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DAYLIGHT & SUNLIGHT REPORT

44 Gloucester Avenue
London

28th January 2015



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1. Introduction

- 1.1. This practice has been instructed to provide an assessment of the daylight & sunlight implications of the proposed development at 44 Gloucester Avenue, London. This report is based upon the latest proposals prepared by Twenty First Architecture Ltd.
- 1.2. The methodology and criteria used for these assessments is provided by the Building Research Establishments guidance 'Site layout planning for daylight and sunlight: a guide to good practice' (BRE, 2011) and the British Standard document BS8206 Pt2.
- 1.3. Drawings showing our understanding of the proposal can be found at appendix 1. Drawings 0088-01 and 0088-02 illustrate the existing situation. Drawings 0088-03 and 0088-04 show the proposed development.

2. Guidance

Daylight & sunlight for planning

Site layout planning for daylight and sunlight: a guide to good practice, BRE 2011

- 2.1. This document follows from previous guidance produced by Her Majesty's Stationery Office (HMSO) on daylight and sunlight in the built environment and is now the accepted methodology used by local authorities for assessing daylight and sunlight in relation to new developments. It provides methods for the calculation of daylight and sunlight impacts of development upon existing surrounding properties and within proposed new dwellings.

Daylight Assessment

- 2.2. There are three detailed methods for calculating daylight, the Vertical Sky Component (VSC), the No-Sky Line Contour (NSC) and the Average Daylight Factor (ADF). For sunlight the Annual Probable Sunlight Hours (APSH) method is detailed.
- 2.3. The VSC method calculates the amount of visible sky available to each window or to points on the façade of a building where windows have not yet been designed. This is the primary assessment of daylight impacts and does not consider the size or nature of rooms behind the façade. The guidelines suggest that, post-development, properties should enjoy at least 27% VSC or that VSC is reduced to no less than 0.8 times its former value.
- 2.4. The NSC method describes the distribution of daylight within rooms by calculating the area of the 'working plane' which can receive a direct view of the sky and hence 'sky light'. The working plane height is set at 850mm above floor level within a residential property. The BRE does not state a required amount of no-sky line but merely suggests a recommended reduction within which changes are not considered noticeable.
- 2.5. The ADF method calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and considers the physical nature of the room behind the window, including; window transmittance, and surface reflectivity. The BRE guidelines / British Standard sets the following recommended ADF levels for habitable room uses:
 - 1% Bedrooms
 - 1.5% Living Rooms
 - 2.0% Kitchens
- 2.6. Where living/kitchen/dining rooms are deep and have small kitchens located to the rear of the room, daylight targets for living rooms have been applied.

Sunlight Assessment

- 2.7. For sunlight the APSH test calculates the percentage of statistically probable hours of sunlight received by each window in both the summer and winter months. March 21st through to September 21st is considered to be the summer period while September 21st to March 21st is considered the winter period. For properties neighbouring a development only those windows orientated within 90° of due south and which overlook the site of the proposal are relevant for assessment.
- 2.8. The guidelines suggest that windows should receive at least 25% total APSH with 5% of this total being enjoyed in the winter months. The guidelines also allow for a 20% reduction in sunlighting when compared to the former value with total reductions of less than 4% APSH not being considered noticeable.

Policy Context

- 2.9. It is important to note that within urban centres achieving good levels of daylight and sunlight in accordance with the BRE guidelines, can be weighed in the balance against other beneficial design factors.
- 2.10. The opening paragraphs of the BRE guidelines state: -

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the document should not be seen as 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 because 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 a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".

- 2.11. The targets set out in the BRE document are very much 'guidelines' and they should be applied sensibly and flexibly based on the site-specific context of development.

3. Assumptions

- 3.1. The architects drawings, site photographs and ordnance survey information have been used to create a 3D computer model of the proposed development in the context of the existing site and surrounding buildings.
- 3.2. Where it has not been possible to gain access to the surrounding properties, details of the internal layouts and floor level heights have been assumed from the external appearance of the building, and the locations of windows. Unless known or otherwise appropriate the depths of rooms have been assumed at 4.27m (14ft) for residential properties and 6m (20ft) for commercial properties.

4. Sources of Information

21st Architecture Ltd

173_GA_00.dwg
173_Split Model.skp
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173_GA_00 Rev E.pdf

173_GA_01 Rev E.pdf
173_GA_-01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received 27/01/2015

5. The Site and Proposal

- 5.1. The current mixed use properties are situated along Gloucester Avenue, with the rear of the site fronting the rail way lines.
- 5.2. The proposal includes renovating the current buildings with the construction of new buildings at the north west and south east of the site.
- 5.3. There are a mix of uses to neighbouring properties with residential properties to the north west and south of the site. There are also properties with elements of residential use above commercial properties to the south.
- 5.4. In line with the BRE guidelines, we have assessed the surrounding residential properties with windows overlooking the site. The following properties were considered within our assessment:
 - 46 Gloucester Avenue
 - 67-85 Gloucester Avenue (odd numbers only)

6. Daylight and Sunlight Results

Surrounding Properties

- 6.1. Full results of the daylight and sunlight assessment are attached within appendix 2.

46 Gloucester Avenue

- 6.2. The residential terraced house is situated immediately to the north west of the proposed site. The windows within the eastern flank of this property overlook the proposed scheme.

Daylight

- 6.3. The results of the Vertical Sky Component (VSC) assessment show 15 of the 17 windows assessed would see a no noticeable change in daylight levels they receive.
- 6.4. The remaining two windows are W02 on the ground floor and W04 on the first floor and these are shown within the window maps included in appendix 1.
- 6.5. We have obtained some floor plans for this property from the Local Authority's planning portal and are aware that the ground floor room served by W02 is dual aspect, with the primary window situated within the northern façade looking past the proposal. The primary window serving this room receives excellent levels of daylight with the proposal in place, well in excess of the BRE recommendations.
- 6.6. Considering this room in more detail the results of the No Sky Contour (NSC) assessment show that there will be no noticeable reduction to the no-sky line, with this room retaining 0.9 times its former values and is therefore fully compliant with BRE criteria. This assessment can be used and relied upon as internal layouts for this room are known. As such it is considered that the daylight received by this room as a whole is fully in line with

the intentions of the BRE guidance.

- 6.7. The remaining window, being W04 situated on the first floor is small and appears to serve a bathroom. As this is a non habitable space this room would not be considered relevant for daylight assessment.
- 6.8. The impacts of the proposed scheme are in line with the intentions of the BRE guidelines for this property.

Sunlight

- 6.9. The results of the Annual Probable Sunlight Hours (APSH) assessment show that 8 of the 9 windows relevant for assessment under the BRE criteria are fully compliant with the BRE guidelines.
- 6.10. The remaining room is R2 situated on the ground floor. This dual aspect room is served by W02 and W03, with the primary window not being a sensitive receptor under the APSH targets.

67-85 Gloucester Avenue (odd numbers only)

- 6.11. These properties are situated to the south of the proposed scheme. The properties at 67-79 Gloucester Avenue (inclusive) are terraced properties with commercial on the ground floor, with residential above. The houses at 81-85 Gloucester Avenue are terraced residential houses.

Daylight

- 6.12. The results of the VSC assessment show that no windows would see a noticeable change in the daylight levels they receive. With the scheme in place, all windows will retain VSC levels within or in excess of c.0.9 times their former values.
- 6.13. The results of the NSC assessment also show no noticeable change in the no-sky line. With the scheme in place, all rooms will retain NSC levels within or in excess of c.0.9 times their former values.
- 6.14. As such, the impacts of the proposed scheme are fully compliant with the BRE targets.

Sunlight

- 6.15. There are 8 windows that are within 90 degree of due south. In line with the criteria as set out within the BRE guide, these windows have been analysed under the APSH sunlighting assessment.
- 6.16. The results show that all 8 windows see no change in the sunlight levels enjoyed. As such, this property remains fully compliant with the BRE guide.

Internal Daylighting

- 6.17. We have also assessed the level of daylight within the proposed dwellings. The layouts and results are attached in appendix 3.

Daylight

- 6.18. The results of the Average Daylight Factor (ADF) assessment show that of the 76 (90%) of the 84 habitable rooms within the proposed scheme experience levels that are compliant with the ADF targets as set in the BRE guidelines.
- 6.19. Of the remaining 8 rooms, 7 are bedrooms and see ADF levels between 0.6% - 0.9% ADF. Most of these bedrooms are located in the basement of existing buildings and as such there would be no opportunity to increase windows size. Whilst these rooms see levels under the BRE target levels, a degree of flexibility can be used when applying the BRE criteria. In line with the BRE recommendations, the bedrooms, those with the lowest

requirement for daylight, have been located on the basement floor where daylight potential is at its lowest.

- 6.20. The remaining room is a living kitchen dining room and would experience ADF levels below the BRE threshold targets. This room is set within the basement of an existing building within the site. As this particular building will be refurbished, rather than constructed, there are constraints in regard to the amount of light available. Whilst this is a technical derogation from the BRE criteria, given the urban context and the proposal and the excellent rate of compliance across the rest of the scheme this isolated breach of the suggested daylight levels would be considered acceptable.

Sunlight

- 6.21. In line with the BRE criteria, we have assessed the main living spaces with windows relevant under the APSH sunlighting assessment.
- 6.22. The results of the analysis show that 21 of the 29 L/K/D's relevant for assessment would experience sunlight hours in excess of the BRE targets. As such, these rooms are compliant with the BRE guidelines.
- 6.23. Of the remaining 8 rooms, 3 rooms will experience total APSH hours in excess of the guideline target of 25% APSH. As the proposed site is situated within an urban environment, the likelihood of the proposed scheme obtaining the requisite winter hours is unlikely as the sun's angle is shallow and relatively low rise obstruction may lead direct sunlight being blocked. In addition, there are 2 additional rooms that experience total APSH levels of 18% and 20% APSH. These levels would be considered normal for a dense urban environment. As these rooms receive reasonable total APSH hours, they would be considered in line with the intentions of the BRE criteria.
- 6.24. There are also 3 rooms where their primary windows are not relevant for the sunlighting assessment. Whilst the assessed windows are a technical departure from the BRE guidelines, these windows are considered secondary. Given the context of the scheme, the proposal as a whole remains in line with the intentions of the BRE criteria.

