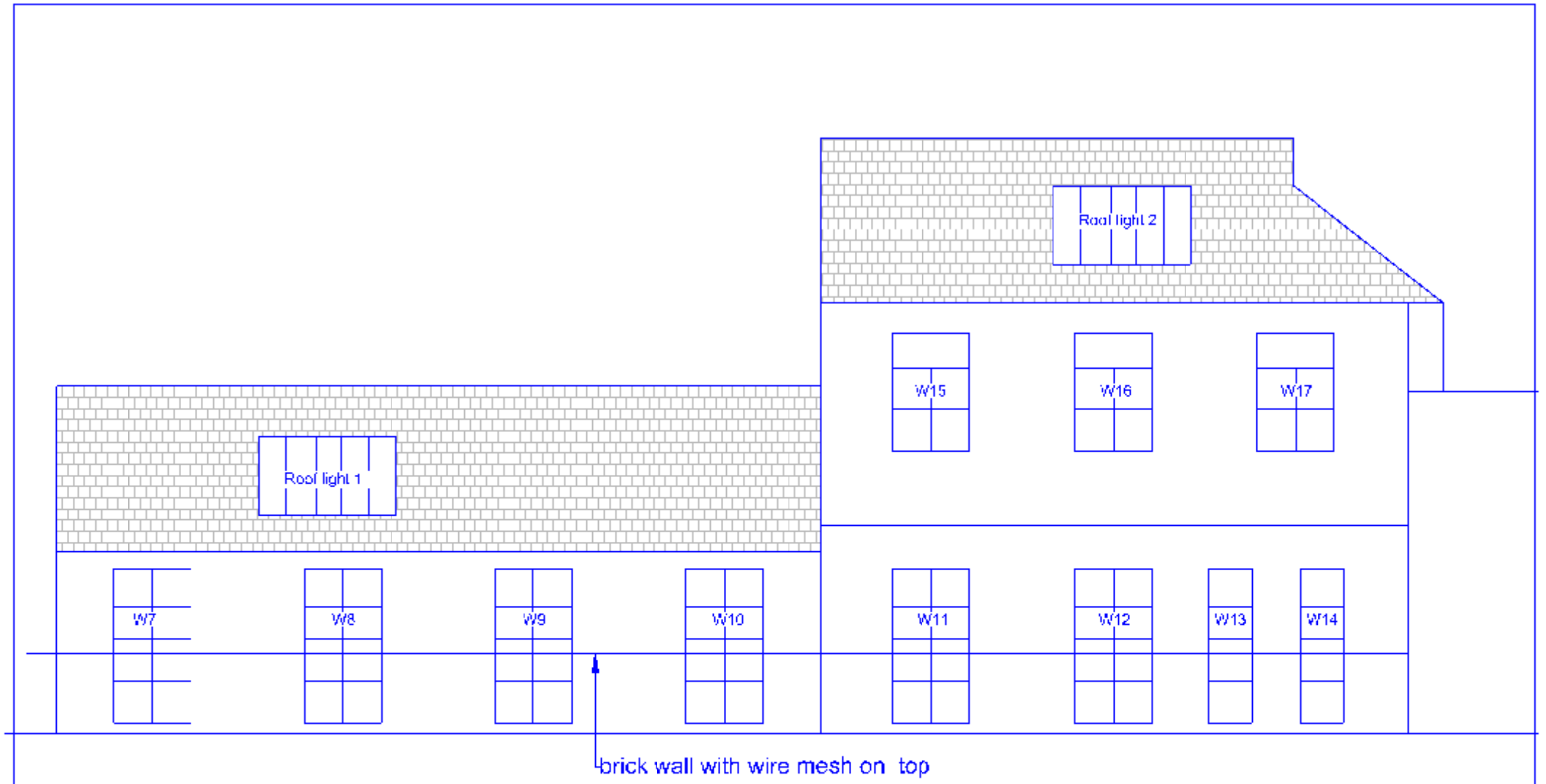


Figure 2 Rear View

1:100 at A4

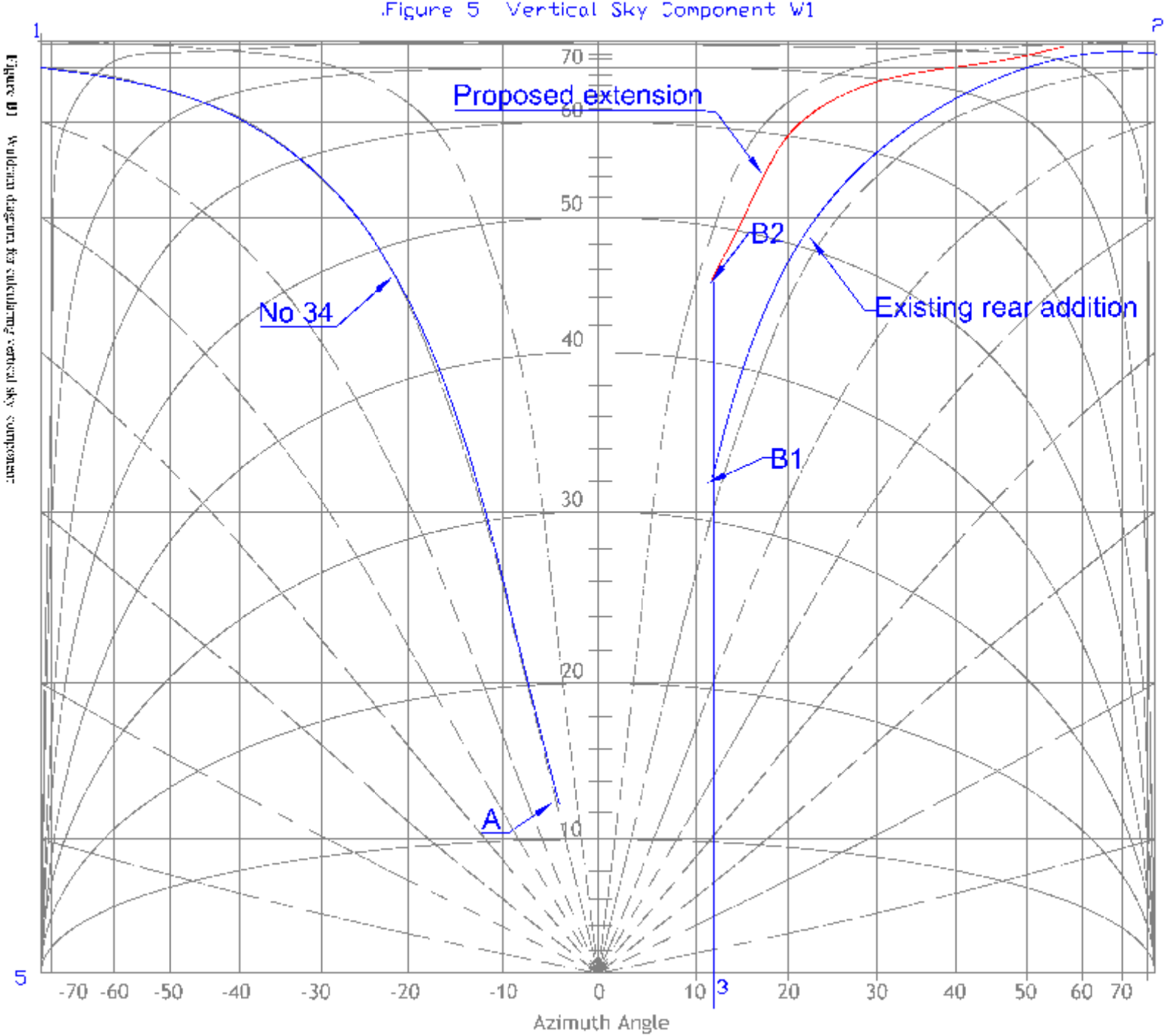

Proposed Extension shown hatched
Sight line to ground floor windows
of Keaton Practice interrupted
62.820
05
03
04
02
01
02
ROOF LEVEL
SECOND FLOOR
FIRST FLOOR
GROUND FLOOR
55.120
Sight line 2
Sight line 1
W15 to
W17
W7 to
W13
PART OF THIS APPLICATION
Keats Group Practice
Figure 3 Section
1:100 at A4



