

External Daylight and Sunlight Study

Client: Hoselynn Ltd

Site Details: 119 – 121 East Barnet Road London EN4 8RF



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Report Details:

Prepared by	Checked by	Date	Job Number
Nicholas Gardner	Peter Kinsella	20.02.2024	11552 – Rev1

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1. Introduction & Methodology

The daylight study is to ensure the comfort, health and safety of building occupants as well as visitors and others within the vicinity of the building 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 and in line with the BRE Guide: BRE BR 209 2022 Edition and BS EN 17037, we have made numerical analyses to ensure compliance with the recommended levels of change in daylight.

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

Vertical Sky Component (VSC)

VSC measures the general amount of light available on the outside plane of the window as a ratio (%) of the amount of total unobstructed sky viewable following introduction of visible barriers such as buildings. The maximum value is just under 40% for a completely unobstructed vertical wall.

The relevant BRE recommendations for daylight and sunlight are:

The Vertical Sky Component measured at the centre of a window should be no less than 80% of its former value, where the window(s) do not meet this criteria, BRE Guidelines states that if the VSC at the centre of a window is more than 27% of available light, then the diffuse daylighting will not be adversely affected.

Annual Probable Sunlight Hours (APSH)

APSH is a measure of the amount of potential direct sunlight that is available to a given surface. Only windows which face within 90 degrees of due south need to be assessed. BRE Guidance states that windows should continue to receive in excess of 80% of their pre-development value, **or** 25% of available hours over a year / 5% of hours in winter to be considered well - lit **or** if the window has a reduction in sunlight received over the whole year less than 4% of annual sunlight hours.



The BRE Guidance is not an instrument of planning policy; therefore, whilst the methods given are technically robust, some level of flexibility should be applied where appropriate.

We must stress that despite the methodology used above and the results that are drawn from it provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole.



2. Proposed Development

There are proposals for the conversion and extension of an existing building to create 4 x residential units at 119 – 121 East Barnet Road, London, EN4 8RF.





3. Modelling the site & Window Schedule

An analysis model is created of the proposed development and the existing development allowing analysis, calculations are then run. The outputs of those calculations can be exported numerically. Using the BRE guidance which gives absolute figures for the acceptable percentage of daylight and sunlight, 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.

The reference document for this analysis, BRE BR 209 2022 Edition and BS EN 17037, provides the methodology for undertaking the calculations as well as benchmark figures for the acceptable reduction in the daylight/sunlight.

In order to complete an accurate model of the existing and proposed site we have used a combination of the following plans and information.

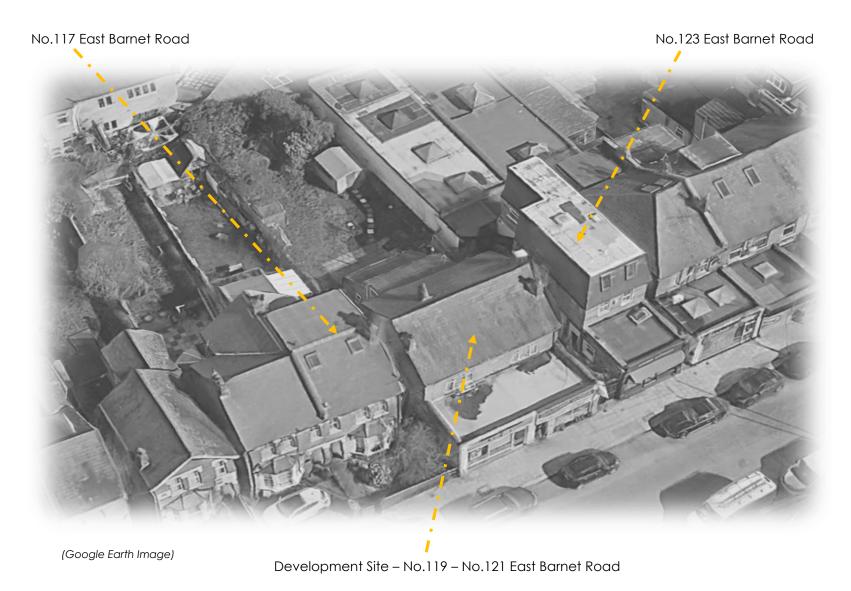
- Proposed Site Plan, Floor Plans, Sections, Elevations
- Proposed Site Plan, Floor Plans, Sections, Elevations
- Neighbouring Supporting Plans and Information No.117 & No.123 East Barnet Road

The purpose of this report is to assess the potential impact that the proposed development may have on the immediate surrounding neighbouring dwellings in terms of daylight and sunlight. The immediate neighbouring dwellings that have been identified for analysis being No.117 and No.123 East Barnet Road which are situated adjacent of the proposed development. After site analysis we have established that No.117 and No.123 East Barnet Road are classed as the 'worst case' due to their proximity in relation to the proposed development, therefore, if the analysis shows that these dwellings meet the requirements for levels of change in daylight in accordance with BRE guidelines then all additional surrounding dwellings will meet these requirements by default.

For a full location and window schedule please see below.



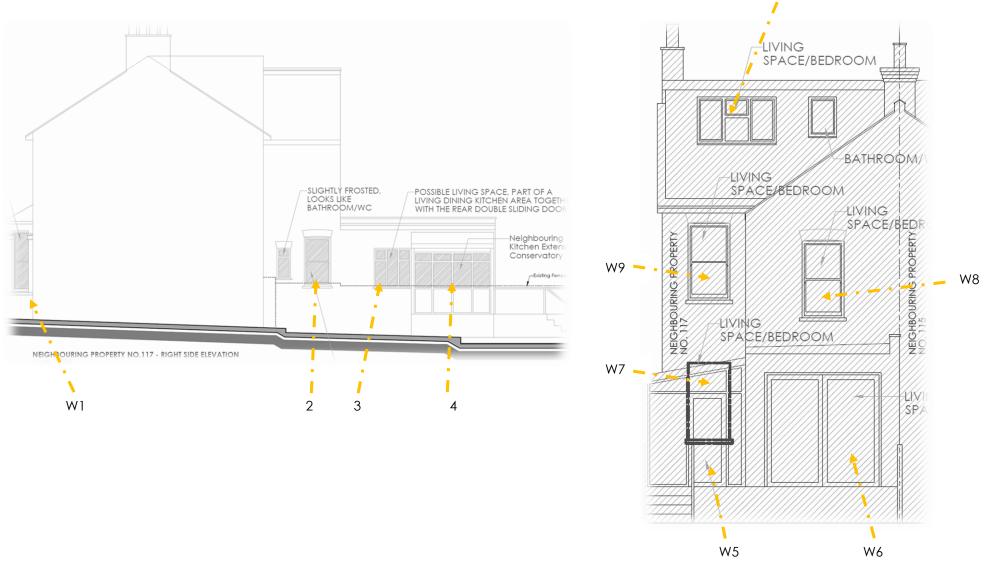
Target Study Area





W10

No.117 East Barnet Road – Side and Rear Elevation





No.123 East Barnet Road – Side and Rear Elevation W15 W16 -SLIGHTLY FROSTED, LOOKS LIKE BATHROOM/WC 11/1 <u>[</u>]]-ACCESS DOOR NEIGHBOURING PROPERTY NO. 123 -LIVING -LIVING AREA BEDROOM SPACE W14 BATHROOM \mathbb{Z} Communal Access Alleyway $\overline{)}$ KITCHEN **W**13 WINDOW . I W12 W11 NEIGHBOURING PROPERTY NO. 123



As can be seen, there are 16 relevant window receptors of concern that may experience an impact in terms of daylight and sunlight from the proposed development.

- Receptors 1 10 located to the rear/side elevation of 'No.117 East Barnet Road'
- Receptors 11 16 located to the rear/side elevation of 'No.123 East Barnet Road'

Remaining Windows within the target study area

All windows assessed are considered 'worst case', therefore, where window receptors meet requirements in accordance with BRE Guidelines, any other windows within the vicinity that sit at a further distance or higher elevation than those that meet requirements will also pass by default. Where nearby windows have not been labelled, they have either been identified as un-affected from the proposed development due to having superior daylighting qualities as those labelled, at a distance and elevation that they will be unaffected from the proposed development or they serve non-habitable spaces such as bathrooms, stairways etc.

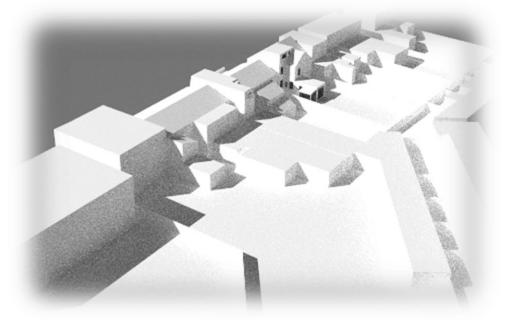


4. Vertical Sky Component Analysis

Stage 1 of the analysis is to model the existing site condition and then the proposal in 3 dimensions, thus allowing us to analyse the current situation and compare with relative ease the proposed situation.

