158 REGENTS PARK ROAD

LONDON NW1 8XN

ANALYSIS

of

SITE LAYOUT

for

DAYLIGHT AND SUNLIGHT

For

AS STUDIOS LIMITED

ARCHITECTUAL & DESIGN SERVICES

2 MAGDENLEN MEWS

LONDON NW3 5HB

NOVEMBER 2017.

by

Terence A. Rook. BSc. CEng., MIMechE, FCIBSE

STINTON JONES CONSULTING ENGINEERS LLP
TOR HOUSE, WEST LANE
EAST GRINSTEAD
WEST SUSSEX RH19 4 HH

ANALYSIS OF SITE LAYOUT WITH REGARD TO DAYLIGHT AND SUNLIGHT

1. Introduction

This report relates to extension of the accommodation occupying first and second floors of the building at 158 Regents Park Road.

This report is prepared to accord with the planning requirements of London Borough of Camden The Mayor's Plan for London, current practice, BS8206 Part 2 (2008) and the BRE Guide Site 'Layout Planning for Daylight and Sunlight: a guide to good practice'

2. Description of the Site.

The development is to the first and second floors of the house at 158 Regents Park Road. The front of the house faces north west towards Regents Park Road.

The proposed extensions are at the rear above the existing ground floor rear addition.

To the north east of the extension is 160 Regents Park Road for which daylight to some windows will be impaired to some extent.

To the south west is 156 Regents Park Road for which daylight to some windows will also be impaired to some extent.

Facing the rear of the development to the south east are the roofs of 7 and 8 Eglon Mews. Daylight and sunlight to the windows in these roofs is not affected but is illustrated further in this report. Other buildings to the south east in Eglon Mews will not be affected in any way.

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

2158(PLA) 001	Location Plan
2158(PLA) 002	Block Plan
2158(PLA) 100	Existing First Floor Plans
2158(PLA) 101	Existing Second Floor Plans
2158(PLA) 102	Existing Third Floor Plans
2158(PLA) 200	Existing Rear Elevation
2158(PLA) 300	Existing Section AA
2158(PLA) 301	Existing Section BB
2158(PLA) 111	Proposed Second Floor Plans
2158(PLA) 112	Proposed Third Floor Plans
2158(PLA) 210	Proposed Rear Elevation 1
2158(PLA) 310	Proposed Section AA
2158(PLA) 311	Proposed Section BB

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 a plan at second floor showing the proposed extension in relation to adjacent houses.

Figure 3 is a rear elevation including the buildings at numbers 156 and 60

Windows on the upper floors of 156, 158 and 160 are referenced on the Figure.

The buildings on both sides of 158 at 156 and 160 have extensions at first floor similar to the extension proposed for 158. The rear facing windows of 156 and 160 at first floor and below are therefore not affected and not reference in the rear elevation,

5 Analysis of Daylight of Windows Nearby

.

The windows at third floor in 156 to 160, designated W156/1 & 2, W158/1 & 2, W160/1 & 2 are higher than the proposed extension to 158 and will therefore not affected in any way.

Figure 4 is a section through the proposed extension. Sight line from the roof windows in 7 Elgon Mews is shown. The sight line shows that the proposed extension will not extend beyond the shadows cast by the existing buildings. There will therefore be no reduction in daylight or sunlight to the windows in any way.

Windows W156/3 and W160/3 are to staircases and need not be analysed to show compliance with the BRE Guide.

Figures 5 is a Waldram skylight diagrams for the windows 156/4 showing sky lines after development.

The angles plotted on the diagram are derived from the salient points on the roofs of the proposed extension and other nearby buildings.

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

A similar method is used for W160/4.

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

The results are given in the following table:

House	Window ref	VSC as Proposed	BRE Criterion	Pass or fail
156	W156/4	31.8%	27%	Pass
160	W160/4	34.0%	27%	Pass

The Guide recommends (Paragraph 2.2.7) that the daylight and sunlight is satisfactory provided the Vertical Sky Component is greater than 27%.

This criterion of the Guide will therefore be met for all windows after the proposed extension is constructed.

6 Analysis of Sunlight to Windows Nearby

Figure 6 is sunlight availability indicators from Appendix A of the BRE Guide for windows 160/4. 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.

The BRE Guide recommends that a window should have 25% of the available possible sunlight hours (APSH) for the whole year and 5% for winter.

The results are summarised in table below.