7. Conclusions

- 7.1. The analysis prepared shows that impacts to the daylight and sunlight to the surrounding neighbours are in line with the intentions of the BRE criteria. The proposed scheme would have no noticeable impacts to the rooms within the surrounding properties.
- 7.2. In regard to the internal daylight and sunlight analysis are also in line with the overall intentions of the BRE guidance considering the urban context in which the proposal is located.

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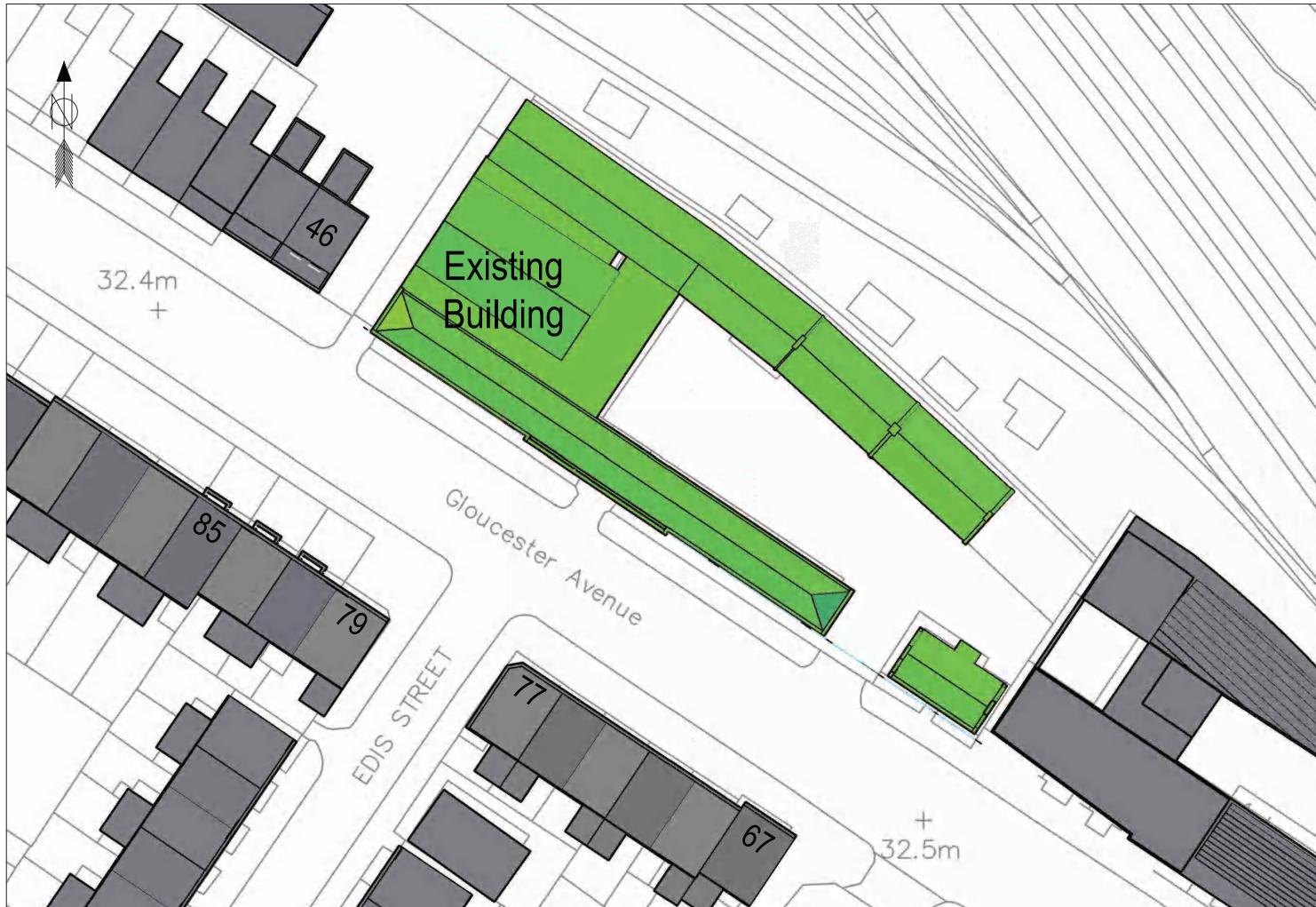
Appendix 1

Drawings

Sources of information

21st Architecture Ltd
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173_GA_00 Rev E.pdf
173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
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Project 44 Gloucester Ave
London

Title Existing Condition
Plan View

Drawn DB Checked DF

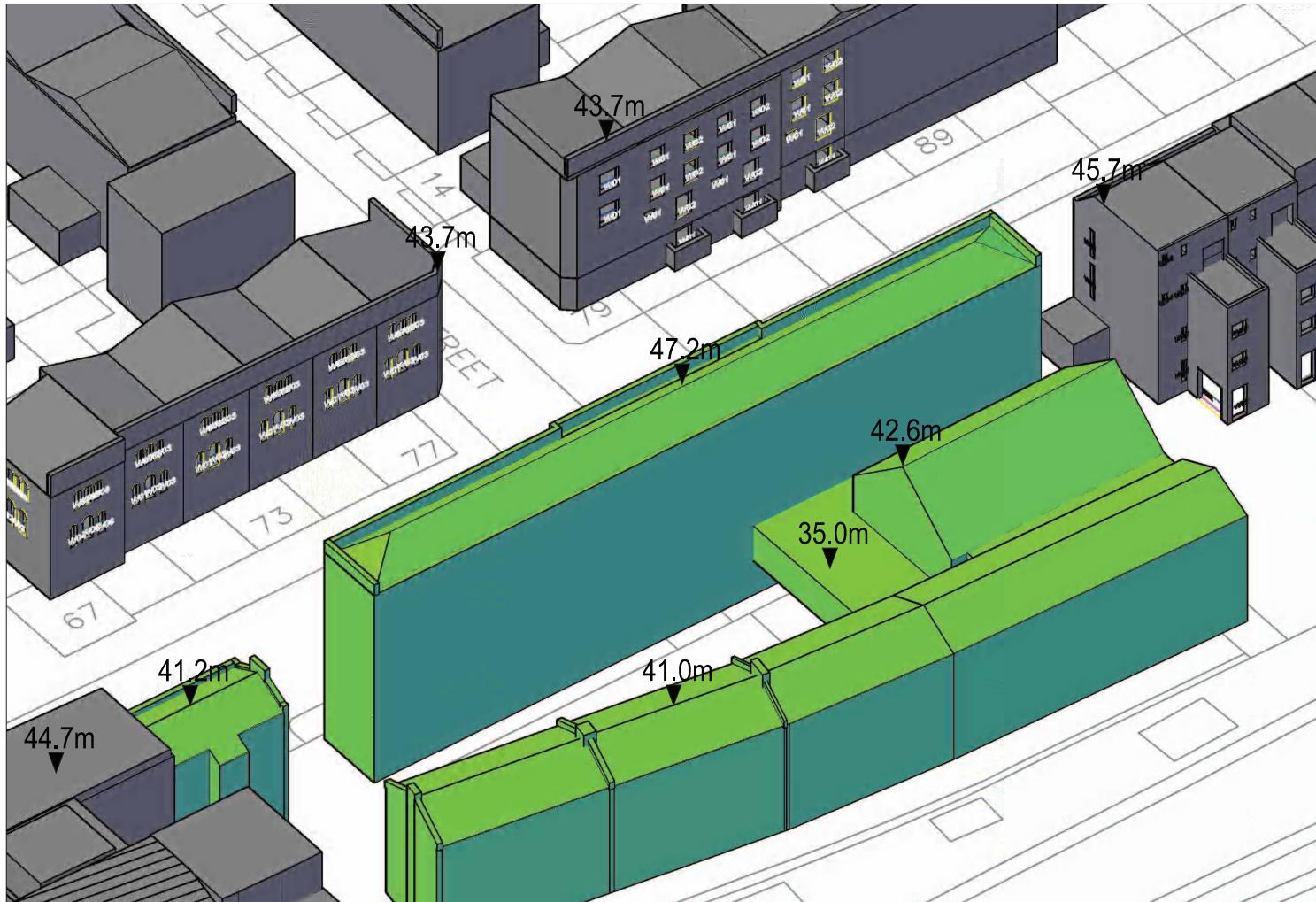
Date 23/01/2014 Rel no. 09

Drawing no. 0088-01

Sources of information

21st Architecture Ltd
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173_Split Model.skp
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173_GA_-01 Rev E.pdf
173_GA_00 Rev E.pdf
173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
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Project 44 Gloucester Ave
London

Title Existing Condition
3D View

Drawn	DB	Checked	DF
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Date	23/01/2014	Rel no.	09
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Drawing no. 0088-02

Sources of information

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173_GA_-01 Rev E.pdf
173_GA_00 Rev E.pdf
173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
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Project 44 Gloucester Ave
London

Title Proposed Condition
Plan View

Drawn DB Checked DF

Date 23/01/2014 Rel no. 09

Drawing no. 0088-03

Sources of information

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173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received: 27/01/2015



