

Former Spurr House, Pole Lane, Unsworth

Noise Impact Assessment

Watson Construction Ltd

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1.0

Introduction

1.0 Introduction

1.1 Overview

Cundall has been commissioned to prepare a Noise Impact Assessment for Watson Construction Ltd at the proposed development at Former Spurr House, Pole Lane, Unsworth.

1.2 Site Location

The Site is situated at 243 Pole Lane opposite the junction with Willow Drive. The site is immediately adjacent to Unsworth Cricket and Tennis Club with the cricket field bordering the site boundary. To the east is the M66 motorway which is clearly audible from the site itself.

The location of the development site is illustrated in Figure 1-1:



Figure 1-1: Site location

1.3 Proposed Development

The proposed development comprises the demolition of the former Spurr House and construction of two apartment blocks to contain 67 1-bed and 2-bed residential dwellings.



Figure 1-2: Proposed site plan

2.0

Planning policy and guidance

2.0 Planning policy and guidance

The noise impact assessment (NIA) related to the proposed development is conducted based on the following policy, standards and guidance documents:

- The Noise Policy Statement for England (2010) (NPSE)
- The National Planning Policy Framework (2023) (NPPF)
- The Planning Practice Guidance (2016) (PPG)
- Bury Council local policy
- BS 8233:2014 Guidance on sound insulation and noise reduction for buildings (BS8233)
- BS 4142:2014 + A1:2019 Method for rating and assessing industrial and commercial sound (BS 4142)
- Approved Document O of the Building Regulations – Overheating (ADO)

This section outlines the relevant requirements and guidance given in these documents.

2.1 Noise Policy Statement for England (NPSE)

The Noise Policy Statement for England (NPSE) sets out the long-term vision of Government noise policy, to:

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

The NPSE long term vision is supported by the following aims:

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.

2.2 National Planning Policy Framework (NPPF)

The revised National Planning Policy Framework NPPF was updated in December 2024 and sets out the Government's planning policies for England and how these are expected to be applied. Specifically, on the subject of noise, paragraph 198 of NPPF states:

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

On the general issue of amenity, paragraph 135 states that planning policies and decisions should ensure that developments:

...create places that [...] promote health and well-being, with a high standard of amenity for existing and future users...

Further to this, paragraph 187 point '(e)' states that planning policies and decisions should contribute to and enhance the natural and local environment by:

...preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

2.3 Planning Practice Guidance (PPG)

The Department for Communities and Local Government (DCLG) launched a planning practice guidance in March 2014 (last updated July 2019) which is a web-based resource and includes a section on Noise. This resource provides guidance on how to determine the noise impact in terms of whether a significant adverse effect is likely to occur and/or whether a good standard of amenity can be achieved.

In line with the NPSE, PPG Noise introduces the concept of:

- Significant observed adverse effect level (SOAEL): This is the level of noise exposure above which significant adverse effects on health and quality of life occur.
- Lowest observed adverse effect level (LOAEL): this is the level of noise exposure above which adverse effects on health and quality of life can be detected.
- No observed effect level (NOEL): this is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Table 2-1 summarises the noise exposure hierarchy, based on the likely average response.

Perception	Examples of outcomes	Increasing effect level	Action
Not noticeable	No effect	No Observed Effect	No specific measures required
Noticeable but not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid where possible
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

Table 2-1: PPG noise exposure hierarchy

2.4 Bury Council local policy

The Bury Council Local Plan does not include any numerical guidance, however based on previous similar project experience the internal noise level target shall be in accordance with BS 8233, and external noise emissions shall be limited to 5 dB below background in accordance with BS 4142.

2.5 BS 8233

British Standard 8233 provides guidance on maximum internal ambient noise levels in residential and non-residential spaces. The following tables summarise the guidance relevant to internal noise levels in residential spaces.

Activity	Location	Daytime (07:00 to 23:00 hrs)	Night-time (23:00 – 07:00 hrs)
Resting	Living room	≤ 35 dB $L_{Aeq,16\text{hour}}$	-
Dining	Dining room/area	≤ 40 dB $L_{Aeq,16\text{hour}}$	-
Sleeping	Bedroom	≤ 35 dB $L_{Aeq,16\text{hour}}$	≤ 30 dB $L_{Aeq,8\text{hour}}$

Table 2-2: Summary of BS 8233 criteria for internal noise levels in dwellings

The notes below should be considered when following the guidance above:

BS 8233 provides the following consideration for façade attenuation when partially open windows are used for ventilation:

“If partially open window were relied upon for background ventilation, the insulation [of the building façade] would be reduced to approximately 15 dB.”

“If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level.”

In relation to the noise guidelines in Table 2-2 above, BS 8233 states:

Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved’

2.5.1 BS 4142

The BS 4142 assessment method involves comparing the rating level (the ‘specific’ sound level plus a range of potential feature corrections) of a source to the measured background sound level in order to estimate its initial impact, as follows:

“Typically, the greater this difference, the greater the magnitude of the impact.

a) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

b) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

c) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.”

The standard suggests that the noise source of interest will have a ‘low impact’ when the ‘rating level’ of a noise source is less than the existing background noise. It is also important to note that the standard requires that any quantitative assessment results are assessed in light of the context in which the sound occurs.

With regard to background noise levels, BS 4142 states:

“In using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods.”

BS 4142 also sets out the following rating penalties based on the characteristics of the noise sources:

- Tonality: up to 6 dB rating penalty applicable depending on its perception;
- Impulsivity: up to 9 dB rating penalty applicable depending on its perception;
- Intermittency: a 3 dB penalty applicable for specific sound that has identifiable on/off conditions.
- Other sound characteristics: a 3 dB penalty applicable for readily distinctive sound feature characteristics that are neither tonal or impulsive;

2.6 Approved Document O

Approved Document O (ADO) was published on 15 December 2021 as part of the Government's Building Regulations. It covers two overheating mitigation requirements for new residential buildings (Requirement O1):

- a. Limiting unwanted solar gains in summer;
- b. Providing an adequate means to remove heat from the indoor environment.

The aim of the requirements is to “...*protect the health and welfare of occupants of the building by reducing the occurrence of high indoor temperatures*”. Compliance can be demonstrated by using one of the following methods:

- The simplified method, as set out in Section 1 of the document; or
- The dynamic thermal modelling method, as set out in Section 2 of the document.

The requirement O1(2) of the document states that in meeting the requirement O1 as per above “...*account must be taken of the safety of any occupant, and their reasonable enjoyment of the residence...*”. This is also relevant in regard to noise assessments.

Paragraph 3.2 to 3.4 of the document states in regard to noise and overheating assessment that:

3.2 In locations where external noise may be an issue (for example, where the local planning authority considered external noise to be an issue at the planning stage), the overheating mitigation strategy should take account of the likelihood that windows will be closed during sleeping hours (11 pm to 7 am);

3.3 Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits

a. 40 dB $L_{Aeq,T}$, averaged over 8 hours (between 11 pm and 7 am)

b. 55 dB L_{AFmax} , more than 10 times a night (between 11 pm and 7 am);

3.4 Where in-situ noise measurements are used as evidence that these limits are not exceeded, measurements should be taken in accordance with the Association of Noise Consultants' Measurement of Sound Levels in Buildings with the overheating mitigation strategy in use.

The Guide to Demonstrating Compliance with the Noise Requirements of Approved Document O (v1.0 July 2022) published by Acoustic & Noise Consultants with the Institute of Acoustics in paragraph 4.1.7. sets thresholds for external noise levels at which detailed dynamic thermally modelling must be undertaken, as indicated below.

Parameter	Moderate risk location (i.e. outside of Greater London)
dBA $L_{eq,8h}$, averaged over 8 hours (between 11 pm and 7 am)	49 dB
dBA L_{Fmax} , more than 10 times a night (between 11 pm and 7am)	64 dB

Table 2-3: ADO thresholds for external noise levels

The detailed thermal modelling shall be undertaken in accordance with CIBSE TM59 (using the criteria specified within ADO) during detailed design phases and, where the risk of overheating is identified, will identify a strategy for limiting solar gains (shutters, blinds, ceiling fans, etc) and removing excess heat.

Where passive means to remove heat (e.g. opening windows, ventilation louvres) conflict with acceptable internal noise levels, alternative mechanical means of cooling may need to be introduced. This analysis will be used by the design team to develop a suitable overheating strategy for the residential uses of the proposed development.

3.0

Baseline conditions

3.0 Baseline conditions

3.1 Noise survey - methodology

To determine the existing noise climate at the proposed development, an environmental noise survey was undertaken between Friday 27 September to Tuesday 1 October 2024.

Two sound level meters were used over a five-day period to capture the baseline noise conditions at the proposed site. The first meter was installed to the western Pole Lane side of the site while the second was installed in the open eastern side of the site.



Figure 3-1: Survey measurement positions

The MP1 position was on the end of the westernmost block of the existing building at 1.5 metres above the existing roof level. The MP2 position was installed on a tripod at over 1.5 metres above ground in the green space towards the north east of the existing site layout.

The survey was undertaken following guidance from BS 7445-1:2003 and BS 4142 using two Class 1 sound level meters and peripherals as detailed below in Table 3-1. The meter was field-calibrated before and after use with no significant drift witnessed throughout the survey period. Calibration certificates for all equipment are available upon request.

Equipment	Reference
Sound level meter(s)	Casella CEL-633 (s/n: 1211404), Casella CEL-633 (s/n: 1211405)
Pre-amp(s)	Casella 495 (s/n: 1180), Casella 495 (s/n: 001211)
Microphone(s)	Casella 2551 (s/n: 2551), Casella 2551 (s/n: 2626)
Calibrator(s)	Casella 120/1 (s/n: 3574169), Casella 120/1 (s/n: 4921893)

Table 3-1: Equipment details list

All measurements were undertaken by competently trained Cundall acoustics staff.

Weather conditions during the survey were clear, mid/low wind and dry for the majority of the survey period however there was a period of heavy rain on the 30/09/2024.

3.2 Results

3.2.1 Observations

During the survey installation it was observed and noted that the noise from the M66 at MP2 was at a consistently high level, while at MP1 it was lower but still noticeable; however, other road and foot traffic from Pole Lane to the west was also noticeable.

