

Internal Average Daylight Study

Client: Four Regions Restaurant
102 – 104 Kew Road
Richmond
TW9 2PQ

Site Details: 102 – 104 Kew Road
Richmond
TW9 2PQ

Contents

1. Introduction & Methodology	3
2. Proposed Development	4
3. Modelling the site	5
4. Internal Daylight	6
5. Illuminance Captures.....	8
6. Conclusion	11

Appendices

Appendix A: 102 – 104 Kew Road Proposed Plans

Report Details:

Prepared by	Checked by	Date	Job Number	Revision
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1. Introduction & Methodology

Base Energy were instructed by Four Regions Restaurant to prepare an internal daylight study to investigate the internal daylight within the proposed apartment building at 102 – 104 Kew Road, Richmond, TW9 2PQ. Specifically, Flat 1 and Flat 4 have been analysed for internal daylight only.

The daylight study is to ensure the comfort, health and safety of building occupants as well as visitors and others within the vicinity is acceptable. It is also to enhance the quality of life in dwellings by recognising those that encourage a healthy and safe internal environment for occupants.

Using industry standard methodology as prescribed by BRE and British Standard guidance: we have made numerical analyses to ensure compliance with the recommended levels of change in daylight for the habitable rooms of the assess dwelling.

The main criteria used in this analysis to show compliance is the:

- Average Daylight Factor (ADF)

The ADF is derived from British Standard BS 8206 and is a complex and representative calculation to determine natural internal luminance (daylight). The ADF takes into account such factors as window size, number of windows available to the room, room size and layout, room surface reflectance, and the angle of visible sky reaching the window.

This report has been prepared for planning purposes, and not a Right to Light dispute.

2. Proposed Development

There are proposals for the conversion and extension of an existing building at first to third floor level to provide 7 new apartments at 102 – 104 Kew Road, Richmond, TW9 2PQ.

Proposed 1st and 2nd Floor Plan



3. Modelling the site

An analysis model is created of the Flat 1 and Flat 4, all relevant surrounding buildings and obstructions are also factored into the analysis, calculations are then run to determine the average daylight factor within those rooms.

The outputs of those calculations can be exported numerically. Using the BRE guidance which gives absolute figures for the acceptable percentage of daylight, we can then establish if the proposal will have the required daylighting levels stipulated by BRE guidelines.

It is important to note that not all nearby features have been modelled, only those that will affect the daylighting. In accordance with BRE recommendations, trees have been omitted from the calculations.

The reference document for this analysis, BRE Digest 209, provides the methodology for undertaking the calculations as well as benchmark figures for the acceptable reduction in the daylight on existing properties which might be affected by development.

This study has been calculated in accordance with BRE methodology, using

- An CIE overcast sky
- Glass transmission is 0.6 (double glazing with low-emissivity coating)
- Angle of visible sky between 72° and 74°
- Vertical glazed for Unit 1, Sloped for Loft rooms
- Area weighted reflectance of room surfaces at 0.5

It is also worth noting that these figures assume that internal lighting is available to supplement the available daylight. It is considered that if a room has a Daylight Factor of 5%, then it will be sufficiently well lit, even in the absence of electric lighting. It is deemed by the guidance that if the ADF criteria are met, then the occupiers of the dwelling will have sufficient daylight, although it should be noted that these figures are guidelines only, and assumptions have been made on window types.

4. Internal Daylight

Internal daylight levels for the rooms detailed below have been calculated in accordance with BRE methodology, using a CIE overcast sky at an illuminance value of 8500 lux. The calculations assume a white ceiling, cream walls and mid-grey carpet or wooden floor.

BS 8206 recommends the following values for particular room types:

- Kitchen/Living/Dining Rooms/Studios: **1.5%- 2%**
- Bedrooms: **1%**

It is deemed by the guidance that if the ADF criteria are met, then the occupiers of the dwellings will have sufficient daylight.

