

**Barrington and Lamble Infill Sites 2 & 3
London NW5**

Daylight & Sunlight Report



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May 2015

1.0 Introduction and Methodology

1.1 Generally

We have been instructed to provide a report assessing the impact that the proposed developments at the Barrington and Lambie Sites 1 & 2 will have on the daylight and sunlight amenity enjoyed by the neighbouring residential properties.

It is usual to assess Daylight and Sunlight in relation to the guidelines set out in the 2011 Building Research Establishment (BRE) report 'Site layout planning for daylight and sunlight - A guide to good practice, second edition' by P. J. Littlefair. We shall refer to this report throughout as the 'BRE'. One of the primary sources for the BRE document is the more detailed guidance contained within 'British Standard 8206 Part 2:2008'. We shall also refer to this document.

In an urban location, frequently site constraints and the proximity of neighbouring buildings mean that some windows or rooms will fall short of the guideline figures. However, daylight and sunlight is one of a number of factors to be considered in designing a building. Often it needs to be balanced with energy efficiency considerations, the provision of external balcony space and other factors. In its introduction, the BRE guide itself urges that the guidelines be interpreted flexibly:

" The advice given here is not mandatory.....Although it gives numerical guidelines these should be interpreted flexibly.....For example in an historic city centre a higher degree of obstruction may be unavoidable...."

The BRE guidelines provide three principal measures of daylight – namely Vertical Sky Component (VSC), Average Daylight Factor (ADF) and No-Sky Line (NSL). In terms of Sunlight, we examine the BRE Annual Probable Sunlight Hours (APSH) and, in relation to overshadowing, we apply the BRE 2 Hour Sunlight Test. These measures of daylight and sunlight are discussed in the following paragraphs.

1.2 Diffuse Daylight

1.2.1 Vertical Sky Component (VSC)

VSC is a measure of the skylight reaching a point from an overcast sky. For Existing buildings, the BRE guideline is based on the loss of VSC at a point at the centre of a window, on the outer plane of the wall. The BRE guidelines state that if the VSC at the centre of a window is less than 27%, and it is less than 0.8 times its former value, then the diffuse daylighting of the existing building may be adversely affected.

1.2.2 No-Sky Line (NSL)

No-Sky Line (NSL) is a measure of the distribution of daylight within a room. As it maps out the region within a room where light can penetrate directly from the sky, it therefore accounts for the size of and number of windows by simple geometry. The BRE suggest the area of the working plane within a room that can receive direct skylight should not be reduced to less than 0.8 times its former value.

1.2.3 Average Daylight Factor (ADF)

ADF is a measure of the daylight within a room, and accounts for factors such as the number of windows and their size in relation to the size of the room. Clearly a small room with a large window will be better

illuminated by daylight than a large room with a small window. It also accounts for window transmittance and the reflectance of the internal walls, floor and ceiling. The general idea is that the daylight which reaches each of the windows is first calculated. Then, allowing for the window size, the daylight which then enters the room through the windows is determined. The light is then imagined to bounce around within the room, controlled by the reflectance of the internal surfaces. The ADF is detailed in both British Standard 8206 Part 2:2008 and Appendix C of the BRE Report. The BRE report provides guidance for acceptable values in the presence of supplementary electric lighting, depending on the room use. These are 1.0% for a bedroom, 1.5% for a living room and 2.0% for a kitchen.

1.3 Sunlight

1.3.1 Annual Probable Sunlight Hours (APSH)

In relation to sunlight, the BRE recommends that the Annual Probable Sunlight Hours (APSH) received at a given window in the proposed case should be at least 25% of the total available including at least 5% in winter. Where the proposed values fall short of these, and the absolute loss is greater than 4%, then the proposed values should not be less than 0.8 times their previous value in each period. We also note that the BRE guidelines state that '...all main living rooms of dwellings .. should be checked if they have a window facing within 90 degrees of due south. Kitchens and bedrooms are less important, although care should be taken not to block out too much sun'.

1.3.2 Overshadowing

Section 3.3 of the BRE guidelines describes the method of assessment of the availability of sunlight within garden/amenity spaces. This relates to the proportion of shading on March 21st.

The BRE criterion for garden or amenity areas is as follows:

'It is recommended that for it to appear adequately sunlit throughout the year, at least half of a garden or amenity space should receive at least two hours of sunlight on 21 March. If as a result of a new development an existing garden or amenity space does not meet the above, and the area which can receive two hours of sunlight on 21 March is less than 0.8 times its former value, then the loss of amenity is likely to be noticeable.'

2.0 Sources of Information

LASER SURVEYS

Site Survey and Elevations; L5216-T, L5216-E

BURD HAWARD ARCHITECTS LTD

Proposed Plans, Elevations + Sections and 3D Model;
1381_P20E to P21E...dwg, 3D.dwg, S2_Plan_00 to 02...dwg

3.0 Calculations and Assumptions

In order to calculate the various measures of daylight and sunlight it is necessary to construct a 3D computer model. The model was analysed using proprietary software to calculate the various measures of daylight and sunlight.

The majority of the windows in, and massing of the surrounding properties, including existing buildings on the site, were modelled according to the measured survey data. The Ordnance Survey data was used for the building addresses. The internal arrangements of 1-12 Barrington Close and 1-16 Lamble Street were taken from drawings of the blocked dated 1961. The arrangements within 13-62 Barrington Close have been assumed. We have made reasonable assumptions as to internal floor to ceiling heights. The proposed development was modelled from the architect's drawings.

The 3D model was created so as to reproduce the massing of the buildings both on and surrounding the site at a level of detail appropriate to the calculations performed. All heights in the model are in mm Above Ordnance Datum (AOD).

In assessing the impact of a new development on neighbouring properties it is usual to only consider main habitable spaces (i.e. living rooms, bedrooms and kitchens) within residential properties.

4.0 Results and Discussion

4.1 Generally

Initially, a detailed 3-dimensional computer model of the existing site, proposed development, and all the surrounding buildings was created. The model was analysed using proprietary software to calculate the various measures of daylight and sunlight. Existing light levels were then compared with the corresponding levels with the proposed development in place. The resulting levels and their reductions were then compared to the relevant BRE Report guidelines.

Attached drawings 755/P/01-03, illustrate the site in plan and 3d prior to development. Drawings 755/P/04-06 illustrate the proposed development. For the purpose of analysis each window and room is given a unique reference. This is necessary to track the windows through the various calculations, and these labels appear in the tables of results. Drawings 755/P/07-09 show the window locations and their labels for each neighbouring residential property. The attached table of results summarises the daylight and sunlight figures.