3.2.2 Daytime results

A summary of the measured daytime (07:00-23:00) survey results is presented in Table 3-2 below:

Date	Measurement position	Ambient sound level, dB L _{Aeq,T}	Range of background sound levels, dB L _{A90,15 mins}	Maximum sound level, dB L _{AFMax,15 mins}
27/09/2024	MP1	54	46 – 55	77
	MP2	62	53 – 62	76
28/09/2024	MP1	55	46 – 57	92
	MP2	59	53 – 60	71
29/09/2024	MP1	60	54 – 60	88
	MP2	63	54 – 63	92
30/09/2024	MP1	55	48 – 64	80
	MP2	63	55 – 61	81
01/10/2024	MP1	58	51 - 58	82
	MP2	66	61 – 68	76

Table 3-2: Daytime survey results

3.2.3 Night-time results

A summary of the measured night-time (23:00-07:00) survey results is presented in Table 3-3 below:

Date	Measurement position	Ambient sound level, dB L _{Aeq,T}	Range of background sound levels, dB L _{A90,15 mins}	Maximum sound level, dB L _{AFMax,15 mins}
27/09/2024	MP1	52	45 – 54	71
	MP2	56	46 – 56	74
28/09/2024	MP1	54	48 – 55	80
	MP2	56	47 – 56	71
29/09/2024	MP1	55	49 – 64	78
	MP2	59	50 – 56	84
30/09/2024	MP1	50	39 – 56	77
	MP2	61	42 – 66	87

Table 3-3: Night-time survey results

3.2.4 Summary results

A summary of the survey results, corrected to exclude adverse weather conditions between 02:30 – 19:00 hrs on 30 September 2024, is presented in Table 3-4 below.

Measurement position	Time Period	Ambient sound level, dB L _{Aeq,T}	Representative background sound level, dB L _{A90,15 mins}	10 th Highest 2-minute L _{AFMax} , dB
MP1	Daytime (07:00-23:00)	57	47	N/A
	Night-time (23:00-07:00)	52	41	74
MP2	Daytime (07:00-23:00)	63	55	N/A
	Night-time (23:00-07:00)	58	48	77

Table 3-4: Summary of daytime and night-time results

4.0

Façade sound insulation and ventilation

4.0 Façade sound insulation and ventilation

4.1 Façade sound insulation

The predicted façade noise levels (referred to in Section 3.2.4) have been used to determine the sound insulation requirements for the proposed development to see that suitable internal ambient noise levels can be achieved. Calculations have been undertaken in accordance with the simplified calculation methodology presented in Annex G2 of BS 8233.

Daytime and night-time (L_{Aeq} and L_{AFmax}) scenarios have been examined and the most stringent calculated façade / glazing requirement has been selected and presented in **Error! Reference source not found.**. The associated floorplan markups with corresponding façade colour coding can be found in drawing FSH-CDL-ZZ-XX-D-AS-45801 in the Appendices section of this report.

Minimum facade sound insulation	Example glazing configurations
$R_w (+C_{tr}) \geq 37$ (-4) dB	Pilkington Insulight 10/12/6
$R_w (+C_{tr}) \geq 33$ (-5) dB	Pilkington Insulight 6/12/6.4
$R_w (+C_{tr}) \geq 30$ (-3) dB	Standard double glazing

Table 4-1: Glazing external building fabric sound insulation requirements

The estimated glazing performance requirements have been presented in terms of a single figure description ($R_w + C_{tr}$) based on octave band frequency data for commercially available glazing products. The calculations have been undertaken in terms of octave band noise data and during the design of the proposed buildings any potential glazing systems will need to be selected based on frequency performance data and not rely solely on single figure performance data.

4.2 Ventilation provision

The intended ventilation strategy for the proposed development has not been specified, however the impact of either passive or MVHR ventilation must each be investigated.

4.2.1 Passive ventilation

Passive ventilation is typically provided by a trickle ventilator within a window frame or building façade element. Such ventilators will need to be acoustically designed so as not to adversely influence the overall façade sound insulation. Table 4-2 below provides the minimum ventilator acoustic requirements relative to the minimum façade sound insulation requirements discussed above:

Minimum facade sound insulation	Minimum trickle vent acoustic performance	Example trickle ventilation
$R_w (+C_{tr}) \geq 37$ (-4) dB	$D_{n,e,w} + C_{tr} \geq 41$ dB	High performance acoustic window trickle vent, or acoustic rated through wall ventilator
$R_w (+C_{tr}) \geq 33$ (-5) dB	$D_{n,e,w} + C_{tr} \geq 36$ dB	Acoustic rated window ventilator
$R_w (+C_{tr}) \geq 30$ (-3) dB	$D_{n,e,w} + C_{tr} \geq 33$ dB	Non-acoustic, standard trickle vent

Table 4-2: Trickle ventilation attenuation performance

The above acoustic requirements are based on a single ventilator being included within a room. If multiple ventilators are required, then the acoustic rating will need to be increased by $[10 \cdot \log(N)]$ where N = number of ventilators per room.

4.2.2 MVHR ventilation

In the case of the proposed development installing MVHR style ventilation, the mechanical ventilation systems must be designed to comply with the noise limits indicated in Table 4-3, below.

Area type	Mechanical services internal noise limit, NR ($L_{eq,T}$)
Living space	30
Bedroom	25

Table 4-3: Mechanical ventilation noise limits

4.3 Thermal comfort (overheating)

If a building overheats, the normal method of providing thermal comfort (i.e. cooling a space down) is to open a window. However, when a window is opened to provide 'ventilative' cooling internal noise levels are likely to be increased. The impact this will have on the occupants of the space will depend on the following:

- Noise levels inside the space when windows are open; and
- How often windows need to be opened to provide relief from overheating.
- Approved Document O (ADO) of the Building Regulations came into force in June 2022 and specifically covers the control of overheating and suitable mitigation.
- Supplementary guidance has been provided in a joint publication (draft for consultation) between the Association of Noise Consultants (ANC) and Institute of Acoustics (IoA), 'Guide to Demonstrating Compliance with the Noise Requirements of Approved Document O – July 2022'.
- Table 1 of this document provides the following external noise level limits for which if windows are open at night, the simplified method for assessing overheating, defined in ADO, cannot be used to demonstrate compliance. The proposed development lies within a moderate risk location as defined in ADO, and relevant limits are shown below:

Parameter	Moderate risk location
$L_{Aeq, 8hrs}$ averaged over 8 hours (between 11pm and 7am)	49 dB
L_{AFmax} more than 10 times a night (between 11pm and 7am)	64 dB

Table 4-4: Copy of Table 1 from Guide to Demonstrating compliance with the Noise Requirements of Approved Document O

Drawing FSH-CDL-ZZ-XX-D-AS-45802, in the Appendices of this report, indicates the noise risk (as summarised overleaf) associated with the use of openable windows at night, in bedrooms, to alleviate overheating.

Where required, detailed thermal modelling shall be undertaken in accordance with CIBSE TM59 (using the criteria specified within ADO) during detailed design phases and, where the risk of overheating is identified, will identify a strategy for limiting solar gains (shutters, blinds, ceiling fans, etc) and removing excess heat.

Where passive means to remove heat (e.g. opening windows, ventilation louvres) conflict with acceptable internal noise levels, alternative mechanical means of cooling may need to be introduced. This analysis will be used by the design team to develop a suitable overheating strategy for the residential uses of the proposed development.

Low Risk

This indicates that the external façade noise is at an acceptable level to leave windows partially open (a maximum open area of ~5% of the room's floor area) at night with negligible risk of internal noise levels exceeding the limits specified within ADO.

No further noise mitigation is deemed necessary in these areas and the simplified method can be used to demonstrate compliance with ADO.

Medium Risk

Detailed thermal modelling will need to be undertaken to demonstrate compliance with ADO and determine if and how much windows will need to be open to prevent overheating.

Where external façade noise levels are at medium risk, openable windows may be feasible, subject to a maximum open area of circa **0.3 m²**

Alternatively, attenuated passive ventilation modules may be suitable subject to the airflow requirements and available façade area.

High Risk

Detailed thermal modelling will need to be undertaken to demonstrate compliance with ADO and determine if and how much windows will need to be open to prevent overheating.

High Risk indicates that noise levels at the façade is too high to allow passive ventilation. Mechanical ventilation will most likely be necessary to reduce the risk of overheating.

It is unlikely that the use of openable windows in non-bedrooms of these façade areas would be feasible as a means of providing make-up air to support a mechanical extract system.

5.0

Plant noise emissions

5.0 Plant noise emissions

5.1 Overview

Proposed external plant specifications have not yet been provided however, if any plant is introduced, the noise emissions at the nearest noise sensitive receptors must be considered and assessed.

In accordance with the standard approach taken by Bury Council for assessing noise from fixed plant, appropriate noise limits are discussed herein that have been derived in accordance with BS 4142.

5.2 Background sound levels

The BS 4142 approach to background sound is that the representative background sound level is used as a baseline when considering and assessing new noise sources in relation to proposed developments. Accordingly, the figures below present histograms of the measured L_{A90} background sound levels over the duration of the survey, where the 'representative' level is typically the lowest, most regularly occurring value.

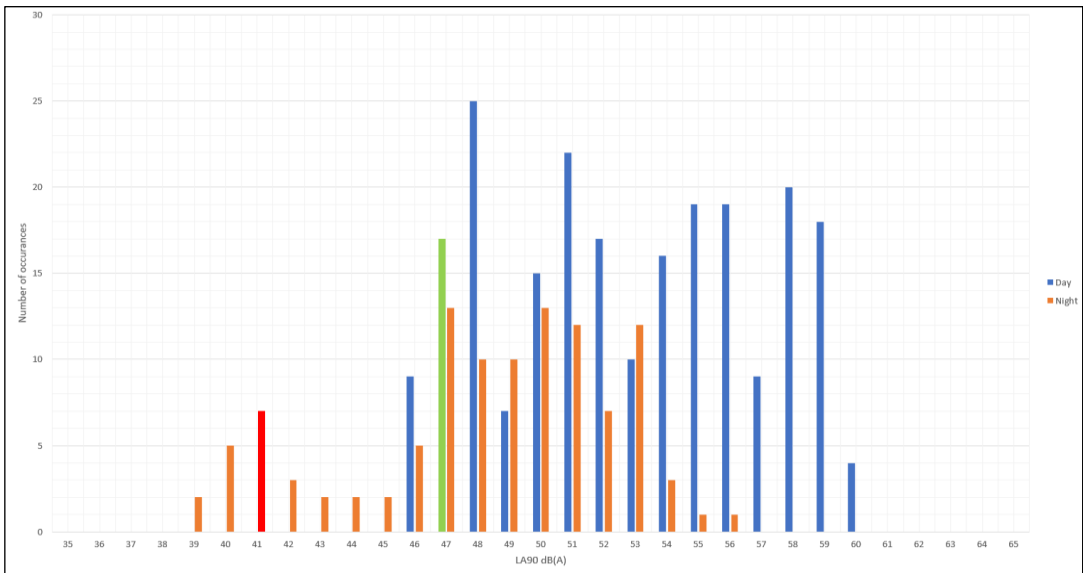


Figure 5-1: MP1 $L_{A90,15\text{ mins}}$ histogram, green = Daytime (07:00-23:00), red = Night-time (23:00-07:00)

