



Architectural & Environmental Consultants

Acoustics | Vibration | Air Quality

Noise Impact Assessment

High Street, Potters Bar

Noise Impact Assessment

Project: HIGH STREET, POTTERS BAR

Report reference: RP01-25592-R2

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY
2. INTRODUCTION
3. PROJECT DESCRIPTION
4. PLANNING POLICY
5. NOISE AFFECTING THE DEVELOPMENT
6. TESCO NOISE IMPACT ASSESSMENT
7. CONCLUSIONS

APPENDIX 1 PROPOSED SITE LAYOUT

APPENDIX 2 SURVEY RESULTS

APPENDIX 3 MODELLING RESULTS

APPENDIX 4 OUTLINE ACOUSTIC FACADE SPECIFICATION

APPENDIX 5 FACADE CALCULATIONS

APPENDIX 6 PART O ACOUSTIC REQUIREMENTS FOR BEDROOMS AT NIGHT

1. EXECUTIVE SUMMARY

- 1.1 Cass Allen has been instructed by Chase New Homes to assess noise affecting a proposed new development at High Street, Potters Bar.
- 1.2 The assessment was carried out in accordance with relevant local and national planning guidance.
- 1.3 A noise survey was carried out at the site. Noise levels at the site are generally dictated by road traffic noise emissions from High Street and Mutton Lane. Noise levels along the western edge of the site will also be affected by carwashes and deliveries associated with the adjacent Tesco.
- 1.4 A 3D noise model of the development was constructed based on the results of the site noise survey. The noise model was used to calculate noise levels at all facades of the development.
- 1.5 Noise affecting the development has been assessed in accordance with ProPG guidance. The design of the development is considered to be acceptable subject to the adoption of acoustically upgraded glazing and ventilation. This can be investigated further as the design progresses and may be secured by the imposition of a noise related planning condition by the Local Planning Authority.
- 1.6 Compliance with noise criteria in Building Regulations Part O has also been assessed. Some bedrooms will need to be designed so that windows can remain closed at night without the rooms overheating.
- 1.7 Appropriate limits for noise from proposed mechanical plant have been calculated based on measured noise levels at the site and guidance given in BS4142. This will be investigated further as the design progresses and may be secured by the imposition of a noise related planning condition if deemed necessary by the Local Planning Authority.
- 1.8 Commercial noise emissions associated with the adjacent Tesco have also been assessed based on measured noise levels at the site and guidance given in BS4142.
- 1.9 In summary, it is our view that the site is suitable for the development in terms of noise levels and that planning permission may be granted subject to the imposition of suitable planning conditions if necessary.

2. INTRODUCTION

- 2.1 Cass Allen has been instructed by Chase New Homes to assess noise affecting a proposed new development at High Street, Potters Bar.
- 2.2 The assessment has been carried out in accordance with relevant local and national planning guidance.
- 2.3 The aims of the assessment were to establish the suitability of existing noise levels at the site for the proposed development based on the current design.
- 2.4 This report contains technical terminology; a glossary of terms can be found at [REDACTED].

3. PROJECT DESCRIPTION

- 3.1 The site is located in Potters Bar, a town on the southern edge of Hertfordshire. It occupies a prominent position on the north-western side of a major four-arm junction at the heart of the local road network.

The site is bounded by Mutton Lane to the south and High Street to the east. Properties along both frontages are predominantly in commercial use, with residential accommodation above. Notable buildings opposite the site on the eastern side of the High Street include Key Point, a former office block currently undergoing conversion to residential use, and the Cask and Stillage public house.

To the west of the site lies a Tesco superstore, which includes a large surface car park and petrol filling station. A prominent phone mast is also located within the Tesco car park. Immediately north of the site is Goodacre Court, a sheltered housing development, and a BP petrol station.

The site itself comprises a mix of buildings and uses, including the Maple House office building, two parades of commercial units fronting the High Street with residential flats above, a car wash, and associated surface car parking (providing approximately 355 spaces). The site location is shown in Figure 1 overleaf.

- 3.2 Within the applicant's wider ownership, but outside the planning application boundary is the Canada Life Building, an existing 6-storey purpose-built office block with prior approval for use as residential.

An application for Prior Approval for the change of use of the Canada Life building to 74no Class C3 residential dwellings under Class MA of the GDPO received deemed consent which expires on 9 February 2029 (ref 25/1764/PD56M).

A full planning application for external alterations to the Canada Life building, including new windows and replacement cladding, has been submitted.

Figure 1 Site Location and Surrounding Area



- 3.3 The proposal is the partial demolition of existing buildings (with retention of existing two-storey car park and substation) and redevelopment of the site to provide a mixed-use development comprising 293 residential apartments (Class C3) and 1,742 sqm of flexible commercial floorspace (Class E) across 4 Blocks and associated internal roads, parking, drainage, landscaping, amenity space and associated works. A current drawing of the proposed development layout is shown in Appendix 1.

4. PLANNING POLICY

National Policy

- 4.1 Outline guidance for the assessment of noise affecting new developments is given in the National Planning Policy Framework (NPPF) (February 2025). Relevant sections in this case are highlighted below:

187. 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 ...noise pollution.

198. 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:

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

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

Local Policy

- 4.2 Hertsmere Borough Council provides outline guidance on the assessment of noise affecting new development in the borough.

Local Plan Core Strategy DPD (January 2013)

SP1 Creating sustainable development:

The Council will work with Hertfordshire County Council, Hertfordshire Constabulary, NHS Hertfordshire, Registered Housing Providers and other key local stakeholders to enable development in the Borough to make a sustainable contribution to delivering the Core Strategy Spatial Vision and Strategy. Accordingly new development will be required to prioritise the efficient use of brownfield land in delivering the land use requirements of the private sector, local service providers and the different needs of the hierarchy of settlements across the Borough. There will be a focus on prioritising development opportunities in Borehamwood but all existing built up areas within urban settlements will be expected to accommodate opportunities which arise for meeting local housing, jobs growth and other development and service needs.

All development across the Borough should:

i) ensure a safe, accessible and healthy living environment for residents and other users of a development;

xvi) ensure that pollutants are minimised, including emissions to air, water, soil, light and noise.

CS16 Environmental impact of development:

The Council will work with key partners, including the Environment Agency and Natural England, to ensure that development proposals do not create an unacceptable level of risk to occupiers of a site, the local community and the wider environment. Development proposals should take account of the policy recommendations of the Councils SFRA and the guidance set out in the jointly produced guidance of the Hertfordshire Planning Authorities 'Building Futures' the Hertfordshire Guide to Promoting Sustainability in Development.

Proposals will be required to incorporate sustainability principles, minimising their impact on the environment and ensuring prudent use of natural resources by measures including:

iv) ensuring that pollutants are minimised (including emissions to air, water, soil, light and noise);

Site Allocations and Development Management Policies Plan (November 2016)

4.67 Where development is proposed next to an existing noise source, an assessment of the noise exposure will need to be undertaken by a competent person and submitted as part of the development proposal. An assessment in accordance with BS 4142:1997 should be submitted with the development proposal. For residential developments close to sources of transport noise, the four Noise Exposure Categories (NECs) and corresponding noise levels in Appendix A will aid the assessment of proposals. Regard must also be given to BS 8233:1999 - Sound Insulation and Noise Reduction for Buildings.

4.68 Where new development is likely to generate noise above existing background noise levels, mitigation measures should be proposed alongside any application. An assessment by a competent person in accordance with BS 4142:1997, together with any government technical guidance, should be submitted as part of a development proposal, where it is likely to generate noise and is located close to existing sensitive receptors. The assessment should demonstrate that any noise produced will not cause an increase in background noise level beyond the development site boundary. Any noise generated should be 10dB below the existing background noise level.

SADM20 - Environmental Pollution and Development:

Development should not result in any adverse impact to public health or wellbeing, or significantly add to contamination or pollution, taking into account the situation following any mitigation and remediation measures. Development proposals will be judged against the principles below and any future Contaminated Land, Air Quality or Noise and Vibration SPD.

Noise and Vibration

(i) New residential development should not be exposed to existing significant sources of noise pollution, unless it can be shown that mitigation measures would be successful in reducing noise impacts to an acceptable level.

(ii) Development which would create increases in background noise levels should be sited away from noise-sensitive development as far as possible: in addition, noise mitigation measures should be taken to ensure there is no increase in background noise levels beyond the site boundary.

(iii) The Council will use the more detailed criteria and guidance in Appendix A to interpret these principles.

Appendix A - Noise Exposure Categories for Dwellings

The Council will consider the potential effect of noise on new dwellings by:

- a) first establishing the exposure to noise, and then*
- b) deciding whether that level of exposure is acceptable*

Table B2 explains the level of exposure to noise according to the source of the noise and time of day. It places levels of exposure into categories.

Table B1 sets out the Noise Exposure Categories and explains how a judgement should be made – i.e. whether to grant or refuse planning permission and/or seek mitigation measures. Both day and night-time impacts will be taken into account. The category, in which the proposed residential development will fall, will be based on both the day and night-time noise levels.

Table B1: Noise Exposure Categories

Noise Exposure Categories (NEC)	
NEC - A	Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.
NEC - B	Noise should be taken into account when determining applications and, where appropriate conditions imposed to ensure an adequate level of protection against noise.
NEC - C	Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.
NEC - D	Planning permission should normally be refused.

Table B2: Recommended Noise Exposure Categories for New Dwellings near Existing Noise.

Noise levels corresponding to the Noise Exposure for New Dwellings Categories for New Dwellings LAeq,T dB					
		Noise Exposure category			
Noise source	Hours	A	B	C	D
Road traffic	07.00 - 23.00	< 55	55 - 63	63 - 72	> 72
	23.00 - 07.00	< 45	45 - 57	57 - 66	> 66
Rail traffic	07.00 - 23.00	< 55	55 - 66	66 - 74	> 74
	23.00 - 07.00	< 45	45 - 59	59 - 66	> 66
Air traffic	07.00 - 23.00	< 57	57 - 66	66 - 72	> 72
	23.00 - 07.00	< 48	48 - 57	57 - 66	> 66
Mixed sources	07.00 - 23.00	< 55	55 - 63	63 - 72	> 72
	23.00 - 07.00	< 45	45 - 57	57 - 66	> 66

Notes:

- Noise is recorded in decibels.
- Noise levels: the noise level(s) (LAeq,T) used when deciding the NEC of a site should be representative of typical conditions.
- Night time noise levels (23.00 – 07.00): sites where individual noise events regularly exceed 82 dB LAmax (S time weighting) several times in any hour shall be treated as being in NEC C regardless of the LAeq,8h (except where the LAeq,8h already puts the site in the NEC D).

