45 New Compton Street
London
WC2H 8DF

Sunlight & Daylight Assessment

S12-061
May 2012

Prepared by :

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On behalf of :

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1.0 Introduction

1.1 Commissioning

RM Partnership have instructed Southwest Environmental Limited to prepare a study to assess the likely impact of the development on the natural lighting experienced within the new proposed accommodation, and existing neighbouring properties. This assessment relates to the 45 New Compton Street Site, London. A site location plan is situated in **Appendix 1**, it identifies the buildings that are discussed in this assessment.

1.2 Terms of Reference

The study has been carried out in accordance with the recommendations of the Building Research Establishment Report "Site Layout Planning for Daylight & Sunlight 1991".

1.3 Report Layout

The result tables and drawings, which are attached at the rear, illustrate the results for the daylight and sunlight assessments.

2.0 Policy Guidelines

2.1 BRE Guide

This study has been carried out in accordance with the recommendations of the Building Research Establishment Report "Site Layout Planning for Daylight & Sunlight 1991". This is the standard adopted by a wide range of District and Borough Councils across the UK.

2.2 Description of Guide

The Guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the Report should not be seen as a part of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design. In certain circumstances, the developer or planning authority may wish to use alternative target values.

Whilst technical analysis can be carried out in accordance with numerical guidelines and reported factually by comparison with those guidelines, the final assessment as to whether affected dwellings are left with acceptable amounts of daylight and sunlight in an inner city contest where the findings are to be interpreted in a flexible manner is a matter of subjective opinion.

3.0 Methodology

The Daylight & Sunlight assessments have been undertaken by reference to the Building Research Establishment (BRE) Guidelines "Site Layout Planning for Daylight & Sunlight. A Guide to Good Practice".

The BRE Report advises that daylight and sunlight levels should be assessed for the main habitable rooms of neighbouring residential properties. Habitable rooms in residential properties are defined as kitchens, living rooms and dining rooms. Bedrooms are less important as they are mainly occupied at night time. The Report also makes reference to other property types, which may be regarded as "sensitive receptors" such as schools, hospitals, hotels and hostels, small workshops and most offices.

3.1 Assessing Daylight

The BRE Guide states that:

"If, for any part of the new development, the angle from the centre of the lowest affected window to the head of the new development is more than 25°, then a more detailed check is needed to find the loss of skylight to the existing buildings."

The BRE Guidelines propose several methods for calculating daylight. The 2 main methods predominantly used are those involving the measurement of the total amount of skylight available in this instance the Vertical sky component (VSC) method was used.

3.2 Significant Criteria

In describing the significance criteria as set out below, it should be noted that they have been developed to protect residential properties, which are the most sensitive receptors.

The Guidance given by BRE has been used as a basis for the criteria to assess the Development's potential impacts. The BRE guidance specifies:

"In special circumstances the developer or planning authority may wish to use different target values. For example, in an historic city centre a higher degree of obstruction may be unavoidable"

The report adds:

"Different criteria may be used, based on the requirements for daylighting in an area viewed against other site layout constraints."

In consideration of the above, it is important to note that the Site is located in an urban centre that, in parts, currently experiences daylight levels below the BRE recommendations. This is discussed within the 'Baseline Conditions' section of this report. Thus, in these instances the BRE guidance states that the:

"guidelines should be applied sensibly and flexibly".

Under these circumstances, the less stringent, higher BRE target percentage loss values and significance criteria may be justifiable.

3.2.1 Daylight and Sunlight

The BRE Guidance is summarised in the below table and this has been used as the basis for the criteria used in the assessment of daylight and sunlight impacts.

Test:	British Research Establishment (BRE) Criteria:
Daylight	A window may be adversely affected if the vertical sky component **(VSC)** measured at the centre of the window is less than 27% and less than 0.8 times its former value. A room may be adversely affected if the average daylight factor **(ADF)** is less than 1% for a bedroom, 1.5% for a living room or 2% for a kitchen. For offices a minimum figure of 2% is required.
Sunlight	A window may be adversely affected if a point at the centre of the window receives in the year less than 25% of the annual probable sunlight hours (APSH) including at least 5% of the annual probable sunlight hours during the winter months (21 September to 21 March) and less than 0.8 times its former sunlight hours during either period.