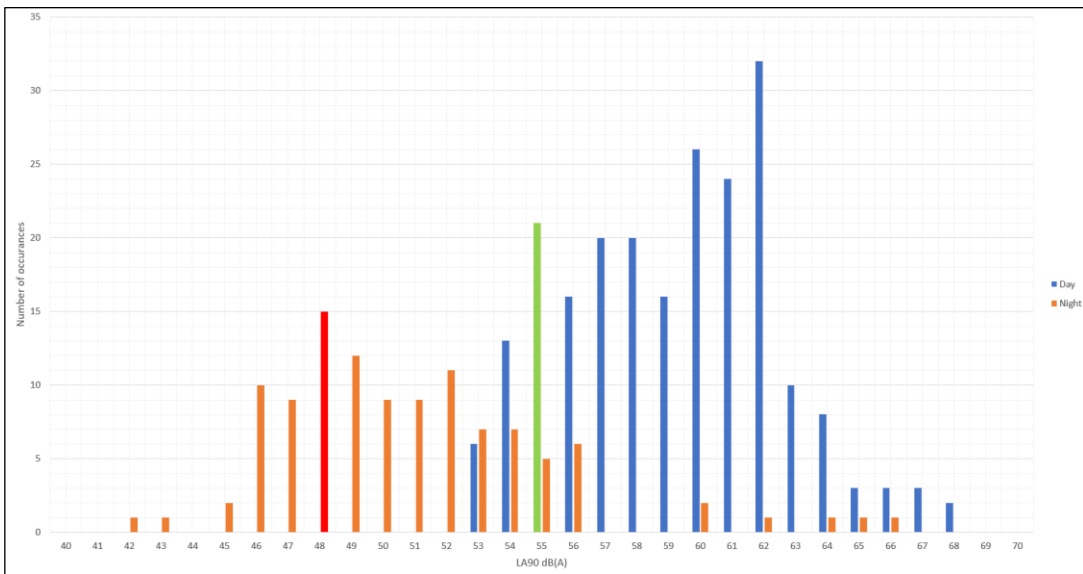


Figure 5-2: MP2 $L_{A90,15\text{ mins}}$ histogram, green = Daytime (07:00-23:00), red = Night-time (23:00-07:00)

Measurement position	Time Period	Representative background sound level, dB L _{A90,15 mins}
MP1	Daytime (07:00-23:00)	47
	Night-time (23:00-07:00)	41
MP2	Daytime (07:00-23:00)	55
	Night-time (23:00-07:00)	48

Table 5-1: Representative background sound levels

5.3 Nearest noise sensitive receptors

Noise sensitive receptors (NSRs) are locations or dwellings where noise levels could potentially have a significant impact on the comfort, health or well-being of the occupants. The nearest NSRs to the proposed site have been identified and listed below.

- NSR 1 – 1 Willow Drive
- NSR 2 – 60 Pole Lane
- NSR 3 – 239-241 Pole Lane

The MP1 results from Table 5-1 are deemed to be most representative of the noise levels at the nearest NSRs to the north and west of the proposed site as all are predominantly exposed to Pole Lane and acoustically screened from the M66.



Figure 5-3: Nearest noise sensitive receptors to proposed site

5.4 Plant emission limits

Based on the Bury Council requirement for plant emission limits to be 5 dB below the representative background sound level, Table 5-2, below summarises the relevant plant noise emission limits for the proposed development.

Assessment stage	Daytime (07:00-23:00)	Night-time (23:00-07:00)
Representative background sound level, dB LA90,15 mins	47	41
Noise rating level limit @1 metre from NSR(s) façade, dB LAr,Tr	42	36

Table 5-2: Plant noise limits

The noise rating level limits must be achieved at 1 metre from any part of the façade of the nearest identified NSRs.

Limits apply to cumulative plant noise emissions from all external plant associated with the proposed development.