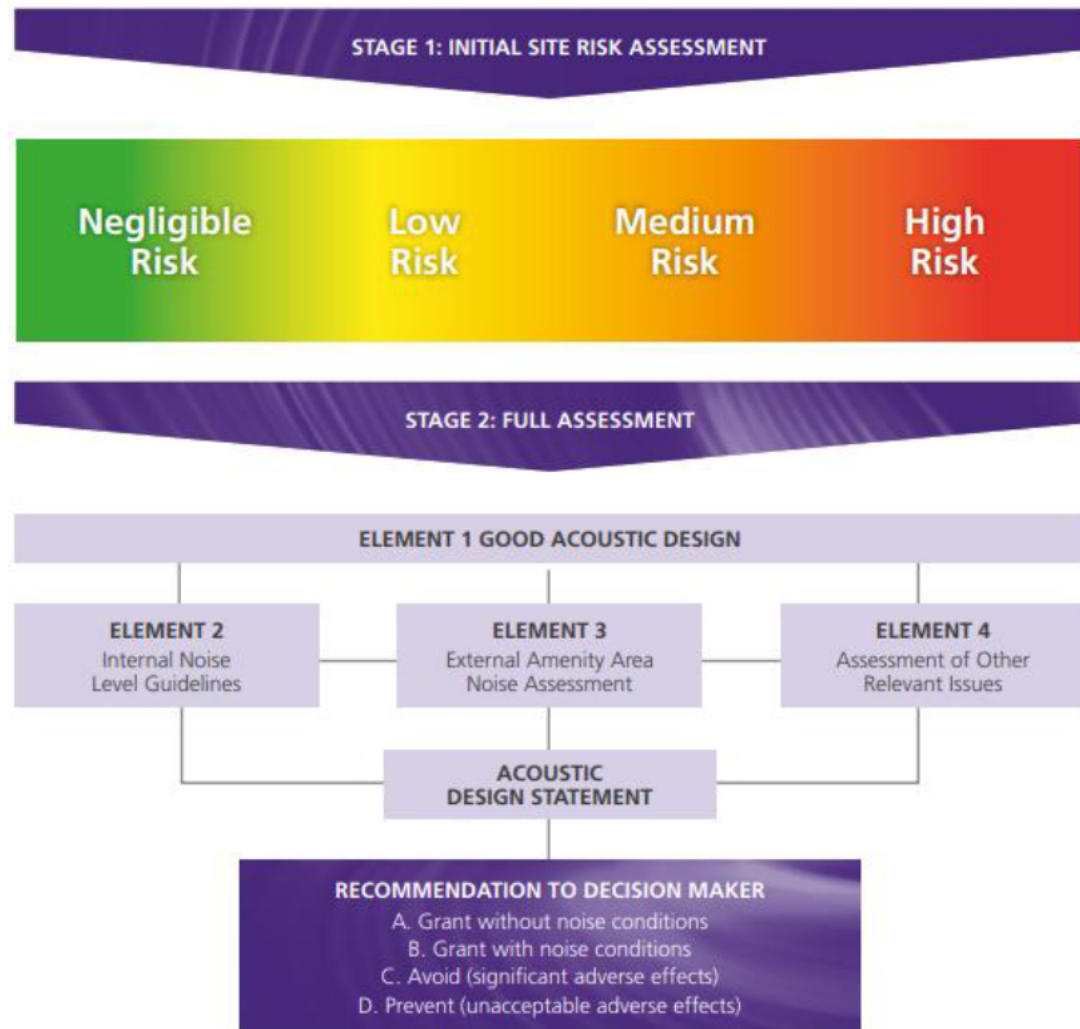
- *Values in the above table refer to noise levels measured on an open site at the position of the proposed dwellings, well away from any existing buildings and 1.2m to 1.5m above the ground.*
- *Levels of noise from road and rail traffic are often specified at 1 metre from a facade, and these facade levels should be assumed to be 3 dB(A) higher than levels measured away from any buildings.*
- *The term 'mixed sources' refers to any combination of road, rail, air and industrial noise source, where no individual noise source is dominant.*

4.3 To address the requirements of the national and local policies, noise affecting the habitable areas of the proposed development have been assessed based on the current design.

5. NOISE AFFECTING THE DEVELOPMENT

- 5.1 Hertsmere Borough Council makes reference to Noise Exposure Categories (NEC) for residential developments close to sources of transport noise (Site Allocations and Development Management Policies Plan (November 2016)). This has been replaced by ProPG: Planning and Noise for New Residential Development, May 2017 (ProPG) as the industry standard.
- 5.2 Specific guidance on the assessment of noise affecting new residential development is given in ProPG. The process within the ProPG guidance for the appraisal of noise levels affecting new residential development is considered to be current 'best practice' and has, therefore, been followed for the assessment. The assessment process can be summarised as follows:
- Stage 1 – measure noise levels at the site and carry out an initial noise risk assessment of the proposed development site based on the measured levels.
 - Stage 2 – where a higher noise risk is identified, carry out a detailed assessment including the following four considerations:
 - Element 1 – the overall acoustic design and layout of the site
 - Element 2 – internal noise levels in habitable areas
 - Element 3 – noise levels in external amenity areas
 - Element 4 – consideration of other relevant issues
 - Based on the results of the Stage 2 assessment, provide a recommendation to the decision maker on whether planning permission can and should be granted.
- 5.3 The process is shown visually in Figure 2 overleaf.

Figure 2 ProPG Assessment Process



- 5.4 It should be noted that the guidance in ProPG relates primarily to noise from transportation sources, i.e. road traffic, aircraft, rail etc. Any significant noise from other sources (e.g. industrial, commercial or entertainment sources) is outside the scope of the ProPG guidance and, therefore, requires separate consideration. This is discussed further below in relation to noise from the Tesco car washes and HGV delivery route.

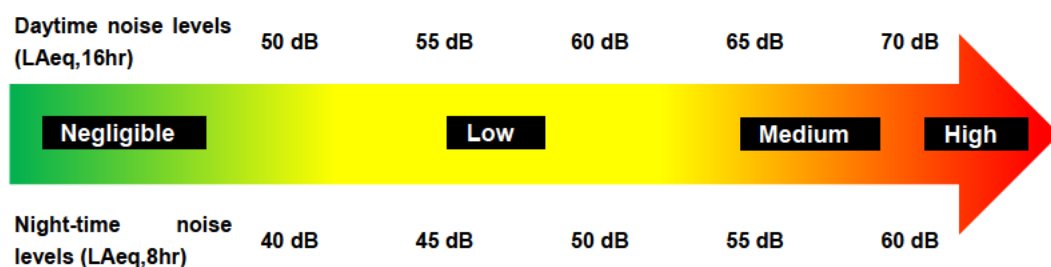
Stage 1 – Noise survey and initial assessment

- 5.5 A noise survey was carried out at the site from 13 – 18 November 2025 to assess existing noise levels in the area. The full methodology and results of the noise survey are provided in Appendix 2.

- 5.6 Average noise levels (LAeq) across the site were generally dictated by road traffic on High Street and Mutton Lane. Noise emissions from the HGV deliveries and Tesco car washes also contributed to the daytime and night-time average noise levels at the western edge of the site.
- 5.7 Maximum noise levels (LAmax) at the site were generally dictated by emergency vehicle and motorbike passes on High Street and Mutton Lane.
- 5.8 Background noise levels (LA90) across the site were dictated by constant road traffic noise from High Street and Mutton Lane.
- 5.9 Noise was also identified from aircraft movements; however, noise from aircraft was insignificant when compared with noise from road traffic.
- 5.10 Areas of the development at the eastern and southern edges of the site will be subject to the highest noise levels. The noise survey results show that noise levels at these positions are as follows:
- Eastern edge of the site facing High Street:
 - Average noise levels during the daytime - 70 dB LAeq,0700-2300hrs
 - Average noise levels during the night-time - 66 dB LAeq,2300-0700hrs
 - Typical maximum noise levels during the night-time - 82 dB LAmax
- Note:** The figures above include a 3dB reduction to account for facade reflections.
- Southern edge of the site facing Mutton Lane:
 - Average noise levels during the daytime - 66 dB LAeq,0700-2300hrs
 - Average noise levels during the night-time - 60 dB LAeq,2300-0700hrs
 - Typical maximum noise levels during the night-time - 76 dB LAmax
- 5.11 Based on the results of the site noise survey, a 3D computer noise model was developed to predict and assess the noise levels that will exist across the entire development.
- 5.12 The 3D noise model was developed using Cadna/A Version 2026 MR1 environmental noise modelling software. Cadna/A incorporates the calculation methodology outlined in the Department of Transport Welsh Office - Calculation of Road Traffic Noise (CRTN) for the assessment of road traffic noise propagation.
- 5.13 The layout of the development and surrounding area was input into the model. To calculate the spread of noise levels around the site, daytime and night-time average noise levels and maximum night-time noise levels were input for High Street, Mutton Lane and Tesco car washes, and were calibrated to the results of the on-site noise measurements.
- 5.14 Noise from HGV deliveries was calculated using library data for HGVs in both moving and idling states. The calculation assumes that there are five HGV deliveries during a “worst-case” daytime hour and three HGV deliveries during a “worst-case” night-time 15-minute period (as per BS4142).

- 5.15 The methodology and results of the noise modelling are provided in Appendix 3. It can be seen from the modelling results that road traffic noise levels will be highest on facades of the development facing High Street and Mutton Lane and lowest on facades at the north of the site.
- 5.16 The measured noise levels can be compared with Figure 3 below to assess the 'noise risk' of the site. Where the noise risk is high, significant acoustic design measures may be required to achieve acceptable noise levels in the development. Where the noise risk is low, acceptable noise levels may be achievable with no specific acoustic design measures.

Figure 3 Noise Risk Assessment (Adaption of Figure 1 from ProPG)



- 5.17 It can be seen from a comparison of the measured noise levels in paragraph 5.10 above with Figure 3 that the site is 'High' risk in relation to daytime noise levels and 'High' risk in relation to night-time noise levels. Therefore, ProPG requires that a more detailed 'Stage 2' assessment is carried out.

Stage 2 – Element 1 – Overall acoustic design of the site

- 5.18 The acoustic design of development has been reviewed in relation to the measured noise levels at the site. The layout of the development is considered to represent good acoustic design because residential blocks A and E are positioned in such a way that they are screened from the dictating noise source affecting the site (High Street). Block A is also positioned so that the rooms facing Mutton Lane screen all other sensitive rooms in the block.
- 5.19 Blocks A, B, and D have been designed so that no habitable rooms are located on ground floor level where noise levels are the highest. This represents good acoustic design.