The BRE guidance has been used to generate significance criteria that have been used to assess the impact of the development.

3.2.1.1 VSC Criteria

For VSC, they are:

- Windows experiencing less than 20% reduction represent negligible to minor beneficial impacts;
- Windows experiencing between 20 and 29.9% reduction represent minor adverse impacts;
- Windows experiencing between 30 and 39.9% reduction represent moderate adverse impacts; and
- Windows experiencing greater than 40% reduction represents substantial adverse impacts.

4.0 Results

Using the 25 degree rule, cross section were made of proposed elevations, these are displayed in Appendix 2.

4.1 Proposed Development

25° projections from reference points on the prosed development show, no obstructions to sky lighting. The elevated position of the prosed dwelling is likely to receive excellent natural lighting, particularly when bearing in mind its urban setting.

4.2 Existing Neighbours

In areas where daylight / sunlight characteristics were likely to be affected, further analysis was used to quantify impact. Three representative reference points were used.

a) Endeavour House – Office Building
b) Rear or 63 St Giles High Street – Residential Building

As per cross sections in **Appendix 2** it can be seen that the lower floors of The Rear of 63 St Giles High Street, and to a lesser extent Endeavour House have established negative natural light impacts from surrounding buildings.

Reference points were adjusted to represent glazed areas which would be in the zone effected by the proposed development. Elevations of reference points can be found in **Appendix 2.**

There are other surrounding buildings that were checked for impact using cross sections, but were found to be clear of the 25° line, or in some cases the "instep" of the proposed fottprint from the existing building edge negates impact.

4.2.1 Prior to Construction

4.2.1.1 Daylight VSC

Vertical Sky Component Effect on Neighbouring Building			
Ref Point	Points obstructed	Points Unobstructed	VSC (%)
A	12	68	34
B	25	55	27.5

4.2.1.2 Sunlight

Sunlight Availability Effect on Neighbouring Building			
Ref Point	Points Obstructed	Points Unobstructed	% Annual Probable Available Sunlight
A	5	95	95
B	24	76	76

4.2.2 Post Construction

4.2.2.1 Daylight VSC

Vertical Sky Component Effect on Neighbouring Building			
Ref Point	Point obstructed	Points Unobstructed	VSC (%)
A	23	57	28.5
B	36	44	22

4.2.2.2 Sunlight

Sunlight Availability Effect on Neighbouring Building			
Ref Point	Points Obstructed	Points Unobstructed	% Annual Probable Available Sunlight
A	6	94	94
B	31	69	69

4.3 Effects

Prior vs Post

	VSC Prior	VSC Post	VSC Change	Sunlight Prior	Sunlight Post	Sunlight Change
A - Endeavour	34	28.5	**0.84**	95	94	**0.99**
B - 63 High Street	27.5	22	**0.80**	76	69	**0.91**

5.0 Conclusions

Natural Lighting meets or exceeds the BRE guide of 80%, for post development levels. The new building will enjoy excellent natural lighting and the negative effects on surrounding neighbours are within accepted boundaries.

6.0 Certification

It should be noted that this assessment is based solely on the plans provided by the client..

This report is produced for the sole use of the Client, and no responsibility of any kind, whether for negligence or otherwise, can be accepted for any Third Party who may rely upon it.

The conclusions and recommendations given in this report are based on our understanding of the future plans for the site.

If, however, the site is developed in a different manner than described in CT Developments Drawings Displayed in Appedix1, then the site should be reassessed.

The scope of this Sunlight and Daylight Assessment was discussed and agreed with the Client. No responsibility is accepted for conditions not encountered, which are outside of the agreed scope of work.