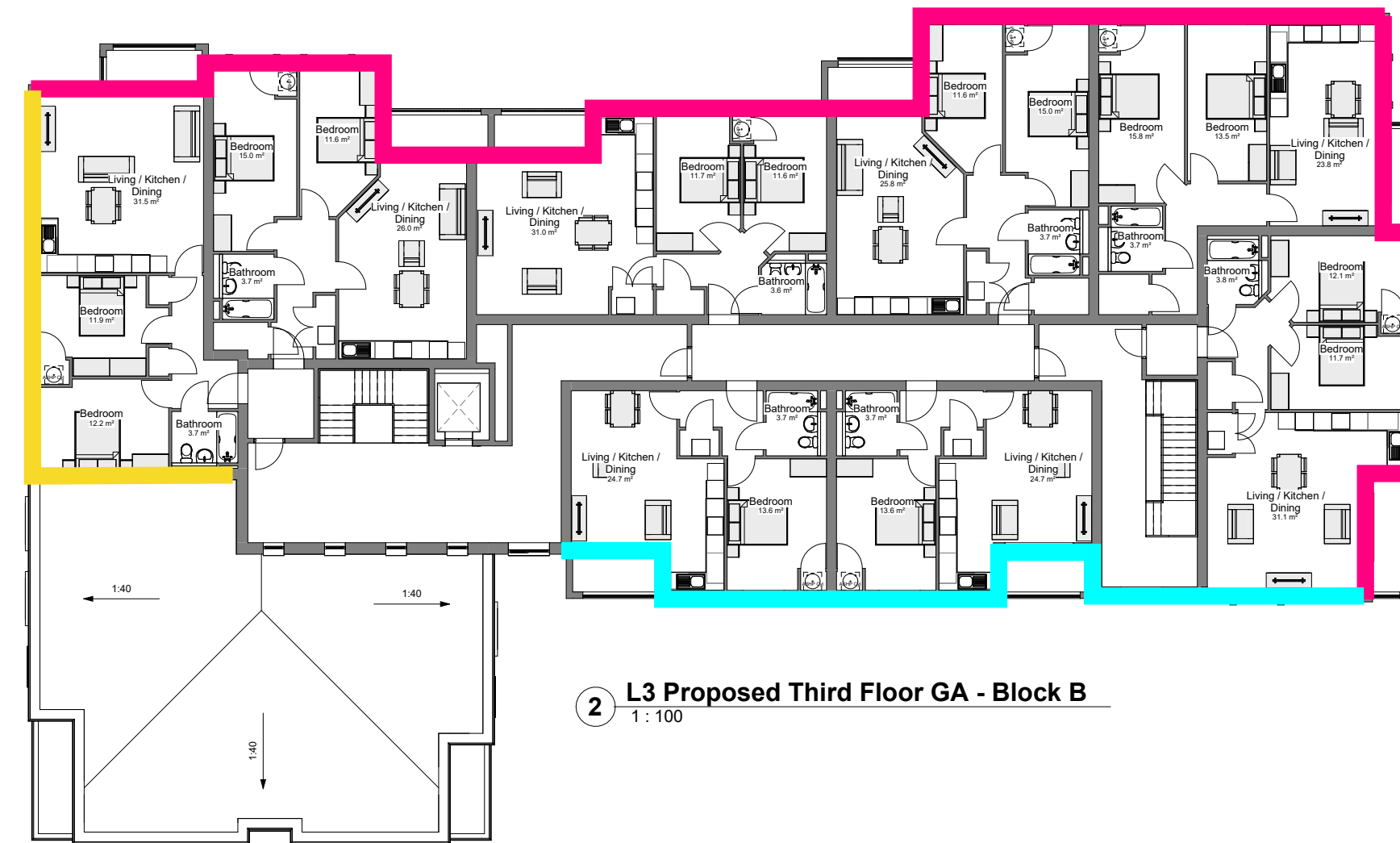
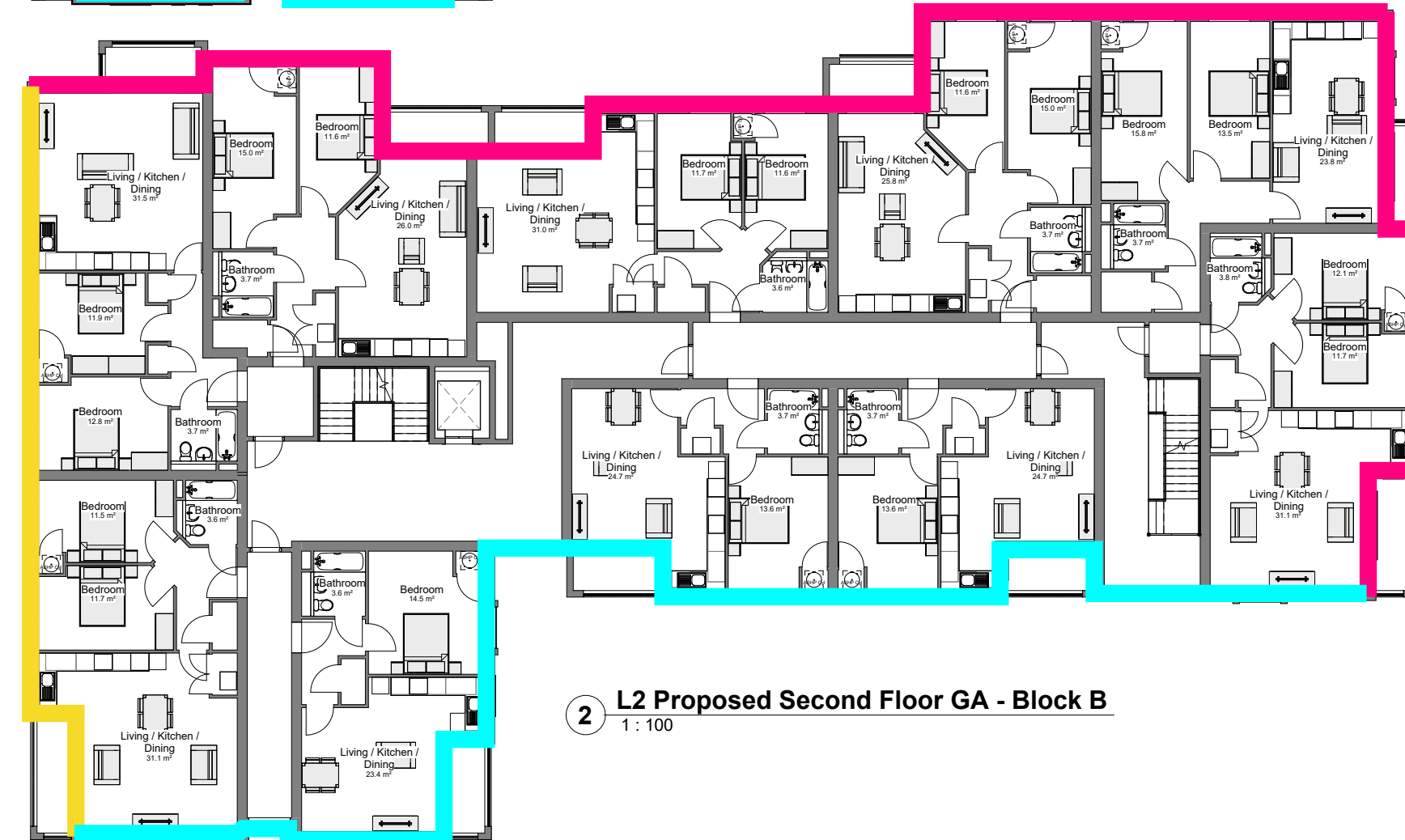
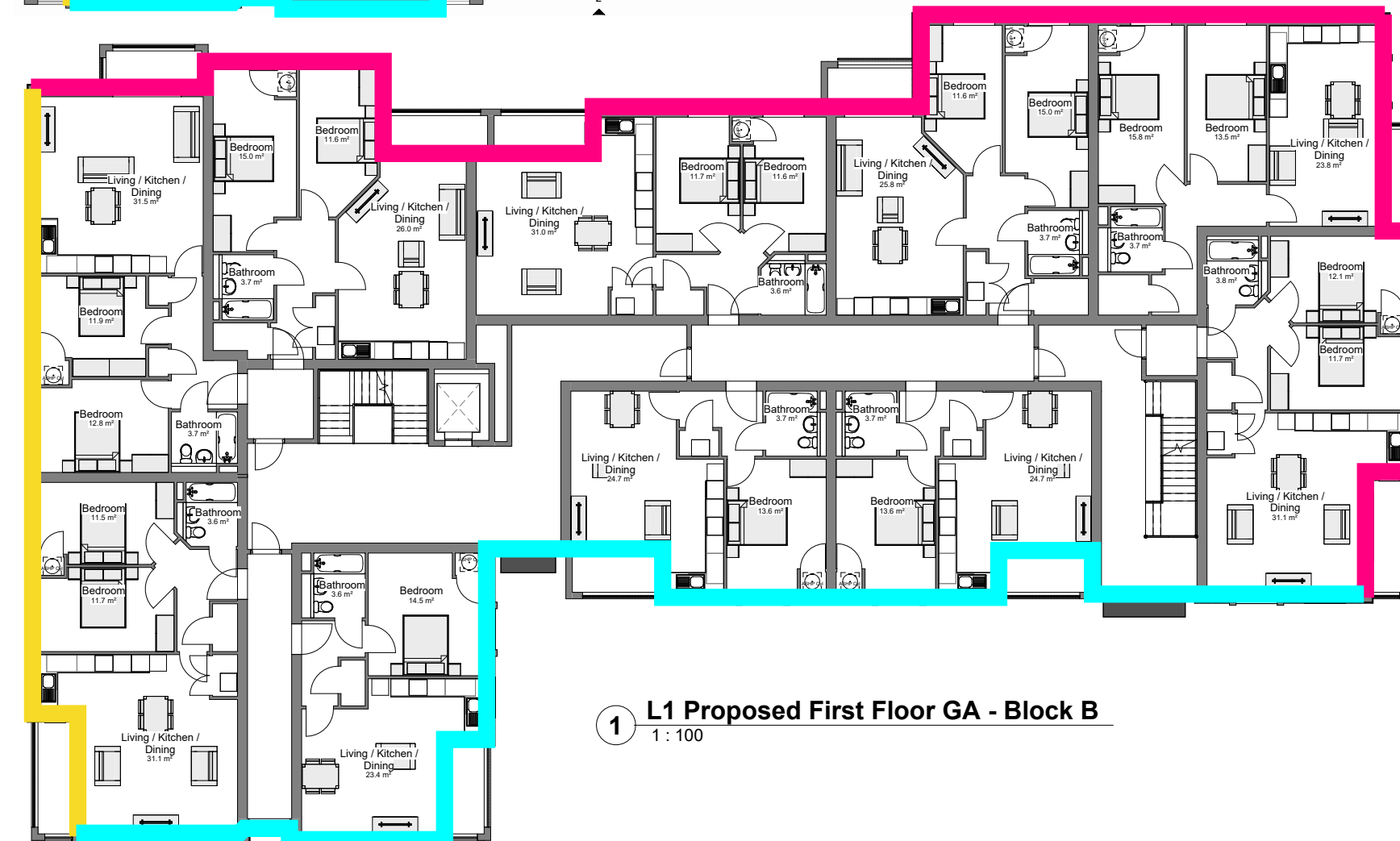
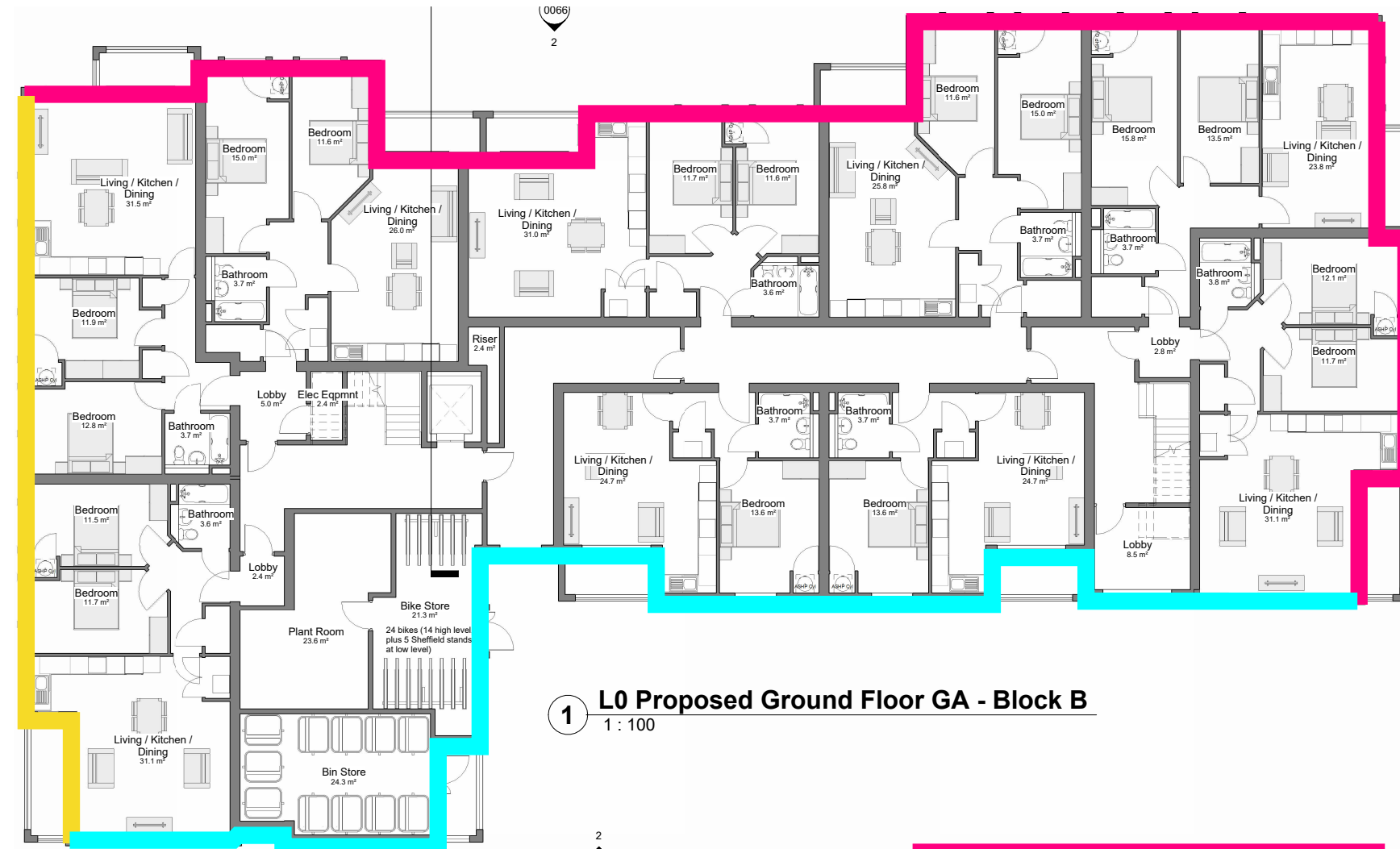
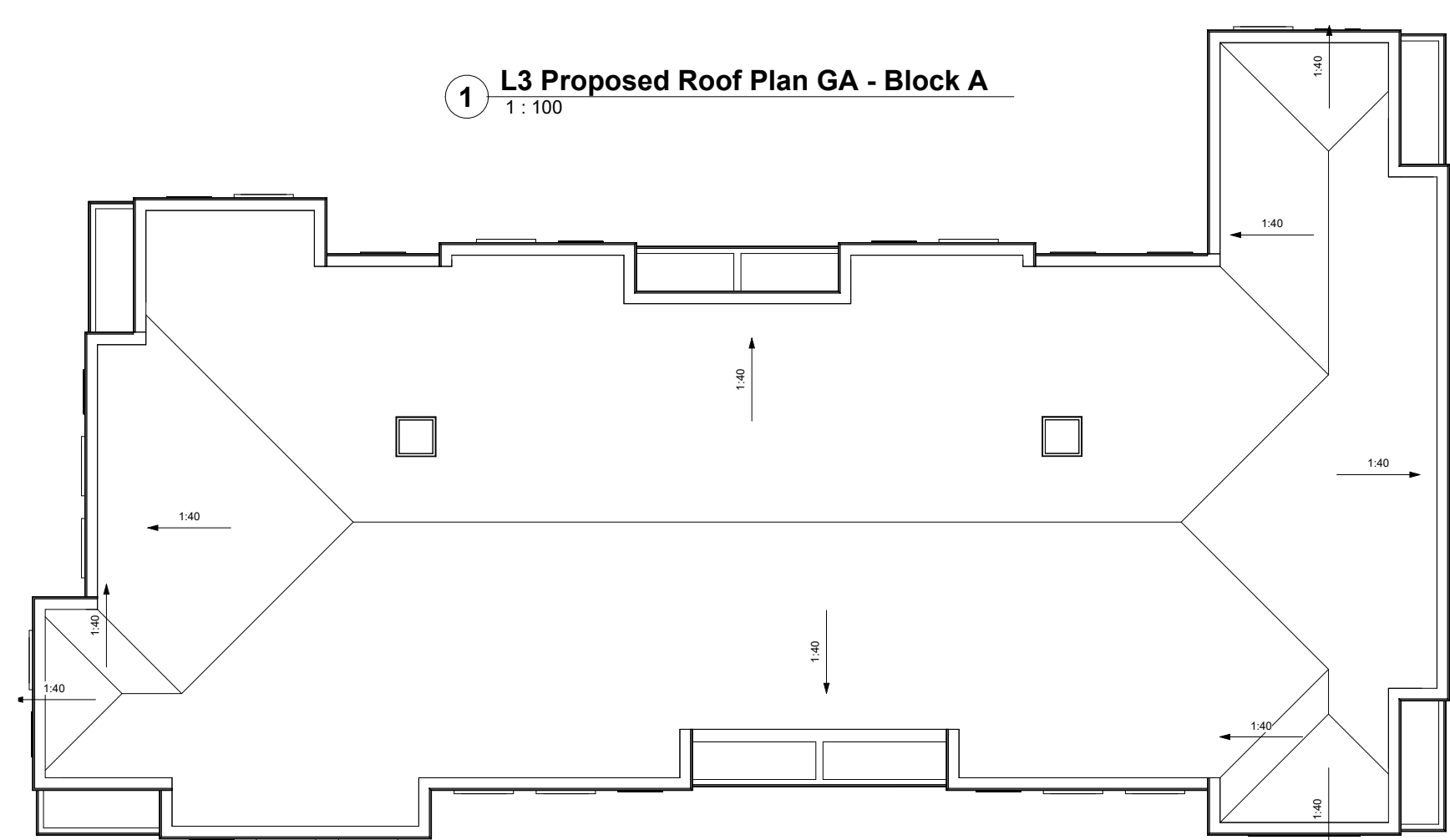
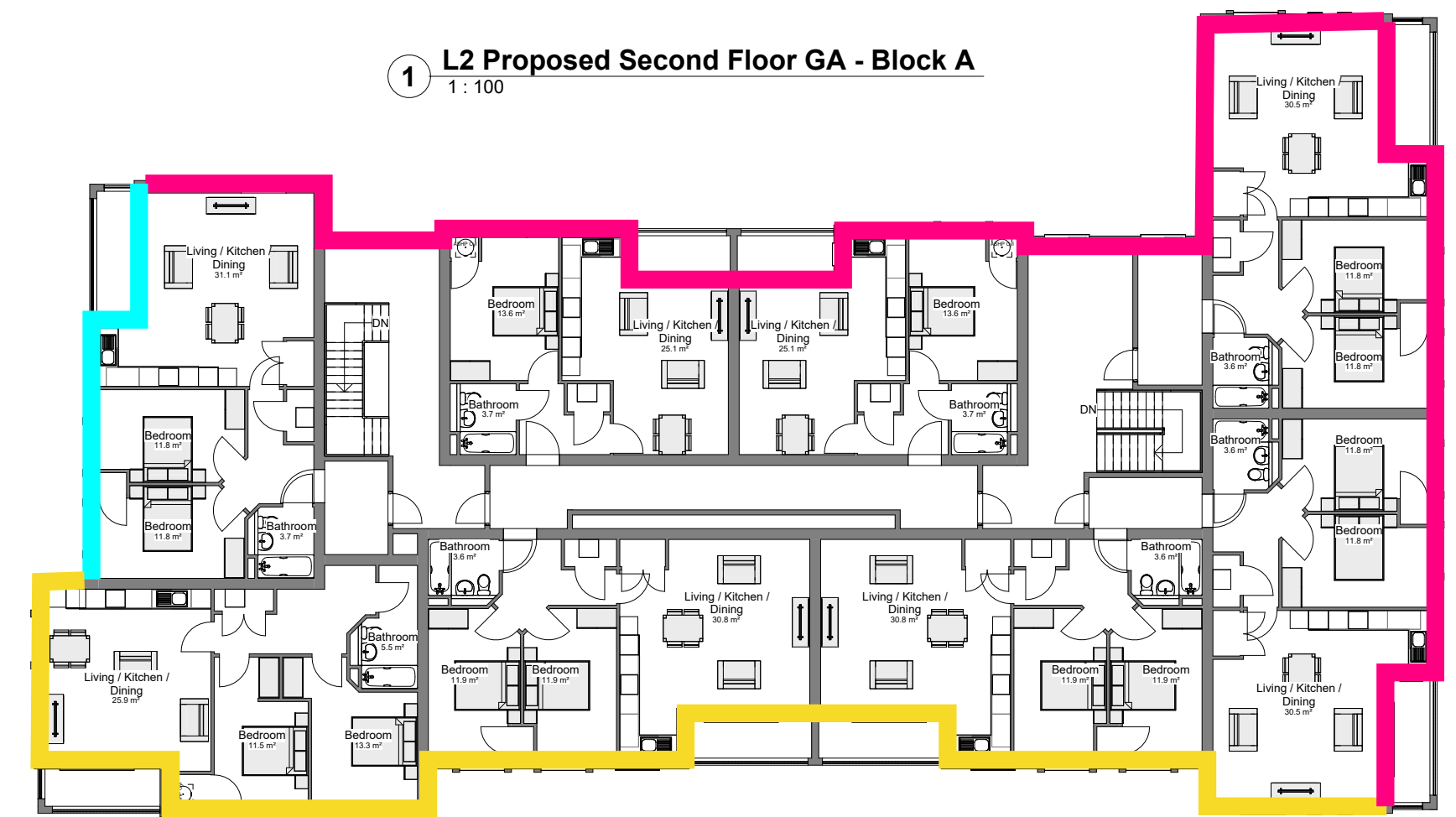
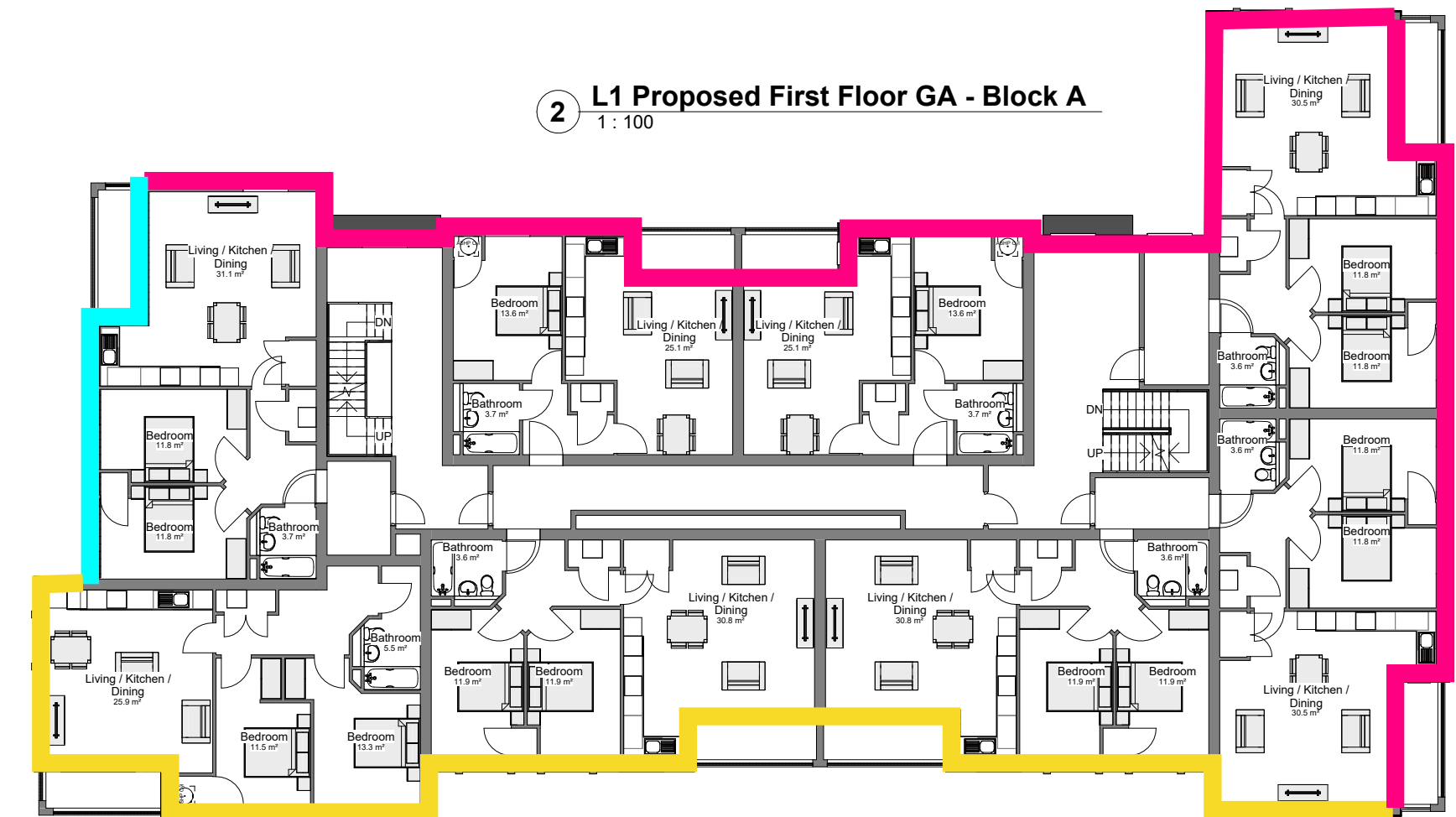