Flat 1 – 1 st Floor	Recommended ADF (%)	Proposed ADF (%)
Kitchen/Living Room	1.5% - 2%	2.18%
Bedroom/Sleeping Area	1%	0.01%

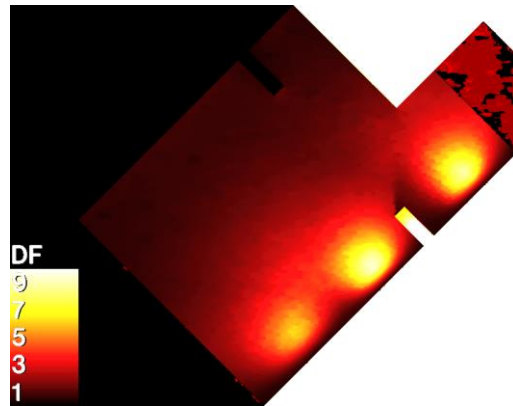
Flat 4 – 2 nd Floor	Recommended ADF (%)	Proposed ADF (%)
Kitchen/Dining Room	1.5% - 2%	3.5%
Lounge	1.5%	1.98%
Bedroom/Sleeping Area	1%	1.76%

It can be seen from the results above that the majority of the rooms within the proposed development meet and exceed the target daylight factor to comply with BRE guidelines.

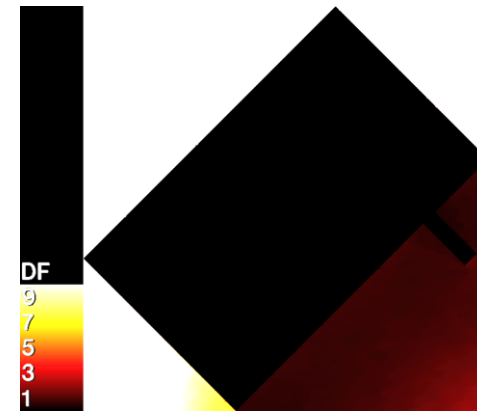
A sample of the internal illuminance plans can be seen below.