4.2 1-12 Barrington Close

The small windows in the flank wall of this property which directly face Site 3 serve circulation space at first and third floor levels. At second floor level W5/102 is a secondary window to a living room, and the daylight impact has little effect on the overall amenity within the room. The APSH impact to window W5/102 fully accords with the BRE criteria.

The figures show that the impact to all other windows is minimal and the property will retain very good daylight and sunlight levels. Therefore the impact fully complies with the BRE daylight and sunlight criteria.

4.3 1-16 Lamble Street

The small windows in the flank wall of this property which directly face Site 2 are secondary windows serving living rooms at ground and first floor level. The daylight impact to them has little effect on the

overall amenity within the room. At first and third floor levels the windows serve circulation space and therefore do not require consideration.

The figures show that the impact to all other windows is minimal and the property will retain very good daylight and sunlight levels. The impact fully complies with the BRE daylight and sunlight criteria.

4.4 13-62 Barrington Close

The results show that the impacts to the windows in this property are minimal. The property will retain very good daylight and sunlight levels, and the impact fully complies with the BRE criteria.

5.0 Overshadowing

There is no garden space sufficiently close to either site 2 or site 3 to warrant a detailed study and therefore it is clear that the overshadowing impact will be negligible.

6.0 Conclusions

We have considered the BRE measures of Daylight and of Sunlight in relation to the surrounding residential properties. These were analysed in detail.

The impact to all properties accords with the BRE guidelines on VSC, NSL and sunlight.

Overall we conclude that the impact of the proposed development on the neighbouring properties will be small and will fully comply with the BRE guidelines, and in this regard, the level of development is not excessive.

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LASER SURVEYS
 Site Survey and Elevations; L5216-T, L5216-E

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 1381_P20E to P21E...dwg, 3D.dwg, S2_Plan_00 to 02...dwg

Key:
— Existing
— Proposed



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 CAMDEN, LONDON

Drawn by: DR

Date: MAY 15

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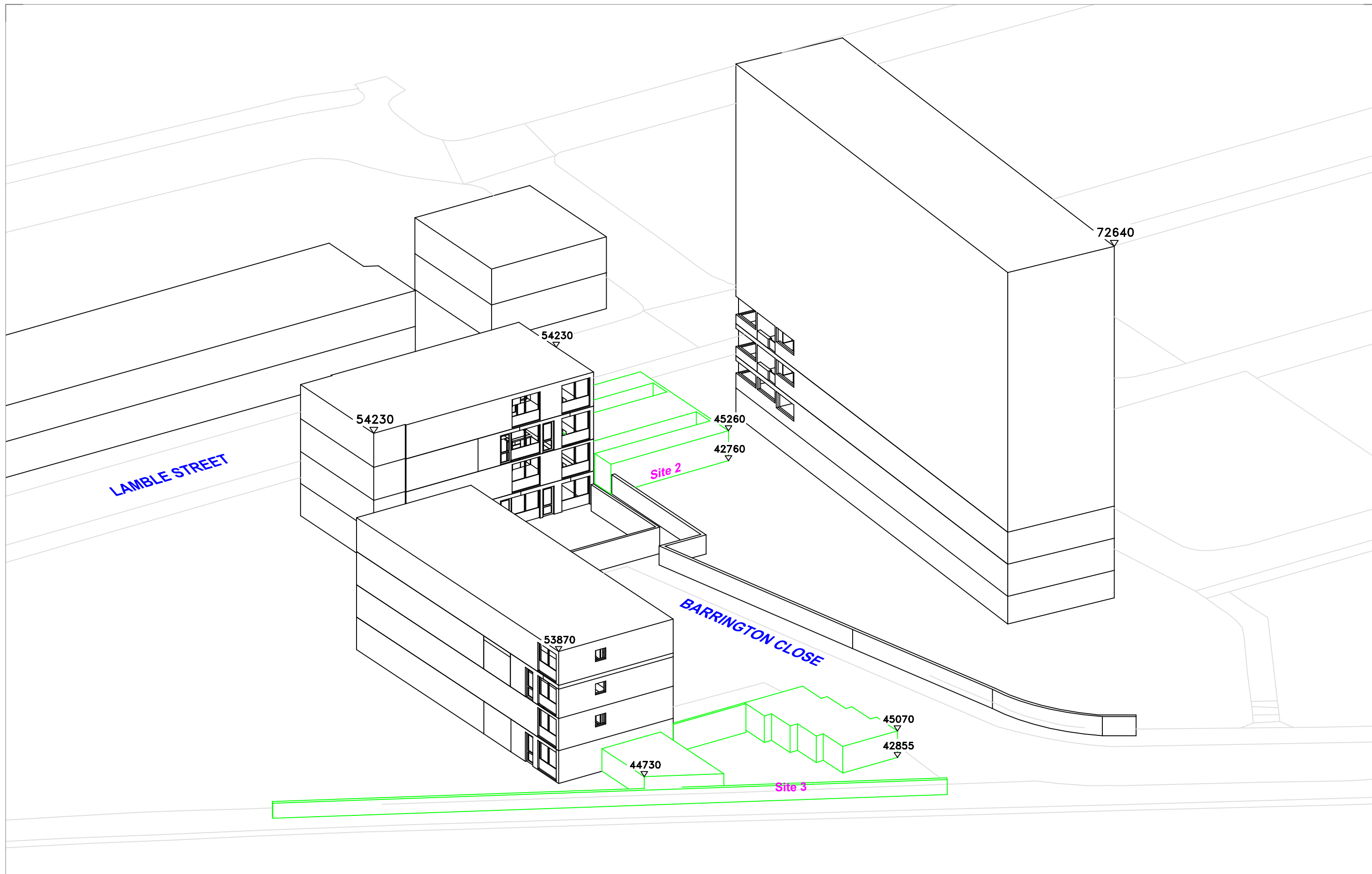
Drawing Title: Plan view
 Existing Buildings

Site Plan

Drawing No. WS755/P/01

Rel.: 4

Sources:



LASER SURVEYS
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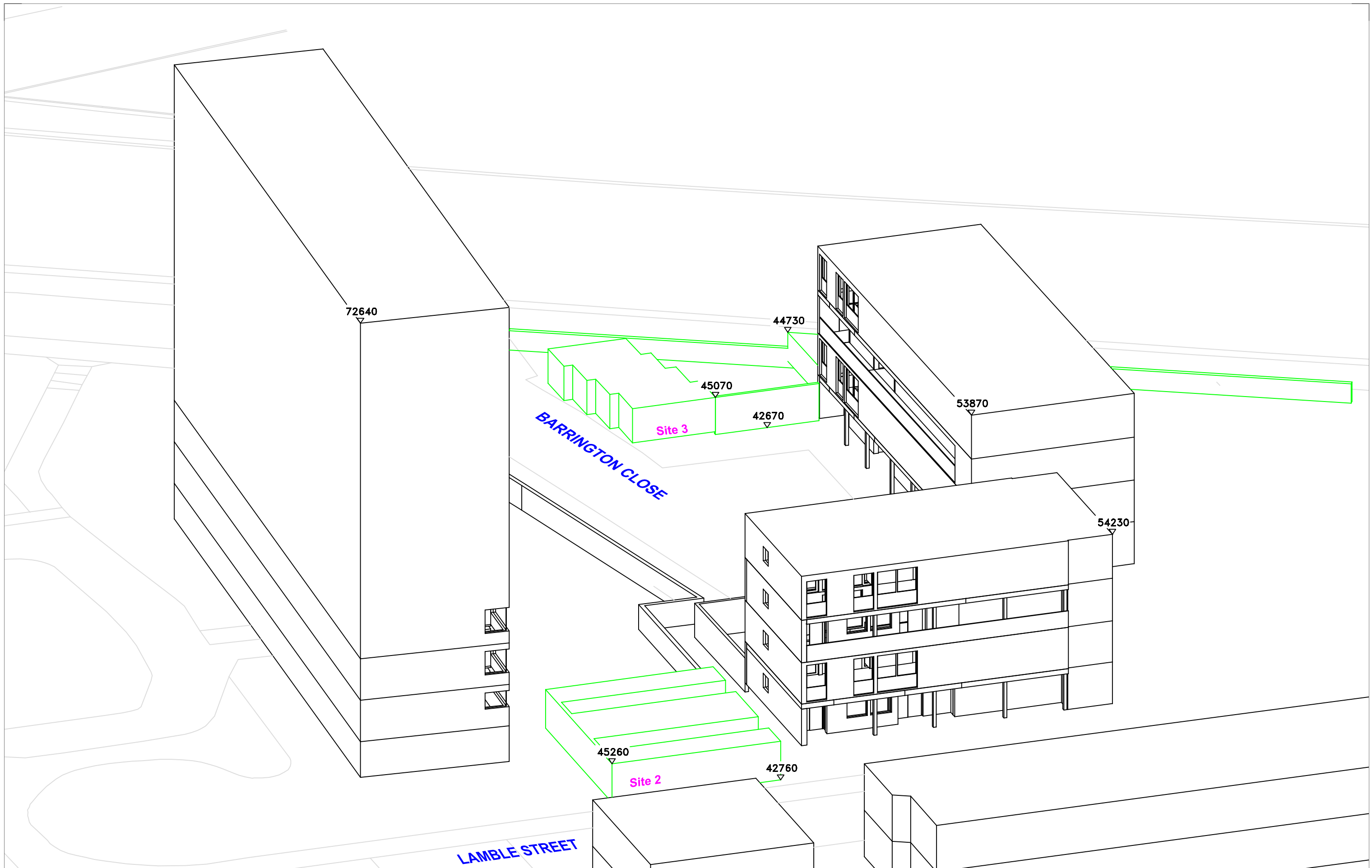
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Drawing Title: 3D view
Existing Buildings

3D Massing Model

Drawing No. WS755/P/02

Rel.: 4



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Drawing Title: 3D view
 Existing Buildings

3D Massing Model

Drawing No. WS755/P/03

Rel.: 4



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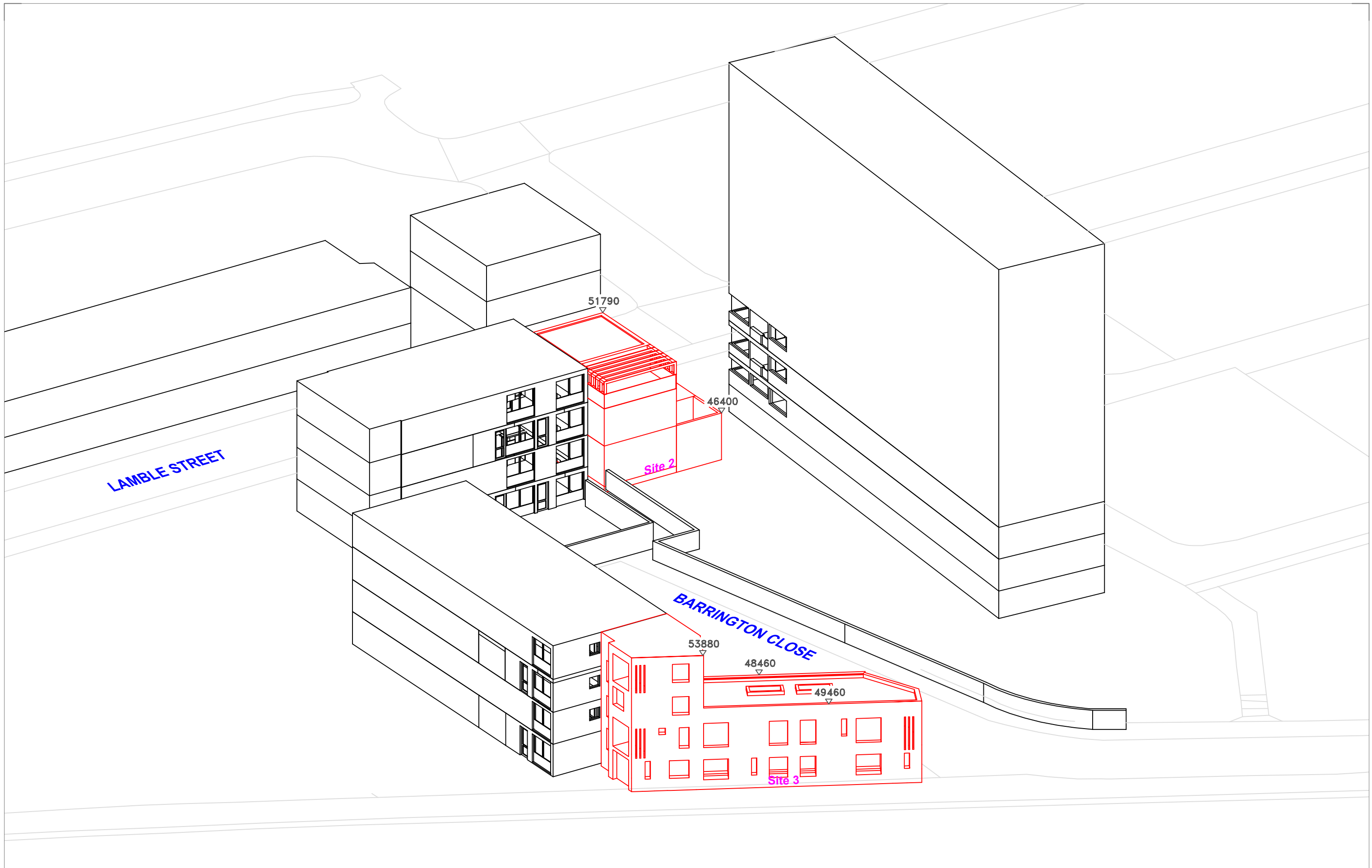
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Drawing Title: **Plan View
 Proposed Schemes;
 Site 2 and Site 3**