Project 44 Gloucester Ave
London

Title Proposed Condition
3D View

Drawn	DB	Checked	DF
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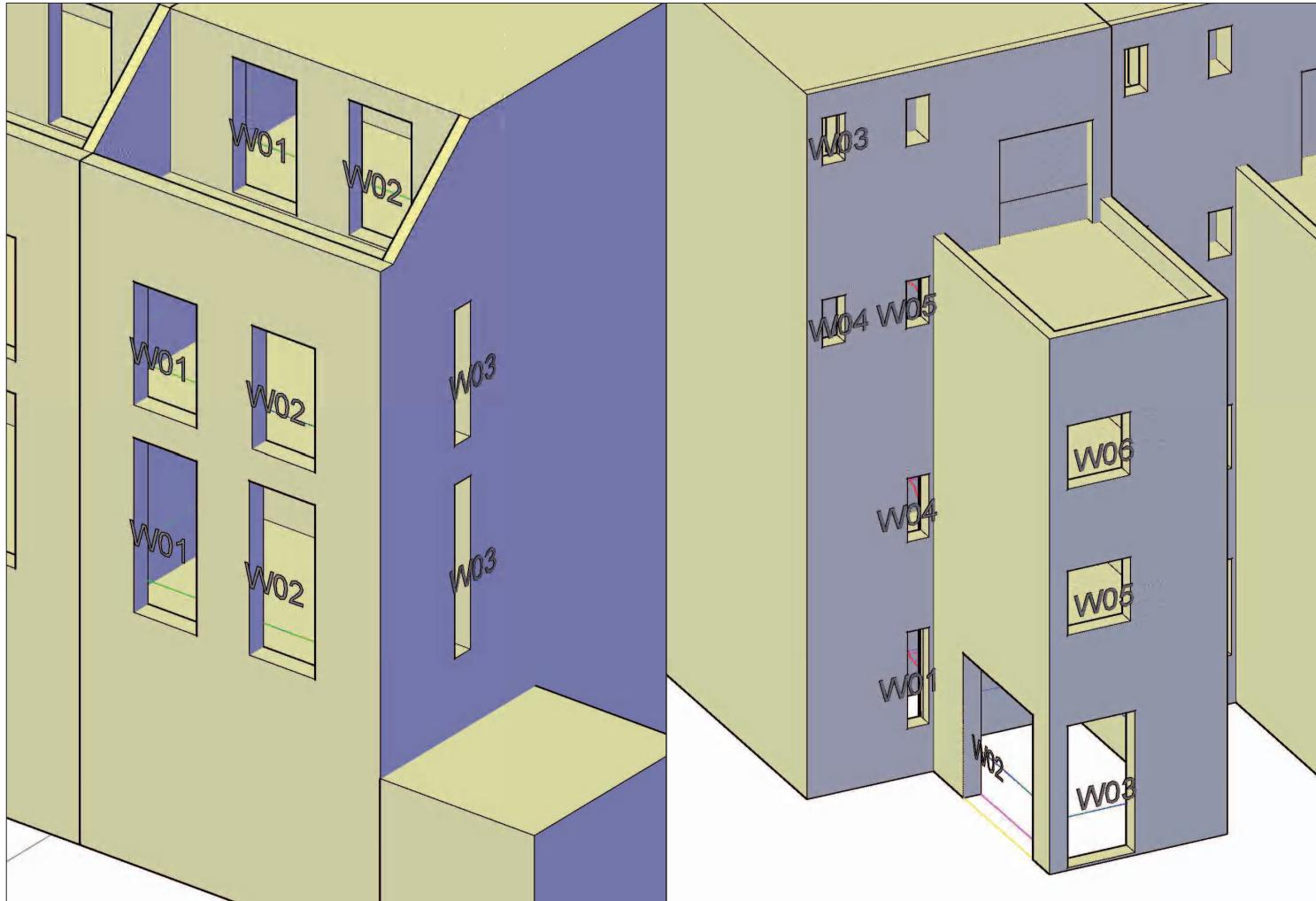
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Drawing no. 0088-04

Sources of information

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173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received: 27/01/2015



Project 44 Gloucester Ave
London

Title 46 Gloucester Ave
Window Map

Drawn	DB	Checked	DF
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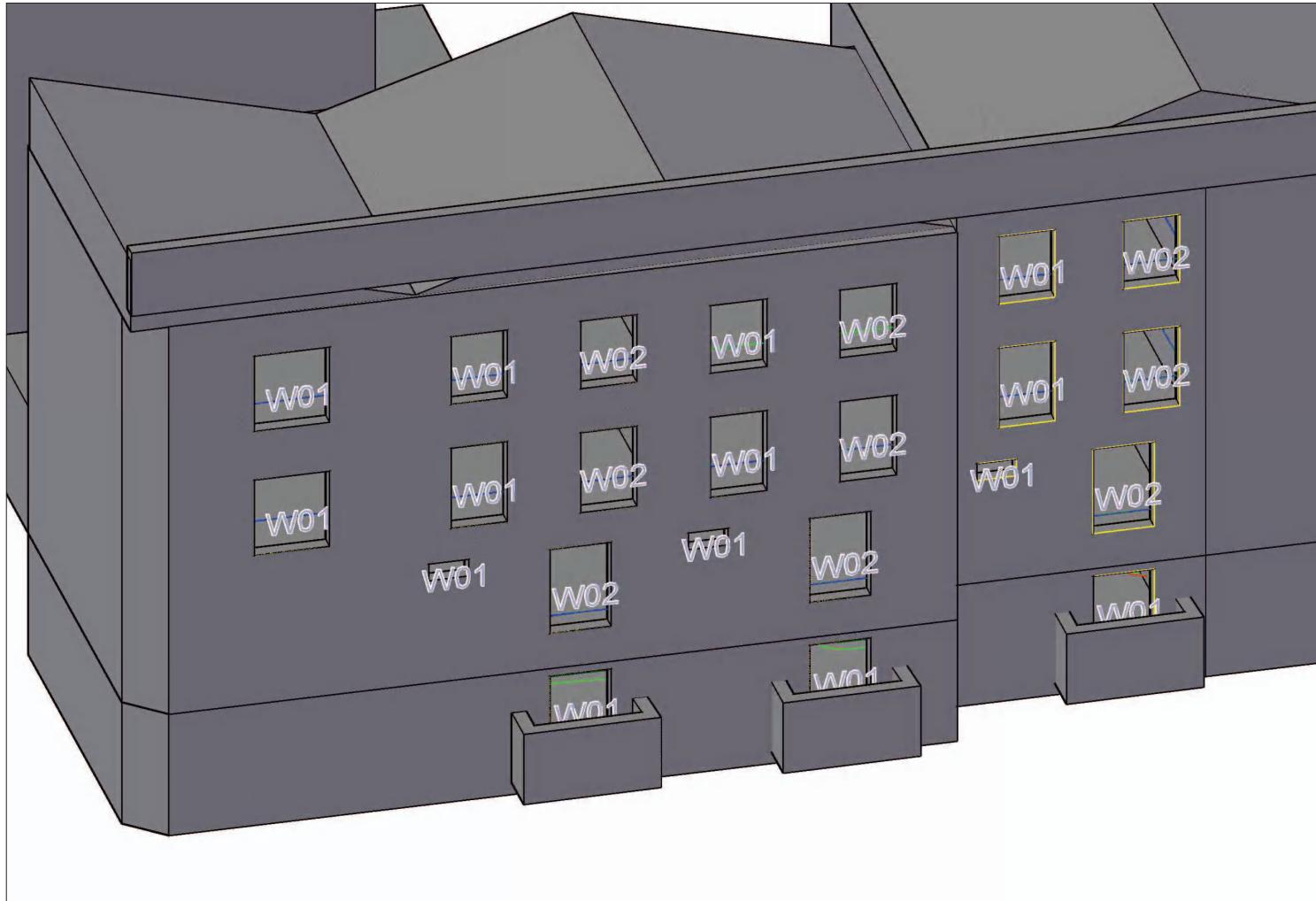
Date	23/01/2014	Rel no.	09
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Drawing no. 0088-WM01

Sources of information

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173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
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Project 44 Gloucester Ave
London

Title 79, 81, 83 & 85 Gloucester Ave
Window Map

Drawn	DB	Checked	DF
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Date	23/01/2014	Rel no.	09
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Drawing no. 0088-WM02

Sources of information

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173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received: 27/01/2015



Project 44 Gloucester Ave
London

Title 73, 75 & 77 Gloucester Ave
Window Map

Drawn	DB	Checked	DF
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Date	23/01/2014	Rel no.	09
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Drawing no. 0088-WM03

Sources of information

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173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
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Project 44 Gloucester Ave
London