The 3D model that has been created is then imported into specialist daylight analysis software from which calculations are then run for both the existing and proposed. We have isolated the dwellings of concern and taken a screen shot which is displayed below.

Existing Conditions



11

Proposed Conditions



5. Vertical Sky Component Benchmark & Results

As previously stated, even though the benchmark figures provided by BRE may provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole. Locations that may be considered dense urban areas or City Centre developments are often exposed to larger constraints in comparison to low-rise suburban areas, with that said, there is a higher scope for potential obstructions and loss of daylight in these areas. Higher density developments, such the one in question, generally experience lower daylight and sunlight levels.

Interpretation of the scale of impact

As discussed, the windows of the neighboring dwelling may or may not achieve the targets set by BRE, however, what BRE does not provide is an idea of the significance that these results will have on the assessed neighboring dwellings. Therefore, using professional experience, if we apply a scale to judge the implication these results may have on the dwelling, we can better understand the impact that may be experienced. The scale below is based on the BRE baseline target of 80% daylight retention.

Scale of Impact

Where the loss of daylight and sunlight fully meets the BRE Guidance Values, the impact is assessed as **Negligible**

Where the loss of daylight and sunlight is reduced within 20 – 35% of the BRE Guidance Values, the impact is can be classed as *Minor*

Where the loss of daylight and sunlight is reduced within 35 – 50% of the BRE Guidance Values, the impact is can be classed as **Moderate**

Where the loss of daylight and sunlight is reduced within 50 – 100% of the BRE Guidance Values, the impact is can be classed as *Major*

^{*}The guidance above has been taken from BRE daylight and sunlight book for the nature and scale section 5. Ref: Site Layout Planning for Daylight and Sunlight, Appendix 1 Environmental Impact Assessment, page 73.



6. Vertical Sky Component Analysis Results

The Vertical Sky Component has been calculated for the openings labelled in section 3 of this report for both the existing and proposed conditions. As previously stated, these window receptors are considered 'worst case', therefore, any other windows that sit at a greater distance or higher elevation than those that have passed the analysis within this report, under BRE Guidelines, will also pass by default.

Vertical Sky Component Results Summary (Numerical Results Appendix D)

The results show that all receptors tested meet and are in excess of minimum requirements in accordance with BRE Guidelines.

When we apply the scale of impact as detailed in section 5, page 12 of this report, we can see that these window receptors may experience a '*Negligible*' impact in terms of daylight.



7. Annual Probable Sunlight Hours Results (Numerical Results Appendix E)

As stated in section 3 of this report, APSH is a measure of the amount of potential direct sunlight that is available to a given surface. Only windows which face within 90 degrees of due south need to be assessed. BRE Guidance states that windows should continue to receive in excess of 80% of their pre-development value, **or** 25% of available hours over a year / 5% of hours in winter to be considered well - lit **or** if the window has a reduction in sunlight received over the whole year less than 4% of annual sunlight hours.

The results show that all 16 window receptors tested that are subject to the APSH analysis meet the minimum criteria for sunlight hours annually, however, the results show that there is a minor shortfall in winter sunlight hours serving receptors 2 and 3 located to No.117 East Barnet Road.



8. Conclusion

As previously stated, there are proposals for the conversion and extension of an existing building to create 4 x residential units at 119 – 121 East Barnet Road, London, EN4 8RF.

The purpose of this report is to assess the potential impact that the proposed development may have on the immediate surrounding neighbouring dwellings in terms of daylight and sunlight. The immediate neighbouring dwellings that have been identified for analysis being No.117 and No.123 East Barnet Road which are situated adjacent of the proposed development. After site analysis we have established that No.117 and No.123 East Barnet Road are classed as the 'worst case' due to their proximity in relation to the proposed development, therefore, if the analysis shows that these dwellings meet the requirements for levels of change in daylight in accordance with BRE guidelines then all additional surrounding dwellings will meet these requirements by default.

Using industry standard methodology, we have made numerical analysis to calculate the recommended levels of change in daylight for the window receptors detailed in section 3 of this report.

The main criteria used in this analysis is to show compliance is the Vertical Sky Component and Annual Probable Sunlight Hours for the effect on a neighbouring dwelling's habitable windows.

The analysis shows that all receptors tested meet the minimum requirements in accordance with BRE Guidelines and may only experience a *negligible* impact in terms of daylight.

With respect to sunlight, the results show that all 16 window receptors tested that are subject to the APSH analysis meet the minimum criteria for sunlight hours annually, however, the results show that there is a minor shortfall in winter sunlight hours serving receptors 2 and 3 located to No.117 East Barnet Road.

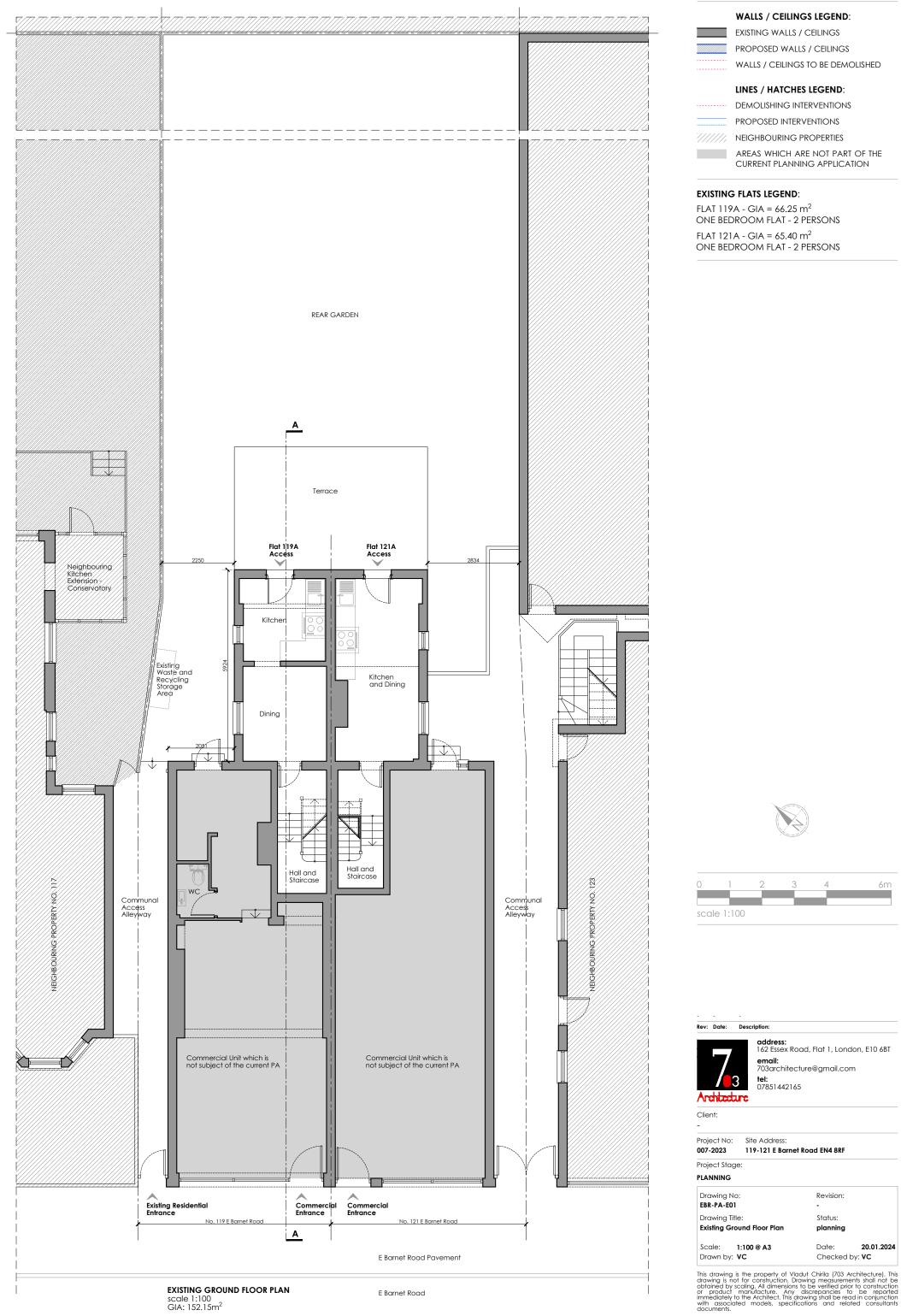
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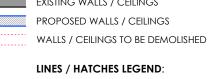


<u>Appendices</u>



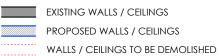
Appendix A: Existing Plans







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LINES / HATCHES LEGEND:

DEMOLISHING INTERVENTIONS

PROPOSED INTERVENTIONS

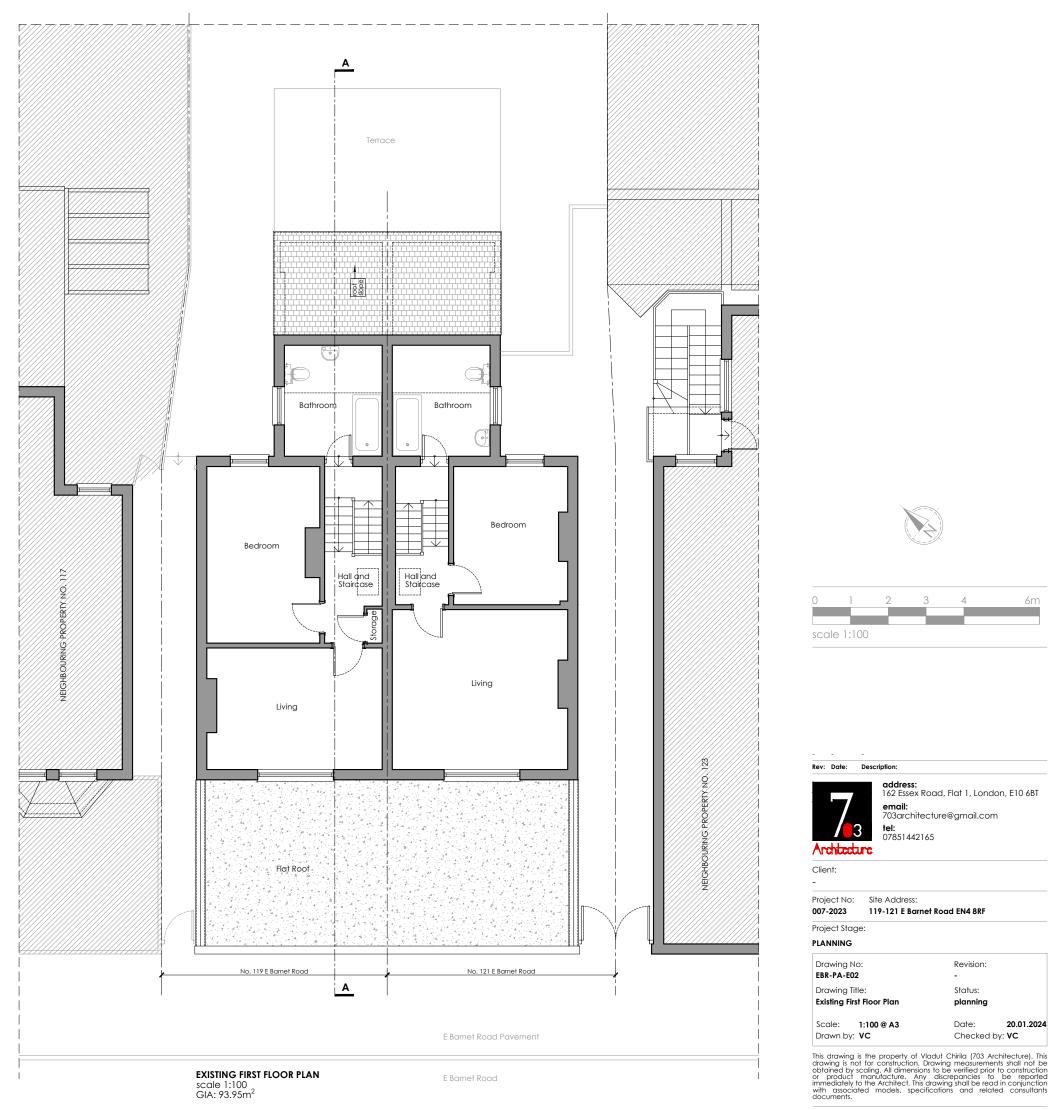
NEIGHBOURING PROPERTIES

AREAS WHICH ARE NOT PART OF THE CURRENT PLANNING APPLICATION

EXISTING FLATS LEGEND:

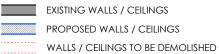
FLAT 119A - GIA = 66.25 m² ONE BEDROOM FLAT - 2 PERSONS

FLAT 121A - GIA = 65.40 m^2 ONE BEDROOM FLAT - 2 PERSONS









LINES / HATCHES LEGEND:

DEMOLISHING INTERVENTIONS

PROPOSED INTERVENTIONS

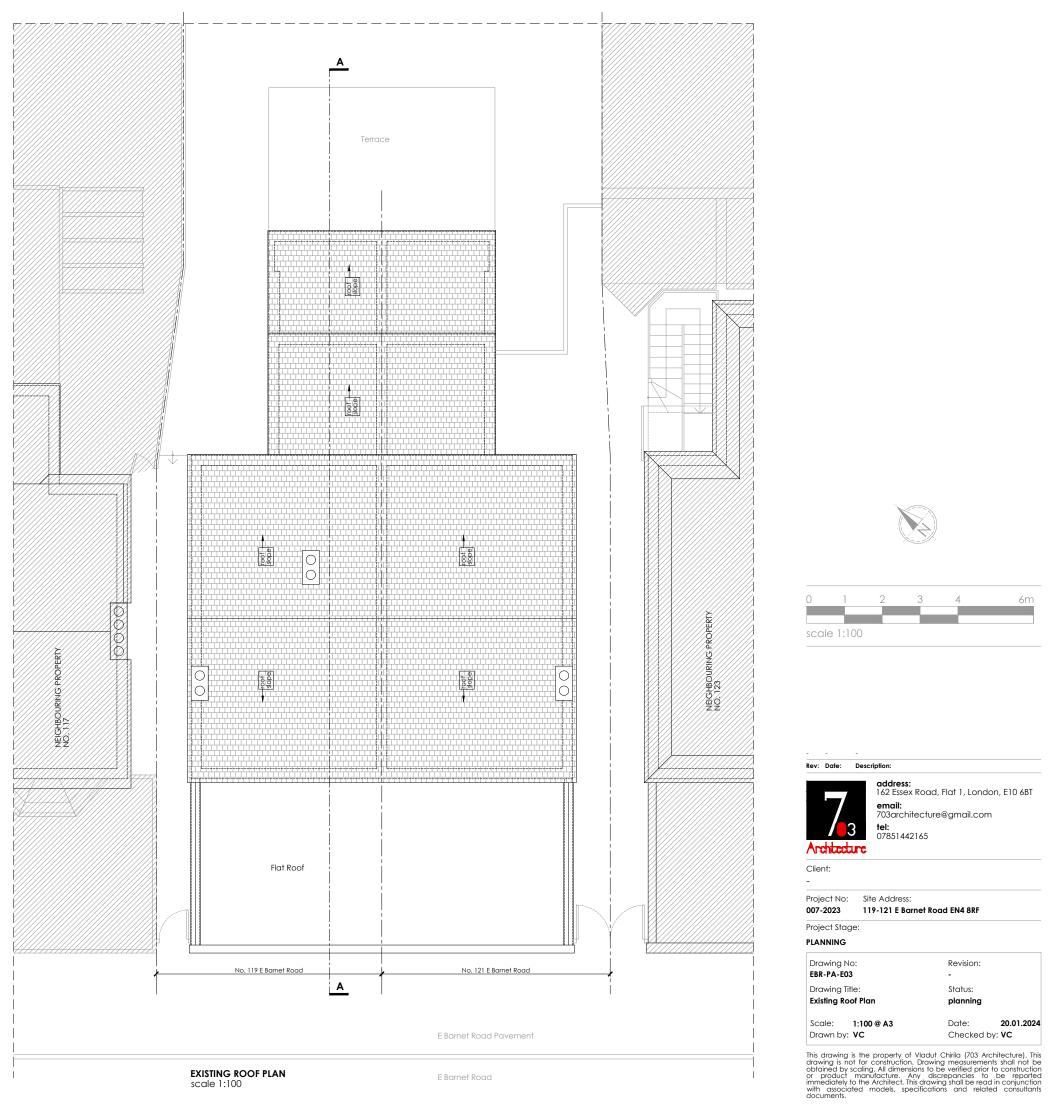
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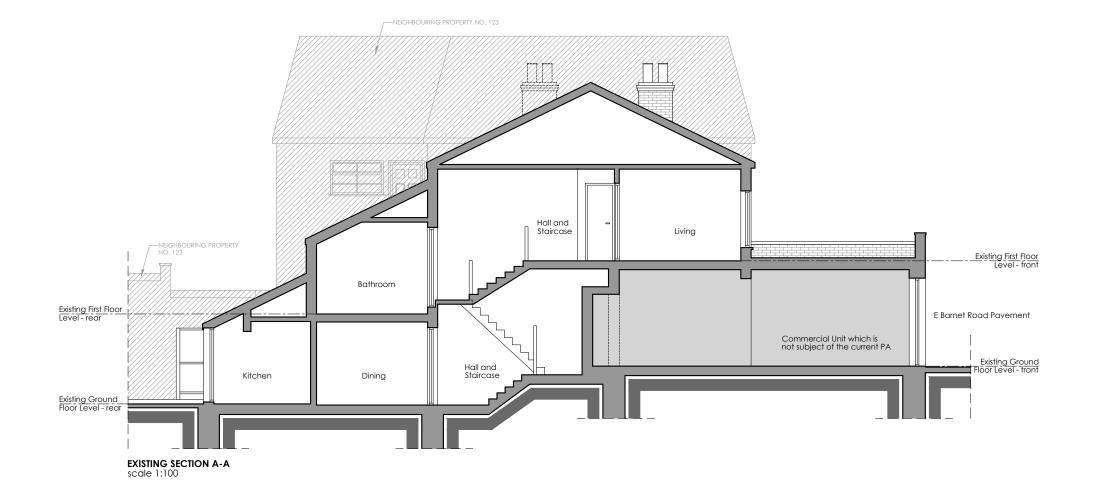
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WALLS / CEILINGS LEGEND: EXISTING WALLS / CEILINGS PROPOSED WALLS / CEILINGS