House	Window ref	Whole Year % APSH		Winter Period % APSH		Pass or fail
		Proposed	BRE Guide Recommended minimum	Proposed	BRE Guide Recommended minimum	
156	W156/4	64%	25%	40%	5%	Pass
160	W160/4	65%	25%	40%	5%	Pass

All windows have sunlight availability better than the BRE recommended target.

7. Daylight in Rooms of the Development.

The proposed extension of the second floor will have some affect on the daylight to the rear bedroom on the second floor and to the kitchen/ living area on the first floor.

Daylight to the existing dining area on first floor will also be reduced by a small amount.

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

The Average Daylight Factor $ADF=Aw\ T\ \Theta / A(1-R^2)$
Where,

ADF = 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. Roof light have a value up to 180 degrees where sky is unobstructed
T = Transmittance of the glass taken as 0.68

The BRE Guide and BS 8206 recommend that average daylight factor exceeds the following values:

For kitchens 2%
For living rooms and dining rooms 1.5%
For bedrooms 1%
Average daylight factor is not applicable to bathrooms, dressing rooms and utility rooms.

The ADF for the three rooms are given in the table below:

Room ref	Aw m^2	A m^2	Θ	ADF	BS 8206 Criterion	Pass or fail
1st floor living /kitchen	3.76	136	85	2.1%	1.5%	Pass
1st floor dining	2.8	66	90	3.4%	1.5%	Pass
2nd floor bedroom	1.55	59	90	2.1%	1.0%	Pass

All the rooms will have satisfactory daylight factor.

6 Conclusion

The proposed extension will have some affect upon the daylight and sunlight to nearby buildings. The reduction will be small and will leave all windows nearby with daylight better than the minimum recommended in the BRE Guide and Camden planning guidance.

There are three rooms within the development property at 158 that will be affected. Analyses by the methods recommended in the BRE Guide show that these rooms will continue to have daylight better than the minimum recommended in Camden planning guidance and the BRE Guide.

Terence A Rook Bsc C.Eng., MIMechE, FCIBSE November 2017.

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 Second floor plans
Figure 3 Rear Elevation
Figure 4 Section
Figure 5 Waldram sky diagram
Figure 6 Sun availability diagram

