



Report

Templewood Avenue **Daylight/Sunlight Report** 10th January 2012

Ian Absolon
For and on behalf of GVA Schatunowski Brooks

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1. Introduction

- 1.1 GVA Schatunowski Brooks has been instructed by de Metz Forbes Knight Architects to assess the daylight/sunlight effects with regard to the redevelopment of the 4 storey house at 17 Templewood Avenue. We have been provided with the proposed drawings from de Metz Forbes Knight Architects numbered A100, 101, 102 and 103 and proposed sketchup model 1794_Templewood model 07.12. We have also been provided with a set of site photographs and have used satellite imagery. This information has enabled us to carry out a 3D computer modelling exercise.

2. Executive Summary

- 2.1 The proposed development will potentially affect the following neighbouring residential properties and these are the subject of the analysis.
- 19 Templewood Avenue
 - 15 Templewood Avenue
- 2.2 The site currently consists of a three storey residential building. It is designed in a “V” shape
- 2.3 The proposals are to increase the usage by extending for 1 floor over part of the site and infilling the volume centrally. Part of the development is below ground level.
- 2.4 The analysis will show that there is no significant impact on the neighbouring windows.
- 2.5 The analysis will also show that daylighting amenity to the scheme pass the guidance.
- 2.5 An Indicative 3-D view of the proposed scheme is shown on drawing TE17/BRE/CAD03

3. Daylight/Sunlight Planning Principles

3.1 The Building Research Establishment (BRE) guidelines – Site Layout Planning for Daylight and Sunlight: a guide to good practice is the document referred to by most local authorities. The BRE guidelines cover amenity requirements for sunlight and daylight to buildings around any development site as well as the quality of daylight within a proposed habitable development. The BRE guidelines should also be read in conjunction with the British Standard, BS 8206-2:2008 Lighting for Buildings Part 2: Code of Practice for Daylighting as they both refer to each other.

3.2 The introduction to the guidelines state: -

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

Daylighting

3.3 The requirements governing daylighting to existing residential buildings around a development site are set out in Part 2.2 of the guidelines. The amount of light available to any window depends upon the amount of unobstructed sky that can be seen from the centre of the window under consideration. The amount of visible sky and consequently the amount of available skylight is assessed by calculating the vertical sky component at the centre of the window. The guidelines advise that bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines also suggest that distribution of daylight within rooms is reviewed although bedrooms are considered to be less important.

3.4 The vertical sky component can be calculated by using the skylight indicator provided as part of the guidelines, by mathematical methods using what is known as a waldram diagram or by 3D CAD modelling.

3.5 The guidelines states the following:-

"If this vertical sky component is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. 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 occupants of the existing building will notice the reduction in the amount of skylight."

- 3.6 It must be interpreted from this criterion that a 27% vertical sky component (VSC) constitutes adequacy, but where this value cannot be achieved a reduction of up to 0.8 times its the former value (this is the same as saying a 20% reduction when compared against the existing condition) would not be noticeable and would not therefore be considered material.
- 3.7 The VSC calculation only measures light reaching the outside plane of the window under consideration, so this is potential light rather than actual. Depending upon the room a window size, the room may still be adequately lit with a lesser VSC value than the target values referred to above.
- 3.8 Appendix C of the BRE guidelines sets out various more detailed tests that assess the interior daylight conditions of rooms. These include the calculation of the average daylight factors (ADF) and no sky-lines. The ADF value determines the level of interior illumination that can be compared with the British Standard, BS 8206: Part 2. This recommends a minimum of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.
- 3.9 The no sky-line, or daylight distribution contour shows the extent of light penetration into the room at working plane level, 850mm above floor level. If a substantial part of the room falls behind the no sky-line contour, the distribution of light within the room may look poor.

Sunlighting

- 3.10 Requirements for protection of sunlighting to existing residential buildings around a development site are set out in Part 3.2 of the BRE guidelines. There is a requirement to assess windows of surrounding properties where the main windows face within 90 degrees of due south. The calculations are taken at the window reference point at the centre of each window on the plane of the inside surface of the wall. The guidelines further state that kitchens and bedrooms are less important in the context of considering sunlight, although care should be taken not to block too much sun. The guidelines sets the following standard:-

"If this window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21st September and 21st March, then the room should still receive enough sunlight. The sunlight availability indicator in Appendix A can be used to check this.