Stage 2 – Element 2 - Internal noise levels

- 5.20 Appropriate design criteria for acceptable noise levels in acoustically sensitive areas of new developments are given in BS8233:2014 '*Guidance on sound insulation and noise reduction for buildings*'.
- 5.21 Relevant BS8233 design criteria are summarised in Table 1 below.

Table 1 BS8233:2014 Internal Noise Criteria

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB LAeq, 16hour	-
Dining	Dining room/area	40 dB LAeq, 16hour	-
Sleeping (daytime resting)	Bedroom	35 dB LAeq, 16hour	30 dB LAeq, 8hour

- 5.22 Full construction details for the development have not been finalised. It has therefore been assumed that the external walls of the development will be constructed using a standard masonry construction (e.g. 102mm brick, 100mm insulated cavity, 100mm concrete block) or a light-weight construction designed to achieve a similar level of sound insulation (this is technically achievable subject to detailed design).
- 5.23 Calculations were carried out using facade modelling software in accordance with the methodology given in BS8233:2014 to calculate the sound insulation performance required of the glazing and ventilation to achieve the nominated internal noise criteria in the habitable rooms of each side of the development (i.e. the habitable rooms that will be subject to the highest external noise levels).
- 5.24 The calculations assume that bedrooms and living rooms will be mechanically ventilated.
- 5.25 The results of the calculations are shown in Appendix 5 and are summarised in Table 2 below.

Table 2 Acoustic Requirements for Habitable Rooms

'Worst Case' Rooms	Glazing Performance Requirements (inc. Frames) for Bedrooms	Glazing Performance Requirements (inc. Frames) for Living Rooms	Ventilator Performance Requirements (in Open Position)
FC01	36 dB Rw+Ctr	36 dB Rw+Ctr	MVHR
FC02	33 dB Rw+Ctr	33 dB Rw+Ctr	MVHR
FC03	30 dB Rw+Ctr	30 dB Rw+Ctr	MVHR
FC04	27 dB Rw+Ctr	27 dB Rw+Ctr	MVHR

Note FC01, FC02, FC03, and FC04 are specified in Appendix 4.

- 5.26 Based on the results of the calculations summarised in Table 2 and the measured noise levels at the site (considering both the day and night-time average and maximum noise levels), a specification has been developed showing the approximate sound insulation performance requirements for all facades of the development. The facade specification is shown in Appendix 4.
- 5.27 It can be seen from the above that acceptable internal noise levels will be achievable in the development subject to the specification of suitable glazing and ventilation systems at the detailed design stage. It is our view therefore that the proposed development is, in principle, acceptable with regards to the noise levels that will exist within the habitable rooms.

5.28 The above ProPG assessment for planning purposes is based on internal noise levels with windows closed (assumed to be “normal” circumstances). However, it is anticipated that residents will open their windows at times for thermal comfort (e.g. to prevent overheating in warmer months). Noise levels in the rooms will increase under these circumstances.

5.29 The development will be subject to Part O of the Building Regulations (Approved Document O), which came into effect on 15 June 2022. Section 3.2 of Approved Document O (ADO) states:

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 (11pm to 7am).

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

a. 40dB LAeq,T, averaged over 8 hours (between 11pm and 7am).

b. 55dB LAFmax, more than 10 times a night (between 11pm and 7am).

5.30 It is important to note that the Part O requirements only apply to bedrooms at night. There are no requirements for other habitable rooms (living rooms, dining rooms, etc).

5.31 The noise levels in bedrooms at night with the windows open will vary based on the external night-time noise levels and the size and extent of window opening required to control overheating. The wider the window needs to be open, the lower the sound insulation performance. The following indicative “outside to inside” reduction values have been adopted for the assessment based on current industry guidance¹:

- ~4 dB when the window is fully open.
- ~9 dB when the window is open to around ~0.4m².
- 13 dB when the window is partially open to ~0.2m².

5.32 Therefore, it is possible to rely on a larger window opening to control overheating on quieter facades. The relationship between external noise levels and window openings for compliance with Part O is summarised in Table 3.

¹ These values are taken from guidance published in the document “Guide to Demonstrating Compliance with the Noise Requirements of Approved Document O” Version 1.1 November 2024, by the Association of Noise Consultants. The values are based on a floor area of 10m² and a room height of 2.4m.

Table 3 External Part O Noise Criteria and Allowable Window Opening for Overheating

External Noise Levels outside Bedrooms at Night		Allowable night-time window opening to control overheating
Average Noise Levels (LAeq,8hrs)	Maximum Noise Levels (LAmax) – see Note 1	
≤44 dB	≤59 dB	Fully open (to achieve 13% of the floor area which is typically ~1.3m ²). Ventilators fully open.
≤49 dB	≤64 dB	Open (~4% of floor area e.g. ~0.4m ²) – see Note 2. Ventilators fully open.
≤53 dB	≤68 dB	Partially open (~2% of floor area e.g. ~0.2m ²). Ventilators fully open.
≥54 dB	≥69 dB	Windows to be assumed to be fully closed during the night for the purposes of Part O compliance. Ventilators fully open.

Note 1 Not exceeded more than 10 times per night (between 11pm and 7am)

- 5.33 The criteria in Table 3 above have been applied to the predicted night-time noise levels from the model to show where open windows can be relied upon for the control of overheating and Part O compliance. The results are shown in Appendix 6.
- 5.34 It can be seen from Appendix 6 that most windows to bedrooms facing High Street and Mutton Lane will need to be assumed to be closed during the night-time for the purposes of the overheating assessment due to the higher external noise levels. Open windows can be used to help address overheating in most other bedrooms across the rest of the site.
- 5.35 The information in Appendix 6 can be provided to the project Energy Assessor to inform the overheating assessment and demonstrate compliance with Part O.

Stage 2 – Element 3 – Noise levels in external amenity areas

- 5.36 BS8233 states that it is desirable that noise levels in external amenity areas of residential developments do not exceed 50 dB LAeq and that 55 dB LAeq,T should be regarded as an upper guideline value. However, BS8233 recognises that these guideline values will not always be achievable in city centres or urban areas adjoining main roads or other transport sources. In these cases, BS8233 states that the development should be designed to achieve the lowest practicable noise levels in the amenity spaces.
- 5.37 Private amenity space is provided across the site in the form of balconies and two residential courtyard gardens. The private amenity space provision serving dwellings is either in the form of a protruding, recessed or Juliet balcony. Given the nature of the site within a town centre location, some of the balconies facing High Street and Mutton Road exceed the BS8233 recommended levels due to the prevailing traffic conditions. On this basis, these balcony spaces are excluded from the calculation of private amenity space to be provided across the scheme. However, this is still private external space that future residents could make use of. In addition, residents will also

be able to utilise the public open space proposed fronting the High Street, as well as other landscaped areas across the site.

- 5.38 The current design of the development is, therefore, considered to be acceptable in relation to noise levels in external amenity areas.

Stage 2 – Element 4 – Other relevant issues

- 5.39 In our view the design and acoustic approach outlined above is in line with both local and national noise policy. It is common for residential properties to be situated near to main roads and this is an acceptable scenario provided that the properties are acoustically upgraded where necessary to achieve acceptable noise levels in habitable areas.

Recommendation to decision maker

- 5.40 It is our view that planning permission may be granted in relation to noise affecting habitable areas of the development subject to the imposition of suitable planning conditions to ensure that acceptable noise levels are achieved in the finished development.

6. TESCO NOISE IMPACT ASSESSMENT

Design criteria – Mechanical plant noise

- 6.1 BS4142:2014+A1:2019 – *Methods for rating and assessing industrial and commercial sound* (hereafter BS4142) can be used to assess the impact of noise from external industrial and/or commercial noise sources on nearby sensitive receptors.
- 6.2 The BS4142 assessment methodology can be summarised as follows:
1. Measure the existing background noise levels (LA90,T dB) at the locations of nearby noise sensitive receptors during the quietest periods when the noise source(s) under investigation will operate
 2. Predict or measure the noise emissions (LAeq,T dB) from the noise source(s) under investigation at the location(s) of the nearby sensitive receptors, and add corrections for any distinguishable acoustic features (e.g. tones, whines, screeches, hisses etc)
 3. Subtract the measured background noise levels (Item 1 above) with the measured or predicted rating noise levels (Item 2 above) at each sensitive receptor. BS4142 states that:
 - a) Typically, the greater this difference, the greater the magnitude of the impact.
 - b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
 - c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
 - d) 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.
- NOTE Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.*
- 6.3 Background noise levels (LA90) at the site were measured as part of the site noise survey outlined in Appendix 2. Noise emissions from the Tesco carwashes and HGV deliveries have been compared with measured background noise levels to predict the noise impact, in accordance with BS4142 methodology. The BS4142 limits are shown in Table 4 below.

Table 4 BS4142 Criteria (dB LAr,Tr) - Free-field Levels

Location	Period	
	Daytime/Evening (0700-2300hrs)	Night-time (2300-0700hrs)
Nearest Sensitive Receptors	51	43

6.4 Noise emissions from the Tesco car washes were measured on-site. Noise data for standard idling and moving HGVs was taken from Cass Allen library data.

- Automatic Car Wash – 90 dBA SWL
- Hand Car Wash – 83 dBA SWL
- HGV Delivery Route - 100 dBA SWL (Moving), 90 dBA SWL (Idling)

6.5 A 3D model was developed based on the results of the site noise survey and project drawings. The model was used to predict noise emissions from the above sources at the nearest facades of the proposed development. The results of the predictions are shown in Table 5.

Table 5 Predicted Plant Noise Emissions from Tesco Car Washes - Free-field Levels

Location	Predicted Plant Noise Levels (dB LAr,Tr)	BS4142 Criteria (dB LAr,Tr)	
		Daytime/Evening (0700-2300hrs)	Night-time (2300-0700hrs)
West facade of block A	55	51	43
South and West facades of block E	46	51	43

6.6 It can be seen from Table 5 that the predicted noise emissions from the adjacent Tesco exceed the daytime and night-time BS4142 noise criteria at the west facade of block A.

Context

6.7 Clause 11 in Section 11 of BS4142 advises the following with regards to the importance of considering the context of a noise when assessing the likely impact:

The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.

6.8 In this instance the calculated noise impact relates to car washes and deliveries. This type of noise is typical within a built-up, mixed-use urban area throughout London; therefore, the existing commercial noise associated will be perceived in this context.

- 6.9 Furthermore, BS4142 advises that in the situation where a new noise-sensitive receptor is introduced and there is an extant industrial and/or commercial sound:

Other guidance and criteria in addition to or alternative to this standard can also inform the appropriateness of both introducing a new noise-sensitive receptor and the extent of required noise mitigation

- 6.10 BS4142 goes on to state:

Where the initial estimate of the impact needs to be modified due to the context, take all pertinent factors into consideration, including the following.