5. Sample Illuminance Captures

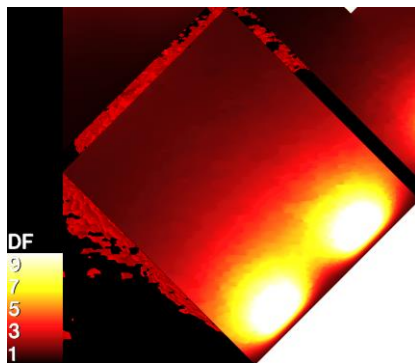
Flat 1 – Kitchen/Living Room



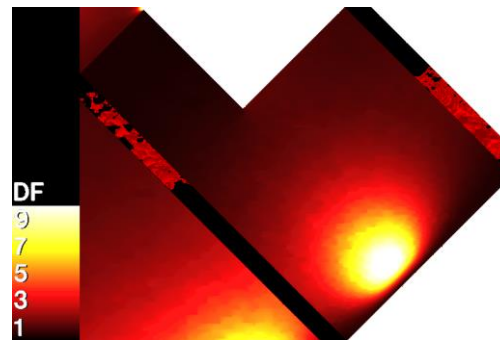
Flat 1 – Bedroom/Sleeping Area



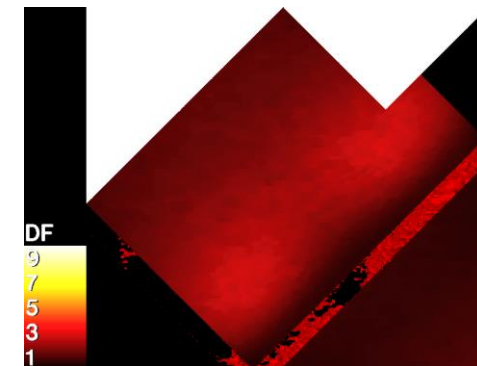
Flat 4 – Kitchen/Dining Room



Flat 4 – Lounge



Flat 4 - Bedroom



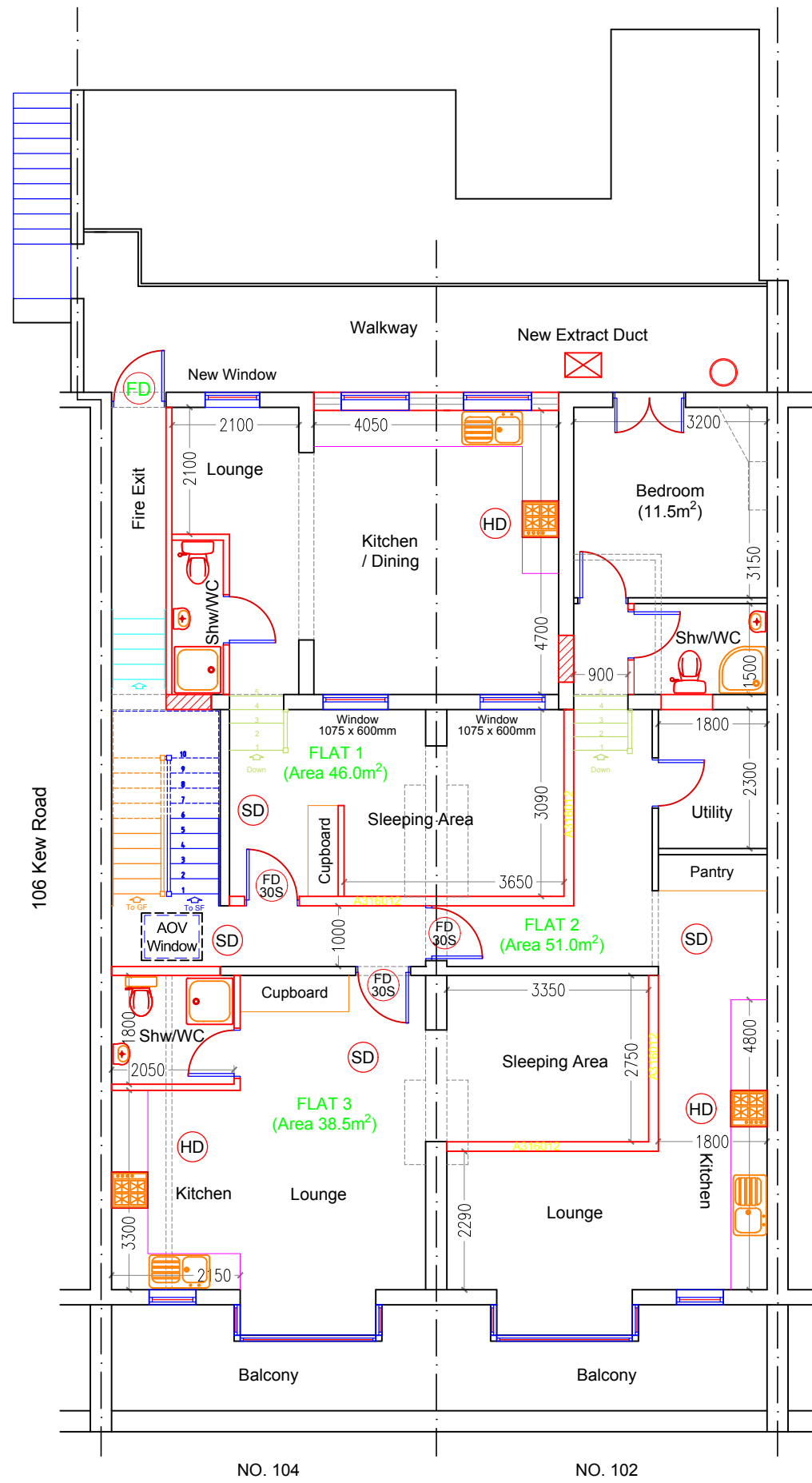
6. Conclusion

Using industry standard methodology, we have made numerical analyses to calculate the recommended levels of daylight for the rooms detailed above. The main criteria used in this analysis to show compliance is the Average Daylight Factor (ADF) reflected as a percentage.

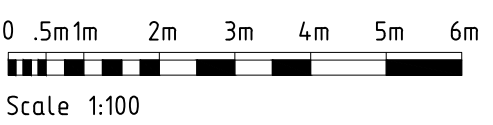
The results show that the majority of rooms detailed in section 4 of this report meet and exceed the minimum requirements in accordance with BRE guidelines.