Any reduction in sunlight access below this level should be kept to a minimum. If the available sunlight hours are both less than the amount given and less than 0.8 times their former value, either over the whole year or just during the winter months then the occupants of the existing building will notice the loss of sunlight."

- 3.11 To summarize the above, a good level of sunlight to a window is 25% annual probable sunlight hours, of which 5% should be in winter months. Where sunlight levels fall below the suggested level, a comparison with the existing condition is reviewed and if the ratio reduction is within 0.8 (the same as saying a 20% reduction) its former value then the sunlight loss will not be noticeable. Sunlight reductions that fall below 0.8, i.e. 0.7 (the same as saying greater than 20%) then the sunlight losses will be noticed by the occupants.

BRE CRITERIA FOR NEW BUILDINGS

- 3.12 The BRE Guide covers amenity requirements for sunlight, daylight and overshadowing for residential developments.

-
- 3.13 Before dealing specifically with the requirements of the Guide under the various headings, we would note certain relevant aspects set out in the Introduction to the Guide which are as follows:-
- 3.14 "While this guide supercedes the 1971 Department of the Environment document 'Sunlight and Daylight' which is now withdrawn, the main aim is the same - to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.
- 3.15 The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

DAYLIGHTING

- 3.16 The guidelines regarding the quality and quantity of daylight to residential habitable rooms are set out in Part 2.1 of the Guide. The amount of light available to any window depends upon the amount of unobstructed sky that can be seen from the centre of the window under consideration. The amount of visible sky and consequently the amount of available skylight is assessed by calculating the vertical sky component at the centre of the window. The Guide advises that bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.
- 3.17 The vertical sky component can be calculated by using the skylight indicator provided as part of the Guide or by mathematical methods using what is known as a waldram diagram. The use of the skylight indicator is, in our view, the less accurate and can only be relied upon for indicative results. The mathematical method which actually measures the amount of visible sky gives far more accurate and truly representative results, and this is the method we have used.
- 3.18 The Guide states the following:-

"..a vertical sky component of 27% or more indicates the potential for good daylight."

- 3.19 The VSC calculation only measures light reaching the outside plane of the window under consideration, so this is potential light rather than actual. Depending upon the room and window size, the room may still be adequately lit with a lesser VSC value than the target values referred to above.
- 3.20 Appendix C of the BRE Guide sets out various more detailed tests that assess the interior daylight conditions of rooms. These include the calculation of the average daylight factors (ADF) and no sky-lines. The ADF value determines the level of interior illumination that can be compared with the British Standard, BS 8206: Part 2. This recommends a minimum of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.
- 3.21 The no sky-line or daylight distribution contour shows the extent of light penetration into the room at working plane level, 850mm above floor level. The guide advises that if a substantial part of the room falls behind the no sky-line contour, the distribution of light within the room may look poor.

SUNLIGHTING

- 3.22 Requirements for provision of sunlight to new residential buildings are set out in Part 3.1 of the BRE Guide.
- 3.23 Sunlight is considered important for living rooms and conservatories but is viewed as less important in Bedrooms and in kitchens. Access to sunlight can be quantified for the interior of rooms. The guidelines state:-
- 3.24 "The British Standard recommends that interiors where the occupants expect sunlight should receive at least one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months, between 21 September and 21 March."
- 3.25 The guide further recommends that where window positions are known, the centre of each main living window can be used for the calculation.

Overshadowing

- 3.26 Overshadowing to gardens and open spaces can be a material planning consideration. Part 3.3 of the BRE guidelines deals with overshadowing considerations, identifying areas such as gardens, allotments, parks, playing fields, playgrounds, swimming pools, paddling pools, sitting out areas and public open spaces.
- 3.27 Assessments are normally undertaken on 21st March, 21st June and 21st December as these months represent the average and extremes within a year. The transient sunlight tracking is reviewed throughout the day, when the altitude of the sun is higher than 10 degrees.
- 3.28 The amount of sunlight being available to an amenity space is measured on 21st March, with the BRE guidelines suggesting that an area should not experience a greater level of permanent overshadowing than 40%. Another way of looking at this suggested benchmark is to say that at least 60% of an amenity area should receive some sunlight during the day on 21 March.