WALLS / CEILINGS TO BE DEMOLISHED

LINES / HATCHES LEGEND:
 DEMOLISHING INTERVENTIONS
 PROPOSED INTERVENTIONS
 NEIGHBOURING PROPERTIES
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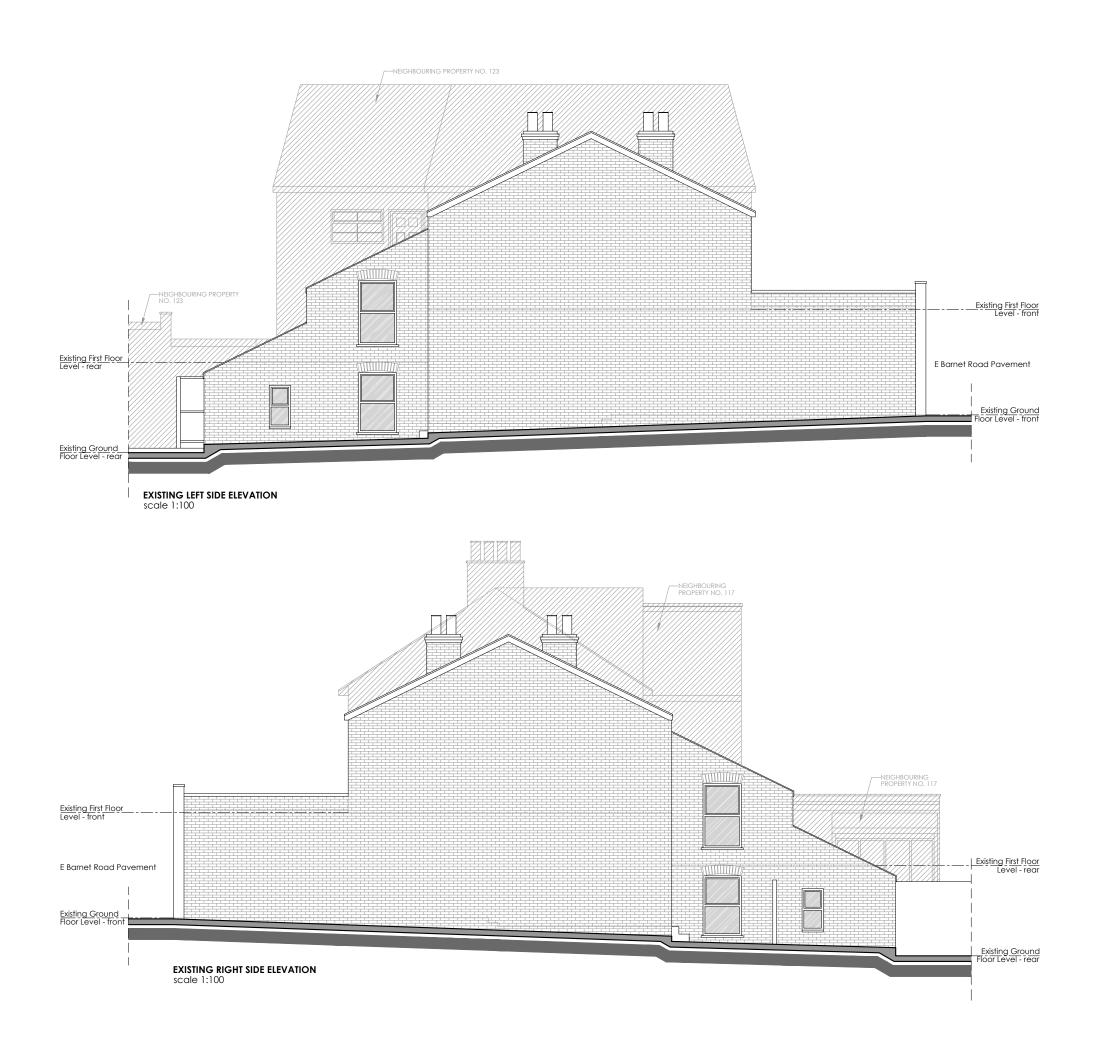
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WALLS / CEILINGS LEGEND: EXISTING WALLS / CEILINGS PROPOSED WALLS / CEILINGS

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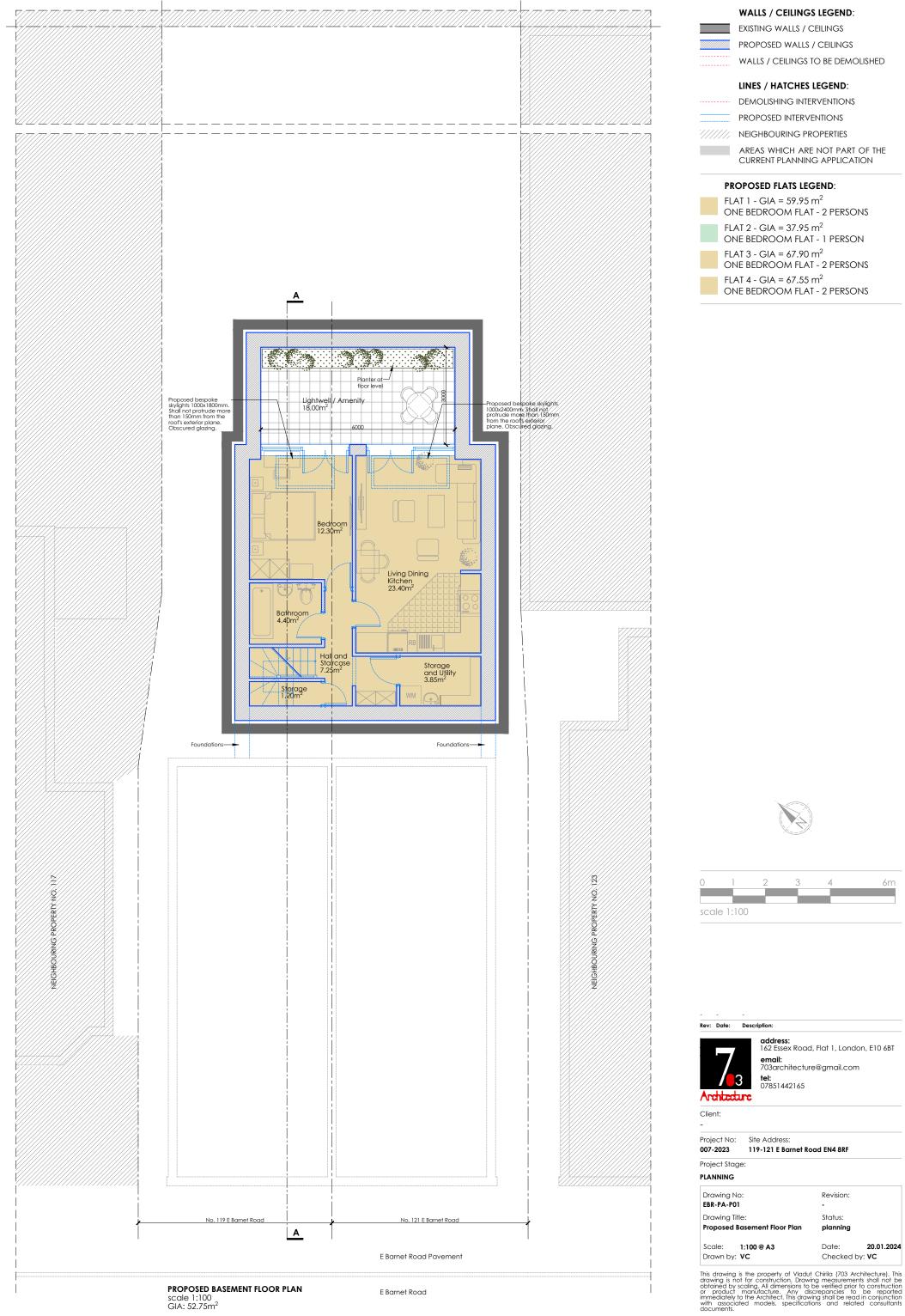