...3) The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:

- i) façade insulation treatment;*
- ii) ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and*
- iii) acoustic screening.”*

- 6.11 Therefore, it is appropriate to include the effect of any noise mitigation measures (such as facade insulation treatment, e.g. upgraded acoustic glazing and mechanical ventilation) in the assessment of the commercial noise to evaluate internal and outdoor acoustic conditions.
- 6.12 As such, alternative guidance should also be given weight when assessing the proposed development. Appropriate design criteria for acceptable noise levels in acoustically sensitive areas of new developments are given in BS8233:2014 ‘Guidance on sound insulation and noise reduction for buildings’ (BS8233).
- 6.13 Calculations have been carried out according to the internal noise level criteria given in BS8233, using the rated mechanical plant noise levels in Table 5. The results of these calculations demonstrate that the use of standard thermal double glazing (min. 27 dB Rw+Ctr) and MVHR for the worst-case facades affected by commercial noise emissions from Tesco will result in compliant internal noise levels being achieved (i.e. ~28dBA). As such, it is our view that noise emissions from the existing mechanical plant are acceptable.

7. CONCLUSIONS

- 7.1 Cass Allen has been instructed by Chase New Homes to assess noise affecting a proposed new development at High Street, Potters Bar.
- 7.2 The assessment was carried out in accordance with relevant local and national planning guidance.
- 7.3 A noise survey was carried out at the site. Noise levels at the site are generally dictated by road traffic noise emissions from High Street and Mutton Lane. Noise levels along the western edge of the site will also be affected by carwashes and deliveries associated with the adjacent Tesco.
- 7.4 A 3D noise model of the development was constructed based on the results of the site noise survey. The noise model was used to calculate noise levels at all facades of the development.
- 7.5 Noise affecting the development has been assessed in accordance with ProPG guidance. The design of the development is considered to be acceptable subject to the adoption of acoustically upgraded glazing and ventilation. This can be investigated further as the design progresses and may be secured by the imposition of a noise related planning condition by the Local Planning Authority.
- 7.6 Compliance with noise criteria in Building Regulations Part O has also been assessed. Some bedrooms will need to be designed so that windows can remain closed at night without the rooms overheating.
- 7.7 Appropriate limits for noise from proposed mechanical plant have been calculated based on measured noise levels at the site and guidance given in BS4142. This will be investigated further as the design progresses and may be secured by the imposition of a noise related planning condition if deemed necessary by the Local Planning Authority.
- 7.8 Commercial noise emissions associated with the adjacent Tesco have also been assessed based on measured noise levels at the site and guidance given in BS4142.
- 7.9 In summary, it is our view that the site is suitable for the development in terms of noise levels and that planning permission may be granted subject to the imposition of suitable planning conditions if necessary.

Appendix 1 Proposed Site Layout

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Room Key

- 1 Bed
- 2 Bed
- 3 Bed
- A3 (Restaurants/Cafes)
- Plant Room
- Bikes
- Class E (Commercial)
- Lobby
- Refuse

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NOTES

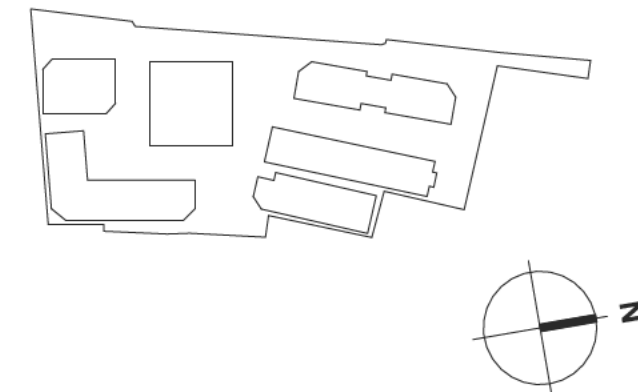
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P04	19.03.2025	Stage 3 Coordination Update	JW	AK
P03	13.03.2025	Stage 3 Coordination Update	JW	AK
P02	16.03.2025	Stage 3 Coordination Update	JW	AK
P01	16.02.2025	Stage 3 Coordination Update	JW	AK
P00	13.02.2025	Stage 3 Initial Issue	JW	AK
REV	COMMITTEE	DESCRIPTION	ISSUED BY	CHECK BY

LOCATION PLAN



ARCHITECTS

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PLANNING CONSULTANT

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LANDSCAPE

MRG Studio
70 St John Street
London / EC1M 4DT

CLIENT



PROJECT

Potters Bar High Street
Canada Life Place, High Street
Potters Bar, EN6 5BA

DRAWING TITLE

General Arrangement
Ground Floor Plan

PROJECT No.

44261

STATUS

For Planning

DRAWN

JW

CHECKED

AK

SCALE

1 : 500 @ A1

DRAWING No.

PB-AFK-XX-00-DR-A-20000

REVISION

P06





Room Key

- Studio
- 1 Bed
- 2 Bed
- 3 Bed
- Bikes

WORK IN PROGRESS

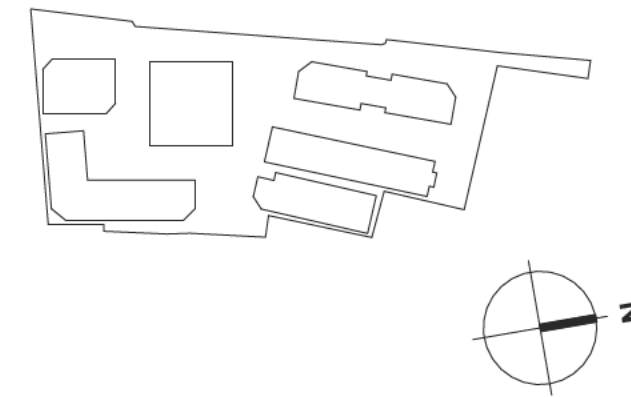
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P00	13.02.2026	Stage 3 Initial Issue	JW	AK
REV	COMMITTY DESCRIPTION		ISSUED BY	CHECK BY

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CLIENT



PROJECT

Potters Bar High Street
Canada Life Place, High Street
Potters Bar, EN6 6BA

DRAWING TITLE

General Arrangement
Typical Floor Low

PROJECT No.

44261

STATUS

For Planning

DRAWN

JW

CHECKED

AK

SCALE

1 : 500 @ A1

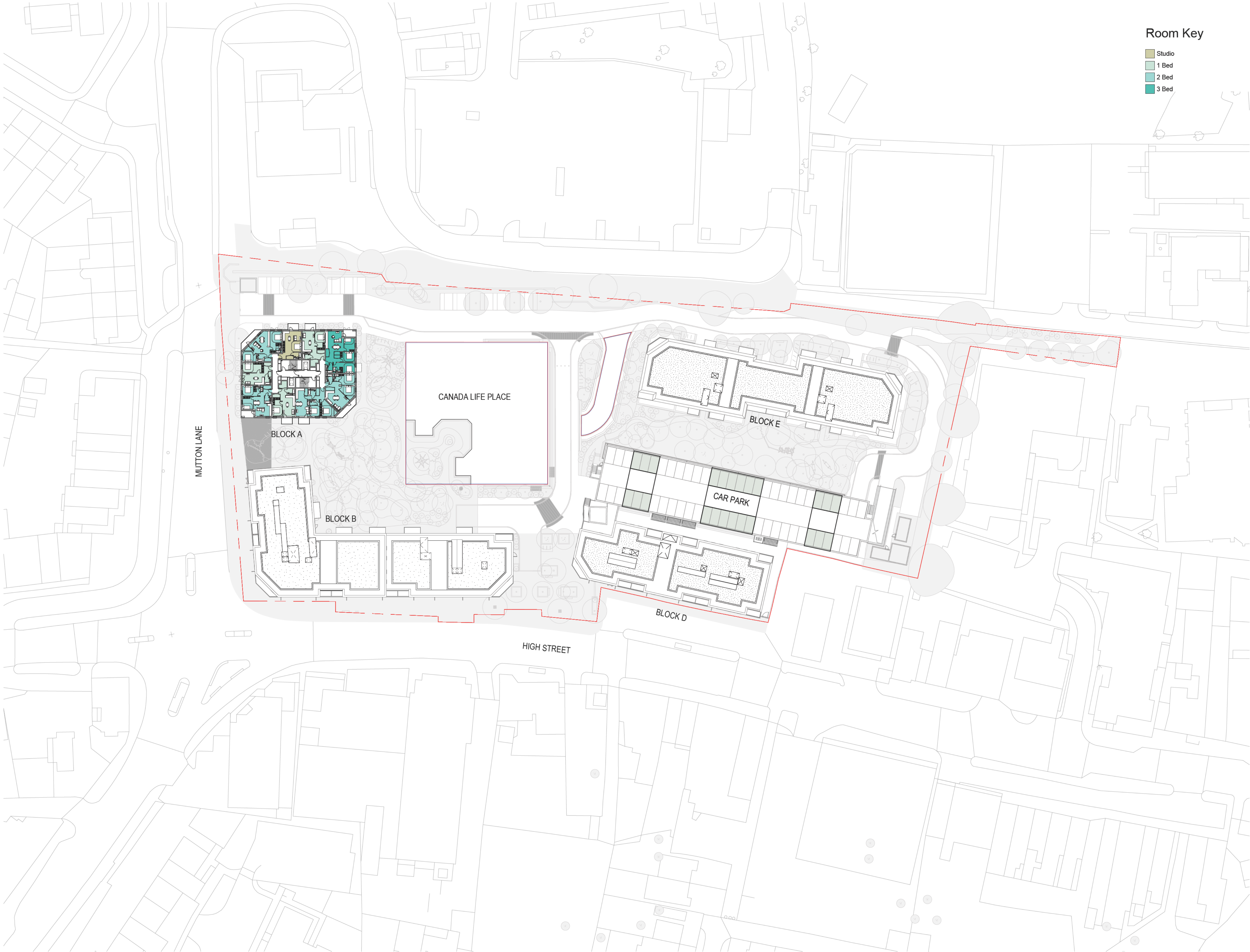
DRAWING No.