4 Assessment Results

- 4.1 We set out below our commentary on the assessments for the daylight/sunlight tests, all results are shown graphically on the attached plans and in tabular format.

15 Templewood Avenue

- 4.2 Drawing number shows the results on plan of the properties' windows.
- 4.3 There is only one habitable room window facing the proposal, this being a bedroom, it retains well in excess of 27% VSC and is therefore fully daylight compliant.
- 4.4 There is no requirement to analyse this for sunlight as it faces outside of 90 degrees of due south.

19 Templewood Avenue

- 4.5 Drawing number TE17/BRE/CAD02 shows the results on plan of the properties' windows.
- 4.6 First floor and second floor windows all retain light in excess of 27%.
- 4.7 The ground floor windows all see reductions of less than 20% save for the rearmost window in the flank which is reduced by just over 20% although we believe this may not actually be a habitable room.
- 4.8 Sunlight assessments show similar results with all but the rear ground floor window being fully compliant.

Scheme Amenity

- 4.17 Drawings TE17/BRE/CAD05 shows the results for this test.
- 4.18 All habitable rooms have been tested for daylighting.
- 4.19 All rooms have Average daylight factors well in excess of the British standard requirements and actually will exceed these by a large margin
- 4.20 Daylight distribution is also good covering almost all of each room area and all rooms can be said to be well lit and compliant.

5. Conclusions

- 5.1 The proposed development will not affect any of the neighbouring buildings to any noticeable degree either in terms of sunlight or daylight,. The daylighting amenity of the scheme is more than compliant with British Standard guidance and the sunlight to the proposed amenity space fully complies with BRE guidance.

Yours faithfully

A handwritten signature in black ink, reading "GVA Schatunowski Brooks." The signature is written in a cursive, flowing style.