Rev: Date: Des	cription:		
Architecture	address: 162 Essex Road, email: 703architecture tel: 07851442165	. ,	
Client: -			
	iite Address: 19-121 E Barnet Ro	ad EN4 8RF	
Project Stage:			
PLANNING			
Drawing No: EBR-PA-E06		Revision:	
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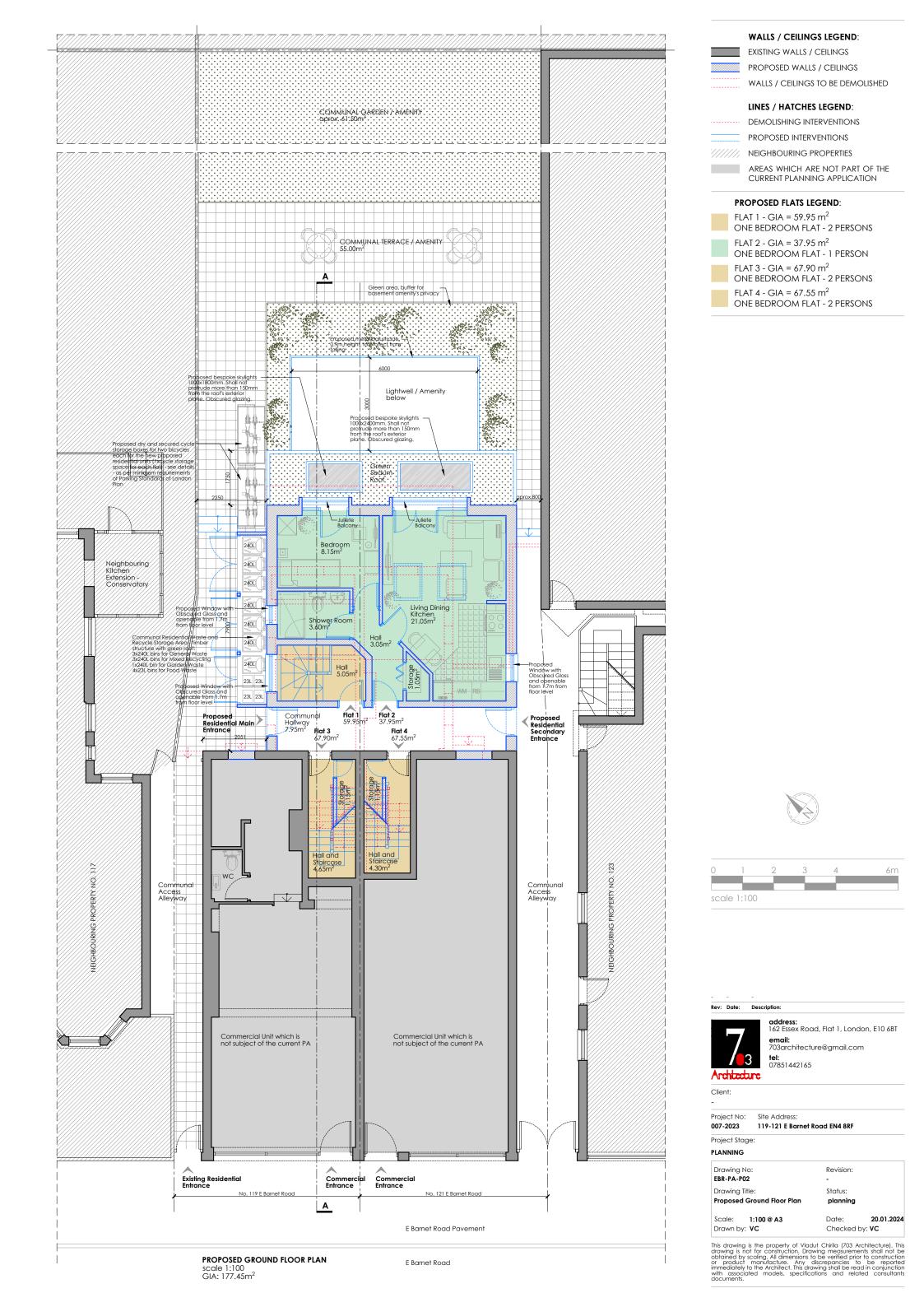
Appendix B: Proposed Plans

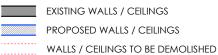














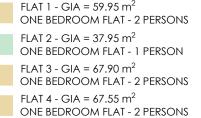
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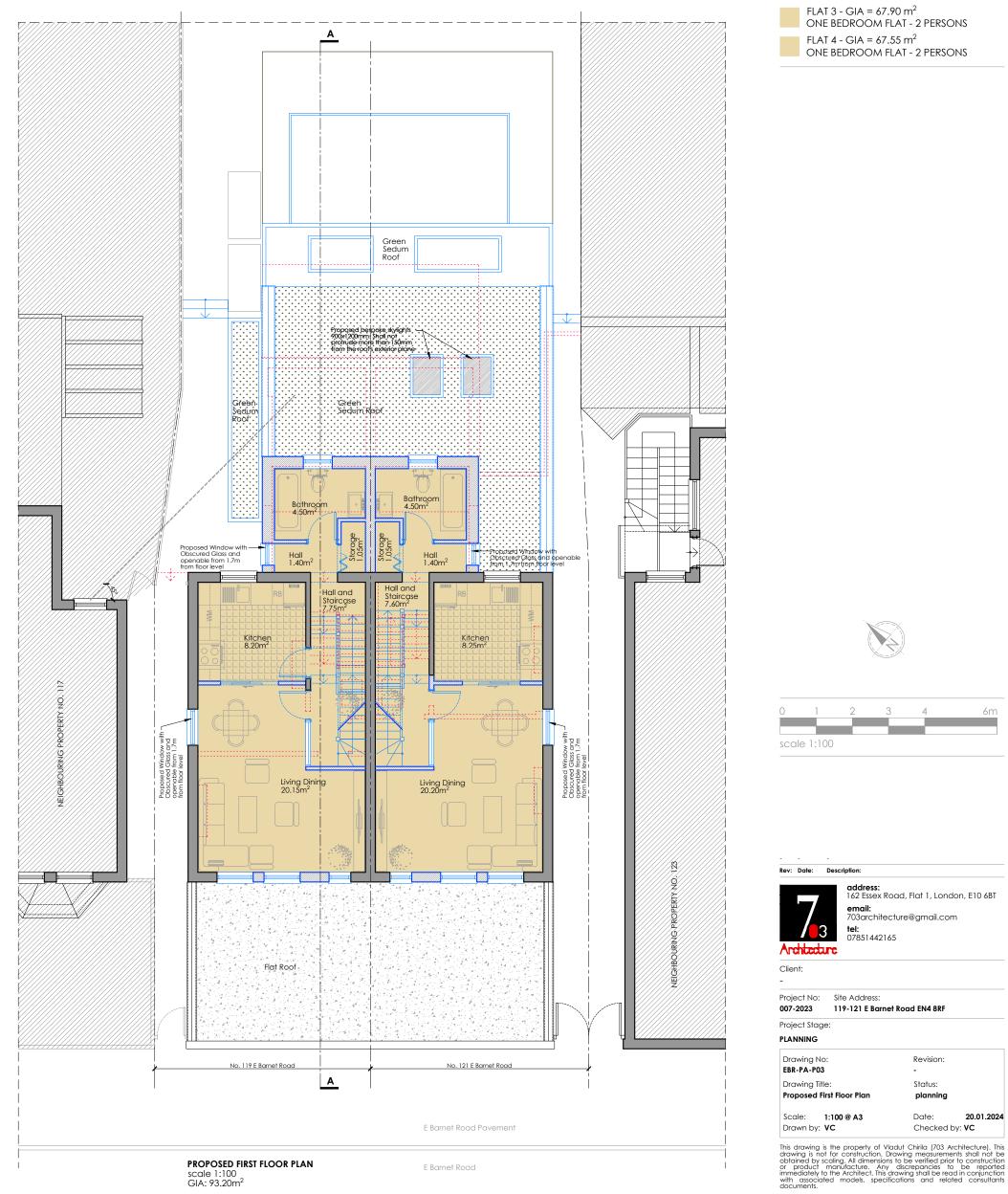
PROPOSED INTERVENTIONS

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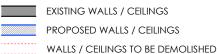
AREAS WHICH ARE NOT PART OF THE CURRENT PLANNING APPLICATION

PROPOSED FLATS LEGEND:











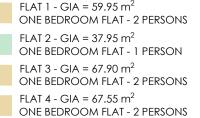
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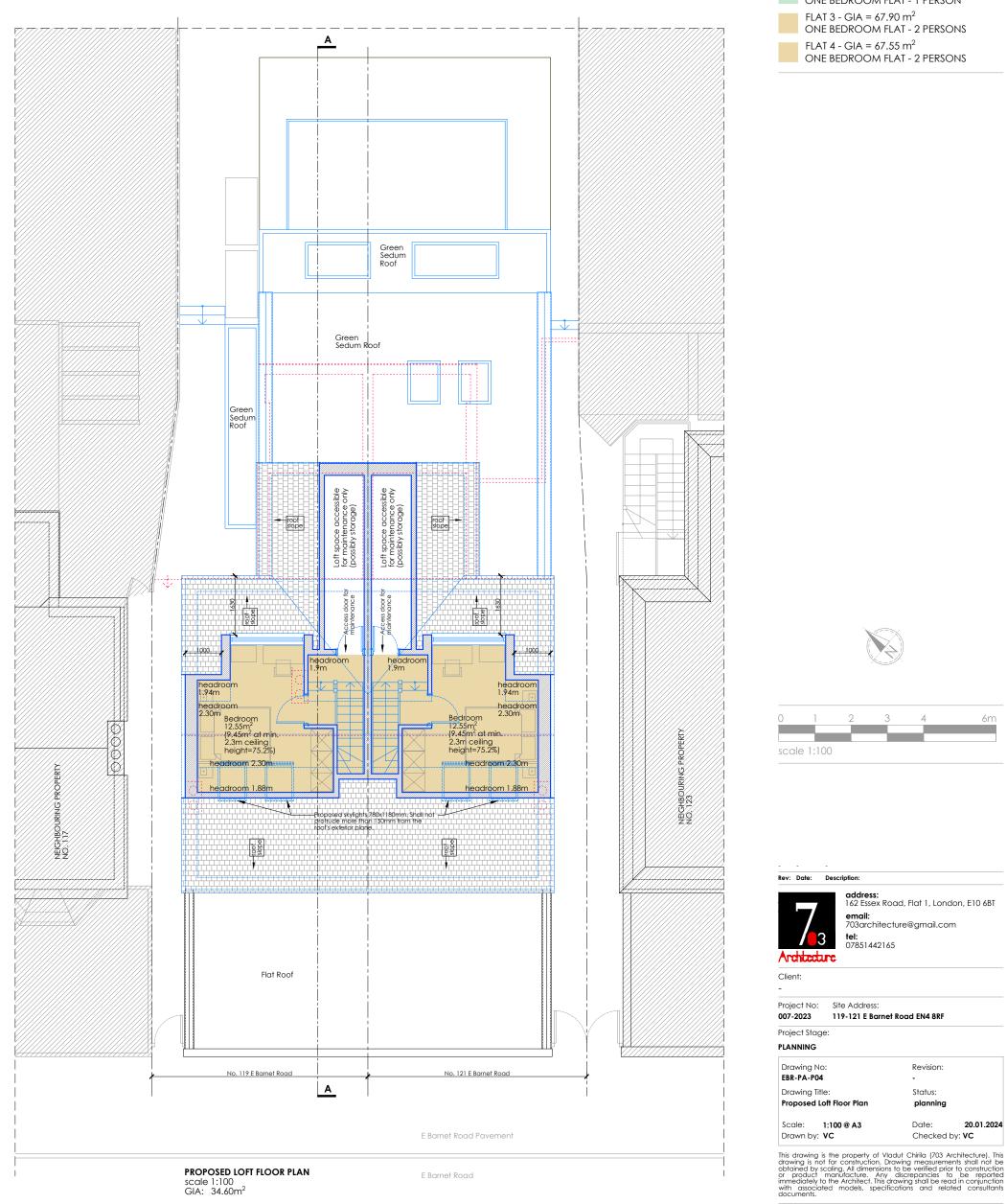
PROPOSED INTERVENTIONS

////// NEIGHBOURING PROPERTIES

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PROPOSED FLATS LEGEND:











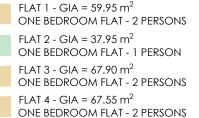
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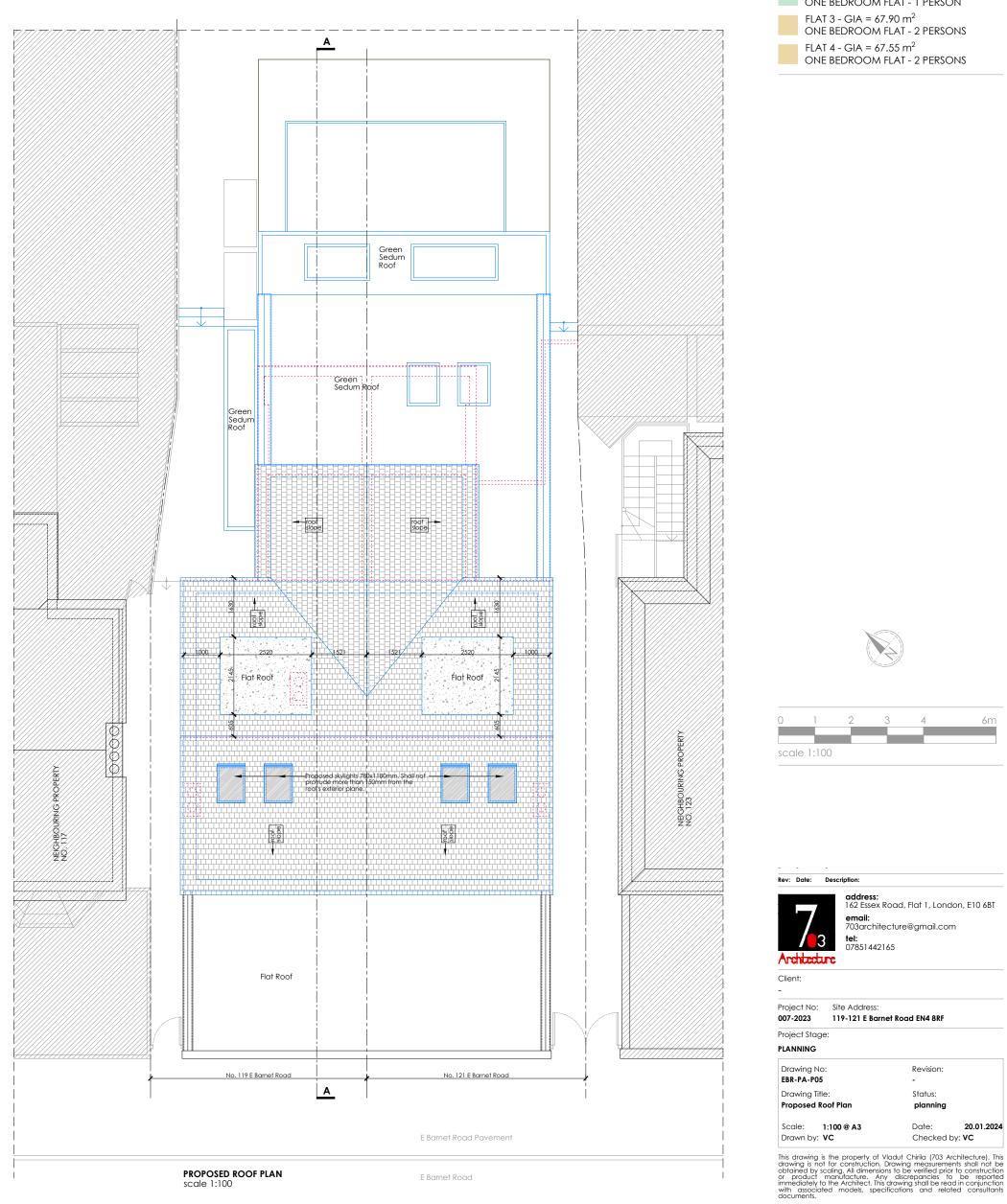
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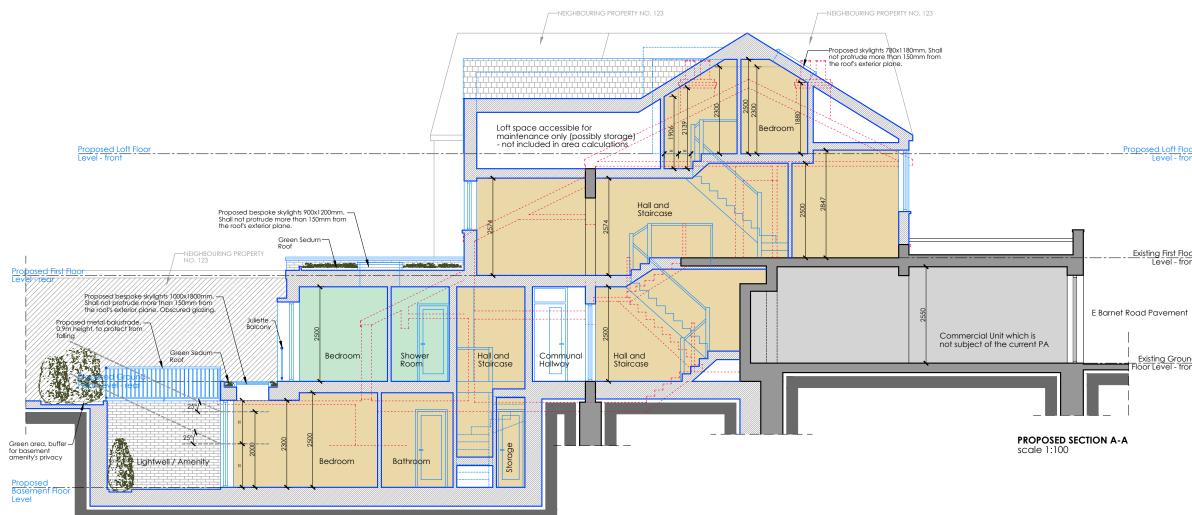
AREAS WHICH ARE NOT PART OF THE CURRENT PLANNING APPLICATION