PB-AFK-XX-ZZ-DR-A-20004

REVISION

P04





Room Key

- Studio
- 1 Bed
- 2 Bed
- 3 Bed

NOTES

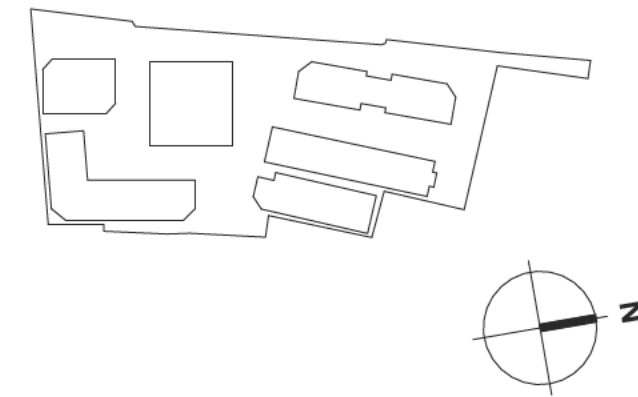
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P00	13.02.2026	Stage 3 Initial Issue	JW	AK
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PROJECT

Potters Bar High Street
Canada Life Place, High Street
Potters Bar, EN6 6BA

DRAWING TITLE

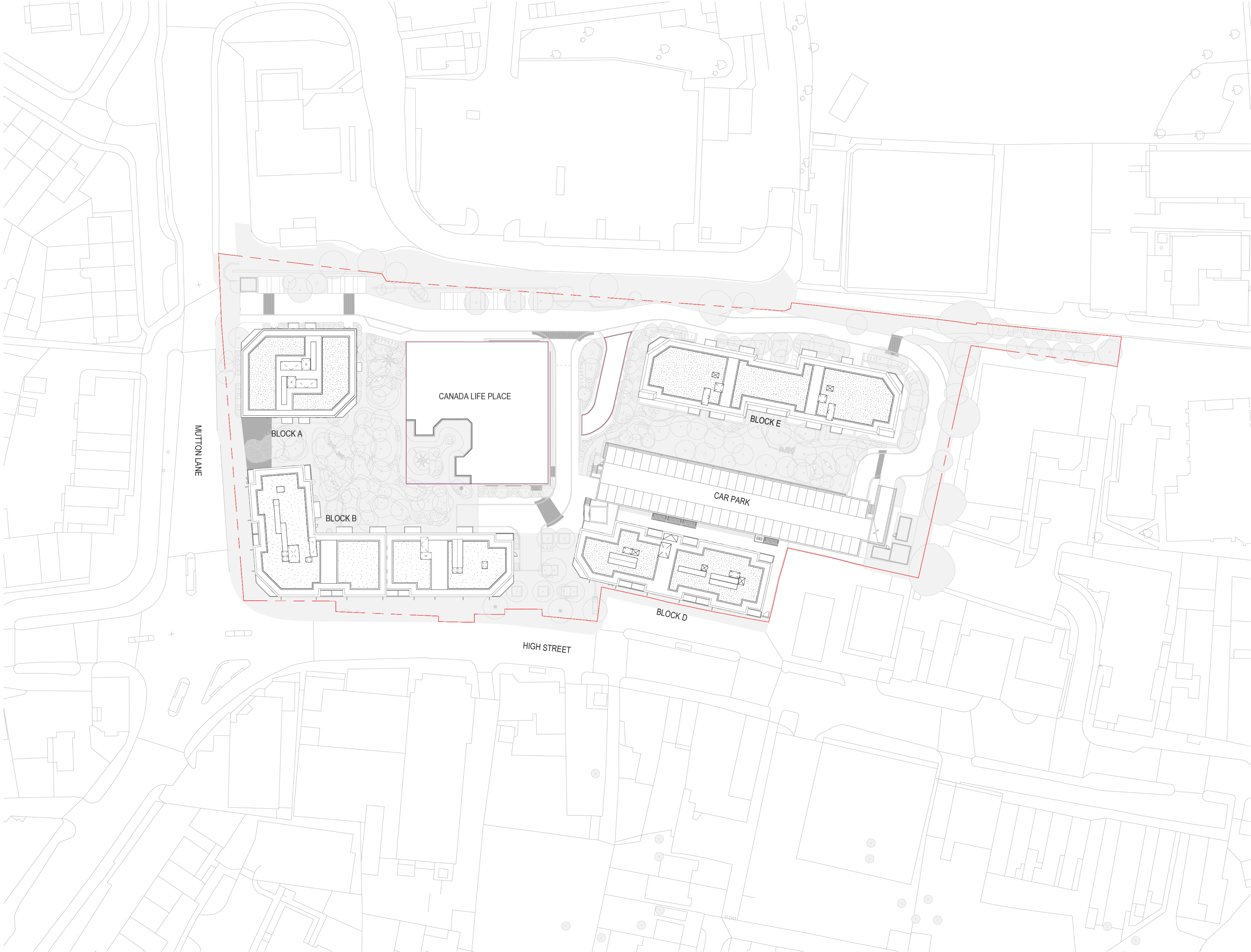
General Arrangement
Typical Floor High

PROJECT No.	STATUS
44261	For Planning

DRAWN	CHECKED	SCALE
JW	AK	1 : 500 @ A1

DRAWING No.	REVISION
PB-AFK-XX-ZZ-DR-A-20007	P04





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NOTES

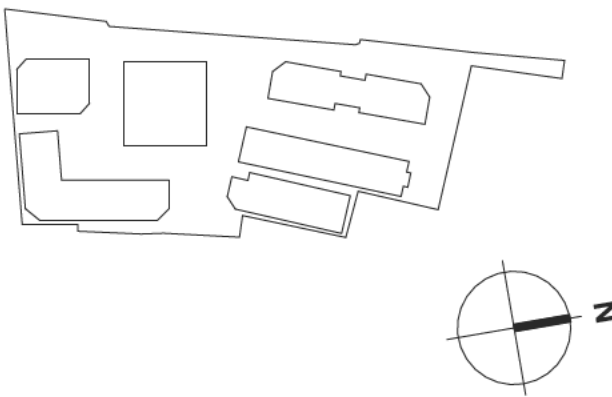
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P00	13.03.2026	Stage 3 Coordination Update	JW	AK
REV	COMMITTY	DESCRIPTION	ISSUED BY	CHECK BY

LOCATION PLAN



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LANDSCAPE

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70 St John Street
London / EC1M 4DT

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PROJECT

Potters Bar High Street
Canada Life Place, High Street
Potters Bar, EN6 6BA

DRAWING TITLE

General Arrangement
Typical Floor Top

PROJECT No.

44261

STATUS

For Planning

DRAWN

JW

CHECKED

AK

SCALE

1 : 500 @ A1

DRAWING No.

PB-AFK-XX-ZZ-DR-A-20015

REVISION

P03

Appendix 2 Survey Results

Survey Summary:

The survey comprised short-term operator attended noise measurements and longer-term unattended noise monitoring at the site. Noise levels at the site were generally dictated by road traffic on High Street and Mutton Lane.

Noise was identified and measured from the Tesco automatic car washes. Noise from Tesco HGV deliveries was also identified.

Plant noise was also identified from existing wall-mounted plant near the entrance of an underground loading area of Canada Life. The plant is not audible at key measurement positions due to screening from the walls along the access road to the underground area.

Aircraft flyovers were present at the site, however this noise was insignificant when compared with noise from other sources.

Survey Period:

13/11/2025 to 18/11/2025

Survey Objectives:

- To identify noise and vibration sources that contribute to ambient noise levels at the site;

Equipment Used:

Type	Manufacturer	Model	Serial Number
Sound level meter ¹ (noise logger)	Rion	NL-32	00530374
Sound level meter ¹ (noise logger)	Rion	NL-32	01182950
Sound level meter ¹ (noise logger)	Rion	NL-32	00903343
Calibrator	Rion	NC-74	34551703
Sound level meter ¹	Rion	NL-52	00965090

Note 1: All sound level meters were calibrated before and after measurement periods and no significant drift in calibration was found to have occurred. The results of the measurements are therefore considered to be representative.

Weather Conditions:

The observed weather conditions were acceptable for acoustic measurement throughout the attended survey periods (low-medium wind speeds and no rain). Weather records for the area confirmed that weather conditions were also generally acceptable for acoustic measurement during the unattended monitoring.

Measurement Positions:

Position (refer plan below)	Description
N1	Attended noise monitoring position. 1.8m above ground. Free-field. 8m from Elite Hand Car Wash.
N2	Attended noise monitoring position. 1.8m above ground. Free-field. 4m from High Street.
N3	Attended noise monitoring position. 1.8m above ground. Free-field. 8m from Tesco automatic car wash.
N4	Attended noise monitoring position. 1.8m above ground. Free-field. 2m from Mutton Lane.
N5	Attended noise monitoring position. 1.8m above ground. Free-field. 4m from Mutton Lane.
N6	Attended noise monitoring position. 1.8m above ground. Free-field. 8m from mechanical plant.
N7	Attended noise monitoring position. 1.8m above ground. Free-field. 16m from mechanical plant.
N8	Attended noise monitoring position. 1.8m above ground. Free-field. 24m from mechanical plant.
N9	Attended noise monitoring position. 1.8m above ground. Free-field.
N10	Attended noise monitoring position. 1m above ground. Sat on small wall in courtyard area. 20m from Mutton Lane.
N11	Attended noise monitoring position. 1.8m above ground. 15m away from Waves Hand Car Wash.
N12	Attended noise monitoring position. 1.8m above ground. In Canada Life car park. 35m away from BP Petrol Station.
N13	Attended noise monitoring position. 1.8m above ground. 2.5m away from BP free air pumps.
L1	Unattended noise logging position. 2m above ground level. Free-field.
L2	Unattended noise logging position. 2m above ground level. Free-field. Direct line of sight to Mutton Lane. 10m away.
L3	Unattended noise logging position. 6m above ground level. Free-field. First floor of building (above Serenity Beauty & Spa). 4m from High Street.

Site Plan showing Measurement Positions:



Attended Noise Monitoring Results:

Date	Position	Time	Meas. Length	LAeq, dB	LAmix, dB	LA90, dB	Observations
13/11/2025	N1	16:03	5 mins	67	82	61	Noise from Elite Hand Car Wash. Also influenced by noise from High Street.
	N2	16:13	9 secs	76	81	71	Single decker bus pass on High Street.
			7 secs	72	75	70	
		16:15	11 secs	73	75	72	Series of van passes on High Street.
		16:16	6 secs	74	76	73	HGV on High Street. Other side of road, 10m from High Street.
		16:17	5 secs	76	79	71	Double decker bus pass on High Street.
18/11/2025		12:21		76	79	69	HGV pass.
13/11/2025	N3	16:23	30 secs	70	74	65	Non-tonal noise. Deluxe wash including an exterior wash, rinse, dry, vacuum and wipe down. This measurement is dictated by the car wash.
		16:28	5 mins	62	75	56	Non-tonal noise. Generic 5 minute measurement of a car wash cycle. Rinse and dry, no jet washing.