Title 67, 69 & 71 Gloucester Ave
Window Map

Drawn	DB	Checked	DF
Date	23/01/2014	Rel no.	09

Drawing no. 0088-WM04



Appendix 2

Results of the Daylight & Sunlight assessment to Surrounds

Address	Room	Window	Existing VSC	Proposed VSC	Loss	Proportion Reduction	Room Area	Existing NSC	Proposed NSC	Loss	Proportion Reduction	Existing ADF Window	Total	Proposed ADF Window	Total	Loss	Loss	Existing APSH Total	Winter	Proposed APSH Total	Winter	Total Loss	Winter Loss
46 Gloucester Avenue																							
Ground	R1	W01	16.8	13.0	3.8	0.8	75.3	43.5	42.3	1.2	1.0	0.5	0.5	0.4	0.4	0.1	11.6	N/A	N/A	N/A	N/A	N/A	N/A
Ground	R2	W02-L W02-U	16.1	8.4	7.8	0.5	142.6	142.6	136.4	6.2	1.0	0.1	0.1	0.1	0.1	0.1	1.5	16	0	5	0	68.8	0.0
	R2	W03-L W03-U	34.7	31.6	3.1	0.9						0.1	0.1	0.1	0.1	0.1	1.5	N/A	N/A	N/A	N/A	N/A	N/A
First	R1	W01-L W01-U	33.7	33.7	0.0	1.0	278.0	277.6	277.6	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.2	75	24	75	24	0.0	0.0
	R1	W02-L W02-U	33.7	33.7	0.0	1.0						0.0	0.0	0.0	0.0	0.0	1.3	75	24	75	24	0.0	0.0
	R1	W03-L W03-U	23.9	19.2	4.7	0.8						0.0	0.0	0.0	0.0	0.0	1.3	44	17	37	17	15.9	0.0
First	R2	W04	19.0	14.1	4.9	0.7	75.3	38.2	36.2	2.0	0.9	0.4	0.4	0.3	0.3	0.1	16.2	N/A	N/A	N/A	N/A	N/A	N/A
First	R3	W05	37.9	33.8	4.1	0.9	124.2	120.6	114.0	6.6	0.9	1.5	1.5	1.3	1.3	0.2	10.2	N/A	N/A	N/A	N/A	N/A	N/A
Second	R1	W01-L W01-U	37.1	37.1	0.0	1.0	278.0	277.5	277.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.2	77	26	77	26	0.0	0.0
	R1	W02-L W02-U	37.1	37.1	0.0	1.0						0.0	0.0	0.0	0.0	0.0	1.3	77	26	77	26	0.0	0.0
	R1	W03-L W03-U	29.9	26.1	3.8	0.9						0.0	0.0	0.0	0.0	0.0	1.3	55	17	50	17	9.1	0.0
Second	R2	W04	34.9	28.6	6.3	0.8	75.3	65.6	65.4	0.1	1.0	0.5	0.4	0.4	0.4	0.3	14.6	N/A	N/A	N/A	N/A	N/A	N/A
	R2	W05	23.8	18.7	5.1	0.8	124.2	120.4	118.4	2.0	1.0	0.4	0.4	0.9	0.9	0.7	14.6	N/A	N/A	N/A	N/A	N/A	N/A
Second	R3	W06	39.4	35.2	4.2	0.9						1.5	1.5	1.4	1.4	0.2	10.8	N/A	N/A	N/A	N/A	N/A	N/A
Third	R1	W01-L W01-U	37.8	37.8	0.0	1.0	224.4	224.3	224.3	0.0	1.0	0.1	0.1	0.1	0.1	0.1	1.1	72	27	72	27	0.0	0.0
	R1	W02-L W02-U	37.2	37.2	0.0	1.0						0.1	0.1	0.1	0.1	0.1	1.1	69	23	69	23	0.0	0.0
	R1	W03	39.5	35.9	3.6	0.9						0.2	0.2	0.2	0.2	0.2	0.9	N/A	N/A	N/A	N/A	N/A	N/A
67 Gloucester Avenue																							
First	R1	W01-L W01-U	33.8	33.8	0.0	1.0	454.5	451.4	451.4	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.2	64	20	64	20	0.0	0.0
	R1	W02-L W02-U	33.9	33.9	0.0	1.0						0.0	0.0	0.0	0.0	0.0	1.3	64	20	64	20	0.0	0.0
	R1	W03-L W03-U	33.9	33.9	0.0	1.0						0.0	0.0	0.0	0.0	0.0	1.4	64	20	64	20	0.0	0.0
	R1	W04-L W04-U	31.7	31.7	0.0	1.0						0.0	0.0	0.0	0.0	0.0	1.2	N/A	N/A	N/A	N/A	N/A	N/A
	R1	W05-L W05-U	31.7	31.6	0.1	1.0						0.0	0.0	0.0	0.0	0.0	1.1	N/A	N/A	N/A	N/A	N/A	N/A
	R1	W06-L W06-U	31.4	31.3	0.1	1.0						0.0	0.0	0.0	0.0	0.0	1.0	N/A	N/A	N/A	N/A	N/A	N/A
Second	R1	W01-L W01-U	36.4	36.4	0.0	1.0	454.5	451.4	451.4	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.2	66	22	66	22	0.0	0.0
	R1	W02-L W02-U	36.5	36.4	0.0	1.0						0.0	0.0	0.0	0.0	0.0	1.3	66	22	66	22	0.0	0.0
	R1	W03-L W03-U	36.5	36.5	0.0	1.0						0.0	0.0	0.0	0.0	0.0	1.3	66	22	66	22	0.0	0.0

Daylight and Sunlight Analysis
Rel-09

27/01/2015

Address	Room	Window	Existing VSC	Proposed VSC	Loss	Proportion Reduction	Room Area	Existing NSC	Proposed NSC	Loss	Proportion Reduction	Existing ADF Window	Total	Proposed ADF Window	Total	Loss	Loss	Existing APSH Total	Winter	Proposed APSH Total	Winter	Total Loss	Winter Loss
Second	R1	W04-L W04-U	36.5	36.5	0.0	1.0	454.5	448.9	448.9	0.0	1.0	0.0		0.0		66	22	66	22	0.0	0.0		
	R1	W05-L W05-U	36.6	36.5	0.0	1.0						0.3		0.3		66	22	66	22	0.0	0.0		
	R1	W06-L W06-U	34.9	34.7	0.2	1.0						0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W07-L W07-U	34.8	34.6	0.2	1.0						0.3		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W08-L W08-U	34.7	34.5	0.2	1.0						0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
69 Gloucester Avenue																							
First	R1	W01-L W01-U	29.3	29.1	0.2	1.0	416.6	370.2	370.2	0.0	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	30.4	30.2	0.2	1.0						0.2		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	30.4	30.1	0.2	1.0						0.4		0.4		N/A	N/A	N/A	N/A	N/A	N/A		
Second	R1	W01-L W01-U	33.0	32.8	0.2	1.0	416.6	365.2	365.2	0.0	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	33.5	33.4	0.2	1.0						0.3		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	33.7	33.5	0.2	1.0						0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
71 Gloucester Avenue																							
First	R1	W01-L W01-U	29.9	29.6	0.3	1.0	424.1	301.3	291.8	9.5	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	29.8	29.5	0.3	1.0						0.2		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	29.4	29.2	0.3	1.0						0.4		0.4		N/A	N/A	N/A	N/A	N/A	N/A		
Second	R1	W01-L W01-U	33.2	33.1	0.2	1.0	424.1	311.2	311.2	0.0	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	33.1	33.0	0.1	1.0						0.3		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
Second	R1	W03-L W03-U	33.0	32.8	0.1	1.0	424.1	311.2	311.2	0.0	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	33.0	32.8	0.1	1.0						0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
73 Gloucester Avenue																							
First	R1	W01-L W01-U	28.9	28.7	0.2	1.0	414.0	216.4	203.5	12.8	0.9	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	28.8	28.6	0.1	1.0						0.2		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	28.4	28.4	0.1	1.0						0.4		0.4		N/A	N/A	N/A	N/A	N/A	N/A		
Second	R1	W01-L W01-U	32.5	32.4	0.1	1.0	414.0	246.8	246.1	0.8	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	32.4	32.3	0.1	1.0						0.3		0.3		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	32.3	32.2	0.0	1.0						0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
75 Gloucester Avenue																							

Daylight and Sunlight Analysis
Rel-09

Address	Room	Window	Existing VSC	Proposed VSC	Loss	Proportion Reduction	Room Area	Existing NSC	Proposed NSC	Loss	Proportion Reduction	Existing ADF Window	Total	Proposed ADF Window	Total	Loss	Loss	Existing APSH Total	Winter	Proposed APSH Total	Winter	Total Loss	Winter Loss		
First	R1	W01-L W01-U	28.1	28.1	0.0	1.0	414.0	169.9	169.9	0.0	1.0	0.0		0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	28.1	28.1	0.0	1.0						0.2		0.2		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	27.9	27.9	0.0	1.0						0.0		0.0		0.4		0.4		0.0		N/A	N/A	N/A	N/A
Second	R1	W01-L W01-U	32.0	32.0	0.0	1.0	414.0	232.8	232.8	0.0	1.0	0.0		0.0		0.3		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	32.0	32.0	0.0	1.0						0.0		0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	31.9	31.9	0.0	1.0						0.3		0.0		0.3		N/A	N/A	N/A	N/A	N/A	N/A		
77 Gloucester Avenue																									
First	R1	W01-L W01-U	27.8	27.8	0.0	1.0	471.9	453.6	453.6	0.0	1.0	0.0		0.0		0.2		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	27.9	27.9	0.0	1.0						0.0		0.0		0.3		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	27.8	27.8	0.0	1.0						0.0		0.0		0.2		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W04-L W04-U	31.5	31.5	0.0	1.0						0.0		0.0		0.4		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W05-L W05-U	31.2	31.2	0.0	1.0						0.0		0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
Second	R1	W01-L W01-U	31.9	31.9	0.0	1.0	471.9	442.0	442.0	0.0	1.0	0.0		0.0		0.2		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	31.8	31.8	0.0	1.0						0.0		0.0		0.2		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W03-L W03-U	31.8	31.8	0.0	1.0						0.0		0.0		0.3		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W04-L W04-U	35.2	35.2	0.0	1.0						0.0		0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W05-L W05-U	35.2	35.2	0.0	1.0						0.0		0.0		0.3		N/A	N/A	N/A	N/A	N/A	N/A		
79 Gloucester Avenue																									
First	R1	W01-L W01-U	29.7	29.7	0.0	1.0	465.1	188.4	188.4	0.0	1.0	0.0	0.6	0.6	0.0	0.6	0.0	0.6	0.0	0.0	N/A	N/A	N/A	N/A	
Second	R1	W01-L W01-U	32.9	32.9	0.0	1.0	465.1	284.0	284.0	0.0	1.0	0.0	0.7	0.7	0.0	0.7	0.0	0.7	0.0	0.0	N/A	N/A	N/A	N/A	
81 Gloucester Avenue																									
Basement	R1	W01-L W01-U	24.9	24.9	0.0	1.0	429.6	219.6	219.6	0.0	1.0	0.0	0.6	0.6	0.0	0.6	0.0	0.6	0.0	0.0	N/A	N/A	N/A	N/A	
Ground	R1	W01-L W02-L W02-U	28.1	28.1	0.0	1.0	429.6	267.8	267.8	0.0	1.0	0.1		0.1		0.0		N/A	N/A	N/A	N/A	N/A	N/A		
	R1	W02-L W02-U	27.7	27.7	0.0	1.0						0.0		0.0		0.7		0.7		0.0		N/A	N/A	N/A	N/A
First	R1	W01-L W01-U	30.3	30.3	0.0	1.0	429.6	276.3	276.3	0.0	1.0	0.0		0.0		0.5		0.5		N/A	N/A	N/A	N/A	N/A	N/A
	R1	W02-L W02-U	30.6	30.6	0.0	1.0						0.0		0.0		0.0		0.5		0.5		N/A	N/A	N/A	N/A