Appendices

Appendix A: 102 – 104 Kew Road Proposed Plans

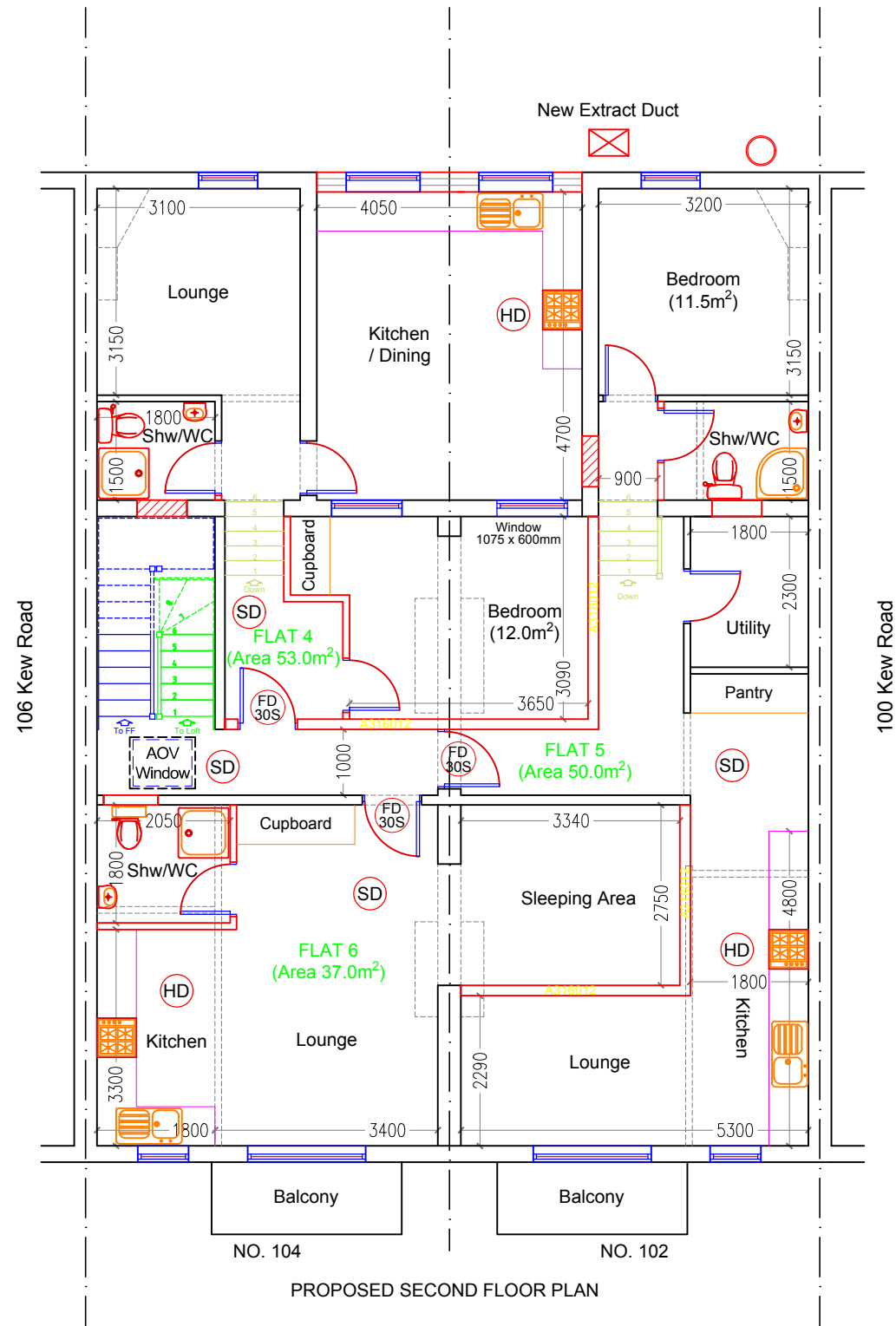


NO. 104 NO. 102
PROPOSED FIRST FLOOR PLAN



Flats 1, 3 and 6 are One Person Studio Flats.
Flats 2, 4 and 5 are One Person, One Bedroom Flats.

- HD HEAT DETECTOR TO BE MAINS CONNECTED AND INTERLINKED AND TO BE INSTALLED BY COMPETENT PERSON.
- SD SMOKE DETECTOR TO BE MAINS CONNECTED AND INTERLINKED AND TO BE INSTALLED BY COMPETENT PERSON.