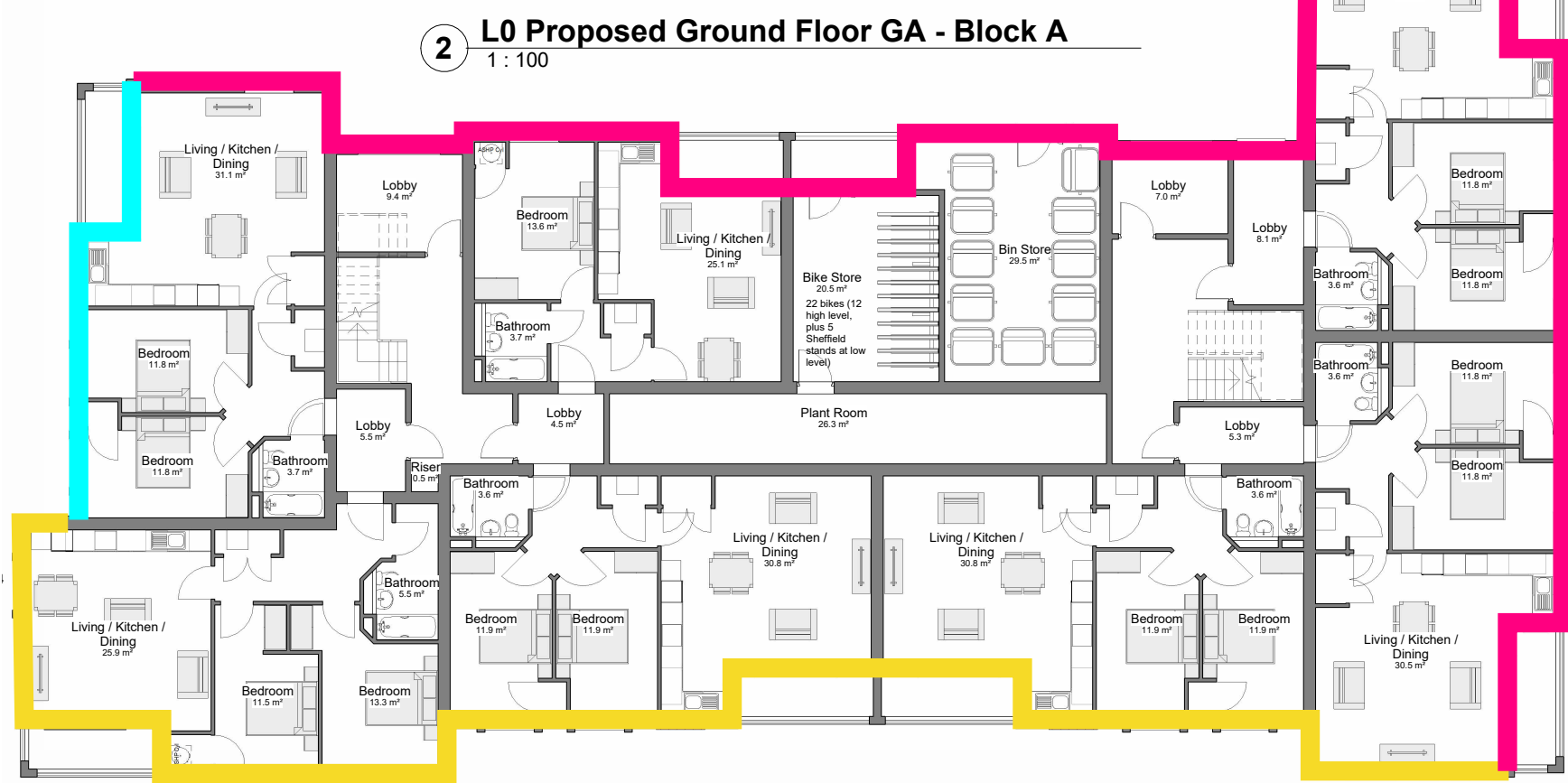
Noise emissions from any plant shall be assessed in accordance with the procedures outlined in BS4142, accounting for any acoustic feature corrections as necessary, before comparing to the specified limits.