Address	Room	Window	Existing VSC	Proposed VSC	Loss	Proportion Reduction	Room Area	Existing NSC	Proposed NSC	Loss	Proportion Reduction	Existing ADF Window	Total	Proposed ADF Window	Total	Loss	Loss	Existing APSH Total	Winter	Proposed APSH Total	Winter	Total Loss	Winter Loss	
Second	R1	W01-L W01-U	33.2	33.2	0.0	1.0	429.6	310.5	310.5	0.0	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A			
	R1	W02-L W02-U	33.4	33.4	0.0	1.0						0.5		0.5								N/A	N/A	
83 Gloucester Avenue																								
Basement	R1	W01-L W01-U	26.0	26.0	0.0	1.0	462.4	263.9	263.9	0.0	1.0	0.0		0.0		0.5	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
Ground	R1	W01	28.9	28.9	0.0	1.0	462.4	314.8	314.8	0.0	1.0	0.1		0.1		N/A	N/A	N/A	N/A	N/A	N/A			
	R1	W02-L W02-U	28.6	28.6	0.0	1.0						0.0		0.0								N/A	N/A	N/A
First	R1	W01-L W01-U	31.0	31.0	0.0	1.0	462.4	344.2	344.2	0.0	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A			
	R1	W02-L W02-U	31.4	31.4	0.0	1.0						0.5		0.5								N/A	N/A	N/A
Second	R1	W01-L W01-U	33.7	33.7	0.0	1.0	462.4	370.1	370.1	0.0	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A			
	R1	W02-L W02-U	34.0	34.0	0.0	1.0						0.5		0.5								N/A	N/A	N/A
85 Gloucester Avenue																								
Basement	R1	W01-L W01-U	27.5	27.4	0.2	1.0	482.5	301.8	295.3	6.6	1.0	0.0		0.0		0.5	0.0	0.5	N/A	N/A	N/A	N/A	N/A	N/A
Ground	R1	W01	30.7	30.6	0.1	1.0	482.5	412.0	389.0	23.0	0.9	0.1		0.1		N/A	N/A	N/A	N/A	N/A	N/A			
	R1	W02-L W02-U	30.1	29.9	0.2	1.0						0.0		0.0								N/A	N/A	N/A
First	R1	W01-L W01-U	32.5	32.5	0.1	1.0	482.5	441.6	430.4	11.2	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A			
	R1	W02-L W02-U	32.7	32.5	0.2	1.0						0.5		0.5								N/A	N/A	N/A
Second	R1	W01-L W01-U	34.9	34.9	0.1	1.0	482.5	451.5	443.4	8.2	1.0	0.0		0.0		N/A	N/A	N/A	N/A	N/A	N/A			
	R1	W02-L W02-U	35.1	34.9	0.2	1.0						0.5		0.5								N/A	N/A	N/A



Appendix 3

Drawings and results of the internal daylight assessment

Sources of information

21st Architecture Ltd
173_GA_00.dwg
173_Split Model.skp
Received: 21/01/2015

173_GA_-01 Rev E.pdf
173_GA_00 Rev E.pdf
173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received: 27/01/2015



Project 44 Gloucester Ave
London

Title Basement Level
Floor Plan

Drawn DB Checked DF

Date 27/01/2015 Rel no. ID10

Drawing no. 0088-ID01



Sources of information

21st Architecture Ltd
173_GA_00.dwg
173_Split Model.skp
Received: 21/01/2015

173_GA_-01 Rev E.pdf
173_GA_00 Rev E.pdf
173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received: 27/01/2015

Project 44 Gloucester Ave
London

Title Ground Level
Floor Plan

Drawn DB Checked DF

Date 27/01/2015 Rel no. ID10

Drawing no. 0088-ID02



Sources of information

21st Architecture Ltd

173_GA_00.dwg
173_Split Model.skp

Received: 21/01/2015

173_GA_-01 Rev E.pdf
173_GA_00 Rev E.pdf
173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received: 27/01/2015

Project 44 Gloucester Ave
London

Title First floor Level
Floor Plan

Drawn DB **Checked** DF

Date 27/01/2015 **Rel no.** ID10

Drawing no. 0088-ID03

Sources of information

21st Architecture Ltd
173_GA_00.dwg
173_Split Model.skp
Received: 21/01/2015

173_GA_-01 Rev E.pdf
173_GA_00 Rev E.pdf
173_GA_01 Rev E.pdf
173_GA_02 Rev E.pdf
173_GA_03 Rev D.pdf
173_GA_04 Rev D.pdf
173_GA_05 Rev D.pdf
173_GA_Roof Rev A.pdf
Received: 27/01/2015



Floor	Room ID	Window ID	Room Use	VSC	Win. Trans.	Glazing Area	Theta	Room Area	Room	Split Calc Multiplier	ADF	TOTAL ADF	TOTAL APSH	WINTER APSH
B1														
Basement	R1	W01-L	Bedroom	9.96	0.65	0.09	25.14	71.88	0.60	0.15	0.00	0.6	15	0
		W01-U	Bedroom		0.65	1.07	36.14	71.88	0.60	1.00	0.55			
Basement	R2	W02-L	Bedroom	11.07	0.65	0.12	27.89	72.77	0.60	0.15	0.01	0.8	20	1
		W02-U	Bedroom		0.65	1.46	38.58	72.77	0.60	1.00	0.79			
Basement	R3	W03-L	Bedroom	10.82	0.65	0.12	27.92	58.20	0.60	0.15	0.01	1.0	20	1
		W03-U	Bedroom		0.65	1.49	38.59	58.20	0.60	1.00	1.00			
Basement	R4	W04	Bedroom	7.87	0.65	1.69	32.35	52.01	0.60	1.00	1.07	1.1	13	1
Basement	R5	W05	Bedroom	6.97	0.65	1.63	30.37	58.49	0.60	1.00	0.86	0.9	10	0
Basement	R6	W06	Bedroom	5.99	0.65	1.62	28.13	62.49	0.60	1.00	0.74	0.7	12	1
Basement	R7	W07	Bedroom	7.48	0.65	1.60	31.52	51.82	0.60	1.00	0.99	1.0	12	1
Basement	R8	W08-L	Bedroom	10.48	0.65	0.13	27.53	68.25	0.60	0.15	0.01	0.9	20	1
		W08-U	Bedroom		0.65	1.57	38.15	68.25	0.60	1.00	0.89			
Basement	R9	W09-L	Bedroom	10.75	0.65	0.14	27.75	67.83	0.60	0.15	0.01	1.0	20	1
		W09-U	Bedroom		0.65	1.65	38.32	67.83	0.60	1.00	0.95			
Basement	R10	W10-L	Bedroom	10.74	0.65	0.13	27.63	53.89	0.60	0.15	0.01	1.1	20	1
		W10-U	Bedroom		0.65	1.56	38.22	53.89	0.60	1.00	1.12			
Basement	R11	W11-L	Bedroom	10.44	0.65	0.12	26.97	53.10	0.60	0.15	0.01	1.1	20	1
		W11-U	Bedroom		0.65	1.48	37.74	53.10	0.60	1.00	1.07			
Basement	R12	W12-L	L/K/D	24.29	0.65	0.28	48.68	203.39	0.60	0.15	0.01	0.9	N/A	N/A
		W12-U	L/K/D		0.65	1.07	58.91	203.39	0.60	1.00	0.31			
		W13-L	L/K/D	24.70	0.65	0.28	48.40	203.39	0.60	0.15	0.01			
		W13-U	L/K/D		0.65	1.07	59.88	203.39	0.60	1.00	0.32			
		W14-L	L/K/D	12.25	0.65	0.39	33.61	203.39	0.60	0.15	0.01			
		W14-U	L/K/D		0.65	1.48	37.87	203.39	0.60	1.00	0.28			
Ground	R1	W01	L/K/D	29.69	0.65	2.26	66.63	179.06	0.60	1.00	0.85	1.7	53	15
		W02	L/K/D	29.82	0.65	2.27	66.86	179.06	0.60	1.00	0.86			
Ground	R2	W03	L/K/D	30.45	0.65	2.27	68.46	210.63	0.60	1.00	0.75	3.2	N/A	N/A
		W04	L/K/D	30.75	0.65	2.26	68.41	210.63	0.60	1.00	0.75			
		W05	L/K/D	30.62	0.65	2.27	68.19	210.63	0.60	1.00	0.75			
		W06	L/K/D	17.76	0.65	2.22	48.18	210.63	0.60	1.00	0.52			
		W07	L/K/D	14.53	0.65	2.22	42.66	210.63	0.60	1.00	0.46			
Ground	R3	W08	L/K/D	28.15	0.65	2.40	64.68	189.22	0.60	1.00	0.83	1.6	49	11
		W09	L/K/D	28.14	0.65	2.27	64.13	189.22	0.60	1.00	0.78			
Ground	R4	W10	L/K/D	28.09	0.65	2.27	64.04	192.92	0.60	1.00	0.77	2.8	N/A	N/A
		W11	L/K/D	28.17	0.65	2.26	64.14	192.92	0.60	1.00	0.76			
		W12	L/K/D	25.15	0.65	2.22	59.94	192.92	0.60	1.00	0.70			
		W13	L/K/D	19.76	0.65	2.22	50.93	192.92	0.60	1.00	0.60			
Ground	R5	W14-L	Bedroom	31.62	0.65	0.12	70.89	61.73	0.60	0.15	0.02	1.9	51	17
		W14-U	Bedroom		0.65	1.61	72.74	61.73	0.60	1.00	1.93			
Ground	R6	W15	L/K/D	32.75	0.65	0.31	56.96	118.26	0.60	1.00	0.15	1.5	N/A	N/A
		W16-L	L/K/D	32.26	0.65	0.13	69.44	118.26	0.60	0.15	0.01			
		W16-U	L/K/D		0.65	1.58	70.61	118.26	0.60	1.00	0.96			
		W17	L/K/D	11.59	0.65	1.35	36.59	118.26	0.60	1.00	0.42			
Ground	R7	W18-L	Bedroom	35.20	0.65	1.22	77.18	61.79	0.60	0.15	0.23	2.5	N/A	N/A
		W18-U	Bedroom		0.65	2.08	66.03	61.79	0.60	1.00	2.26			
Ground	R8	W19-L	Bedroom	34.75	0.65	1.21	76.48	52.19	0.60	0.15	0.27	2.9	N/A	N/A
		W19-U	Bedroom		0.65	2.07	64.72	52.19	0.60	1.00	2.61			
Ground	R9	W20-L	L/K/D	31.21	0.65	1.22	69.45	127.48	0.60	0.15	0.10	1.10	N/A	N/A
		W20-U	L/K/D		0.65	2.08	66.51	127.48	0.60	1.00	1.10			