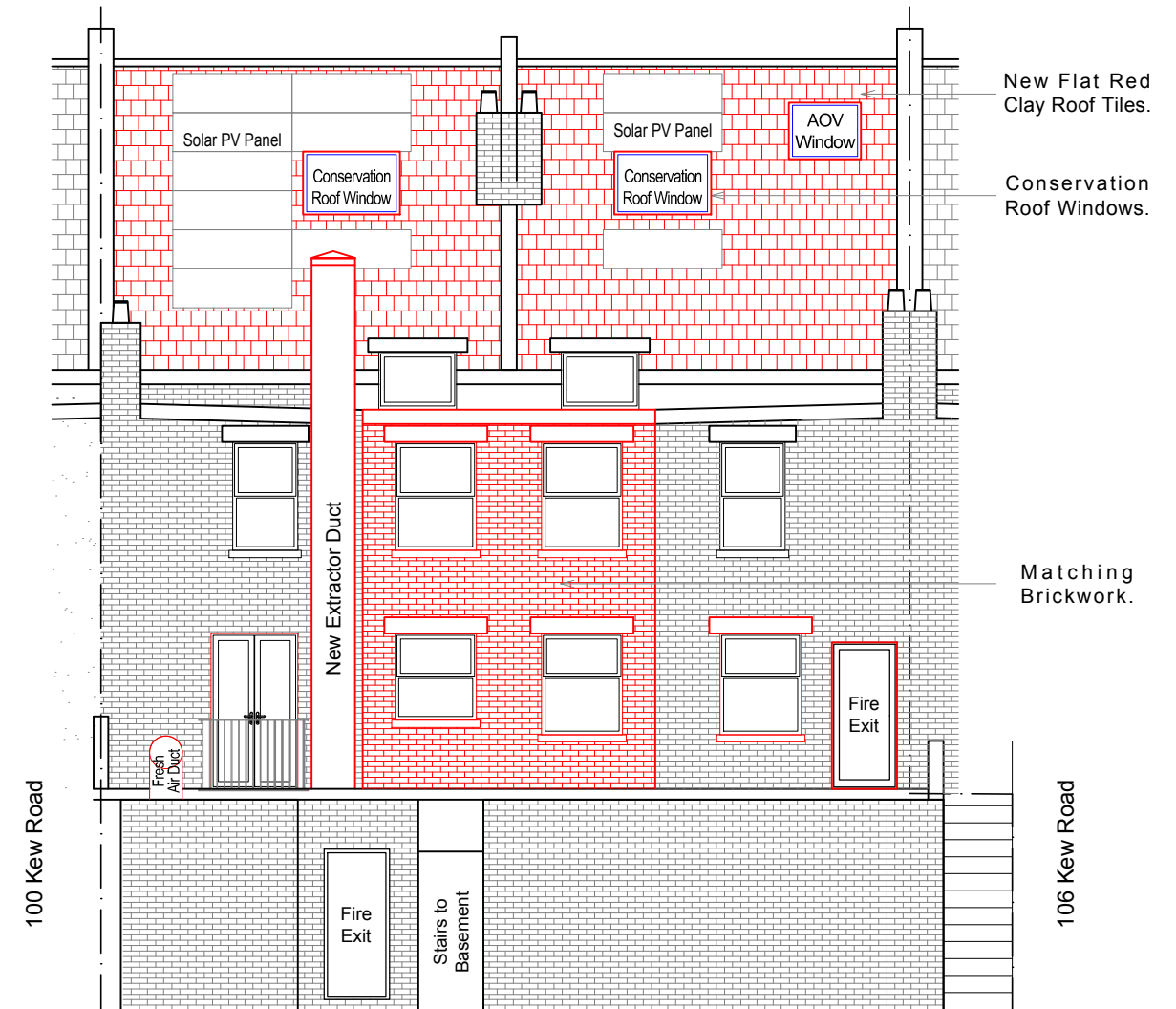
NO. 104 NO. 102
PROPOSED SECOND FLOOR PLAN

Revision C: Internal Layout for Flats 1, 2, and 5 further modified on 23/03/2020.
Revision B: Internal Layout for Flats 1, 2, 4 and 5 modified on 20/03/2020.
Revision A: Internal Layout for Flat 1 and Flat 4 modified on 16/03/2020.

Client MR SAMMY MAK.		Site 102-104 KEW ROAD, RICHMOND, SURREY, TW9 2PQ.		
Project INTERNAL MODIFICATIONS FOR FLAT CONVERSIONS.		Title PROPOSED FIRST FLOOR AND SECOND FLOOR PLANS.		
Scale 1:100 @ A3	Date 23/03/2020	Drawn by SSC	Drg. No 102-104KEW/NPA3	Revision C