Attended Noise Monitoring Results:

Date	Position	Time	Meas. Length	LAeq, dB	LAmx, dB	LA90, dB	Observations
18/11/2025	N3	13:00		59	67	55	Tesco car wash cycle. Standard wash including an exterior wash and rinse. No drying. Noise for this reading is dictated by road traffic noise on Mutton Lane.
13/11/2025	N4	16:26	8 secs	81	88	69	Bus pass on Mutton Lane.
18/11/2025		12:19	5 secs	78	83	72	HGV pass. 1.5m away from Mutton Lane.
	N5	16:34	7 secs	68	72	62	Double decker bus pass on Mutton Lane.
13/11/2025	N6	16:42	20 secs	68	69	68	Non-tonal constant plant noise.
	N7	16:43		63	65	63	
	N8	16:44		61	62	60	
	N9	16:47	21 secs	55	59	51	Aircraft flyover from Heathrow airport. Not expected to be important.
18/11/2025	N10	12:31	5 mins	60	71	56	Road traffic noise from Mutton Lane. Occasional passes from workers at surrounding businesses.
		13:07		59	65	56	
		14:28		61	77	56	
	N11	12:40		56	64	54	Noise from Waves hand car wash and car/van/HGV passes on the road leading to the Tesco delivery location.
		13:15		55	62	53	
		14:42		58	71	52	
	N12	12:51		53	67	52	Noise dictated by surrounding sources, aircraft flyovers and cars/pedestrians in the Canada Life car park. Measurements representative of background noise levels at the site.
		13:21		52	59	50	
		14:48		52	61	50	
	N13	14:54	46 secs	63	65	54	Plant noise from BP garage free air pump.

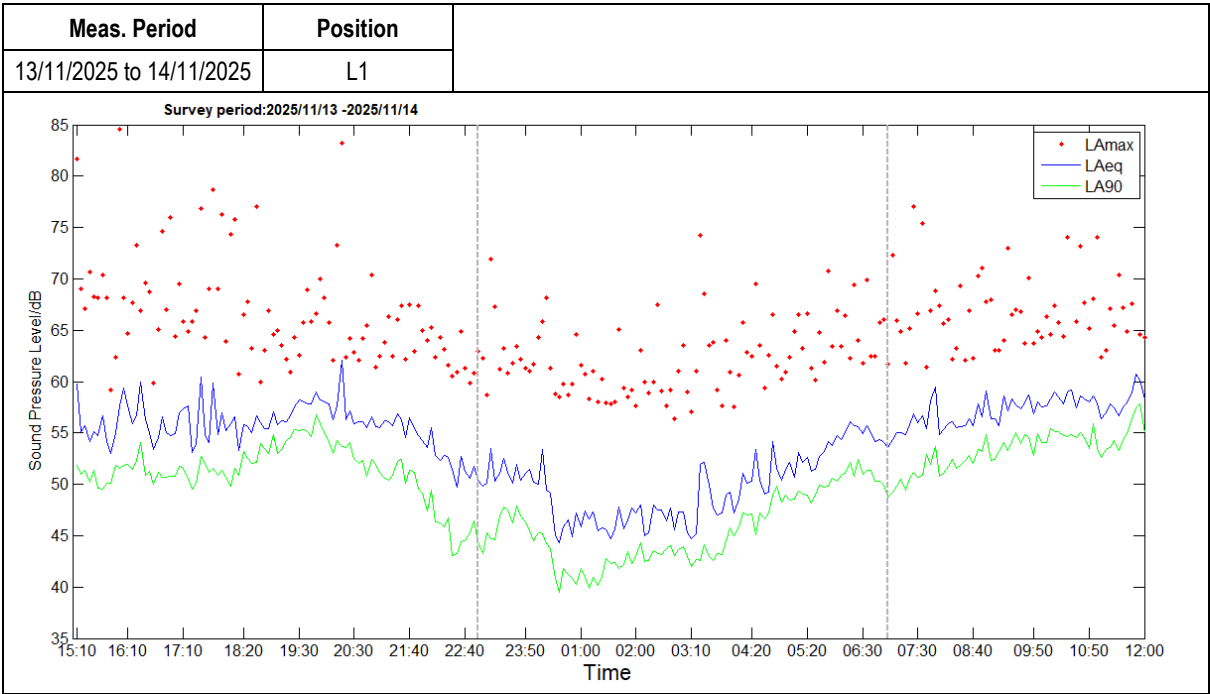
Unattended Noise Monitoring Results:

Meas. Period	Position	Daytime (0700-2300hrs)		Night-time (2300-0700hrs)		
		LAeq,16hr, dB	LA90,1hr dB ¹	LAeq,8hr, dB	LA90,5mins, dB ¹	LAm _{ax} , dB ²
13/11/2025 to 14/11/2025	L1	57	51	51	43	67
13/11/2025 to 18/11/2025	L2	66	57	60	43	76
	L3	73	62	69	45	85

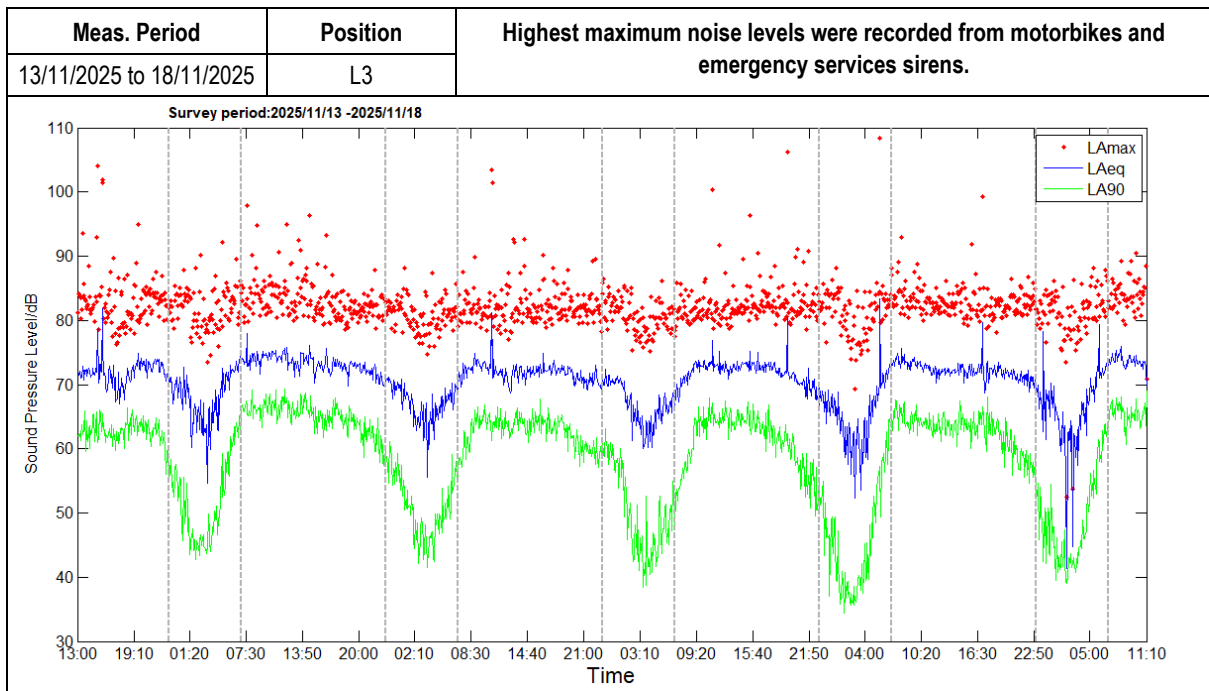
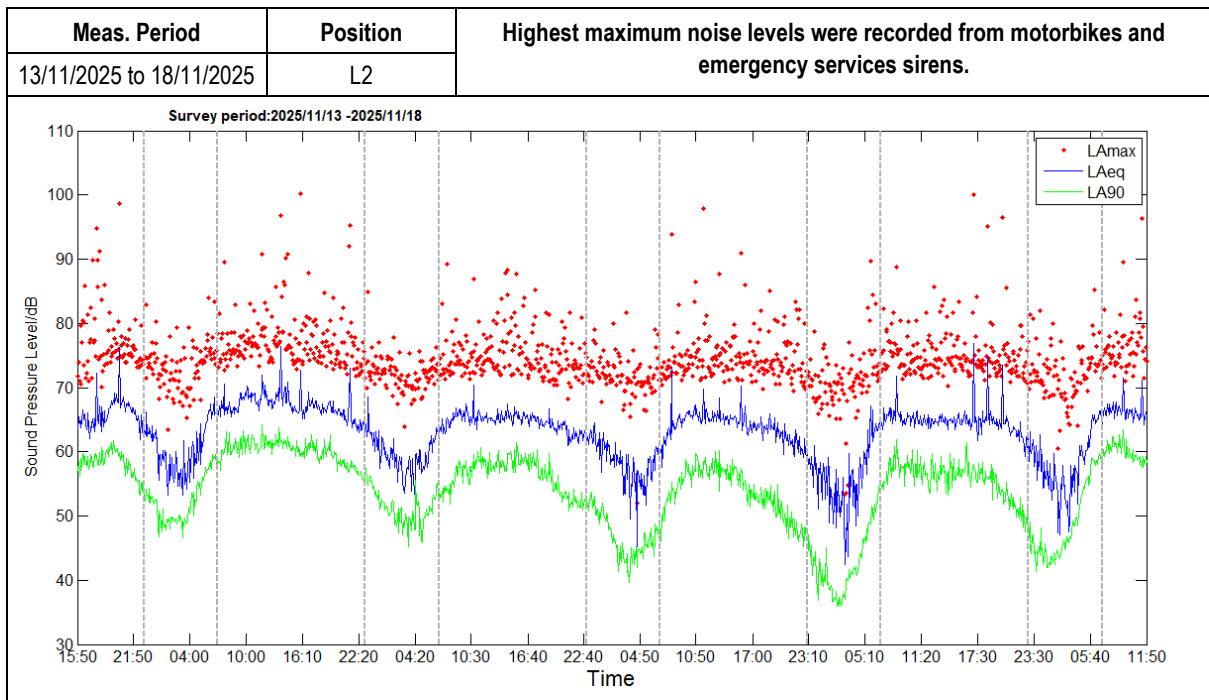
Note 1: Typical lowest measured during the period shown.

Note 2: Highest typical maximum noise level during the night-time (not exceeded more than 10-15 times per night).