Floor	Room ID	Window ID	Room Use	VSC	Win. Trans.	Glazing Area	Theta	Room Area	Room	Split Calc Multiplier	ADF	TOTAL ADF	TOTAL APSH	WINTER APSH
		W21-L	L/K/D	29.42	0.65	1.22	66.69	127.48	0.60	0.15	0.10		N/A	N/A
		W21-U	L/K/D		0.65	2.08	64.28	127.48	0.60	1.00	1.07			
		W22-L	L/K/D	1.65	0.65	0.68	13.73	127.48	0.60	0.15	0.01		0	0
		W22-U	L/K/D		0.65	1.16	8.86	127.48	0.60	1.00	0.08	2.5		
Ground	R10	W23-L	Bedroom	22.92	0.65	1.34	56.22	63.66	0.60	0.15	0.18		N/A	N/A
		W23-U	Bedroom		0.65	2.29	46.89	63.66	0.60	1.00	1.71	1.9		
Ground	R11	W24-L	Bedroom	19.53	0.65	1.37	50.60	49.01	0.60	0.15	0.22		N/A	N/A
		W24-U	Bedroom		0.65	2.33	41.44	49.01	0.60	1.00	2.00	2.2		
Ground	R12	W25-L	L/K/D	18.78	0.65	0.52	46.20	125.18	0.60	0.15	0.03		N/A	N/A
		W25-U	L/K/D		0.65	0.92	47.11	125.18	0.60	1.00	0.35			
		W26-L	L/K/D	16.40	0.65	1.18	45.20	125.18	0.60	0.15	0.06		N/A	N/A
		W26-U	L/K/D		0.65	2.06	45.46	125.18	0.60	1.00	0.76			
		W27-L	L/K/D	15.29	0.65	0.62	41.64	125.18	0.60	0.15	0.03		N/A	N/A
		W27-U	L/K/D		0.65	1.09	42.10	125.18	0.60	1.00	0.37	1.6		
Ground	R13	W28-L	L/K/D	16.78	0.65	1.76	45.70	117.47	0.60	0.15	0.10		20	1
		W28-U	L/K/D		0.65	3.08	47.04	117.47	0.60	1.00	1.25			
		W29-L	L/K/D	0.66	0.65	1.03	10.66	117.47	0.60	0.15	0.01		N/A	N/A
		W29-U	L/K/D		0.65	1.80	2.89	117.47	0.60	1.00	0.04	1.5		
Ground	R14	W30-L	Bedroom	10.33	0.65	1.07	38.52	70.40	0.60	0.15	0.09		18	1
		W30-U	Bedroom		0.65	1.88	25.77	70.40	0.60	1.00	0.70	0.8		
Ground	R15	W31-L	Bedroom	12.19	0.65	1.19	42.90	70.27	0.60	0.15	0.11		19	2
		W31-U	Bedroom		0.65	2.08	28.39	70.27	0.60	1.00	0.85	1.0		
Ground	R16	W32-L	L/K/D	0.19	0.65	1.04	7.50	117.23	0.60	0.15	0.01		0	0
		W32-U	L/K/D		0.65	1.78	2.69	117.23	0.60	1.00	0.04			
		W33-L	L/K/D	18.02	0.65	1.79	47.32	117.23	0.60	0.15	0.11		29	2
		W33-U	L/K/D		0.65	3.06	49.37	117.23	0.60	1.00	1.31	1.5		
First	R1	W01-L	Bedroom	34.33	0.65	0.35	73.16	71.66	0.60	0.15	0.05		60	21
		W01-U	Bedroom		0.65	1.92	75.14	71.66	0.60	1.00	2.04	2.1		
First	R2	W02-L	L/K/D	34.41	0.65	0.35	73.33	120.07	0.60	0.15	0.03		60	21
		W02-U	L/K/D		0.65	1.92	75.29	120.07	0.60	1.00	1.22			
		W03-L	L/K/D	34.51	0.65	0.35	73.59	120.07	0.60	0.15	0.03		60	21
		W03-U	L/K/D		0.65	1.92	75.51	120.07	0.60	1.00	1.23	2.5		
First	R3	W04-L	Bedroom	34.66	0.65	0.35	73.94	59.13	0.60	0.15	0.07		60	21
		W04-U	Bedroom		0.65	1.92	75.80	59.13	0.60	1.00	2.50	2.6		
First	R4	W05-L	L/K/D	34.92	0.65	0.35	74.42	142.07	0.60	0.15	0.03		61	22
		W05-U	L/K/D		0.65	1.92	76.19	142.07	0.60	1.00	1.05			
		W06-L	L/K/D	34.84	0.65	0.34	74.08	142.07	0.60	0.15	0.03		60	22
		W06-U	L/K/D		0.65	1.86	75.88	142.07	0.60	1.00	1.01			
		W07-L	L/K/D	23.27	0.65	0.35	54.93	142.07	0.60	0.15	0.02		N/A	N/A
		W07-U	L/K/D		0.65	1.92	57.19	142.07	0.60	1.00	0.78			
		W08-L	L/K/D	18.87	0.65	0.35	48.08	142.07	0.60	0.15	0.02		N/A	N/A
		W08-U	L/K/D		0.65	1.92	49.87	142.07	0.60	1.00	0.68	3.6		
First	R5	W09-L	L/K/D	34.73	0.65	0.16	68.20	126.00	0.60	0.15	0.01		42	16
		W09-U	L/K/D		0.65	0.88	70.04	126.00	0.60	1.00	0.50			
		W10-L	L/K/D	34.66	0.65	0.35	73.85	126.00	0.60	0.15	0.03		61	22
		W10-U	L/K/D		0.65	1.92	75.71	126.00	0.60	1.00	1.17			
		W11-L	L/K/D	34.59	0.65	0.16	67.74	126.00	0.60	0.15	0.01		42	16
		W11-U	L/K/D		0.65	0.87	69.64	126.00	0.60	1.00	0.49			
		W12-L	L/K/D	27.71	0.65	0.16	59.93	126.00	0.60	0.15	0.01		N/A	N/A
		W12-U	L/K/D		0.65	0.87	62.38	126.00	0.60	1.00	0.44			
		W13-L	L/K/D	27.07	0.65	0.35	60.92	126.00	0.60	0.15	0.03		N/A	N/A
		W13-U	L/K/D		0.65	1.92	63.51	126.00	0.60	1.00	0.98			
		W14-L	L/K/D	26.11	0.65	0.16	56.61	126.00	0.60	0.15	0.01		N/A	N/A
		W14-U	L/K/D		0.65	0.88	59.03	126.00	0.60	1.00	0.42	4.1		
First	R6	W15-L	Bedroom	33.94	0.65	0.35	72.25	65.77	0.60	0.15	0.06		61	22
		W15-U	Bedroom		0.65	1.92	74.39	65.77	0.60	1.00	2.21	2.3		