PROPOSED FLATS LEGEND:











EXISTING WALLS / CEILINGS PROPOSED WALLS / CEILINGS WALLS / CEILINGS TO BE DEMOLISHED

LINES / HATCHES LEGEND: DEMOLISHING INTERVENTIONS PROPOSED INTERVENTIONS NEIGHBOURING PROPERTIES AREAS WHICH ARE NOT PART OF THE CURRENT PLANNING APPLICATION

PROPOSED FLATS LEGEND:

FLAT 1 - GIA = 59.95 m ² ONE BEDROOM FLAT - 2 PERSONS
FLAT 2 - GIA = 37.95 m ² ONE BEDROOM FLAT - 1 PERSON
FLAT 3 - GIA = 67.90 m ² ONE BEDROOM FLAT - 2 PERSONS
FLAT 4 - GIA = 67.55 m ² ONE BEDROOM FLAT - 2 PERSONS



Proposed Loft Floor Level - front



Existing First Floor Level - front

Existing Ground Floor Level - front

Rev: Date:	Description:		
Architect	email: 703architec tel: 07851442163	ad, Flat 1, Londo ture@gmail.com 5	n, E10 6BT
Client: -			
	Site Address: 119-121 E Barnet	Road EN4 8RF	
Project Stag	e:		
PLANNING			
Drawing No EBR-PA-PO		Revision:	
Drawing Tit Proposed S	le: ection A-A	Status: planning	
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EXISTING WALLS / CEILINGS PROPOSED WALLS / CEILINGS WALLS / CEILINGS TO BE DEMOLISHED

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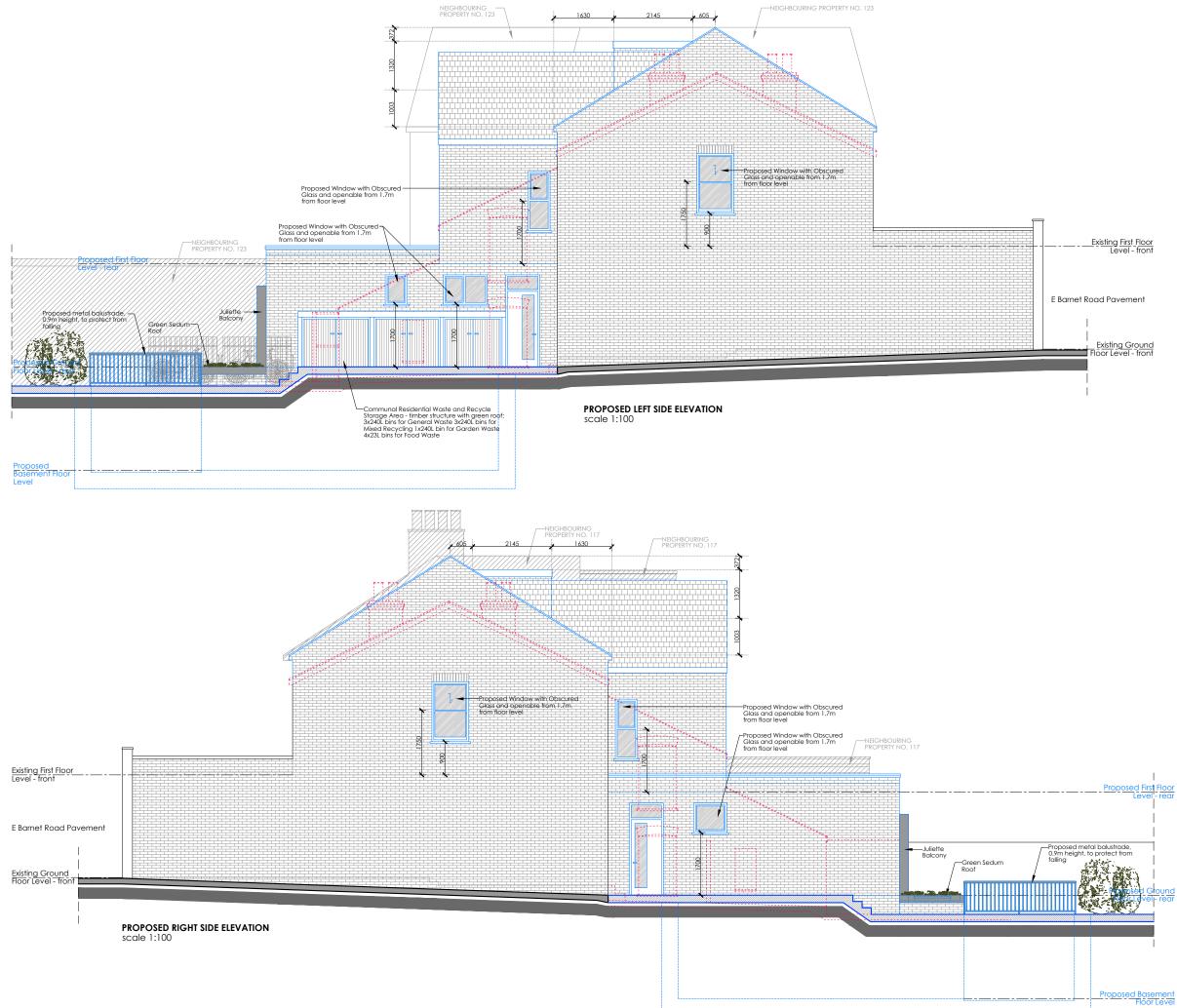
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WALLS / CEILINGS LEGEND: EXISTING WALLS / CEILINGS

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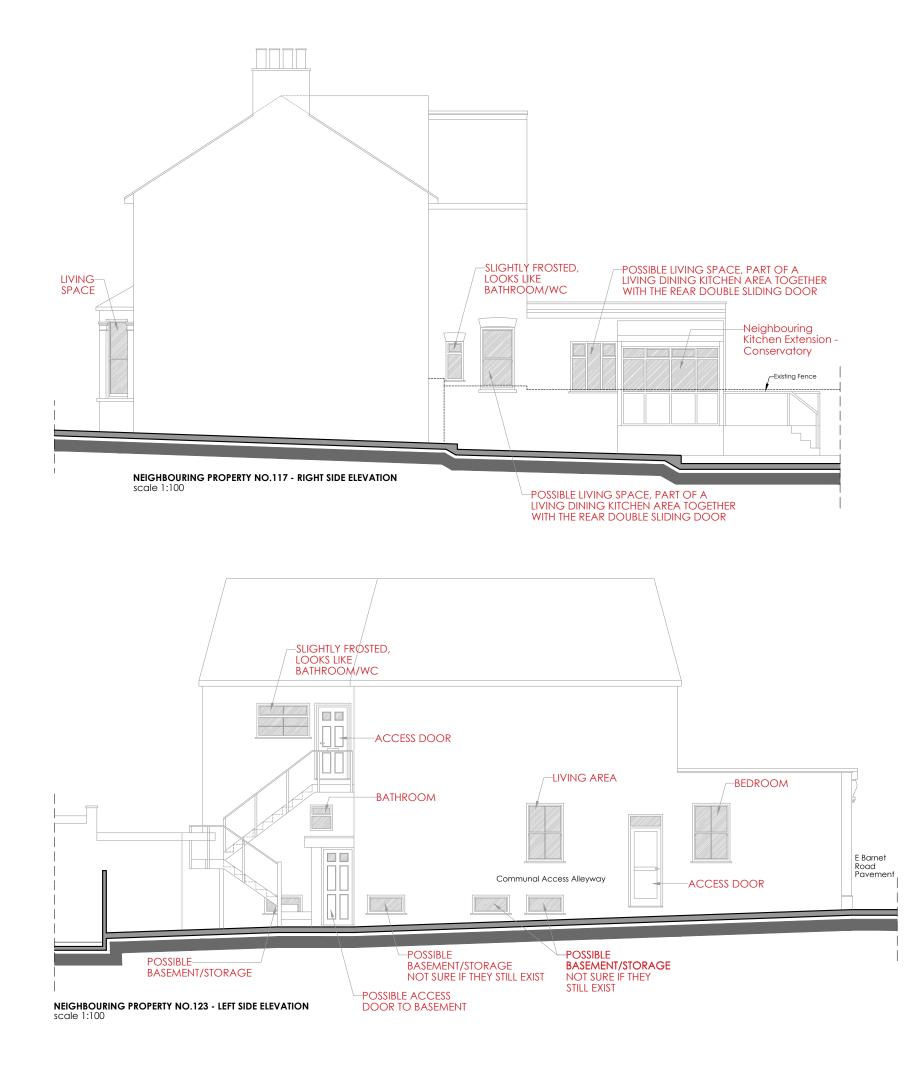