Appendices

Appendices

Appendix A FSH-CDL-ZZ-XX-D-AS-45801 – Façade Sound Insulation Requirements

Appendix B FSH-CDL-ZZ-XX-D-AS-45802 – Overheating



1043881

A1

Based on:	Rev
Architects Drg No.	Rev
Structural Drg No.	Rev
Survey Drg No.	Rev
Other Drg No.	Rev
Other Drg No.	Rev

THIS DRAWING MAY INDICATE ELEMENTS RELATED TO FIRE SYSTEMS. THESE ARE INDICATIVE ONLY AND FINAL NUMBER, POSITIONING AND PERFORMANCE MUST BE ESTABLISHED AS PART OF THE CDP WORKS TO MAINTAIN THE INTENT OF THE DESIGN FIRE STRATEGY

NOTES:

Condition	Minimum facade acoustic performance
Condition 1	$R_w (C_{tr}) \geq 37 (-4) \text{ dB}$
Condition 2	$R_w (C_{tr}) \geq 33 (-5) \text{ dB}$
Condition 3	$R_w (C_{tr}) \geq 30 (-3) \text{ dB}$

P01	20/11/24	DRAFT FOR COMMENT	GR	NB	MP
Issue	Date	Description	By	Chkd	Verid

Project
FORMER SPURR HOUSE
POLE LANE, UNSWORTH

Client
WATSON HOMES

Title
FACADE SOUND INSULATION
REQUIREMENTS

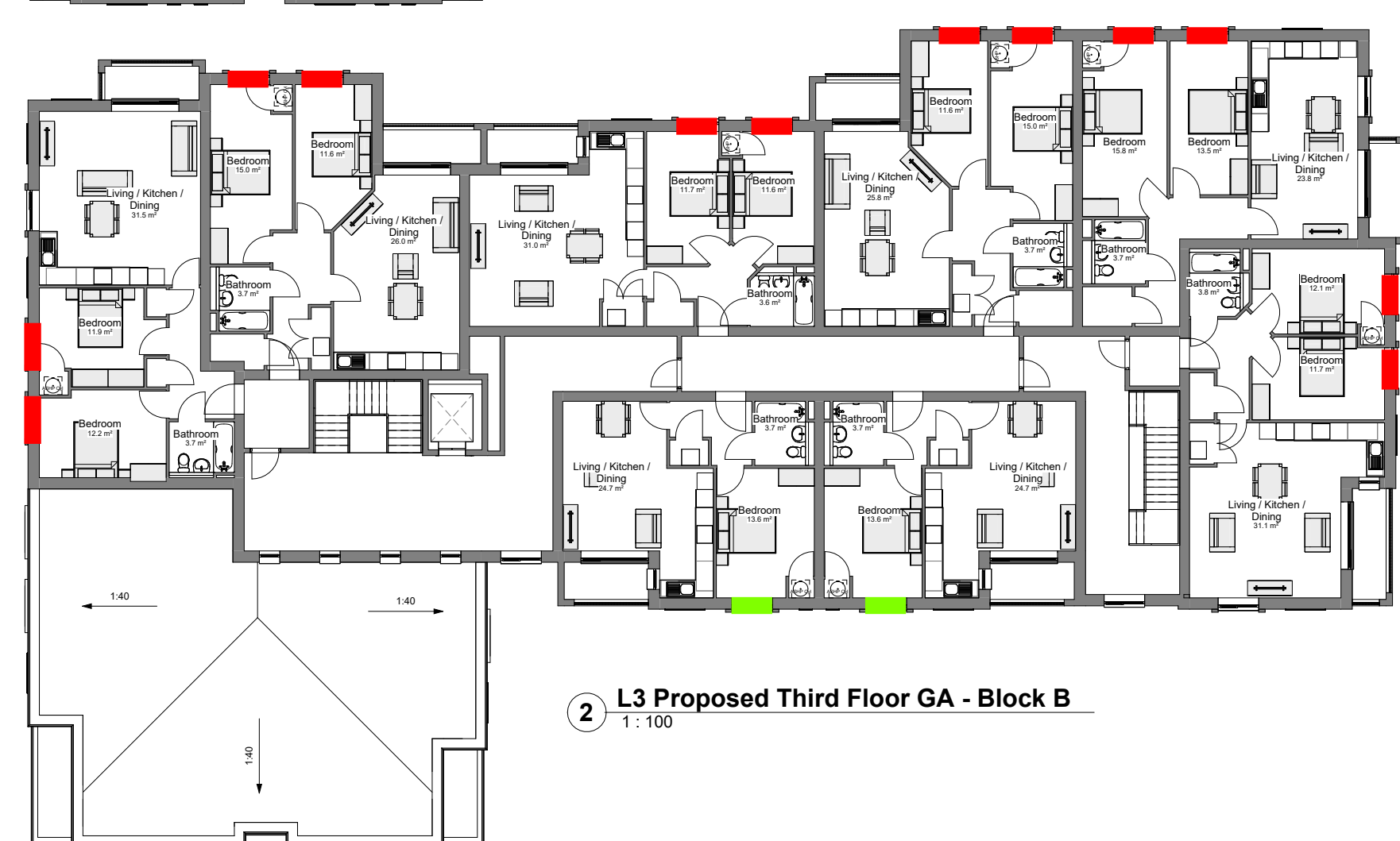
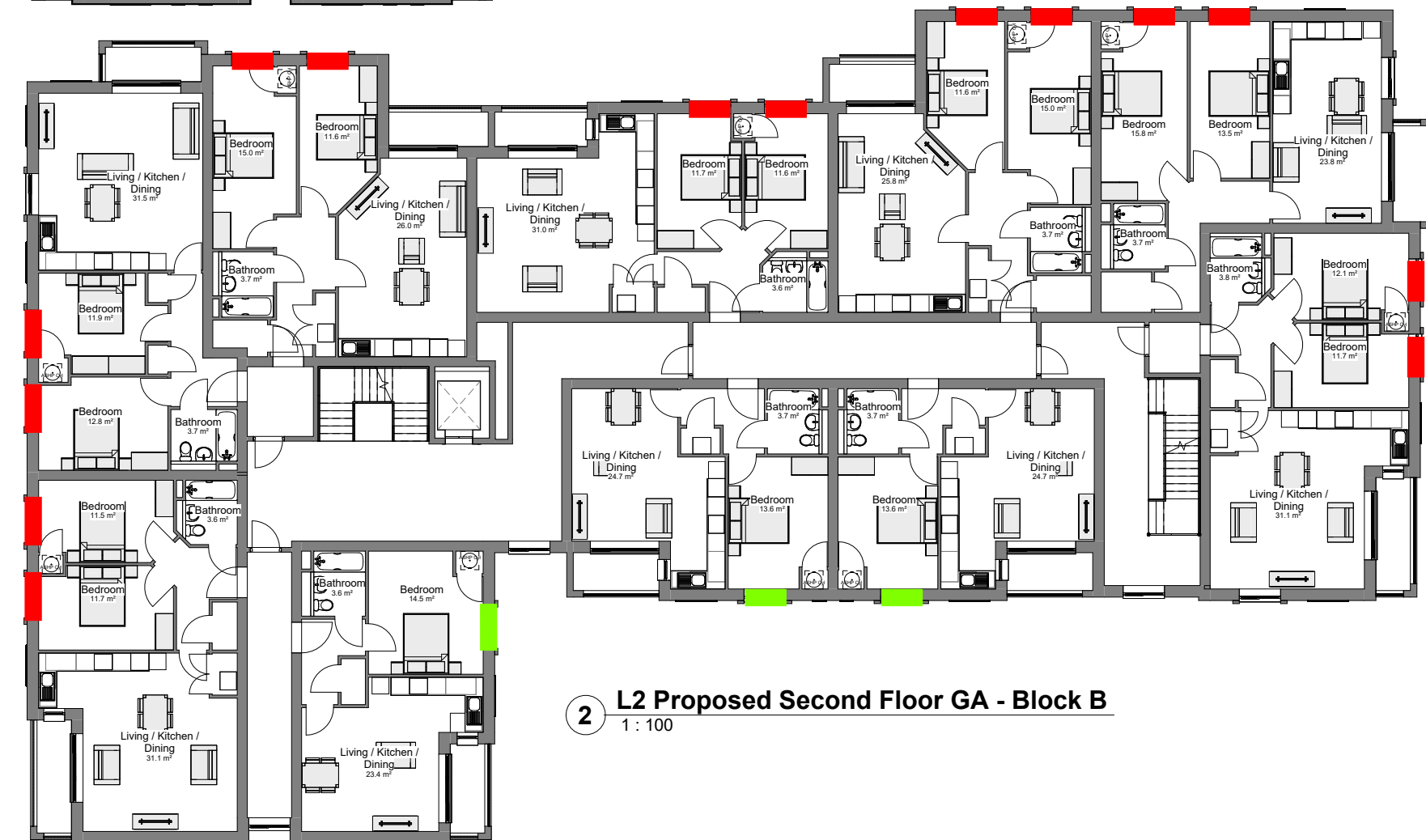
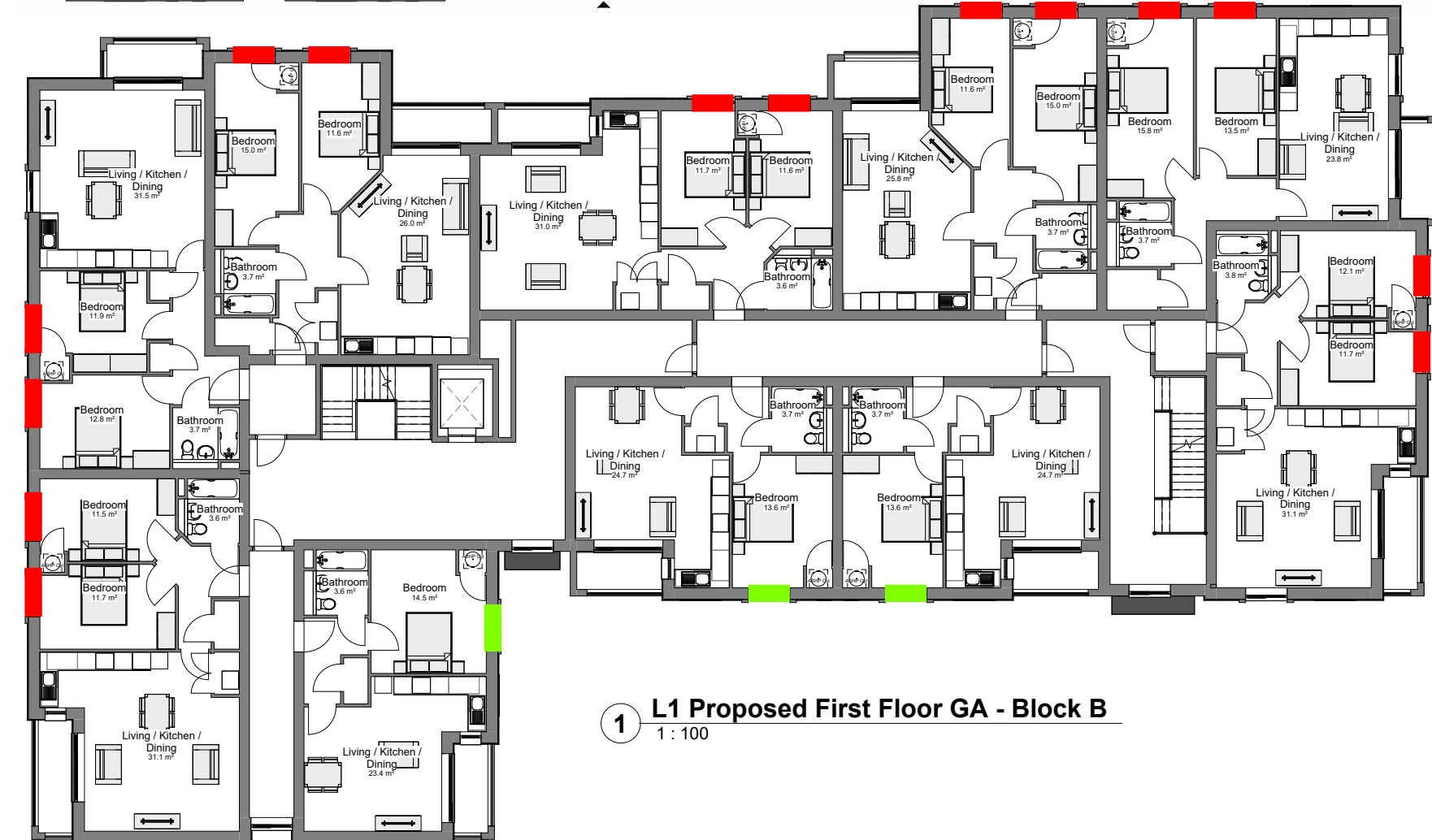
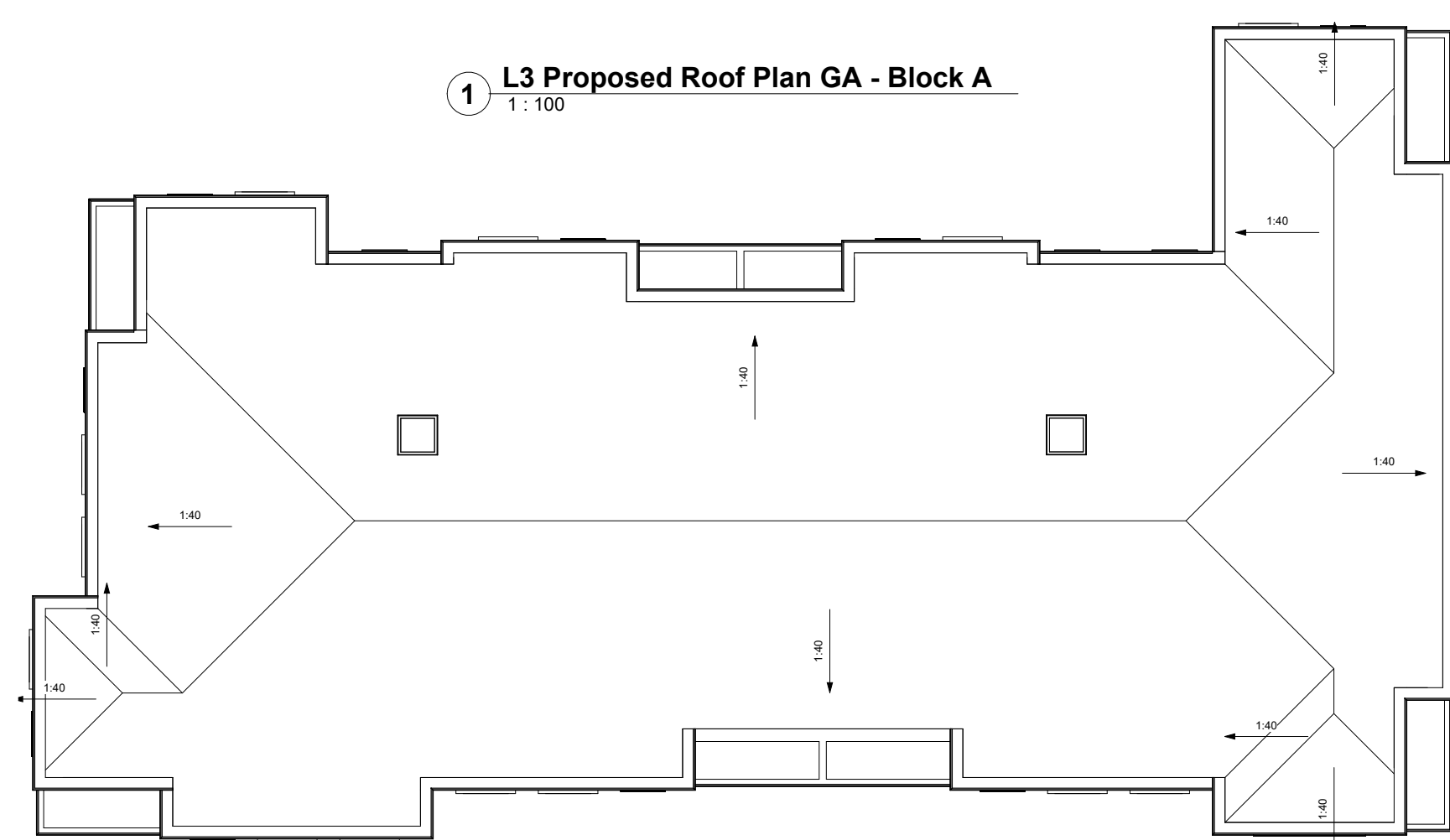
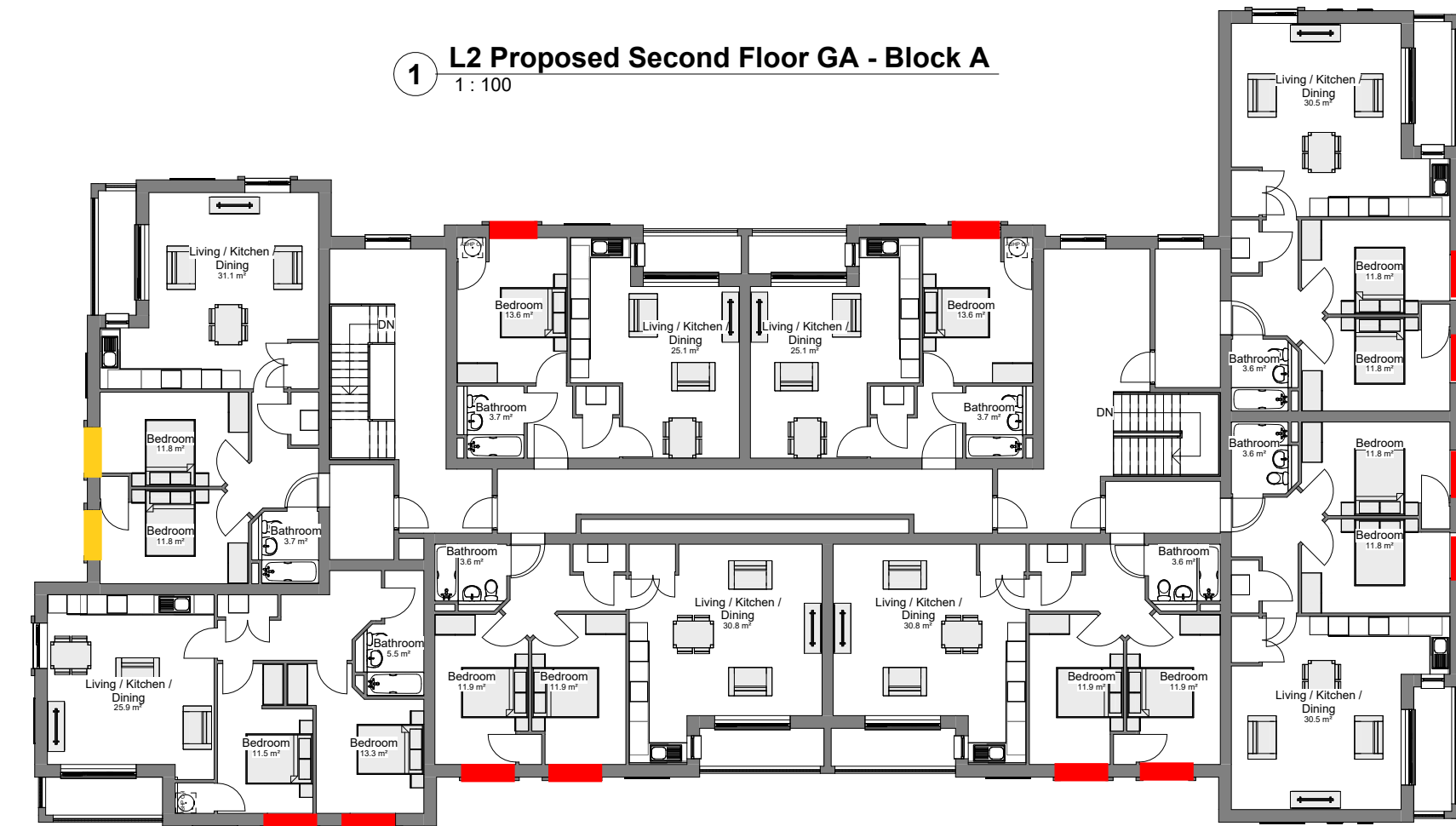
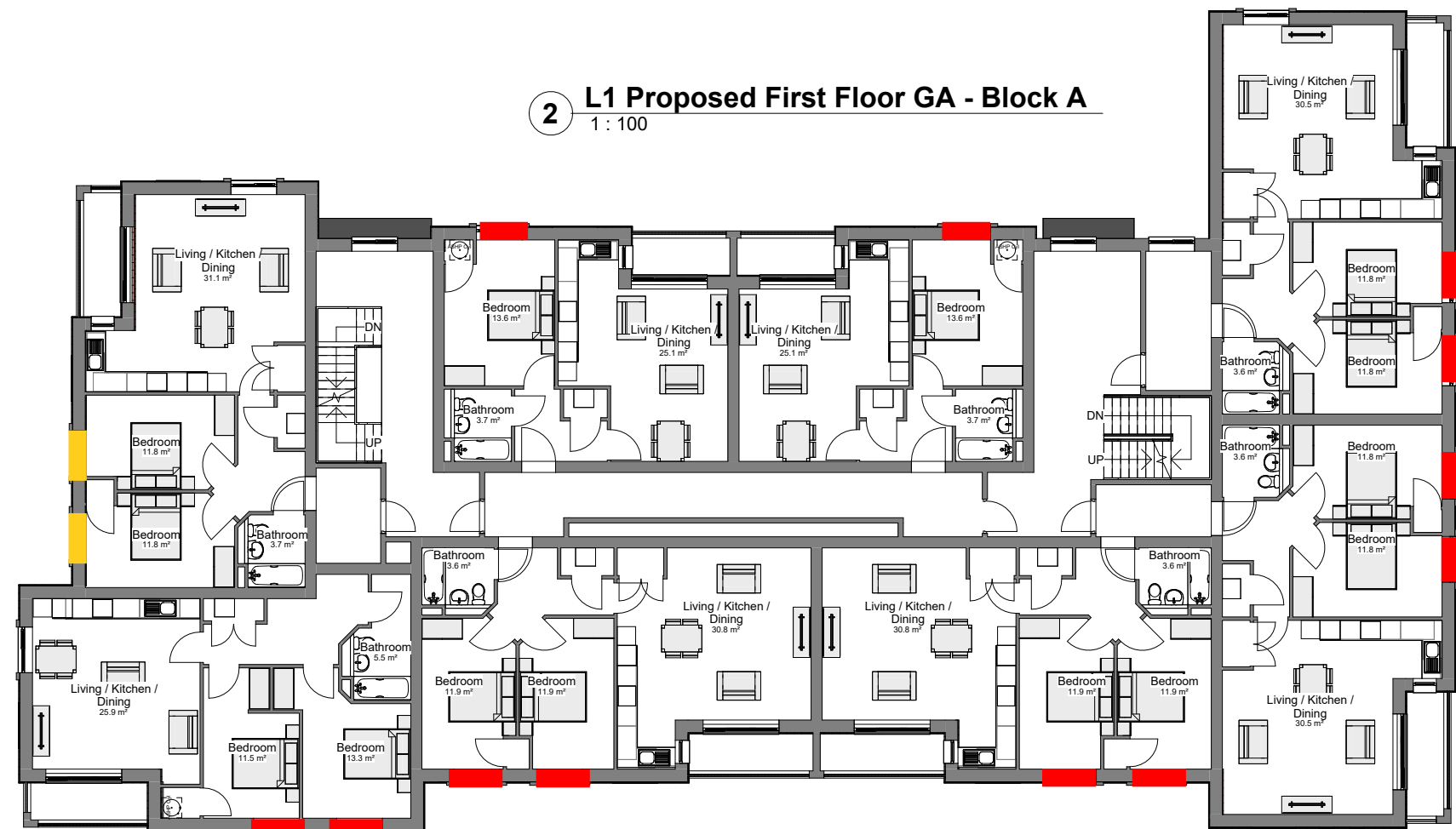
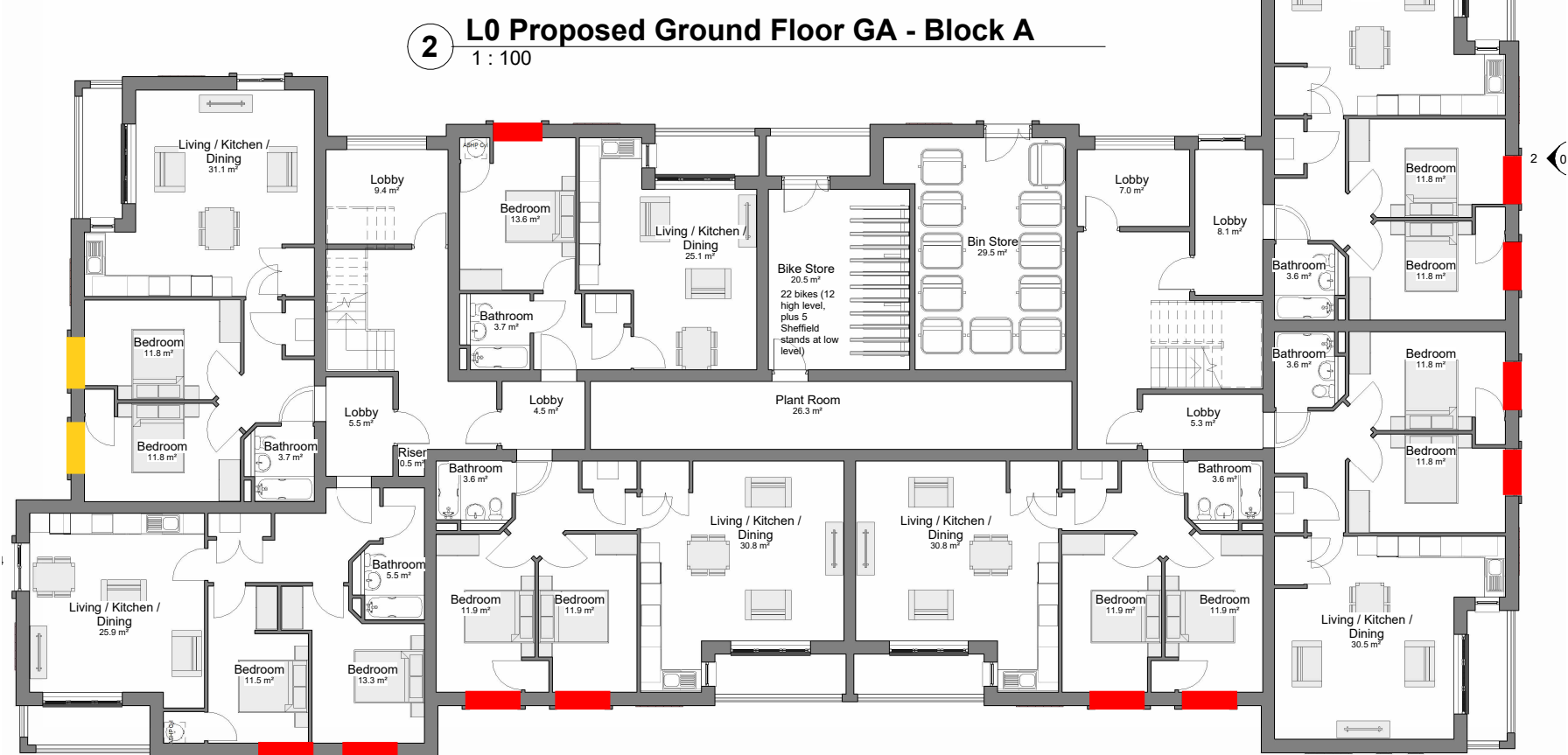
Drawing Status
FOR INFORMATION