Floor	Room ID	Window ID	Room Use	VSC	Win. Trans.	Glazing Area	Theta	Room Area	Room	Split Calc Multiplier	ADF	TOTAL ADF	TOTAL APSH	WINTER APSH
First	R7	W16-L	Bedroom	33.29	0.65	0.35	71.66	62.34	0.60	0.15	0.06	2.4	60	21
		W16-U	Bedroom		0.65	1.92	73.92	62.34	0.60	1.00	2.31			
First	R8	W17-L	Bedroom	33.44	0.65	0.35	71.33	55.52	0.60	0.15	0.07	2.7	61	22
		W17-U	Bedroom		0.65	1.92	73.65	55.52	0.60	1.00	2.59			
First	R9	W18-L	Bedroom	33.43	0.65	0.33	71.11	65.85	0.60	0.15	0.05	2.1	59	21
		W18-U	Bedroom		0.65	1.82	73.46	65.85	0.60	1.00	2.06			
First	R10	W19-L	L/K/D	33.49	0.65	0.33	71.18	129.44	0.60	0.15	0.03	4.5	59	21
		W19-U	L/K/D		0.65	1.82	73.52	129.44	0.60	1.00	1.05			
		W20-L	L/K/D	33.60	0.65	0.35	71.60	129.44	0.60	0.15	0.03		59	20
		W20-U	L/K/D		0.65	1.92	73.87	129.44	0.60	1.00	1.11			
		W21-L	L/K/D	33.11	0.65	0.35	70.69	129.44	0.60	0.15	0.03		N/A	N/A
		W21-U	L/K/D		0.65	1.92	73.79	129.44	0.60	1.00	1.11			
		W22-L	L/K/D	32.46	0.65	0.35	69.68	129.44	0.60	0.15	0.03		N/A	N/A
		W22-U	L/K/D		0.65	1.92	72.65	129.44	0.60	1.00	1.09			
First	R11	W23	Bedroom	26.72	0.65	1.43	61.29	62.99	0.60	1.00	1.41	1.4	N/A	N/A
First	R12	W24-L	Bedroom	35.22	0.65	0.09	74.94	61.43	0.60	0.15	0.02	1.9	56	20
		W24-U	Bedroom		0.65	1.50	75.86	61.43	0.60	1.00	1.88			
First	R13	W25-L	Bedroom	9.95	0.65	0.78	38.46	67.61	0.60	0.15	0.07	1.7	N/A	N/A
		W25-U	Bedroom		0.65	1.31	23.41	67.61	0.60	1.00	0.46			
		W26-L	Bedroom	24.99	0.65	0.66	56.11	67.61	0.60	0.15	0.08		42	9
		W26-U	Bedroom		0.65	1.18	59.92	67.61	0.60	1.00	1.06			
First	R14	W27-L	L/K/D	27.65	0.65	1.18	63.39	96.79	0.60	0.15	0.12	3.1	N/A	N/A
		W27-U	L/K/D		0.65	2.12	60.54	96.79	0.60	1.00	1.35			
		W28-L	L/K/D	33.09	0.65	1.18	72.91	96.79	0.60	0.15	0.14		N/A	N/A
		W28-U	L/K/D		0.65	2.12	68.19	96.79	0.60	1.00	1.52			
First	R15	W29-L	Bedroom	38.24	0.65	0.25	84.54	67.83	0.60	0.15	0.05	3.1	N/A	N/A
		W29-U	Bedroom		0.65	2.49	82.79	67.83	0.60	1.00	3.09			
First	R16	W30-L	L/K/D	38.47	0.65	0.25	85.09	139.07	0.60	0.15	0.02	5.3	N/A	N/A
		W30-U	L/K/D		0.65	2.49	83.28	139.07	0.60	1.00	1.51			
First	R16	W31-L	L/K/D	38.61	0.65	0.25	85.47	139.07	0.60	0.15	0.02	5.3	N/A	N/A
		W31-U	L/K/D		0.65	2.49	83.61	139.07	0.60	1.00	1.52			
		W32-L	L/K/D	26.88	0.65	0.25	61.51	139.07	0.60	0.15	0.02		49	17
		W32-U	L/K/D		0.65	2.49	61.97	139.07	0.60	1.00	1.13			
		W33-L	L/K/D	25.51	0.65	0.25	59.23	139.07	0.60	0.15	0.02		46	14
		W33-U	L/K/D		0.65	2.49	59.75	139.07	0.60	1.00	1.09			
First	R17	W34-L	L/K/D	38.70	0.65	0.25	85.74	139.36	0.60	0.15	0.02	5.2	N/A	N/A
		W34-U	L/K/D		0.65	2.50	83.84	139.36	0.60	1.00	1.53			
		W35-L	L/K/D	38.80	0.65	0.25	85.89	139.36	0.60	0.15	0.02		N/A	N/A
		W35-U	L/K/D		0.65	2.49	83.96	139.36	0.60	1.00	1.52			
		W36-L	L/K/D	24.45	0.65	0.25	57.40	139.36	0.60	0.15	0.02		44	12
		W36-U	L/K/D		0.65	2.49	58.00	139.36	0.60	1.00	1.05			
		W37-L	L/K/D	23.91	0.65	0.25	56.47	139.36	0.60	0.15	0.02		43	11
		W37-U	L/K/D		0.65	2.49	57.12	139.36	0.60	1.00	1.04			
First	R18	W38-L	Bedroom	23.76	0.65	0.15	55.68	75.80	0.60	0.15	0.02	1.7	40	8
		W38-U	Bedroom		0.65	1.54	56.58	75.80	0.60	1.00	1.17			
		W39-L	Bedroom	23.78	0.65	0.07	52.66	75.80	0.60	0.15	0.01		30	3
		W39-U	Bedroom		0.65	0.71	53.98	75.80	0.60	1.00	0.51			
First	R19	W40-L	Bedroom	23.44	0.65	0.25	55.70	74.35	0.60	0.15	0.03	2.0	41	10
		W40-U	Bedroom		0.65	2.50	56.33	74.35	0.60	1.00	1.92			
First	R20	W41-L	L/K/D	22.40	0.65	0.25	54.09	140.26	0.60	0.15	0.01	1.7	39	10
		W41-U	L/K/D		0.65	2.49	54.65	140.26	0.60	1.00	0.99			
		W42-L	L/K/D	20.35	0.65	0.25	50.79	140.26	0.60	0.15	0.01		36	10
		W42-U	L/K/D		0.65	2.49	51.37	140.26	0.60	1.00	0.93			
		W43-L	L/K/D	39.08	0.65	0.24	86.58	140.26	0.60	0.15	0.02		N/A	N/A
		W43-U	L/K/D		0.65	2.49	84.51	140.26	0.60	1.00	1.52			
		W44-L	L/K/D	39.10	0.65	0.25	86.66	140.26	0.60	0.15	0.02		N/A	N/A

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First	R21	W44-U	L/K/D		0.65	2.49	84.57	140.26	0.60	1.00	1.52	5.0		
		W45-L	L/K/D	35.98	0.65	1.22	79.23	119.03	0.60	0.15	0.12		N/A	N/A
		W45-U	L/K/D		0.65	2.08	68.96	119.03	0.60	1.00	1.22			
		W46-L	L/K/D	14.21	0.65	0.68	40.26	119.03	0.60	0.15	0.04		25	6
		W46-U	L/K/D		0.65	1.16	41.79	119.03	0.60	1.00	0.41			
		W47-L	L/K/D	5.40	0.65	1.22	27.24	119.03	0.60	0.15	0.04		15	8
		W47-U	L/K/D		0.65	2.08	22.18	119.03	0.60	1.00	0.39	2.2		
First	R22	W48-L	Bedroom	34.42	0.65	1.18	77.89	64.04	0.60	0.15	0.22		N/A	N/A
		W48-U	Bedroom		0.65	2.02	63.97	64.04	0.60	1.00	2.05	2.3		
First	R23	W49-L	Bedroom	32.80	0.65	1.22	75.59	64.37	0.60	0.15	0.22		N/A	N/A
		W49-U	Bedroom		0.65	2.08	59.83	64.37	0.60	1.00	1.96	2.2		
First	R24	W50-L	Bedroom	30.96	0.65	1.22	73.59	58.19	0.60	0.15	0.24		N/A	N/A
		W50-U	Bedroom		0.65	2.08	55.92	58.19	0.60	1.00	2.03	2.3		
First	R25	W51-L	Bedroom	29.07	0.65	1.21	71.47	55.65	0.60	0.15	0.24		N/A	N/A
		W51-U	Bedroom		0.65	2.08	52.42	55.65	0.60	1.00	1.99	2.2		
First	R26	W52-L	L/K/D	25.02	0.65	1.22	65.30	128.80	0.60	0.15	0.09		N/A	N/A
		W52-U	L/K/D		0.65	2.08	46.55	128.80	0.60	1.00	0.76			
		W53-L	L/K/D	24.76	0.65	1.22	64.60	128.80	0.60	0.15	0.09		N/A	N/A
		W53-U	L/K/D		0.65	2.08	46.35	128.80	0.60	1.00	0.76			
		W54-L	L/K/D	2.41	0.65	0.68	16.73	128.80	0.60	0.15	0.01		3	0
		W54-U	L/K/D		0.65	1.16	12.71	128.80	0.60	1.00	0.12	1.8		
First	R27	W55-L	Bedroom	25.75	0.65	1.34	60.60	63.58	0.60	0.15	0.19		N/A	N/A
		W55-U	Bedroom		0.65	2.28	50.71	63.58	0.60	1.00	1.85	2.0		
First	R28	W56-L	Bedroom	22.74	0.65	1.37	55.41	49.03	0.60	0.15	0.24		N/A	N/A
		W56-U	Bedroom		0.65	2.33	46.00	49.03	0.60	1.00	2.22	2.5		
First	R29	W57-L	L/K/D	22.33	0.65	0.53	51.36	125.06	0.60	0.15	0.03		N/A	N/A
		W57-U	L/K/D		0.65	0.91	53.16	125.06	0.60	1.00	0.39			
		W58-L	L/K/D	19.62	0.65	1.19	50.08	125.06	0.60	0.15	0.07		N/A	N/A
		W58-U	L/K/D		0.65	2.04	51.22	125.06	0.60	1.00	0.85			
		W59-L	L/K/D	18.19	0.65	0.63	46.02	125.06	0.60	0.15	0.04		N/A	N/A
		W59-U	L/K/D		0.65	1.08	47.33	125.06	0.60	1.00	0.42	1.8		
First	R30	W60-L	L/K/D	20.17	0.65	1.79	51.04	117.44	0.60	0.15	0.12		27	1
		W60-U	L/K/D		0.65	3.06	52.50	117.44	0.60	1.00	1.39			
First	R30	W61-L	L/K/D	1.17	0.65	1.04	13.17	117.44	0.60	0.15	0.02		N/A	N/A
		W61-U	L/K/D		0.65	1.78	7.26	117.44	0.60	1.00	0.11	1.6		
First	R31	W62-L	Bedroom	13.02	0.65	1.07	43.89	70.38	0.60	0.15	0.10		21	2
		W62-U	Bedroom		0.65	1.83	30.12	70.38	0.60	1.00	0.80	0.9		
First	R32	W63-L	Bedroom	16.38	0.65	1.21	49.83	70.37	0.60	0.15	0.13		24	3
		W63-U	Bedroom		0.65	2.06	35.80	70.37	0.60	1.00	1.06	1.2		
First	R33	W64-L	L/K/D	0.39	0.65	1.04	10.16	117.23	0.60	0.15	0.01		0	0
		W64-U	L/K/D		0.65	1.78	2.69	117.23	0.60	1.00	0.04			
		W65-L	L/K/D	23.17	0.65	1.79	55.04	117.23	0.60	0.15	0.13		40	6
		W65-U	L/K/D		0.65	3.06	57.91	117.23	0.60	1.00	1.54	1.7		
Second	R1	W01-L	L/K/D	38.51	0.65	0.01	81.59	135.18	0.60	0.15	0.00		63	24
		W01-U	L/K/D		0.65	2.23	83.59	135.18	0.60	1.00	1.40			
		W02-L	L/K/D	38.53	0.65	0.01	81.70	135.18	0.60	0.15	0.00		63	24
		W02-U	L/K/D		0.65	2.23	83.64	135.18	0.60	1.00	1.40	2.8		
Second	R2	W03-L	Bedroom	38.57	0.65	0.01	81.83	59.10	0.60	0.15	0.00		63	24
		W03-U	Bedroom		0.65	2.23	83.73	59.10	0.60	1.00	3.21	3.2		
Second	R3	W04-L	Bedroom	38.36	0.65	0.01	82.14	58.29	0.60	0.15	0.00		63	24
		W04-U	Bedroom		0.65	2.23	83.88	58.29	0.60	1.00	3.26	3.3		
Second	R4	W05-L	L/K/D	38.68	0.65	0.01	82.18	109.58	0.60	0.15	0.00		63	24