Site Plan

Drawing No. **WS755/P/04**

Rel.: **4**



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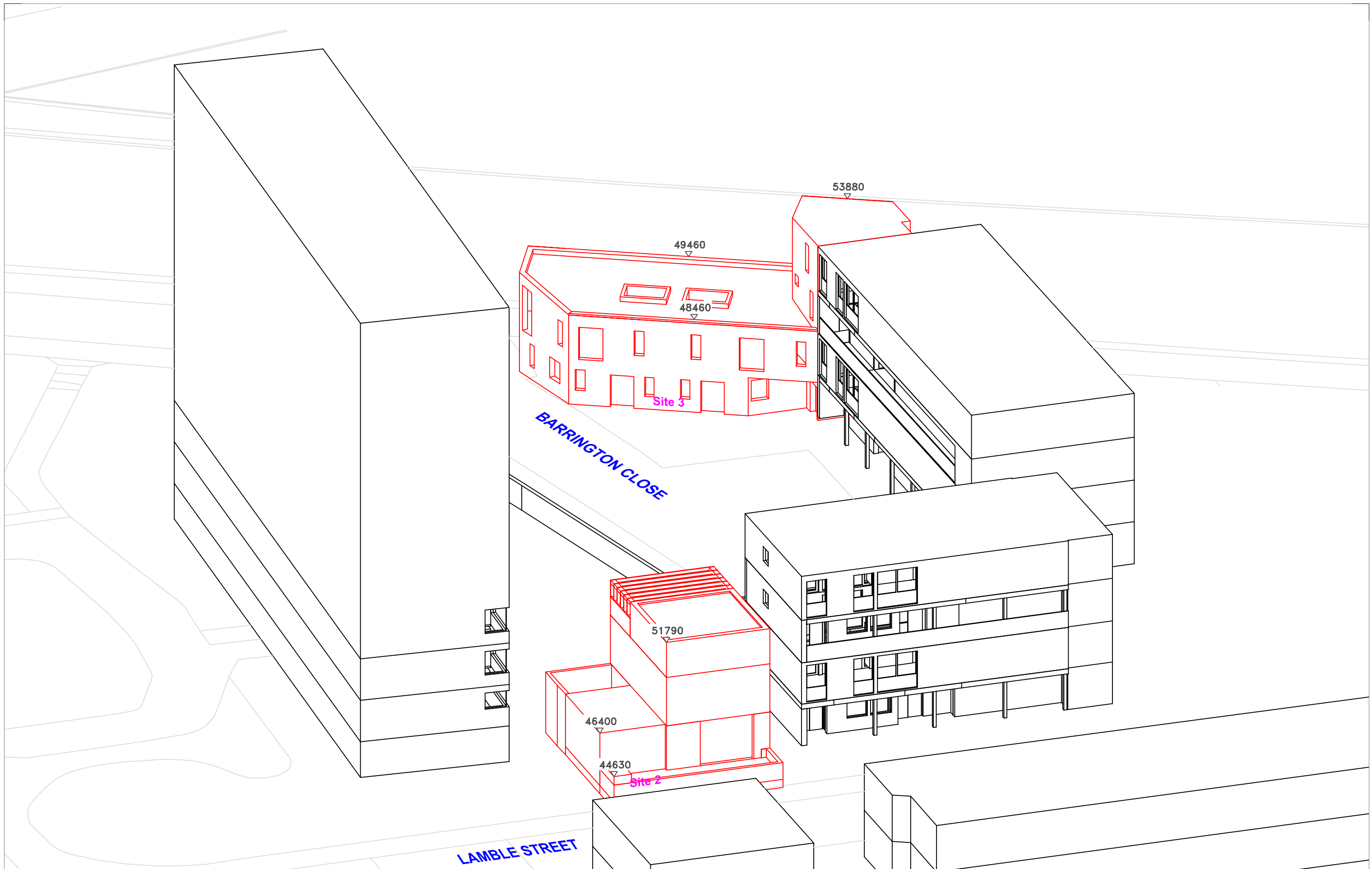
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Drawing Title: 3D View
 Proposed Schemes;
 Site 2 and Site 3

3D Massing Model

Drawing No. WS755/P/05

Rel.: 4



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Drawing Title: 3D View
Proposed Schemes;
Site 2 and Site 3