VIEW 3 TOWARDS SIDE OF KEATS GROUP PRACTICE

Figure 3 Section
1:100 at A4

Figure 5 Vertical Sky Component W1



Visible Sky as Existing

Area 1,2,B,3, A,1 =116 therefore vertical sky component=11.6%

Visible Sky as proposed

Area 1,2,B2,3,A,1 =106 therefore vertical sky component=10.6%

Figure 6 Vertical Sky Component W11

Visible Sky as existing
Area 1,2,3, Bldg line 4,1
=184 therefore vertical sky component=18.4%

Visible Sky as proposed

Area 1,2,3,B,4,1
-182.5 therefore vertical sky component-18.25%

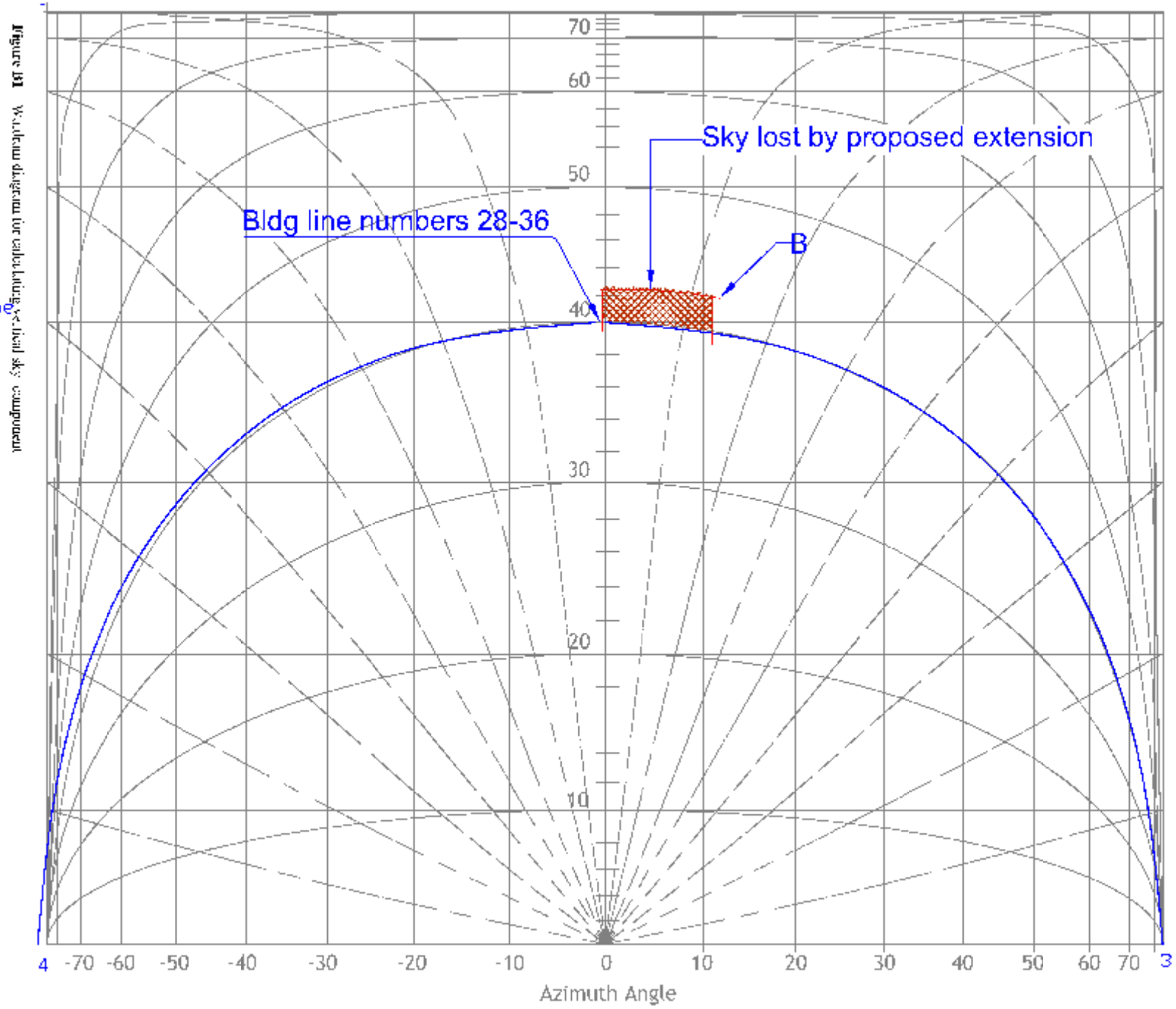


Figure 181 Waldram diagram for calculating vertical sky component

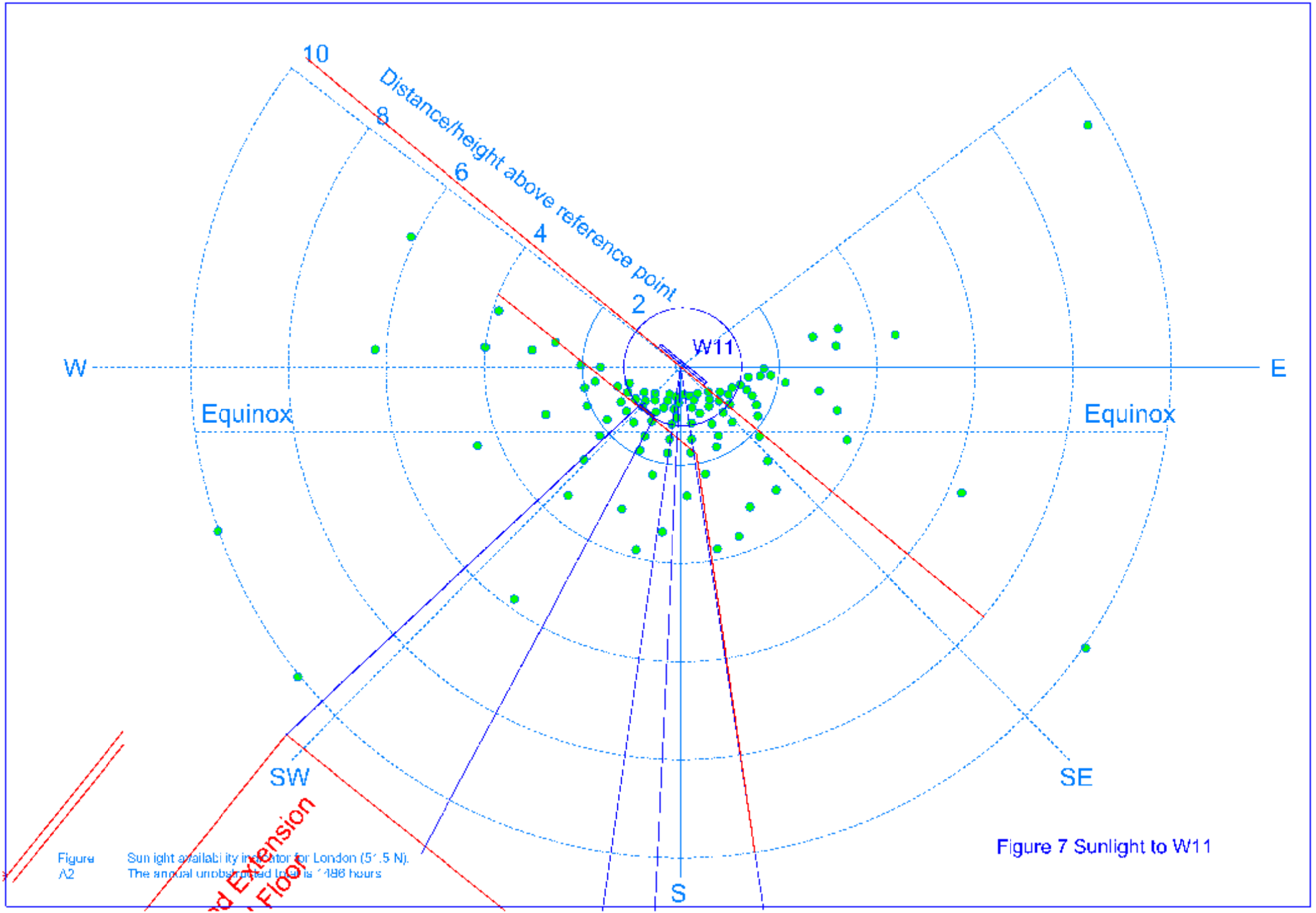


Figure 7 Sunlight to W11

Figure A2 Sunlight availability indicator for London (51.5 N). The annual unobstructed total is 1486 hours