GVA Schatunowski Brooks

Legend

Daylight

Existing

Proposed

1/11 Grid Loss

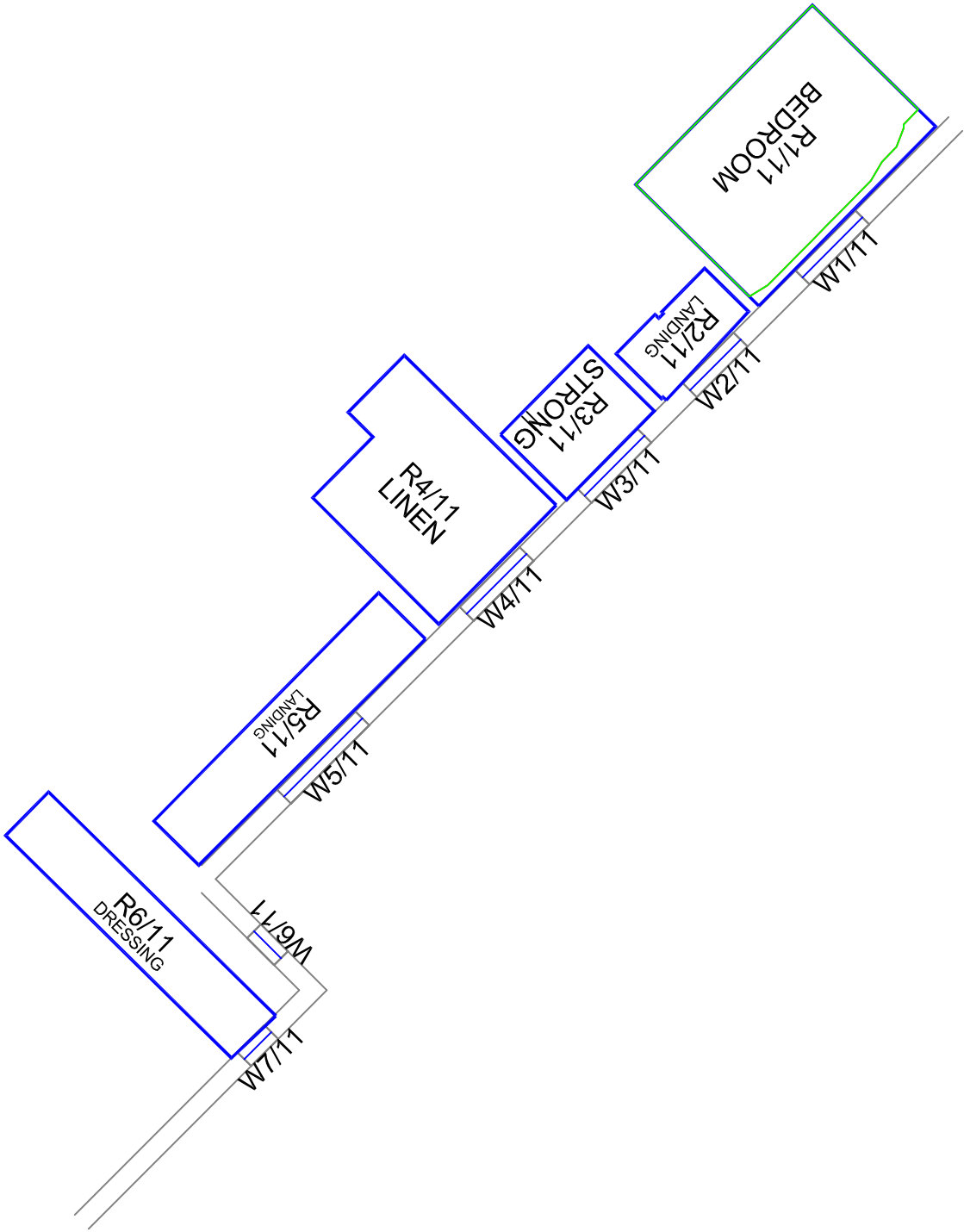
Hatching

Room Layout

Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information



08449 02 03 04
GVA Schatunowski Brooks
10 Stratton Street, London, W1J 8JR
www.gva.co.uk