3D Massing Model

Drawn by: DR

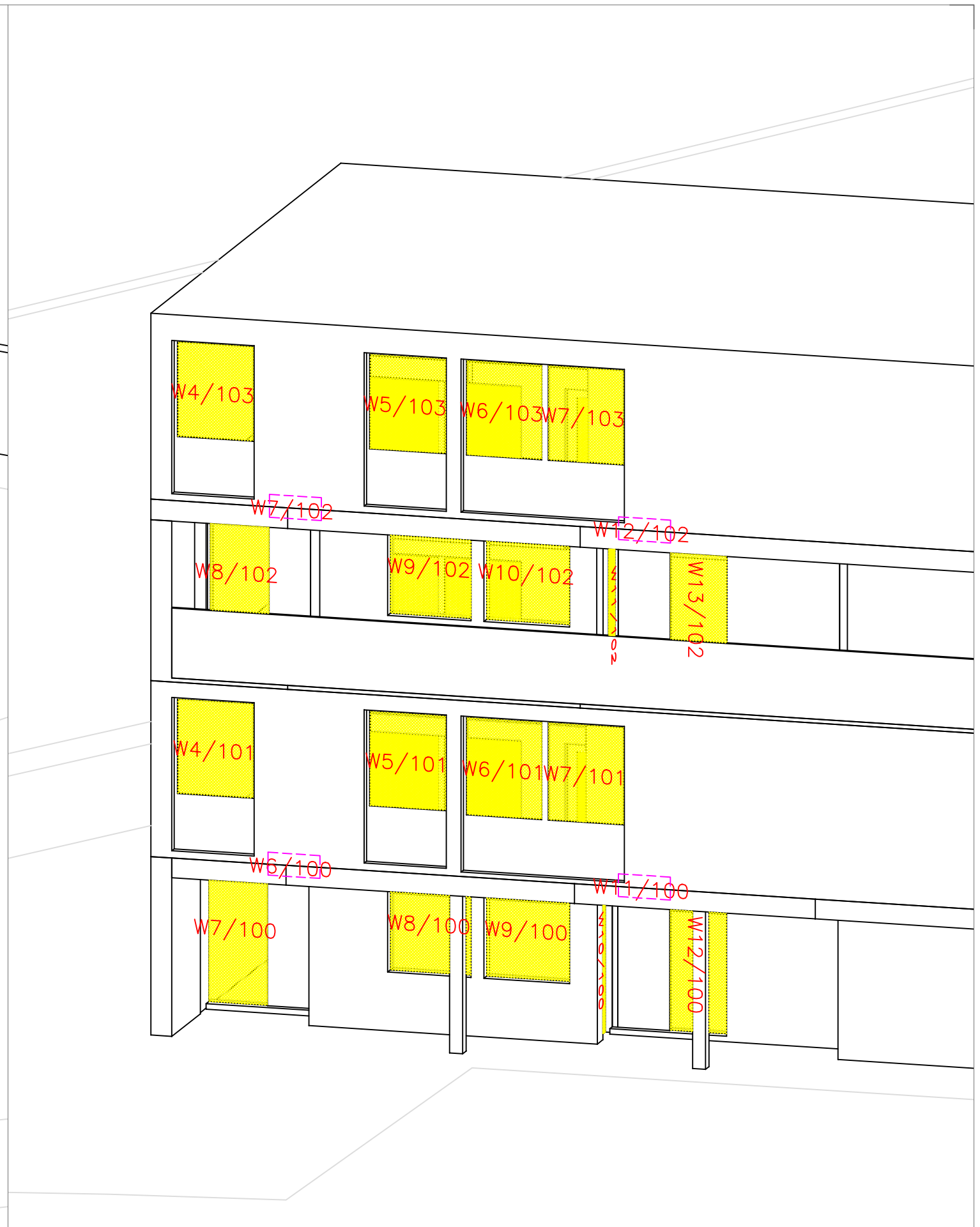
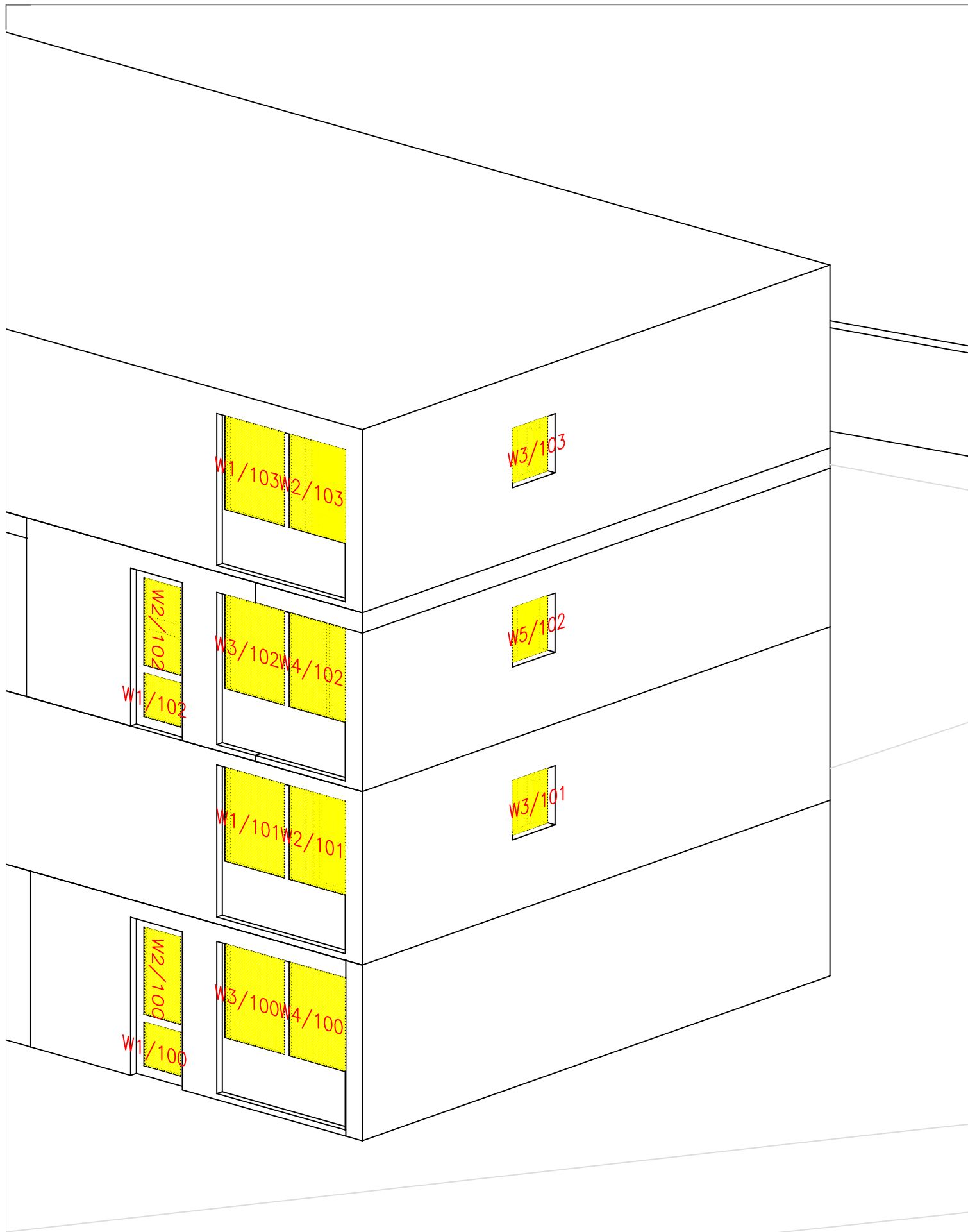
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Drawing No. WS755/P/06