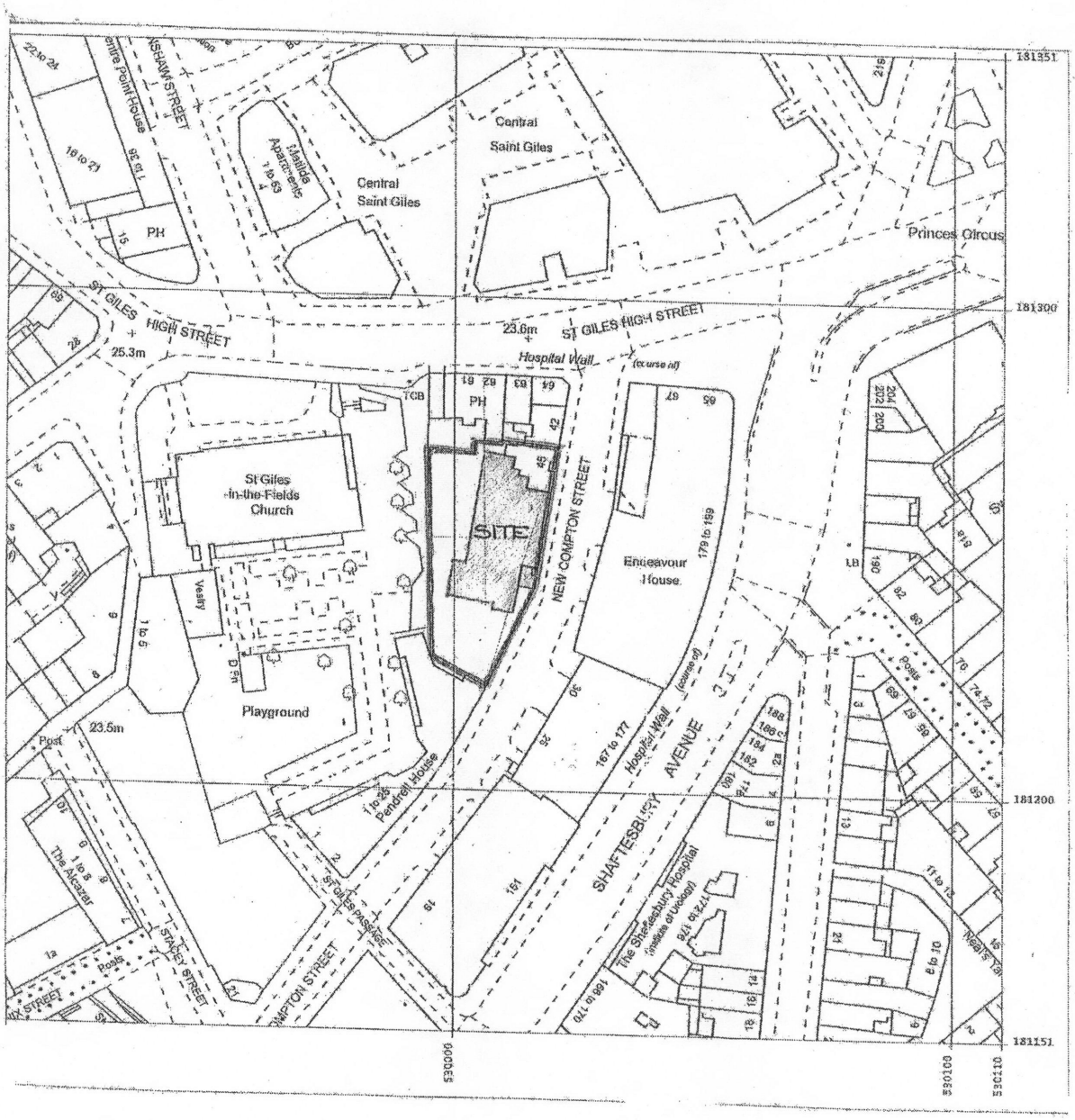
This report may suggest an opinion. However, this is for guidance only and no liability can be accepted for its accuracy.