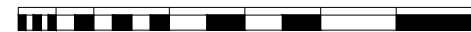


EXISTING REAR ELEVATION



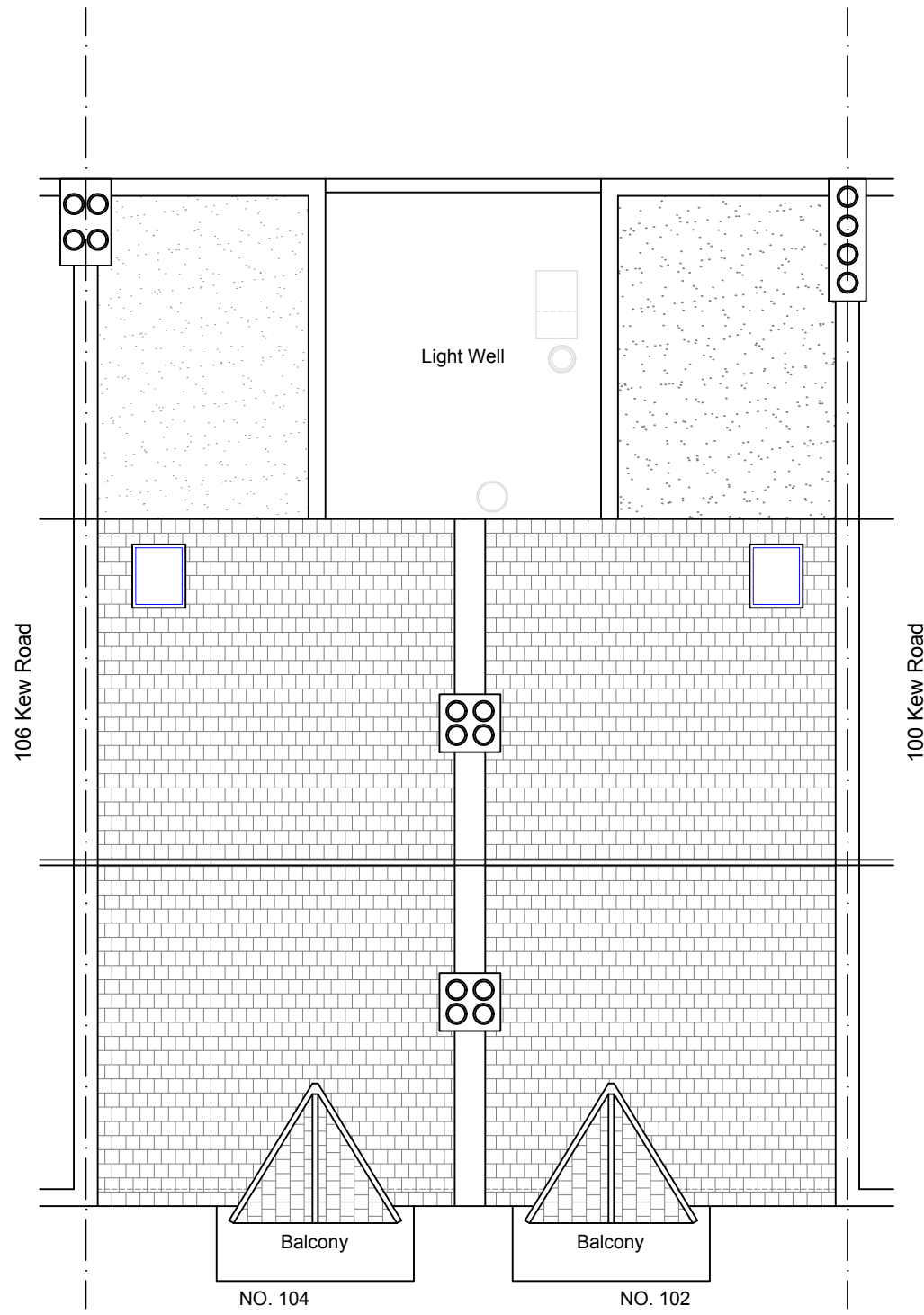
PROPOSED REAR ELEVATION

0 .5m 1m 2m 3m 4m 5m 6m

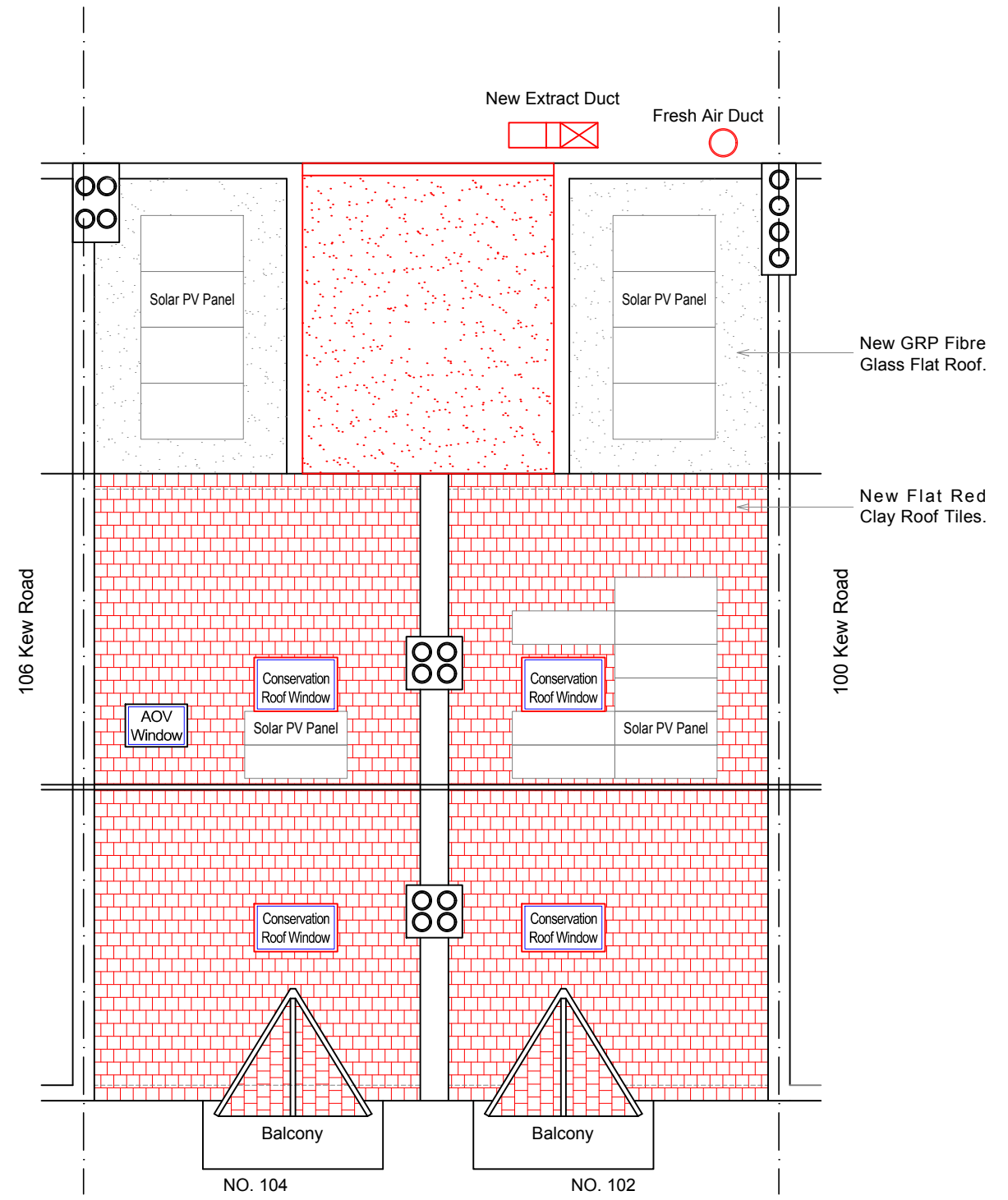


Scale 1:100

Client		Site 102-104 KEW ROAD, RICHMOND, SURREY, TW9 2PQ.		
Project INTERNAL MODIFICATIONS FOR CONVERSION INTO 7X STUDIO FLATS.		Title EXISTING AND PROPOSED REAR ELEVATIONS.		
Scale	Date	Drawn by	Drg. No	Revision
1:100 @ A3	11/01/2020	SSC	102-104KEW/NPA6	0

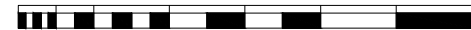


EXISTING ROOF PLAN



PROPOSED ROOF PLAN

0 .5m 1m 2m 3m 4m 5m 6m



Scale 1:100

Client	MR SAMMY MAK.	Site	102-104 KEW ROAD, RICHMOND, SURREY, TW9 2PQ.		
Project	INTERNAL MODIFICATIONS FOR CONVERSION INTO 7X STUDIO FLATS.	Title	EXISTING AND PROPOSED ROOF PLANS.		
Scale	1:100 @ A3	Date	11/01/2020	Drawn by	SSC
				Drg. No	102-104KEW/NPA7
				Revision	0