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Second	R5	W05-U	L/K/D	38.67	0.65	2.23	83.93	109.58	0.60	1.00	1.73	6.1	63	24
		W06-L	L/K/D		0.65	0.01	82.12	109.58	0.60	0.15	0.00			
		W06-U	L/K/D		0.65	2.23	83.92	109.58	0.60	1.00	1.73			
		W07-L	L/K/D		0.65	0.01	65.07	109.58	0.60	0.15	0.00			
		W07-U	L/K/D		0.65	2.22	68.10	109.58	0.60	1.00	1.40			
		W08-L	L/K/D		0.65	0.01	57.00	109.58	0.60	0.15	0.00			
		W08-U	L/K/D		0.65	2.17	61.12	109.58	0.60	1.00	1.23			
Second	R5	W09-L	L/K/D	38.66	0.65	0.01	74.94	144.24	0.60	0.15	0.00	4.1	44	18
		W09-U	L/K/D		0.65	1.01	76.66	144.24	0.60	1.00	0.55		63	24
		W10-L	L/K/D	38.65	0.65	0.01	81.99	144.24	0.60	0.15	0.00			
		W10-U	L/K/D		0.65	2.23	83.86	144.24	0.60	1.00	1.32			
Second	R5	W11-L	L/K/D	38.64	0.65	0.01	74.84	144.24	0.60	0.15	0.00	7.0	44	18
		W11-U	L/K/D		0.65	1.01	76.62	144.24	0.60	1.00	0.54		63	24
		W12-L	L/K/D	38.59	0.65	0.01	81.72	144.24	0.60	0.15	0.00			
		W12-U	L/K/D		0.65	2.23	83.74	144.24	0.60	1.00	1.31			
		W13-L	L/K/D	33.71	0.65	0.01	71.81	144.24	0.60	0.15	0.00			
		W13-U	L/K/D		0.65	2.23	74.28	144.24	0.60	1.00	1.17			
		W14-L	L/K/D	33.88	0.65	0.01	68.60	144.24	0.60	0.15	0.00			
		W14-U	L/K/D		0.65	1.01	69.98	144.24	0.60	1.00	0.50			
		W15-L	L/K/D	33.33	0.65	0.01	71.42	144.24	0.60	0.15	0.00			
		W15-U	L/K/D		0.65	2.23	73.53	144.24	0.60	1.00	1.15			
		W16-L	L/K/D	32.55	0.65	0.01	65.48	144.24	0.60	0.15	0.00			
		W16-U	L/K/D		0.65	1.01	67.29	144.24	0.60	1.00	0.48			
Second	R6	W17-L	Bedroom	38.52	0.65	0.01	81.40	63.64	0.60	0.15	0.00	3.0	63	24
		W17-U	Bedroom		0.65	2.23	83.59	63.64	0.60	1.00	2.97			
Second	R7	W18-L	Bedroom	38.41	0.65	0.01	81.08	59.85	0.60	0.15	0.00	3.2	63	24
		W18-U	Bedroom		0.65	2.23	83.45	59.85	0.60	1.00	3.16			
Second	R8	W19-L	L/K/D	38.45	0.65	0.01	81.11	159.33	0.60	0.15	0.00	4.7	63	24
		W19-U	L/K/D		0.65	2.23	83.48	159.33	0.60	1.00	1.19			
		W20-L	L/K/D	38.46	0.65	0.01	81.15	159.33	0.60	0.15	0.00			
		W20-U	L/K/D		0.65	2.23	83.48	159.33	0.60	1.00	1.19			
		W21-L	L/K/D	38.14	0.65	0.01	82.22	159.33	0.60	0.15	0.00			
		W21-U	L/K/D		0.65	2.23	83.06	159.33	0.60	1.00	1.18			
		W22-L	L/K/D	37.74	0.65	0.01	81.18	159.33	0.60	0.15	0.00			
		W22-U	L/K/D		0.65	2.23	82.35	159.33	0.60	1.00	1.17			
Second	R9	W23-L	Bedroom	16.90	0.65	0.77	47.85	67.60	0.60	0.15	0.08	2.2	N/A	N/A
		W23-U	Bedroom		0.65	1.31	37.15	67.60	0.60	1.00	0.73		54	19
		W24-L	Bedroom	32.94	0.65	0.68	69.24	67.60	0.60	0.15	0.11			
		W24-U	Bedroom		0.65	1.16	72.49	67.60	0.60	1.00	1.26			
Second	R10	W25-L	L/K/D	29.42	0.65	1.22	66.04	96.76	0.60	0.15	0.13	3.2	N/A	N/A
		W25-U	L/K/D		0.65	2.08	63.21	96.76	0.60	1.00	1.38		N/A	N/A
		W26-L	L/K/D	34.70	0.65	1.22	75.79	96.76	0.60	0.15	0.15			
		W26-U	L/K/D		0.65	2.08	70.42	96.76	0.60	1.00	1.54			
Second	R11	W27-L	L/K/D	39.33	0.65	1.22	88.92	119.83	0.60	0.15	0.14	2.2	N/A	N/A
		W27-U	L/K/D		0.65	2.04	89.35	119.83	0.60	1.00	1.54			
Second	R11	W28-L	L/K/D	0.00	0.65	0.61	0.00	119.83	0.60	0.15	0.00	2.2	0	0
		W28-U	L/K/D		0.65	1.03	0.00	119.83	0.60	1.00	0.00		18	10
		W29-L	L/K/D	6.87	0.65	1.22	30.42	119.83	0.60	0.15	0.05			
		W29-U	L/K/D		0.65	2.04	26.68	119.83	0.60	1.00	0.46			
Second	R12	W30-L	Bedroom	39.35	0.65	1.22	89.06	65.48	0.60	0.15	0.25	3.1	N/A	N/A
		W30-U	Bedroom		0.65	2.04	89.40	65.48	0.60	1.00	2.83			
Second	R13	W31-L	Bedroom	39.37	0.65	1.22	89.12	68.02	0.60	0.15	0.24	3.0	N/A	N/A
		W31-U	Bedroom		0.65	2.04	89.43	68.02	0.60	1.00	2.72			
Second	R14	W32-L	Bedroom	39.38	0.65	1.22	89.17	55.98	0.60	0.15	0.30	3.6	N/A	N/A
		W32-U	Bedroom		0.65	2.04	89.46	55.98	0.60	1.00	3.31			
Second	R15	W33-L	Bedroom	39.39	0.65	1.22	89.22	53.25	0.60	0.15	0.31	3.8	N/A	N/A
		W33-U	Bedroom		0.65	2.04	89.49	53.25	0.60	1.00	3.48			

Floor	Room ID	Window ID	Room Use	VSC	Win. Trans.	Glazing Area	Theta	Room Area	Room	Split Calc Multiplier	ADF	TOTAL ADF	TOTAL APSH	WINTER APSH
Second	R16	W34-L	L/K/D	39.40	0.65	0.31	89.27	141.93	0.60	0.15	0.03	4.7	N/A	N/A
		W34-U	L/K/D		0.65	0.52	89.51	141.93	0.60	1.00	0.33			
		W35-L	L/K/D	39.41	0.65	1.32	89.30	141.93	0.60	0.15	0.13			
		W35-U	L/K/D		0.65	2.22	89.53	141.93	0.60	1.00	1.42			
		W36-L	L/K/D	36.86	0.65	2.42	82.52	141.93	0.60	0.15	0.21			
		W36-U	L/K/D		0.65	4.06	83.73	141.93	0.60	1.00	2.43			
		W37-L	L/K/D	4.51	0.65	0.68	25.10	141.93	0.60	0.15	0.02		5	0
		W37-U	L/K/D		0.65	1.14	20.85	141.93	0.60	1.00	0.17			
Second	R17	W38-L	Bedroom	29.23	0.65	1.34	69.51	63.66	0.60	0.15	0.22	2.5	N/A	N/A
		W38-U	Bedroom		0.65	2.25	63.25	63.66	0.60	1.00	2.27			
Second	R18	W39-L	Bedroom	27.04	0.65	1.37	64.92	49.01	0.60	0.15	0.28	3.1	N/A	N/A
		W39-U	Bedroom		0.65	2.29	60.24	49.01	0.60	1.00	2.86			
Second	R19	W40-L	L/K/D	21.30	0.65	0.53	54.33	125.11	0.60	0.15	0.04	2.1	N/A	N/A
		W40-U	L/K/D		0.65	0.89	52.32	125.11	0.60	1.00	0.38			
		W41-L	L/K/D	24.76	0.65	1.19	58.30	125.11	0.60	0.15	0.08			
		W41-U	L/K/D		0.65	2.00	62.10	125.11	0.60	1.00	1.01			
		W42-L	L/K/D	23.04	0.65	0.63	55.47	125.11	0.60	0.15	0.04			
		W42-U	L/K/D		0.65	1.08	59.27	125.11	0.60	1.00	0.52			
Second	R20	W43-L	L/K/D	24.41	0.65	1.79	58.12	117.44	0.60	0.15	0.13	1.9	34	3
		W43-U	L/K/D		0.65	3.00	61.33	117.44	0.60	1.00	1.59			
Second	R20	W44-L	L/K/D	1.25	0.65	1.34	14.83	117.44	0.60	0.15	0.03	1.2	N/A	N/A
		W44-U	L/K/D		0.65	2.26	9.79	117.44	0.60	1.00	0.19			
Second	R21	W45-L	Bedroom	17.10	0.65	1.09	52.50	69.45	0.60	0.15	0.13	1.5	29	7
		W45-U	Bedroom		0.65	1.84	39.85	69.45	0.60	1.00	1.07			
Second	R22	W46-L	Bedroom	20.50	0.65	1.20	58.23	69.45	0.60	0.15	0.15	2.0	30	7
		W46-U	Bedroom		0.65	2.02	45.74	69.45	0.60	1.00	1.35			
Second	R23	W47-L	L/K/D	0.56	0.65	1.34	12.06	117.44	0.60	0.15	0.02			
		W47-U	L/K/D		0.65	2.26	3.99	117.44	0.60	1.00	0.08			
		W48-L	L/K/D	27.92	0.65	1.79	64.14	117.44	0.60	0.15	0.15			
		W48-U	L/K/D		0.65	3.00	67.19	117.44	0.60	1.00	1.74			