Unattended Noise Monitoring Results:



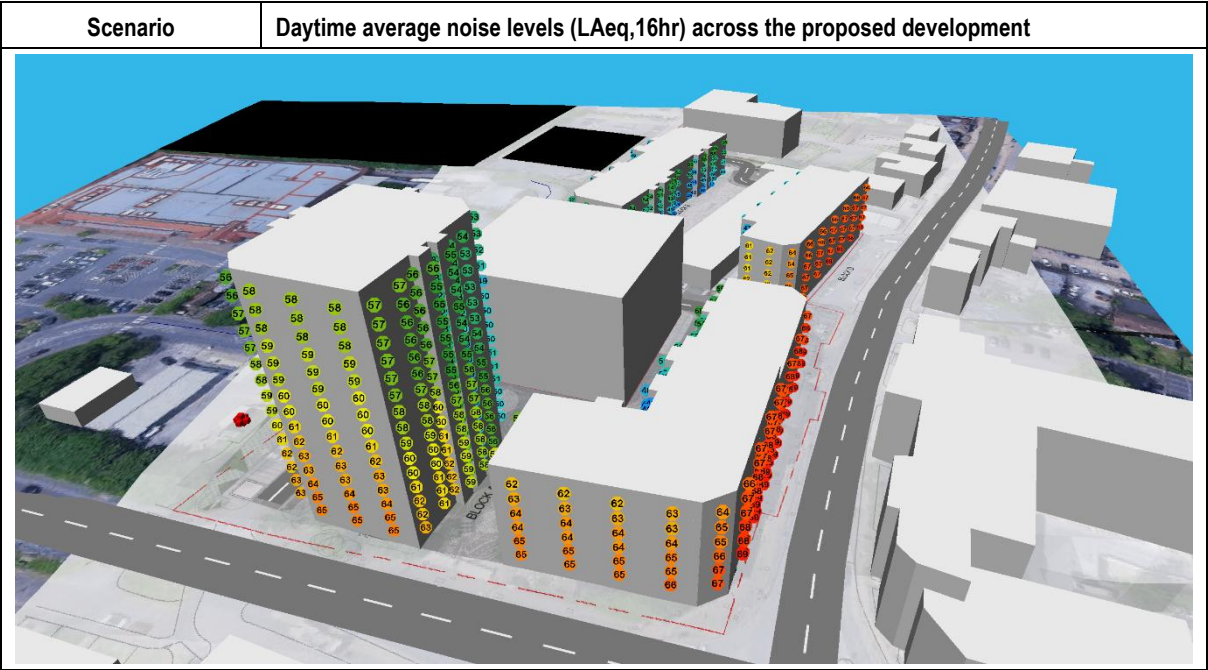
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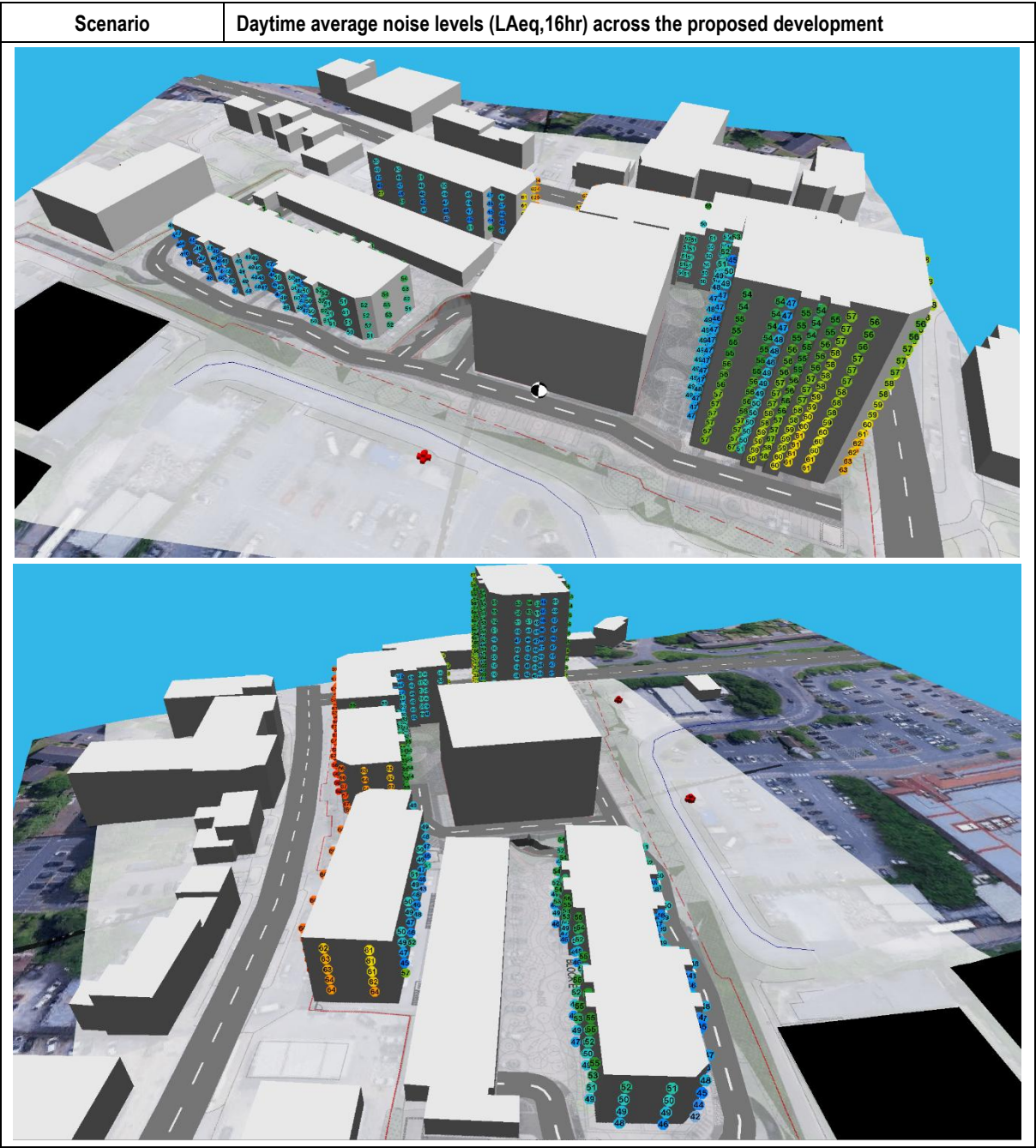
Appendix 3 Modelling Results

Modelling Software:	CADNA/A Version 2026 MR1
Modelled Scenarios:	Day and night-time average noise levels and maximum noise levels across the site
Data inputs:	- Noise survey results - Topographical data for the site - Development layout
Calculation Algorithms Used:	- Calculation of Road Traffic Noise 1988 – Department of Transport - ISO 9613-1:1993 Acoustics-Attenuation of sound during propagation outdoors – Part 1: Calculation of the absorption of sound by the atmosphere - ISO 9613-2:2024 Acoustics-Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors