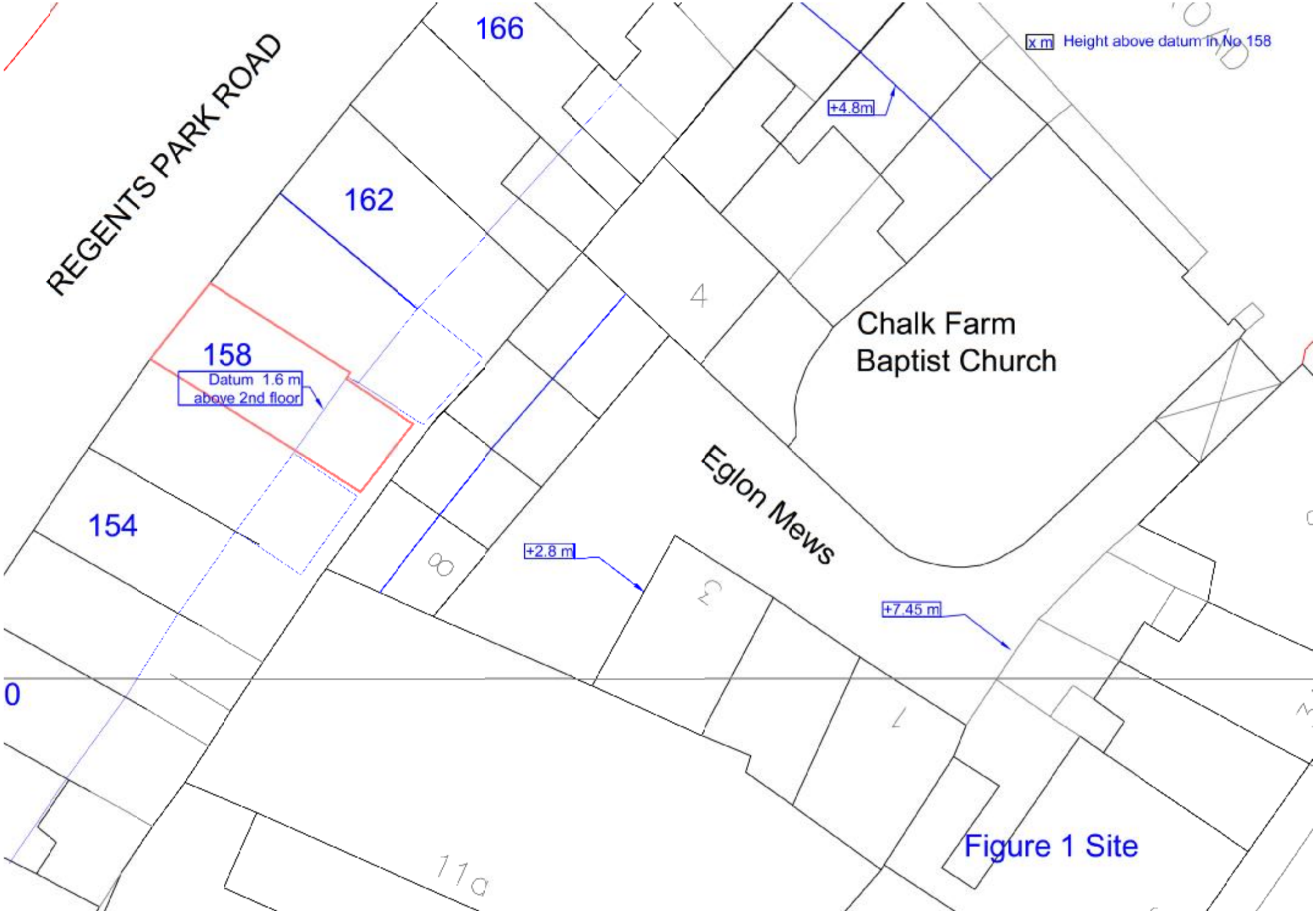

Figure 1 Site

Figure 2 Plan at Second Floors

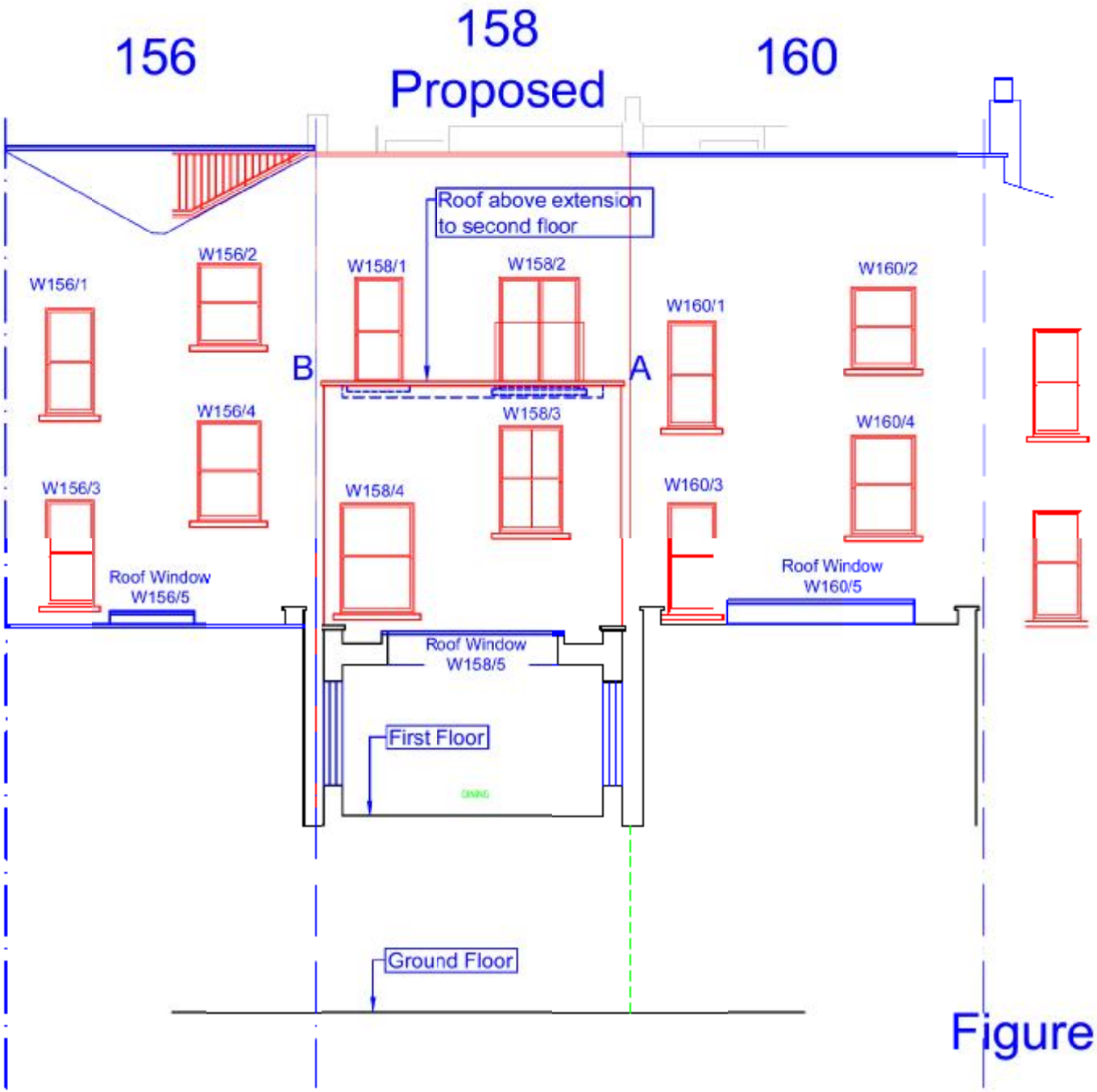

Figure 3 Rear Elevation