Will Thorpe BSc PGC FGS MCIWEM
Director

Distribution (Electronic): Pharaoh Designs (Jason Asbury) x 1

APPENDIX 1

Site Location Plan
Buildings Plan



LOCATION PLAN

SCALE 1:1250

N

45 NEW COMPTON STREET WC2

LOCATION PLAN

DRAWN: DTW | APPROVED: RM

Chartered Architects
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tel: 01366 501369
fax: 01366 502162
PARTNERSHIP

DATE: MAY 11 | SCALE: 1:1250 | REVISION:

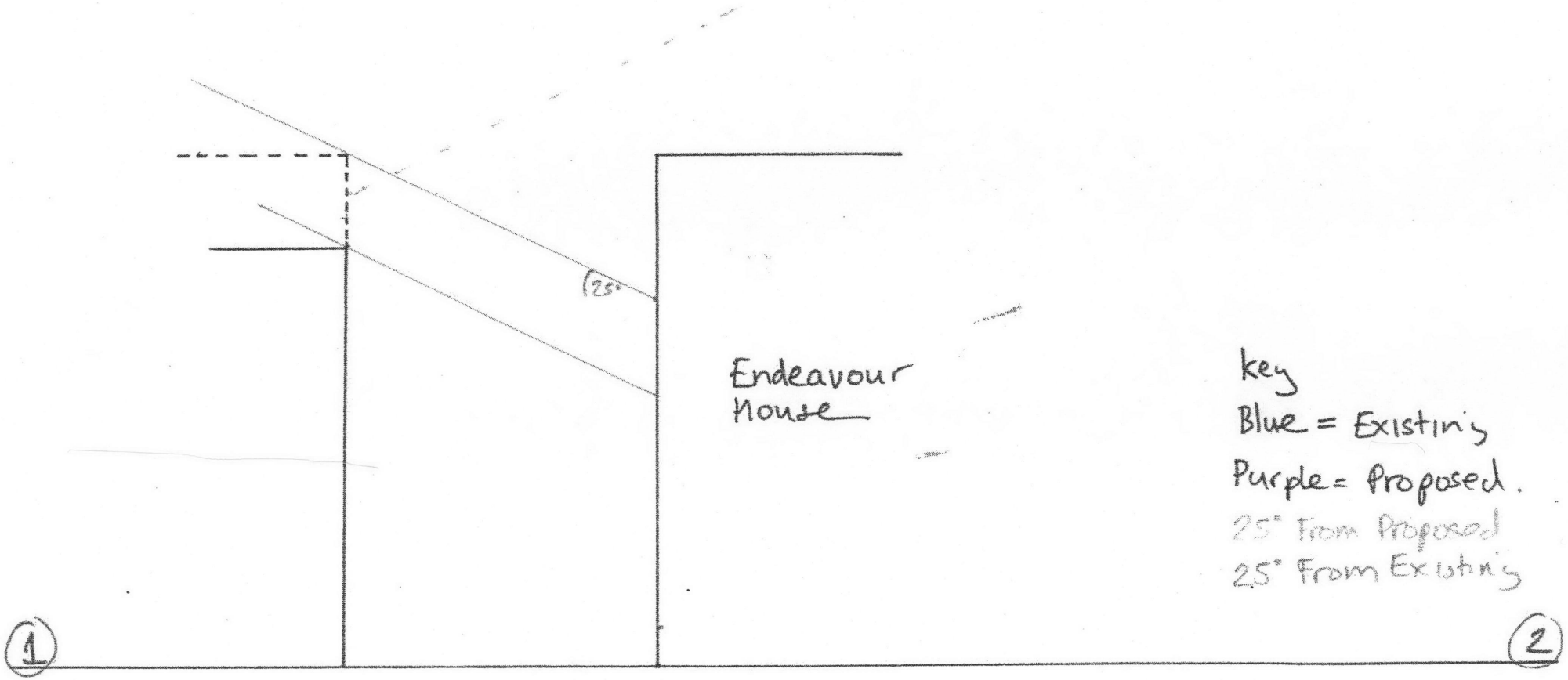
JOB NUMBER: 0814 | DRAWING NUMBER: 500

APPENDIX 2

Workings

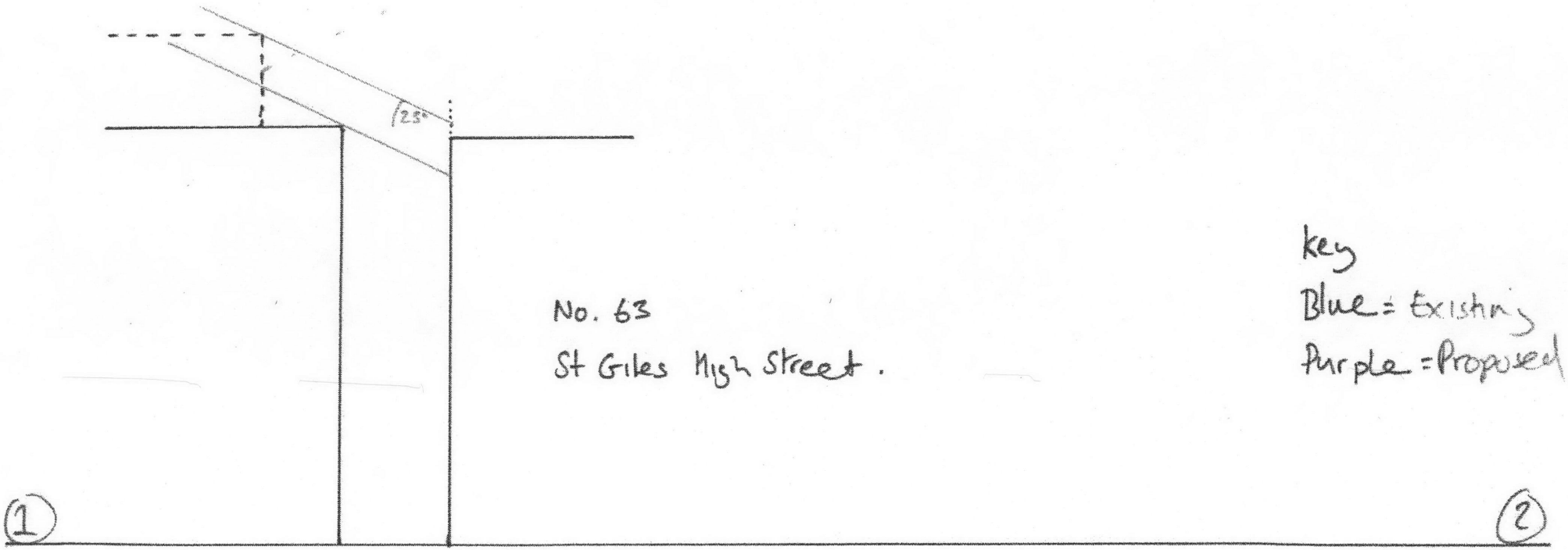
1:200 @ A4.

New Compton Street
Sunlight + Daylight. — Section (A)



1:200 @ A4.