Project Name
TEMPLEWOOD AVENUE

Client	-
-	-

Drawing Title
NO-SKY LINE CONTOURS FOR
15 TEMPLEWOOD AVENUE

Drawn By	Checked By	Scale @ A3	Date
A.H.	-	1:100	DEC 2011

Project No.	Drawing No.	Revision
TE17-01	BRE01	-

Legend

Daylight

Existing

Proposed

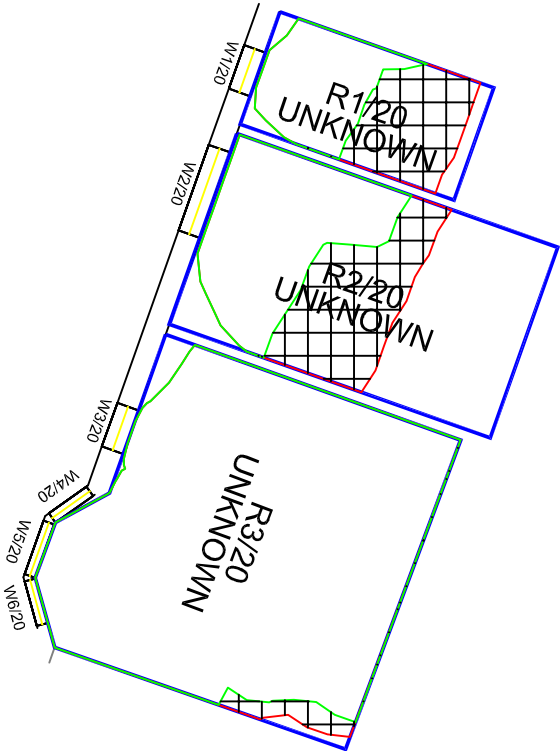
1/11 Grid Loss Hatching

Room Layout

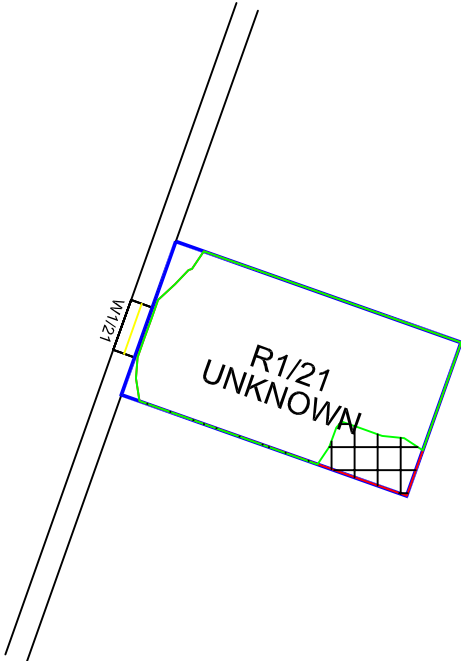
Existing No-Sky Line Contour

Proposed No-Sky Line Contour

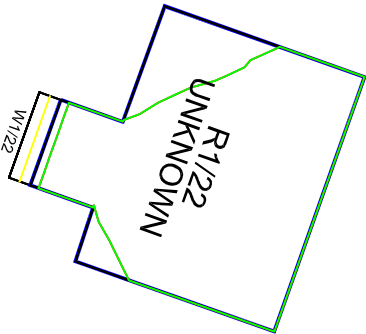
Sources of Information



GROUND FLOOR



FIRST FLOOR



SECOND FLOOR



08449 02 03 04
GVA Schatunowski Brooks
10 Stratton Street, London, W1J 8JR
www.gva.co.uk

Project Name
TEMPLEWOOD AVENUE

Client
-
-

Drawing Title
NO-SKY LINE CONTOURS FOR
19 TEMPLEWOOD AVENUE

Drawn By
A.H.
Checked By
-
Scale @ A3
1:100
Date
DEC 2011

Project No.
TE17-01
Drawing No.
BRE02
Revision
-

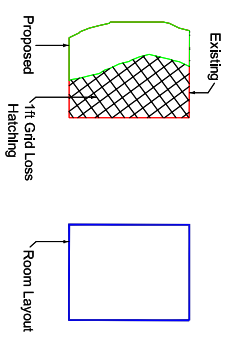
This drawing is Copyright © of GVA Grimley Limited.

Do not scale this drawing.

All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.