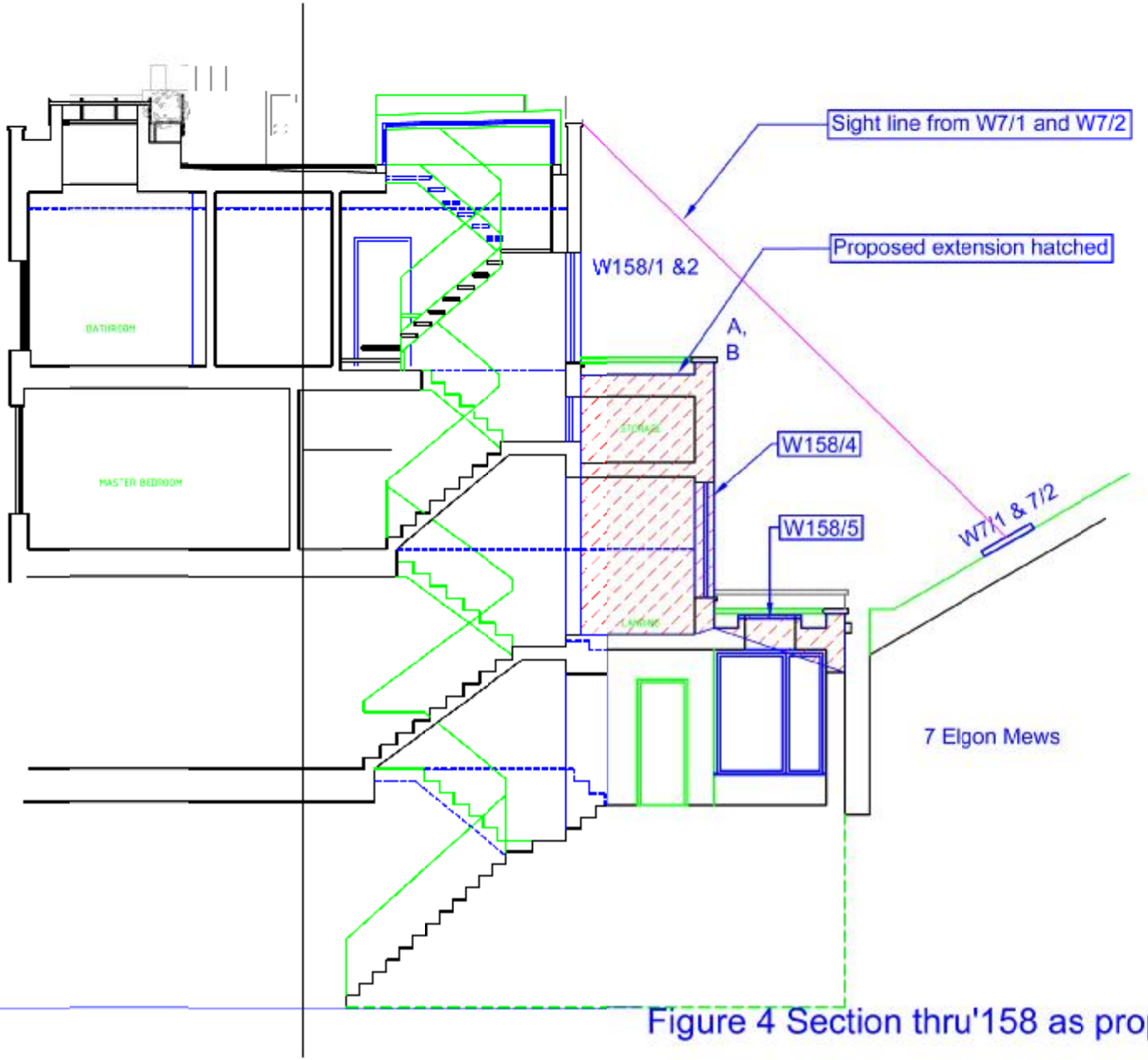

Figure 4 Section thru'158 as proposed

.Figure 5 Vertical Sky Component W 156/4