Project No. 1043881 Scale NTS

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Drawing No.
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NOTES:

Noise risks and implications of overheating strategy for bedrooms, at night, in accordance with Building Regulations Approved Document O:

Low Risk

This indicates that the external façade noise is at an acceptable level to leave windows partially open (a maximum open area of ~5% of the room's floor area) at night with negligible risk of internal noise levels exceeding the limits specified within ADO.

No further noise mitigation is deemed necessary in these areas and the simplified method can be used to demonstrate compliance with ADO.

Medium Risk

Detailed thermal modelling will need to be undertaken to demonstrate compliance with ADO and determine if and how much windows will need to be open to prevent overheating.

Where external façade noise levels are at medium risk, openable windows may be feasible, subject to a maximum open area of circa 0.3 m²

Alternatively, attenuated passive ventilation modules may be suitable subject to the airflow requirements and available façade area.

High Risk

Detailed thermal modelling will need to be undertaken to demonstrate compliance with ADO and determine if and how much windows will need to be open to prevent overheating.

High Risk indicates that noise levels at the façade is too high to allow passive ventilation. Mechanical ventilation will most likely be necessary to reduce the risk of overheating.

It is unlikely that the use of openable windows in non-bedrooms of these façade areas would be feasible as a means of providing make-up air to support a mechanical extract system.

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Project
FORMER SPURR HOUSE
POLE LANE, UNSWORTH

Client
WATSON HOMES

Title
NIGHT-TIME NOISE v. OVERHEATING RISKS

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