Legend

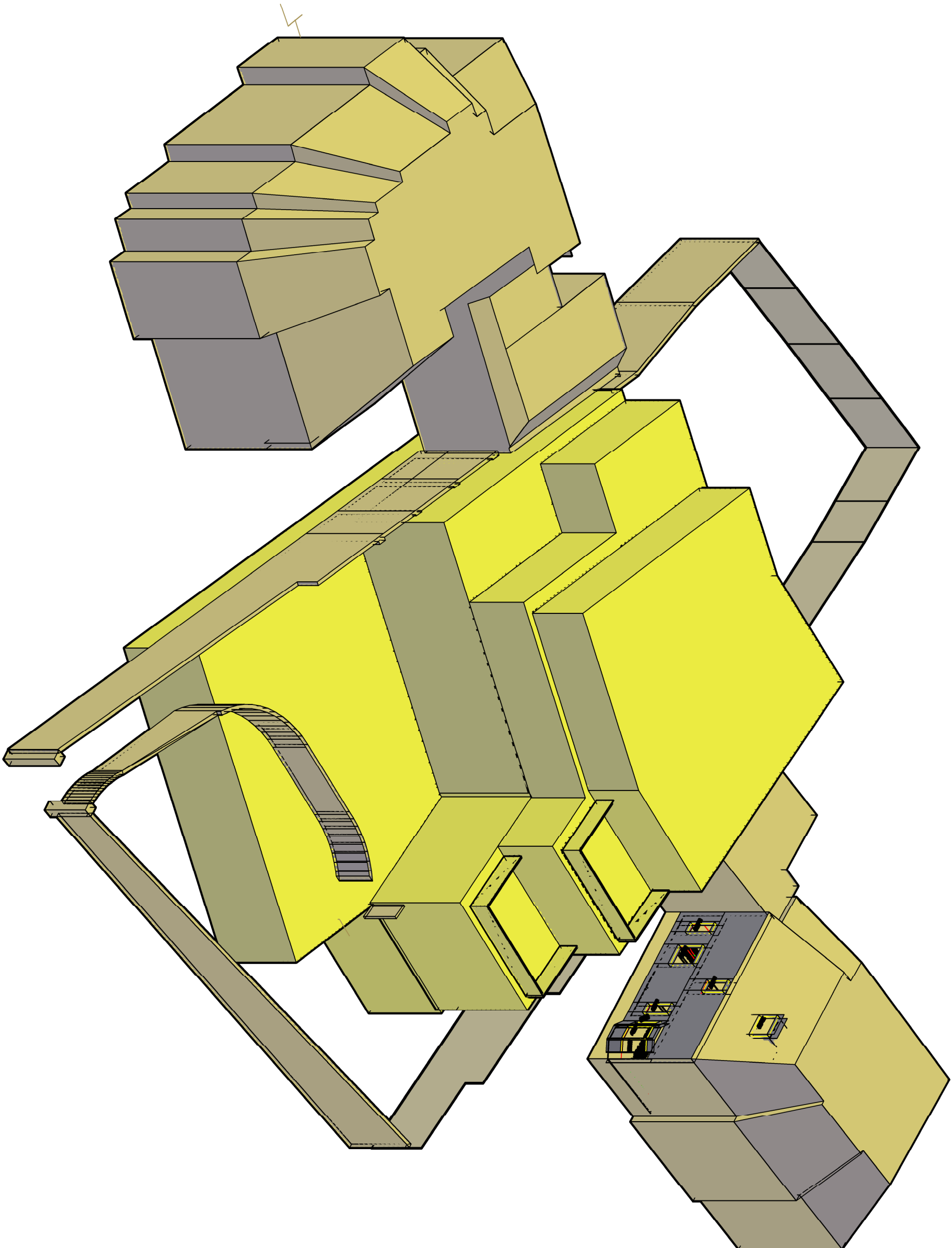
Daylight



— Existing No-Sky Line Contour
— Proposed No-Sky Line Contour

— Existing No-Sky Line Contour
— Proposed No-Sky Line Contour

Sources of Information



PROPOSED



08449 02 03 04

GVA Schatunowski Brooks

10 Stratton Street, London, W1J 8JR
www.gva.co.uk

London, W1J 8JR
www.gva.co.uk

Project Name

TEMPLEWOOD AVENUE

Client

1

Drawing Title

PROPOSED 3D MODEL
19 TEMPLEWOOD AVENUE

Drawn By A.H.	Chkd By -	Scale @ A3 1:100	Date DEC 2011
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Drawn By A.H.	Chkd By -	Scale @ A3 1:100	Date DEC 2011
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Drawn By A.H.	Chkd By -	Scale @ A3 1:100	Date DEC 2011
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Project No.

Drawing No.

Revision

DAYLIGHT

A3

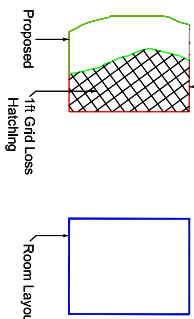
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Legend