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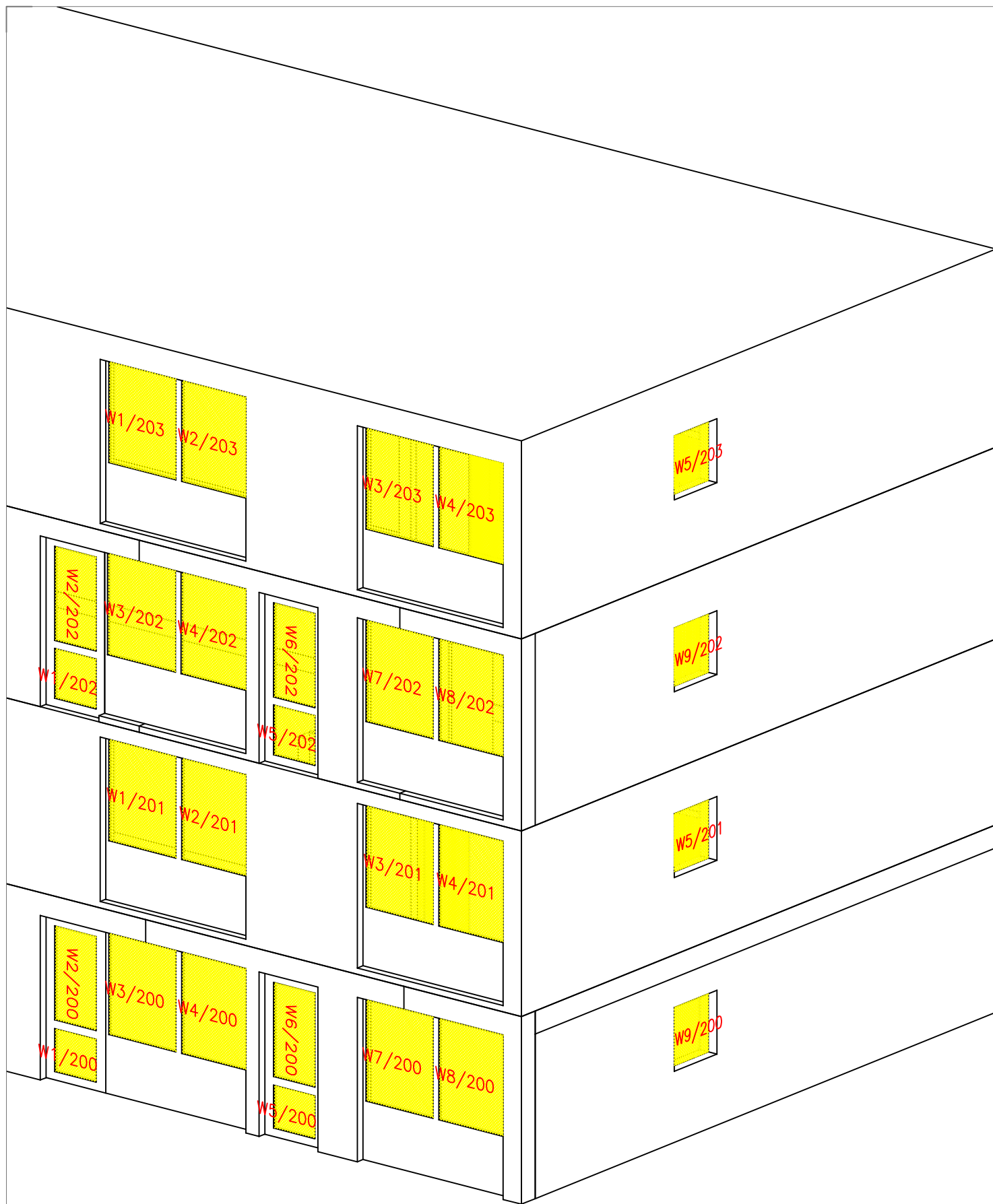
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Drawing Title: Window Locations
1-12 Barrington Close

Daylight & Sunlight

Drawing No. WS755/P/07

Rel.: 4



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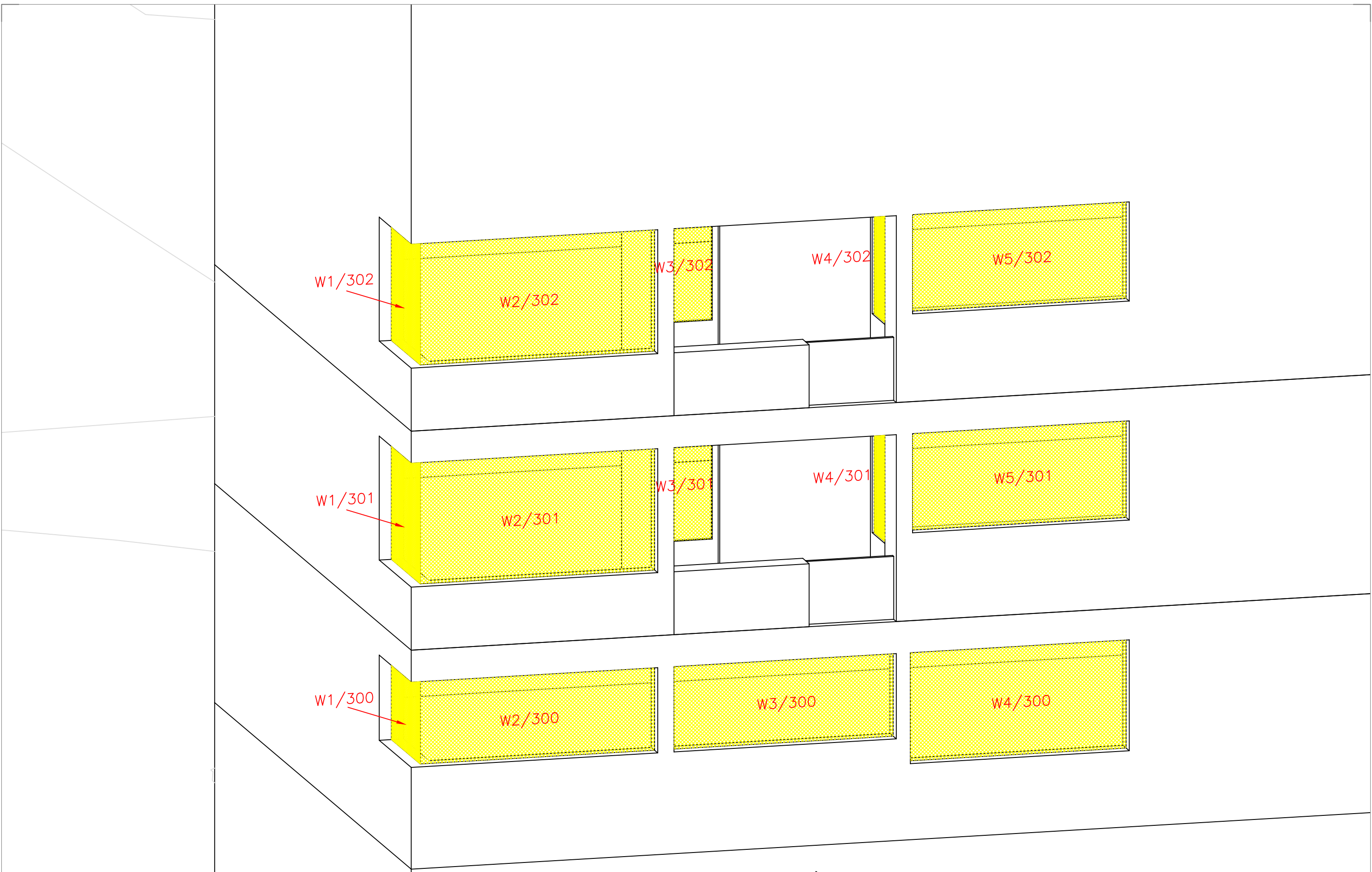
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Drawing Title: Window Locations
1-16 Lambie Street