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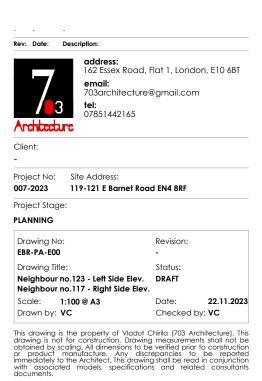
Appendix C:

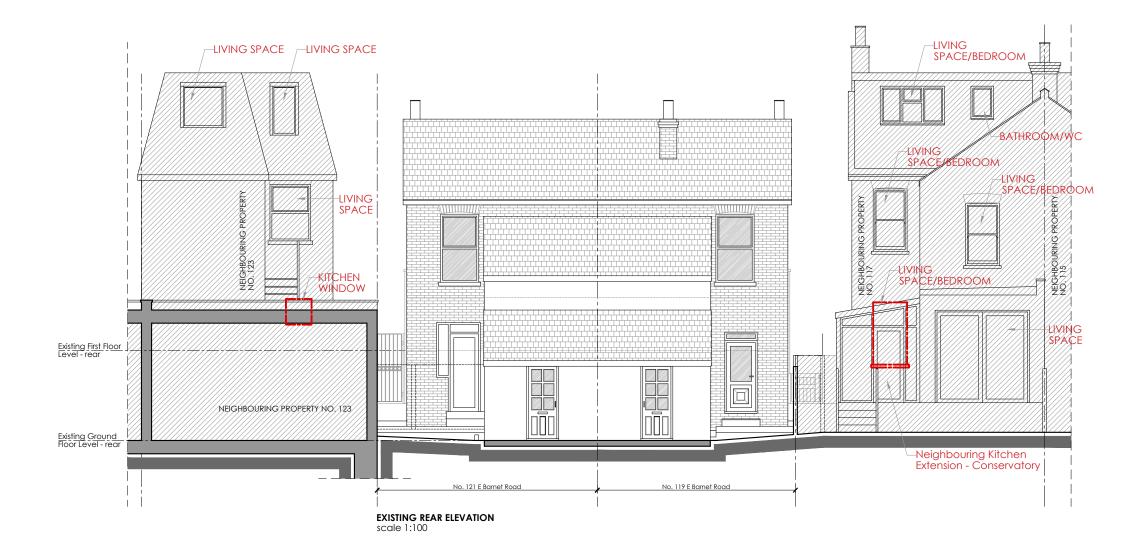
117 & 123 East Barnet Road Supporting Plans









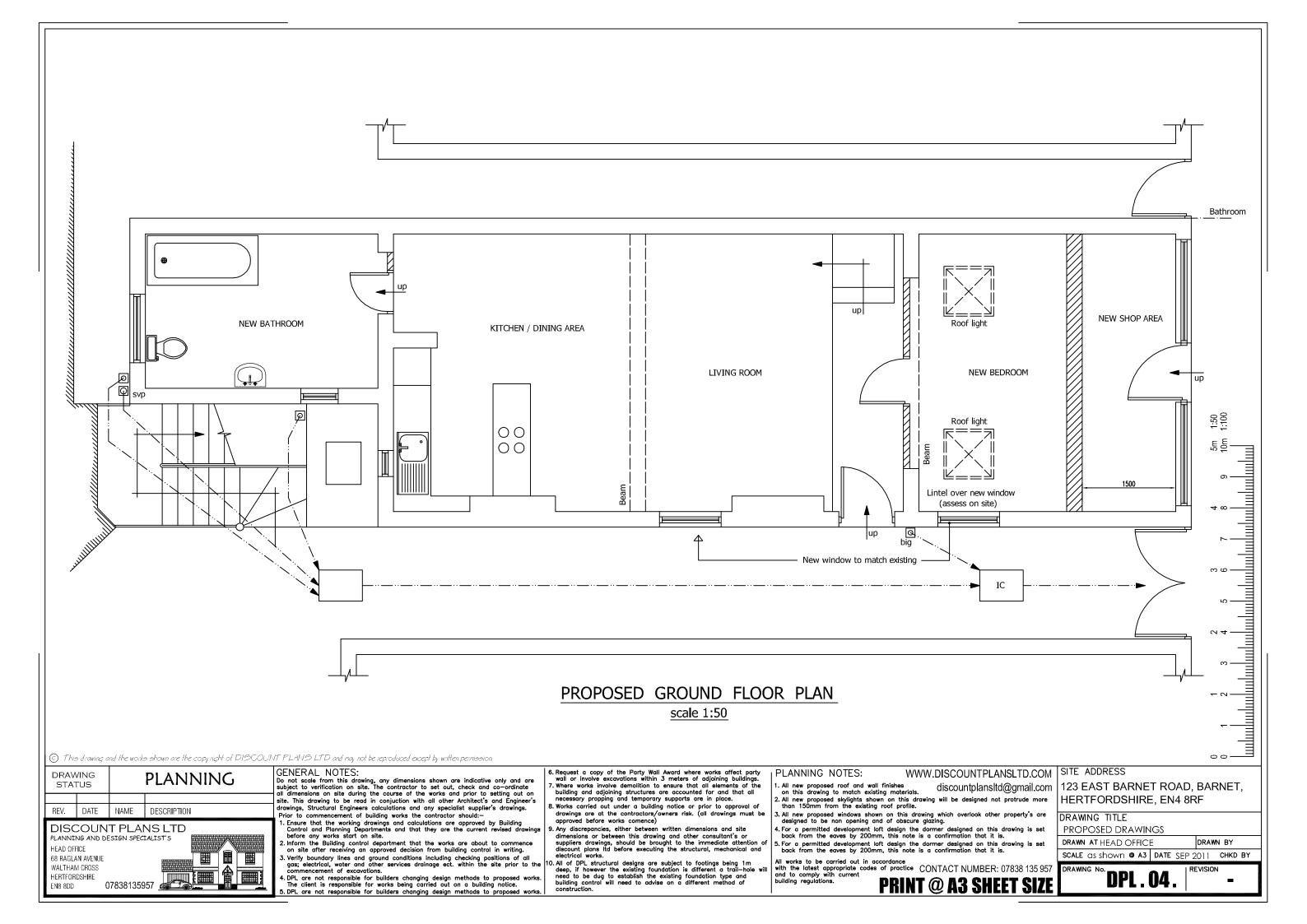








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Appendix D: Vertical Sky Component – Numerical Results Plans

Project Name: Project No: Report Title: Date of Analysis:

No.119 - No.121 East Barnet Road, London, EN4 8RF S11552 - Rev0 Vertical Sky Component Analysis - Rev0 08.12.2023

Vertical Sky Component - Numerical Results Rev0			
Receptor	VSC - Existing (%)	VSC - Proposed (%)	% Retained
1	30.18	29.98	99.00%
2	22.33	19.02	85.00%
3	19.92	17.10	86.00%
4	29.69	25.82	87.00%
5	35.30	35.28	100.00%
6	35.48	35.47	100.00%
7	21.85	20.87	96.00%
8	38.84	38.78	100.00%
9	29.37	28.43	97.00%
10	39.24	39.22	100.00%
11	16.19	15.45	95.00%
12	5.53	4.76	86.00%
13	23.05	22.04	96.00%
14	25.62	25.08	98.00%
15	39.62	39.62	100.00%
16	33.55	33.51	100.00%



Appendix E: Annual / Winter Probable Sunlight Hours – Numerical Results Plans

Project Name:	No.119 - No.121 East Barnet Road, London, EN4 8RF
Project No:	S11552 - Rev0
Report Title:	Annual Probable Sunlight Hours Analysis - Rev0
Date of Analysis:	08.12.2023

Annual Probable Sunlight Hours			
Window Receptors - Annual Hours	Existing %	Proposed %	% Retained
1	64.00	63.00	98.00%
2	37.00	32.00	86.00%
3	38.00	33.00	87.00%
4	61.00	53.00	87.00%

Project Name:	No.119 - No.121 East Barnet Road, London, EN4 8RF
Project No:	S11552 - Rev0
Report Title:	Winter Probable Sunlight Hours Analysis - Rev0
Date of Analysis:	08.12.2023

Winter Probable Sunlight Hours		
Window Receptors - Winter Hours	Existing %	Proposed %
1	21.00	21.00
2	3.00	2.00
3	7.00	3.00
4	12.00	6.00

% Retained	
100.00%	
67.00%	
43.00%	
50.00%	