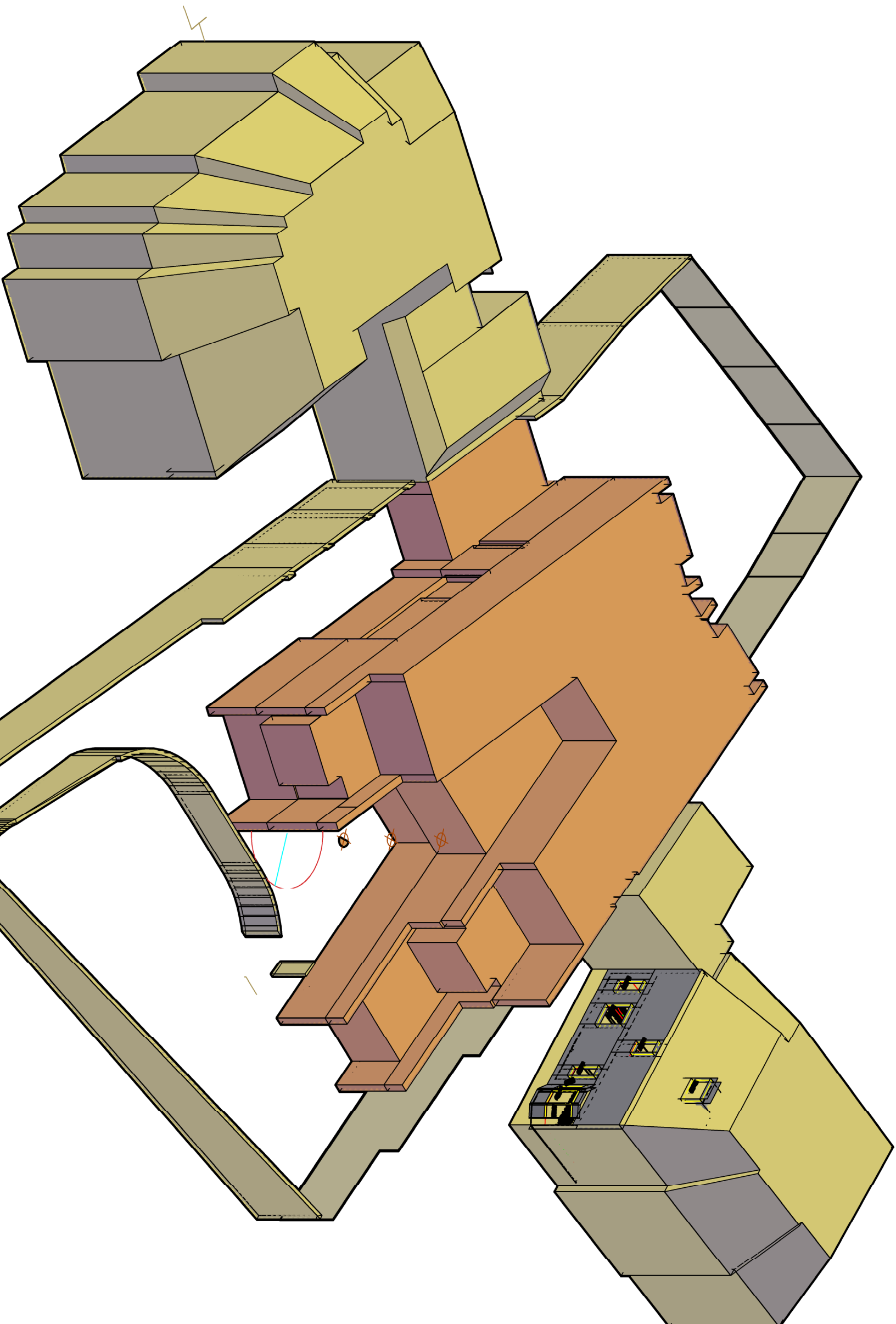
Daylight



Existing No-Sky Line Contour

Proposed No-Sky Line Contour

Sources of Information



PROPOSED



08449 02 03 04
GVA Schatunowski Brooks
 10 Stratton Street, London, W1J 8JR
www.gva.co.uk

Project Name
TEMPLEWOOD AVENUE

Client _____

Drawing Title

Drawn By A.H.	Chkd By -	Scale @ A3 1:100	Date DEC 2011
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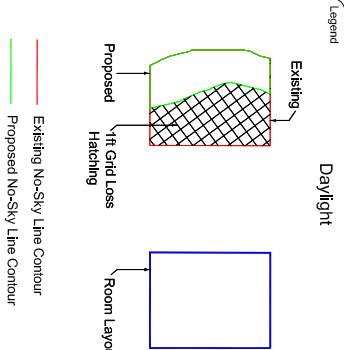
Project No. TE17-01

Drawing No. BRE04

A3

DAYLIGHT

Do not scale this drawing
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details