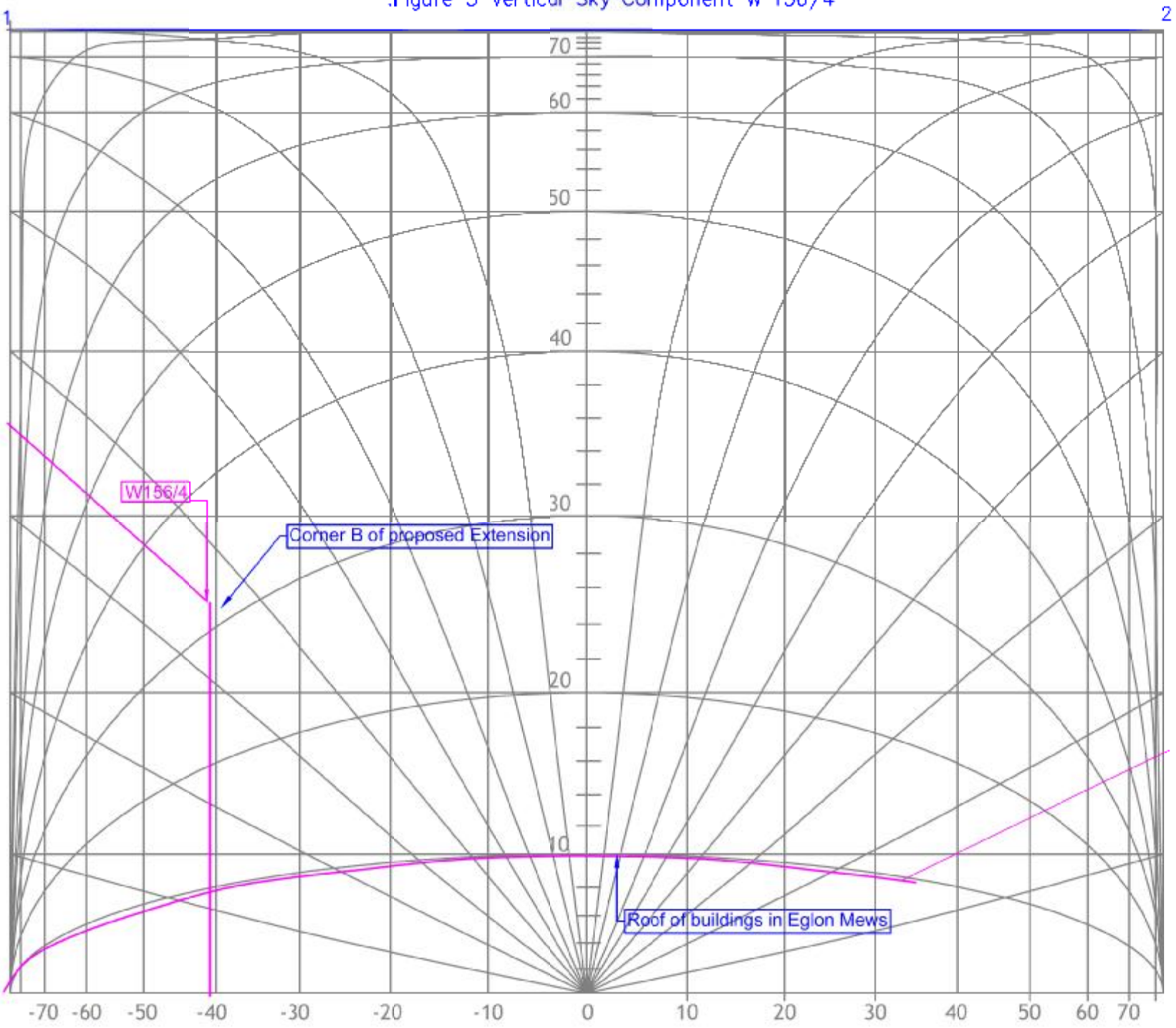

Figure B1 Waldram diagram for calculating vertical sky component

Visible Sky as proposed

31.8%

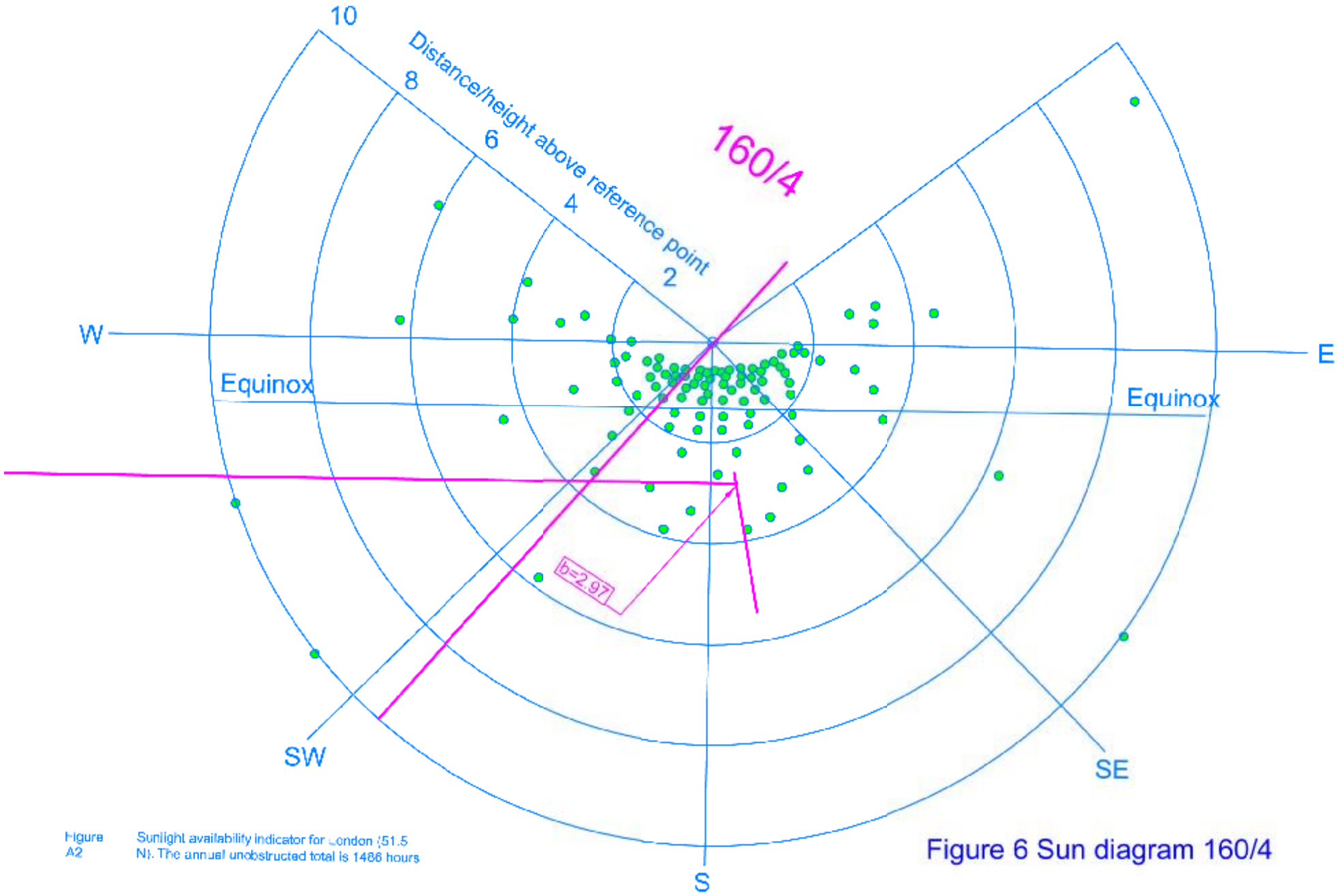

Figure A2 Sunlight availability indicator for London (51.5 N). The annual unobstructed total is 1486 hours

Figure 6 Sun diagram 160/4