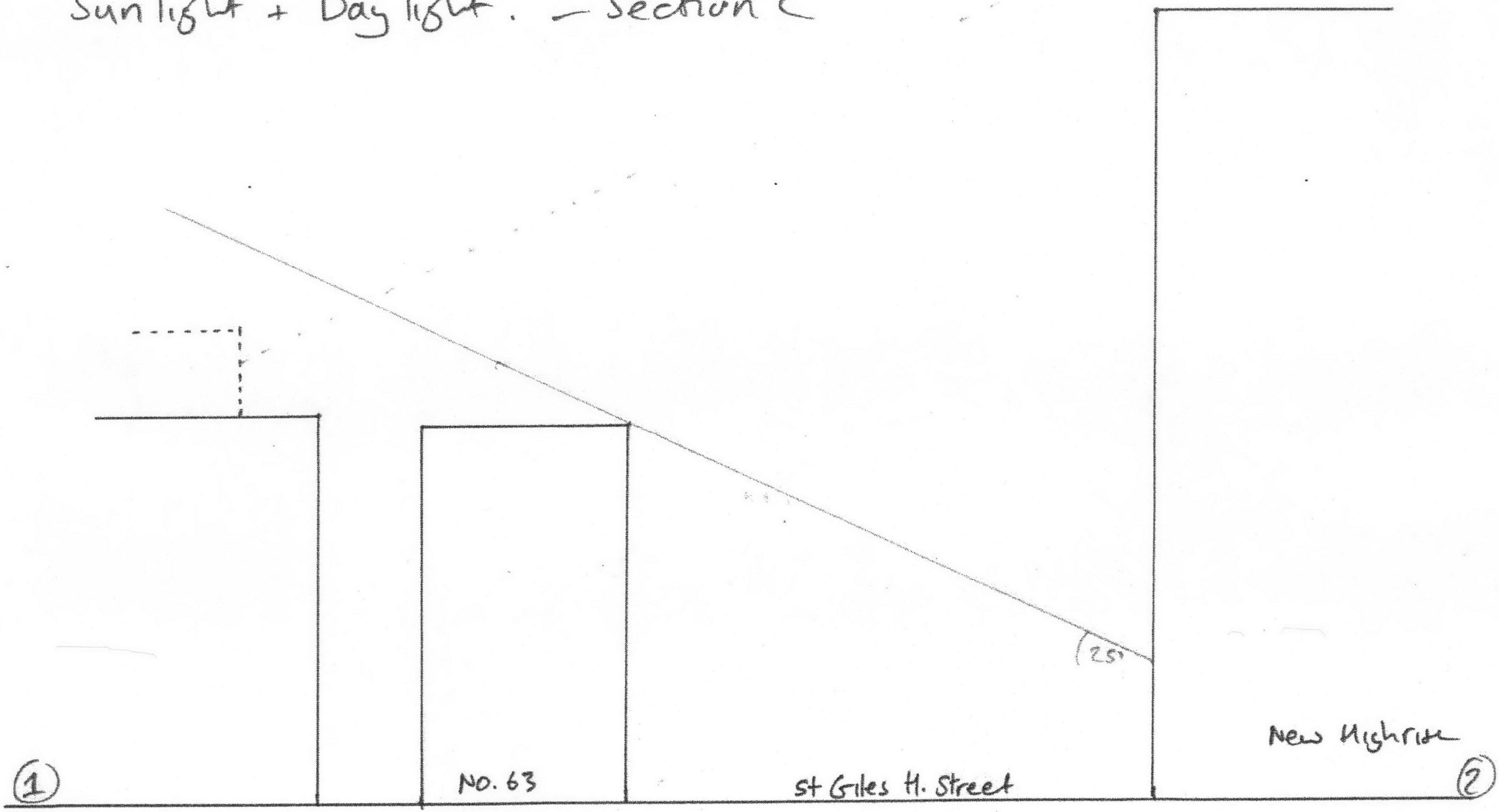
New Compton Street.
Sunlight + Daylight – Section (B)