Sources of Information

de Meitz Forbes Knight Architects

A100

A101

A102

A103

SKETCHUP MODEL

1794_Templewood model to consultants 07.12





TEMPLEWOOD AVENUE

AMENITY ANALYSIS

Jan-12

Room/Floor	Room Use	Window			No Sky	%Sun		
			%VSC	%ADF	% of Room	Summer	Winter	Total
17 TEMPLEWOOD AVENUE								
GROUND FLOOR								
R1/30	PLAYROOM	W1/30	37.71	5.43	98.17%	48.00	20.00	68.00
R2/30	LD	W2/30	35.50	5.81	99.71%	N/A	N/A	N/A
		W3/30	35.94			N/A	N/A	N/A
		W4/30	35.89			N/A	N/A	N/A
R3/30	KITCHEN	W5/30	35.56	4.92	99.73%	N/A	N/A	N/A
FIRST FLOOR								
R1/31	BEDROOM	W1/31	39.53	11.26	99.18%	N/A	N/A	N/A
		W7/31	25.20			32.00	20.00	52.00
R2/31	BEDROOM	W2/31	39.14	6.08	99.75%	N/A	N/A	N/A
		W3/31	39.01			N/A	N/A	N/A
R3/31	BEDROOM	W4/31	39.48	9.70	99.82%	N/A	N/A	N/A
R4/31	BEDROOM	W5/31	39.62	13.43	99.33%	43.00	22.00	65.00
		W6/31	29.03			37.00	25.00	62.00
SECOND FLOOR								
R1/32	BEDROOM	W1/32	39.42	6.88	99.87%	N/A	N/A	N/A
		W2/32	39.29			N/A	N/A	N/A
R4/32	STUDY	W5/32	39.60	17.96	98.75%	49.00	25.00	74.00



TEMPLEWOOD AVENUE

BRE ANALYSIS

Dec-11

Room/Floor	Room Use	Window	%VSC			% Daylight Factor			Proposed No Sky	
			Exist	Prop	% Loss	Exist	Prop	% Loss	% of Room Area	% Loss of Existing
15 TEMPLEWOOD AVENUE										
FIRST FLOOR										
R1/11	BEDROOM	W1/11	34.30	31.97	>27	2.10	1.98	5.95%	93.57%	0.00%
19 TEMPLEWOOD AVENUE										
GROUND FLOOR										
R1/20	UNKNOWN	W1/20	16.06	12.68	21.05%	1.27	1.02	19.61%	45.78%	48.11%
R2/20	UNKNOWN	W2/20	21.08	16.82	20.21%	1.74	1.48	15.09%	34.83%	41.12%
R3/20	UNKNOWN	W3/20	26.58	21.88	17.68%	3.34	2.97	11.16%	95.40%	2.38%
		W4/20	22.65	17.88	21.06%					
		W5/20	29.40	24.77	15.75%					
		W6/20	34.42	31.66	>27					
FIRST FLOOR										
R1/21	UNKNOWN	W1/21	35.55	28.59	>27	1.44	1.20	16.71%	87.59%	9.37%
SECOND FLOOR										
R1/22	UNKNOWN	W1/22	39.56	37.57	>27	2.10	2.00	4.94%	84.40%	0.00%



TEMPLEWOOD AVENUE

SUNLIGHT ANALYSIS

Dec-11

Available sunlight as a percentage of
annual unobstructed total (1486.0 Hrs)

		Existing %			Proposed %					
	Window Ref							% Loss of Summer	% Loss of Winter	% Loss of Total
Room use		Summer	Winter	Total	Summer	Winter	Total			
19 TEMPLEWOOD AVENUE										
GROUND FLOOR										
UNKNOWN	W1/20	16.00	5.00	21.00	13.00	2.00	15.00	18.75%	60.00%	28.57%
UNKNOWN	W2/20	29.00	10.00	39.00	24.00	7.00	31.00	17.24%	30.00%	20.51%
UNKNOWN	W3/20	27.00	10.00	37.00	22.00	8.00	30.00	18.52%	20.00%	18.92%
UNKNOWN	W4/20	29.00	7.00	36.00	22.00	5.00	27.00	24.14%	28.57%	25.00%
UNKNOWN	W5/20	39.00	17.00	56.00	32.00	14.00	46.00	17.95%	17.65%	17.86%
UNKNOWN	W6/20	39.00	21.00	60.00	38.00	20.00	58.00	2.56%	4.76%	3.33%
FIRST FLOOR										
UNKNOWN	W1/21	29.00	21.00	50.00	29.00	13.00	42.00	0.00%	38.10%	16.00%
SECOND FLOOR										
UNKNOWN	W1/22	35.00	26.00	61.00	35.00	23.00	58.00	0.00%	11.54%	4.92%