Daylight & Sunlight

Drawing No. WS755/P/08

Rel.: 4



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Drawing Title: Window Locations
13-62 Barrington Close

Daylight & Sunlight

Drawing No. WS755/P/09

Rel.: 4

Location			Vertical Sky Component (VSC)			Average Daylight Factor (ADF)				No-Sky Line (NSL)				Window		Annual Probable Sunlight Hours (APSH) (window)					Annual Probable Sunlight Hours (APSH) (room)						
Room	Room Use	Window	EXISTING VSC	PROPOSED VSC	Reduction Factor	EXISTING ADF	TOTAL ADF	PROPOSED ADF	TOTAL ADF	Whole Room	EXISTING sq ft	PROPOSED sq ft	Reduction Factor	Angle from South	Aspect	EXISTING Winter %	EXISTING Annual %	PROPOSED Winter %	PROPOSED Annual %	Reduction Factor	Existing Winter %	Existing Annual %	Proposed Winter %	Proposed Annual %	Reduction Factor		
			R1/200	LIVINGROOM	W1/200	26.2	26.1	1.00	0.15		0.15		169.3	169.3	169.3	1.00	31.7°E	Southerly	17	56	17	56	1.00				
R1/200	LIVINGROOM	W2/200	28.6	28.1	0.98	0.96		0.95							31.7°E	Southerly	19	58	19	58	1.00						
R1/200	LIVINGROOM	W3/200	28.5	28.0	0.98	1.74		1.72							31.7°E	Southerly	20	59	20	59	1.00						
R1/200	LIVINGROOM	W4/200	28.5	28.0	0.98	1.73	4.59	1.71	4.53						31.7°E	Southerly	22	60	22	60	1.00	22	61	22	61	1.00	
R2/200	LIVINGROOM	W5/200	25.9	25.8	1.00	0.13		0.13		204.2	204.2	203.7	1.00	31.7°E	Southerly	21	58	21	58	1.00							
R2/200	LIVINGROOM	W6/200	28.2	27.7	0.98	0.83		0.82							31.7°E	Southerly	22	60	22	60	1.00						
R2/200	LIVINGROOM	W7/200	27.9	27.4	0.98	1.45		1.43							31.7°E	Southerly	22	59	22	59	1.00						
R2/200	LIVINGROOM	W8/200	27.5	27.0	0.98	1.47		1.45							31.7°E	Southerly	22	58	22	58	1.00						
R2/200	LIVINGROOM	W9/200	19.3	5.2	0.27	0.43	4.30	0.00	3.82						121.7°E	Northerly	3	13	3	13	1.00	23	61	23	61	1.00	
R3/200	HALL	W11/200	0.2	0.2	1.00	0.05		0.05		59.9	52.4	52.4	1.00														
R3/200	HALL	W12/200	6.1	6.1	1.00	1.09	1.14	1.09	1.14																		
R4/200	KITCHEN	W10/200	1.8	1.8	1.00	0.13		0.13		97.7	96.3	96.3	1.00														
R4/200	KITCHEN	W13/200	9.8	9.8	1.00	1.44	1.56	1.44	1.57																		
R5/200	KITCHEN	W14/200	9.7	9.7	1.00	1.97		1.97		60.0	60.0	60.0	1.00	148.3°W	Northerly	1	6	1	6	1.00							
R5/200	KITCHEN	W15/200	3.0	3.0	1.00	0.33	2.30	0.33	2.30						58.3°W	Southerly	1	3	1	3	1.00	1	6	1	6	1.00	
R6/200	HALL	W16/200	0.1	0.1	1.00	0.02		0.02		69.2	67.9	67.9	1.00														
R6/200	HALL	W17/200	8.9	8.9	1.00	1.24	1.26	1.24	1.26																		
R1/201	BEDROOM	W1/201	30.4	30.2	0.99	2.50		2.48		110.4	107.8	107.8	1.00	31.7°E	Southerly	23	63	23	63	1.00							
R1/201	BEDROOM	W2/201	30.3	30.1	0.99	2.53	5.03	2.52	5.00						31.7°E	Southerly	23	61	23	61	1.00	23	63	23	63	1.00	
R2/201	BEDROOM	W3/201	29.5	29.2	0.99	2.10		2.09		132.7	107.3	107.3	1.00	31.7°E	Southerly	24	62	24	62	1.00							
R2/201	BEDROOM	W4/201	29.0	28.8	0.99	2.13	4.23	2.11	4.20						31.7°E	Southerly	25	61	25	61	1.00	25	63	25	63	1.00	
R3/201	HALL	W5/201	21.4	8.7	0.41	1.09	1.09	0.16	0.16	64.6	18.1	8.9	0.49														
R4/201	BEDROOM	W6/201	37.9	36.6	0.97	3.92	3.92	3.89	3.89	73.1	72.3	72.3	1.00														
R5/201	BEDROOM	W7/201	37.7	37.4	0.99	2.91	2.91	2.91	2.91	107.6	106.1	106.1	1.00														
R6/201	BEDROOM	W8/201	37.7	37.5	1.00	2.31		2.31		144.8	143.9	143.9	1.00														
R6/201	BEDROOM	W9/201	37.7	37.6	1.00	2.30	4.61	2.30	4.61																		
R1/202	LIVINGROOM	W1/202	31.7	31.6	1.00	0.21		0.21		174.1	174.1	174.1	1.00	31.7°E	Southerly	25	67	25	67	1.00							
R1/202	LIVINGROOM	W2/202	32.5	32.5	1.00	1.04		1.04							31.7°E	Southerly	26	68	26	68	1.00						
R1/202	LIVINGROOM	W3/202	32.3	32.2	1.00	1.89		1.89							31.7°E	Southerly	26	68	26	68	1.00						
R1/202	LIVINGROOM	W4/202	32.0	32.0	1.00	1.87	5.00	1.87	4.99						31.7°E	Southerly	26	66	26	66	1.00	26	68	26	68	1.00	
R2/202	LIVINGROOM	W5/202	30.8	30.7	1.00	0.18		0.18		209.6	209.6	209.4	1.00	31.7°E	Southerly	26	64	26	64	1.00							
R2/202	LIVINGROOM	W6/202	31.5	31.5	1.00	0.88		0.88							31.7°E	Southerly	26	65	26	65	1.00						
R2/202	LIVINGROOM	W7/202	31.0	30.9	1.00	1.53		1.53							31.7°E	Southerly	26	64	26	64	1.00						
R2/202	LIVINGROOM	W8/202	30.4	30.4	1.00	1.55		1.55							31.7°E	Southerly	26	63	26	63	1.00						
R2/202	LIVINGROOM	W9/202	22.4	16.4	0.73	0.47	4.60	0.34	4.48						121.7°E	Northerly	3	14	3	14	1.00	26	65	26	65	1.00	
R3/202	HALL	W11/202	1.6	1.6	1.00	0.14		0.14		58.8	50.6	50.6	1.00														
R3/202	HALL	W12/202	10.3	10.3	1.00	1.72	1.86	1.72	1.86																		
R4/202	KITCHEN	W10/202	2.8	2.8	1.00	0.34		0.34		96.7	94.8	94.8	1.00														
R4/202	KITCHEN	W13/202	14.4	14.3	0.99	1.93	2.27	1.93	2.26																		
R5/202	KITCHEN	W14/202	14.4	14.3	1.00	2.41		2.41		71.2	70.5	70.5	1.00	148.3°W	Northerly	1	7	1	7	1.00							
R5/202	KITCHEN	W16/202	4.3	4.3	1.00	0.60	3.01	0.60	3.01						58.3°W	Southerly	0	5	0	5	1.00	1	7	1	7	1.00	
R6/202	HALL	W15/202	12.0	12.0	1.00	1.61		1.61		57.2	53.2	53.2	1.00														
R6/202	HALL	W17/202	1.8	1.8	1.00	0.17	1.78	0.17	1.78																		