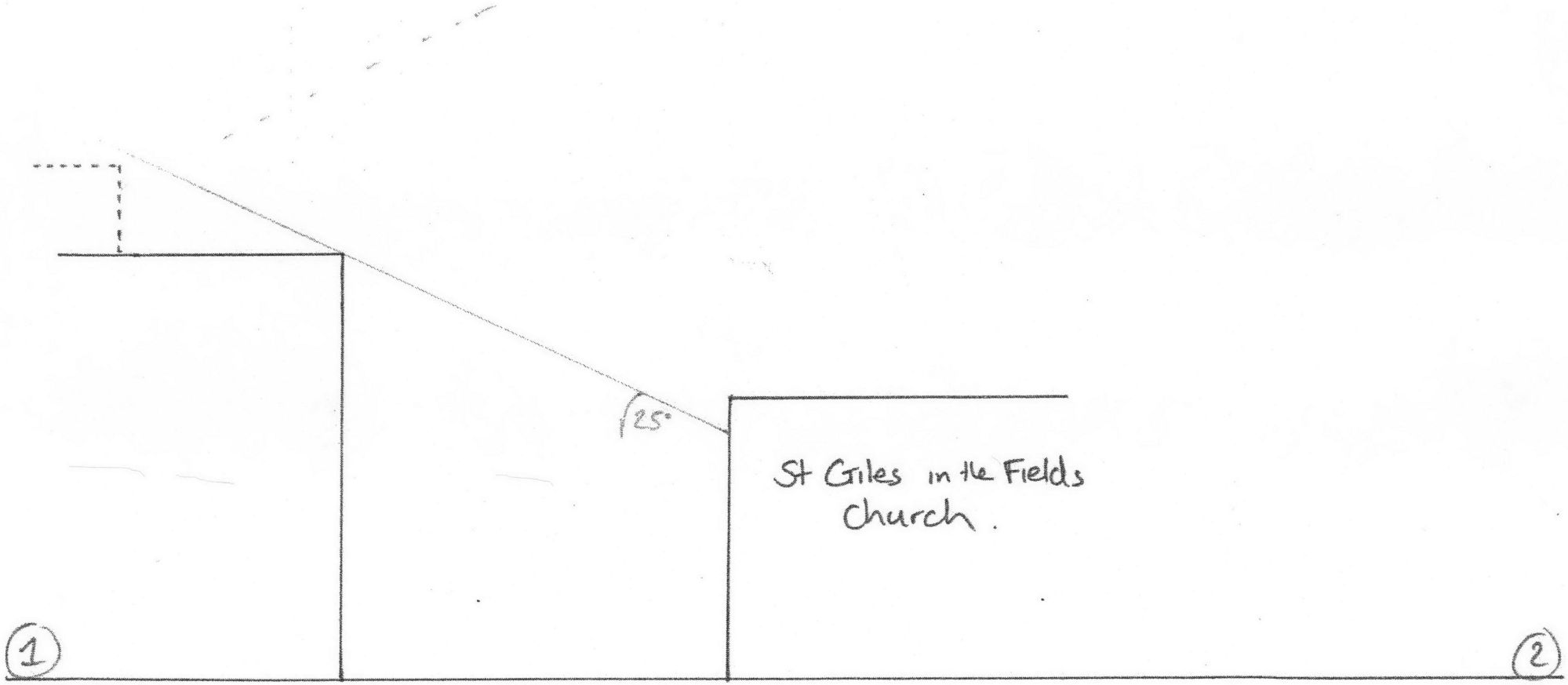
key
Blue = Existing
Purple = Proposed

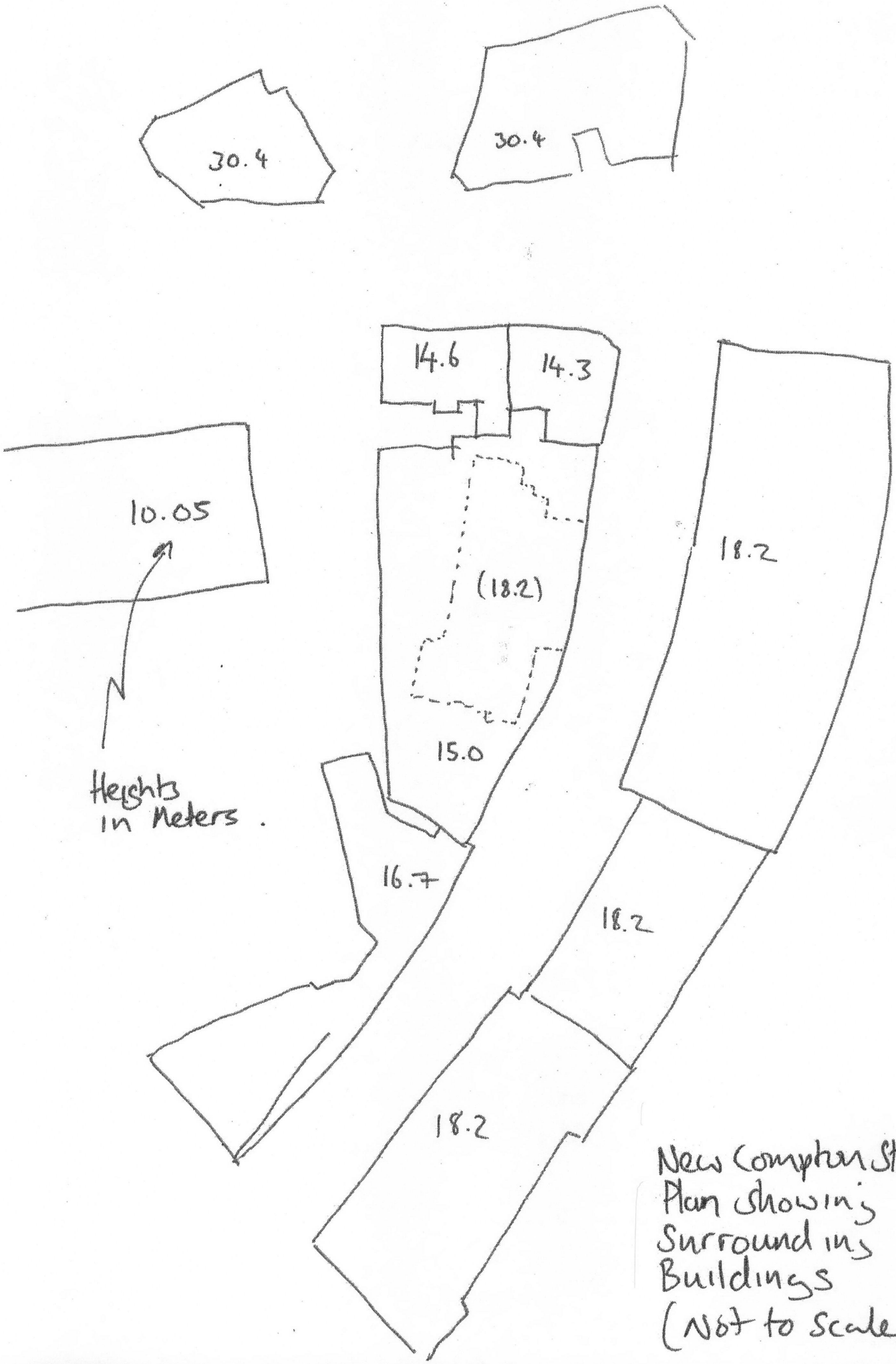
New Compton Street.

Sunlight + Daylight. – Section C



New Compton Street
Sunlight + Daylight – section (D)





New Compton Street Plan showing Surrounding Buildings (Not to scale)

New Compton Street

Calcualted Ratios for Proposed Development - Effect on Neighbouring Building

Endeavour House

Ref Point	Obstruction Distance	Ref Point Height	Obstruction Height	Residual Height	Ratio
A	11.2	11.0	15.0	4.0	2.8
A2	24.4	11.0	14.3	3.3	7.4
A3	40.5	11.0	16.7	5.7	7.1
A - Post	11.2	11.0	18.2	7.2	1.6

63 High Street

Ref Point	Obstruction Distance	Ref Point Height	Obstruction Height	Residual Height	Ratio
B	4.0	13.0	15.0	2.0	2.0
B - Post	4.0	13.0	18.2	5.2	0.8

New Compton Street

Prior to Construction

Vertical Sky Component Effect on Neighbouring Building

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New Compton Street

Post Construction

Vertical Sky Component Effect on Neighbouring Building

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Sunlight Availability Effect on Neighbouring Building

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Prior vs Post

	VSC Prior	VSC Post	VSC Change	Sunlight Prior	Sunlight Post
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Sunlight Change
0.99
0.91