Location			Vertical Sky Component (VSC)			Average Daylight Factor (ADF)				No-Sky Line (NSL)				Window		Annual Probable Sunlight Hours (APSH) (window)					Annual Probable Sunlight Hours (APSH) (room)					
Room	Room Use	Window	EXISTING	PROPOSED	Reduction Factor	EXISTING	PROPOSED		Reduction Factor	Whole Room	EXISTING	PROPOSED	Reduction Factor	Angle from South	Aspect	EXISTING		PROPOSED		Reduction Factor	Existing	Proposed		Reduction Factor		
			VSC	VSC		ADF	TOTAL	ADF			TOTAL	sq ft				sq ft	Winter %	Annual %	Winter %		Annual %	Winter %	Annual %		Winter %	Annual %
R1/203	BEDROOM	W1/203	34.1	34.1	1.00	2.80		2.80		106.5	104.8	104.8	1.00	31.7°E	Southerly	26	69	26	69	1.00						
R1/203	BEDROOM	W2/203	33.8	33.7	1.00	2.82	5.62	2.82	5.62					31.7°E	Southerly	26	69	26	69	1.00	26	69	26	69	1.00	
R2/203	BEDROOM	W3/203	32.6	32.6	1.00	2.32		2.32		128.2	109.2	109.2	1.00	31.7°E	Southerly	26	66	26	66	1.00						
R2/203	BEDROOM	W4/203	32.0	32.0	1.00	2.34	4.65	2.34	4.65					31.7°E	Southerly	26	64	26	64	1.00	26	66	26	66	1.00	
R3/203	HALL	W5/203	23.4	23.4	1.00	1.19	1.19	1.19	1.19	63.7	22.4	22.4	1.00													
R4/203	BEDROOM	W6/203	39.6	39.6	1.00	4.27	4.27	4.27	4.27	68.2	67.9	67.9	1.00													
R5/203	BEDROOM	W7/203	39.6	39.6	1.00	2.94	2.94	2.94	2.94	113.2	111.6	111.6	1.00													
R6/203	BEDROOM	W8/203	39.6	39.6	1.00	2.46		2.46		141.7	140.8	140.8	1.00													
R6/203	BEDROOM	W9/203	39.6	39.6	1.00	2.46	4.91	2.46	4.91																	
13-62 BARRINGTON CLOSE																										
R1/300		W1/300	38.6	37.9	0.98	2.10		2.07		126.1	126.1	125.6	1.00	151.9°W	Northerly	1	17	0	15	0.88						
R1/300		W2/300	34.3	29.6	0.86	4.09	6.18	3.62	5.69					61.9°W	Southerly	19	59	16	51	0.86	20	62	16	57	0.92	
R2/300		W3/300	34.3	30.8	0.90	3.87	3.87	3.53	3.53	126.3	122.9	118.7	0.97	61.9°W	Southerly	20	60	20	53	0.88	20	60	20	53	0.88	
R3/300		W4/300	34.4	31.6	0.92	5.38	5.38	5.01	5.01	124.3	123.2	123.2	1.00	61.9°W	Southerly	20	60	20	52	0.87	20	60	20	52	0.87	
R1/301		W1/301	39.6	39.3	0.99	3.26		3.24		126.1	126.1	126.1	1.00	151.9°W	Northerly	1	17	0	16	0.94						
R1/301		W2/301	36.7	35.2	0.96	6.63	9.89	6.40	9.64					61.9°W	Southerly	20	61	20	60	0.98	21	63	20	62	0.98	
R2/301		W3/301	6.6	6.6	1.00	0.79	0.79	0.78	0.78	84.8	52.0	52.0	1.00	61.9°W	Southerly	7	10	7	10	1.00	7	10	7	10	1.00	
R3/301		W4/301	5.4	4.8	0.88	0.57		0.53		123.1	122.0	122.0	1.00	151.9°W	Northerly	0	13	0	12	0.92						
R3/301		W5/301	36.8	36.0	0.98	4.97	5.53	4.86	5.38					61.9°W	Southerly	21	62	21	61	0.98	21	62	21	61	0.98	
R1/302		W1/302	39.6	39.6	1.00	3.26		3.26		126.1	126.1	126.1	1.00	151.9°W	Northerly	2	18	2	18	1.00						
R1/302		W2/302	38.6	38.6	1.00	6.96	10.21	6.95	10.21					61.9°W	Southerly	22	63	22	63	1.00	22	64	22	64	1.00	
R2/302		W3/302	8.3	8.3	1.00	0.91	0.91	0.91	0.91	84.8	52.0	52.0	1.00	61.9°W	Southerly	10	13	10	13	1.00	10	13	10	13	1.00	
R3/302		W4/302	5.7	5.7	1.00	0.57		0.57		123.1	122.0	122.0	1.00	151.9°W	Northerly	2	15	2	15	1.00						
R3/302		W5/302	38.7	38.7	1.00	5.20	5.77	5.20	5.77					61.9°W	Southerly	23	64	23	64	1.00	23	64	23	64	1.00	