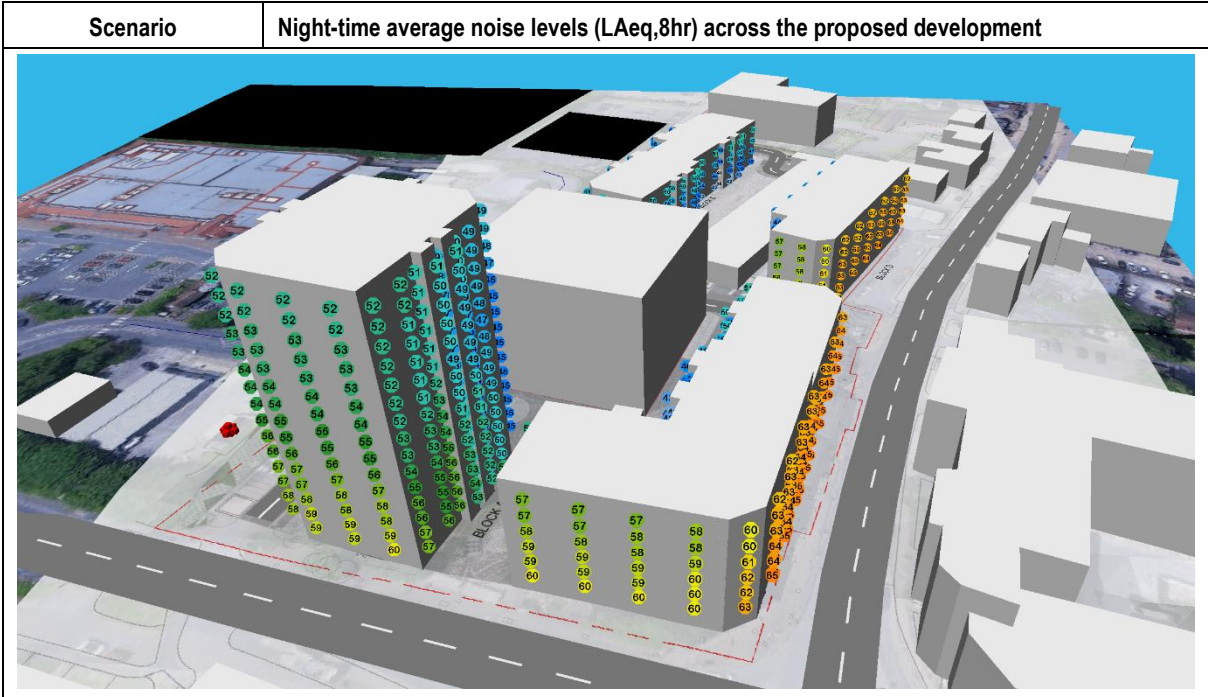
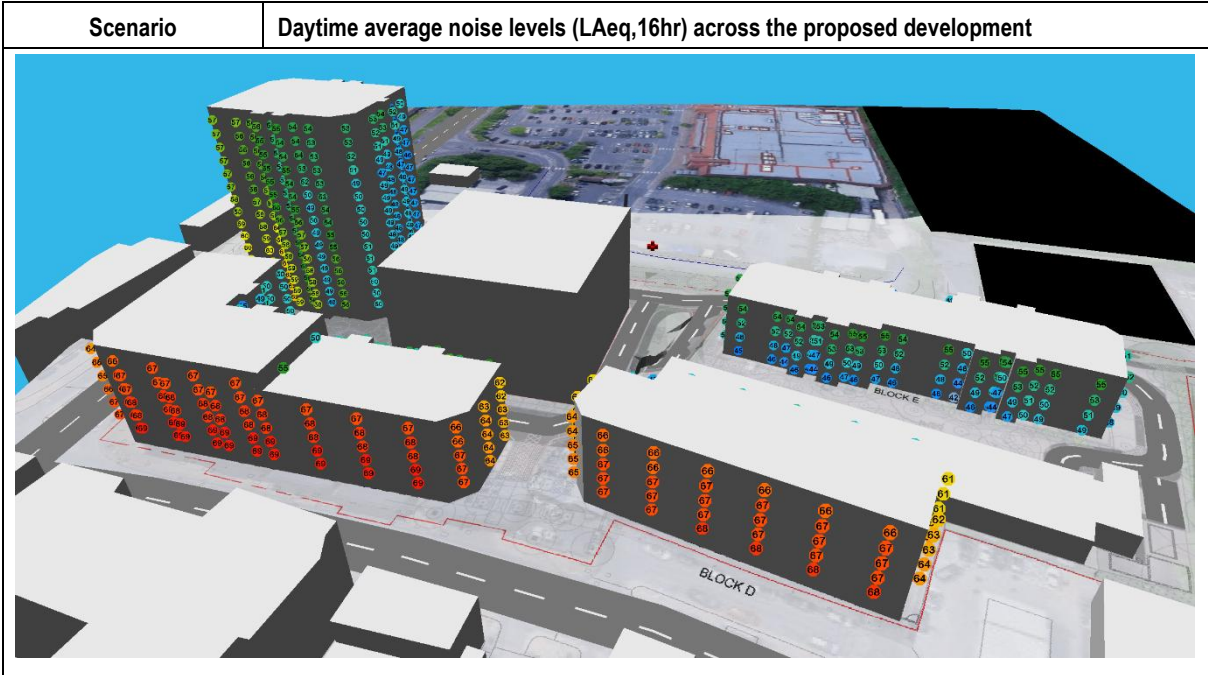
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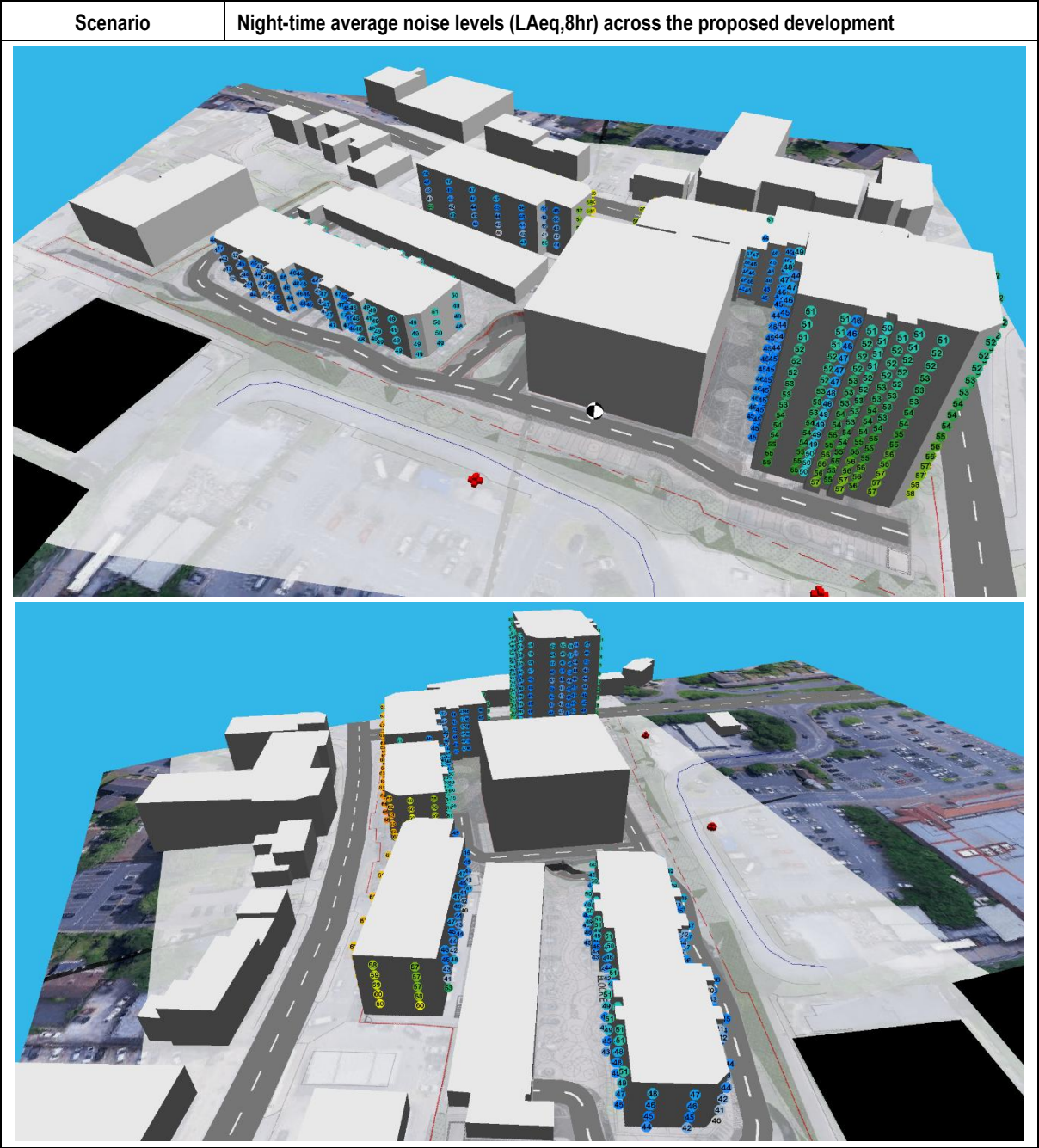
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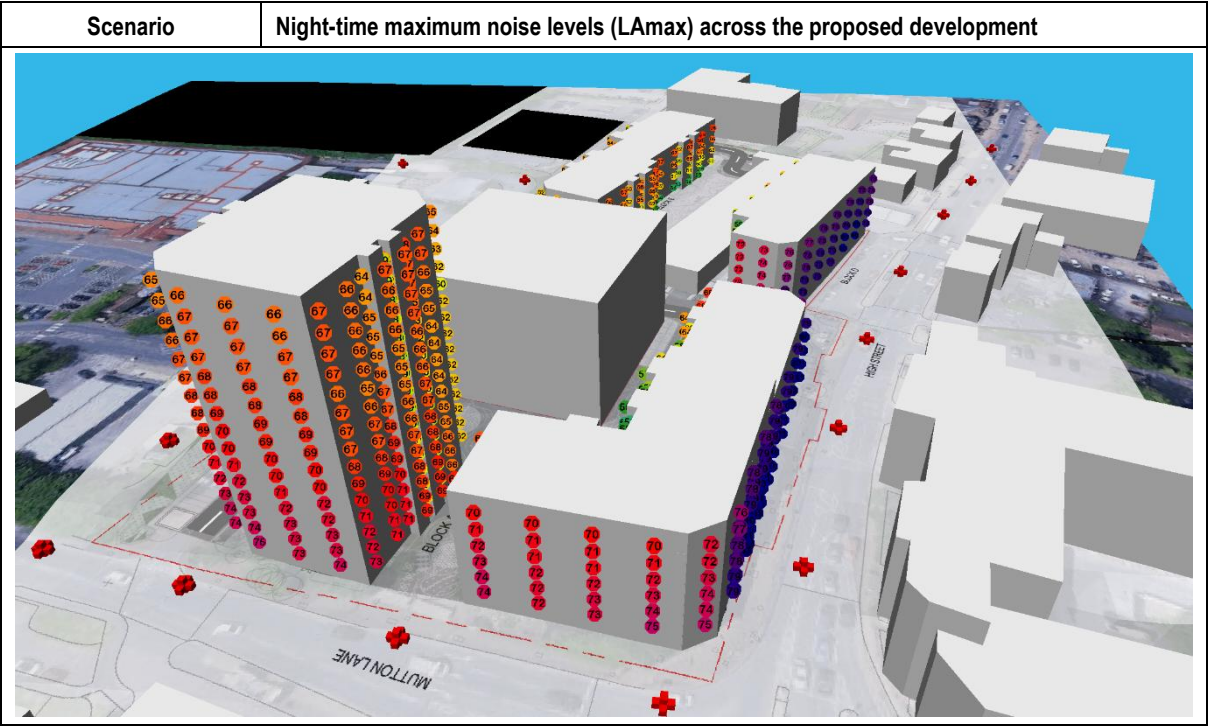
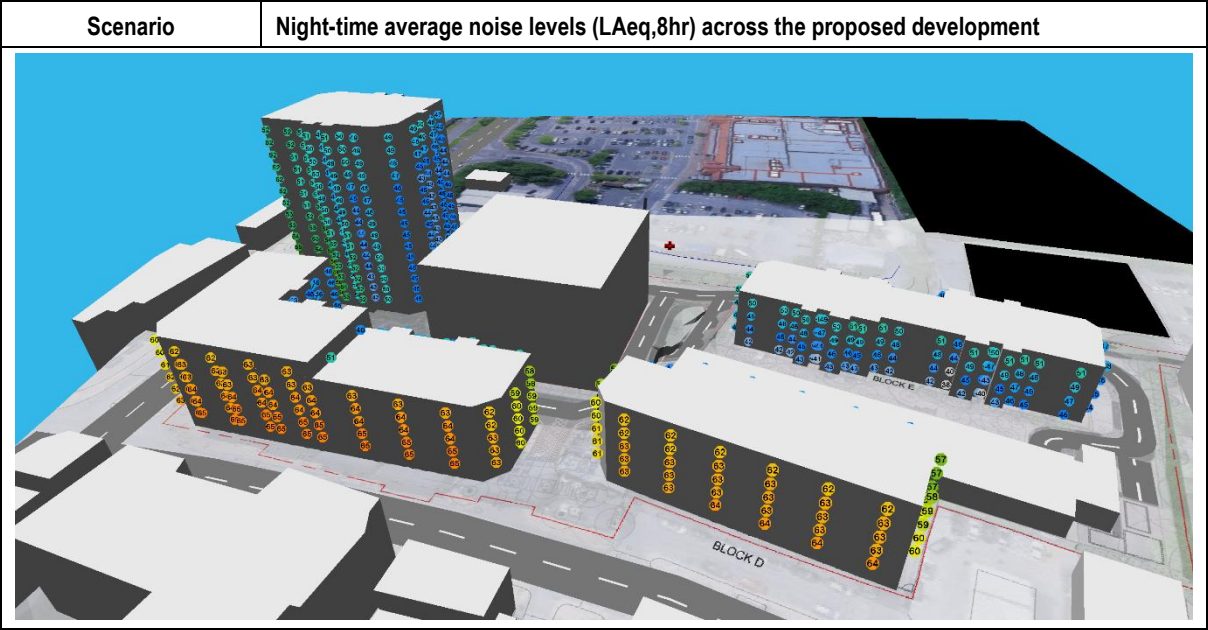
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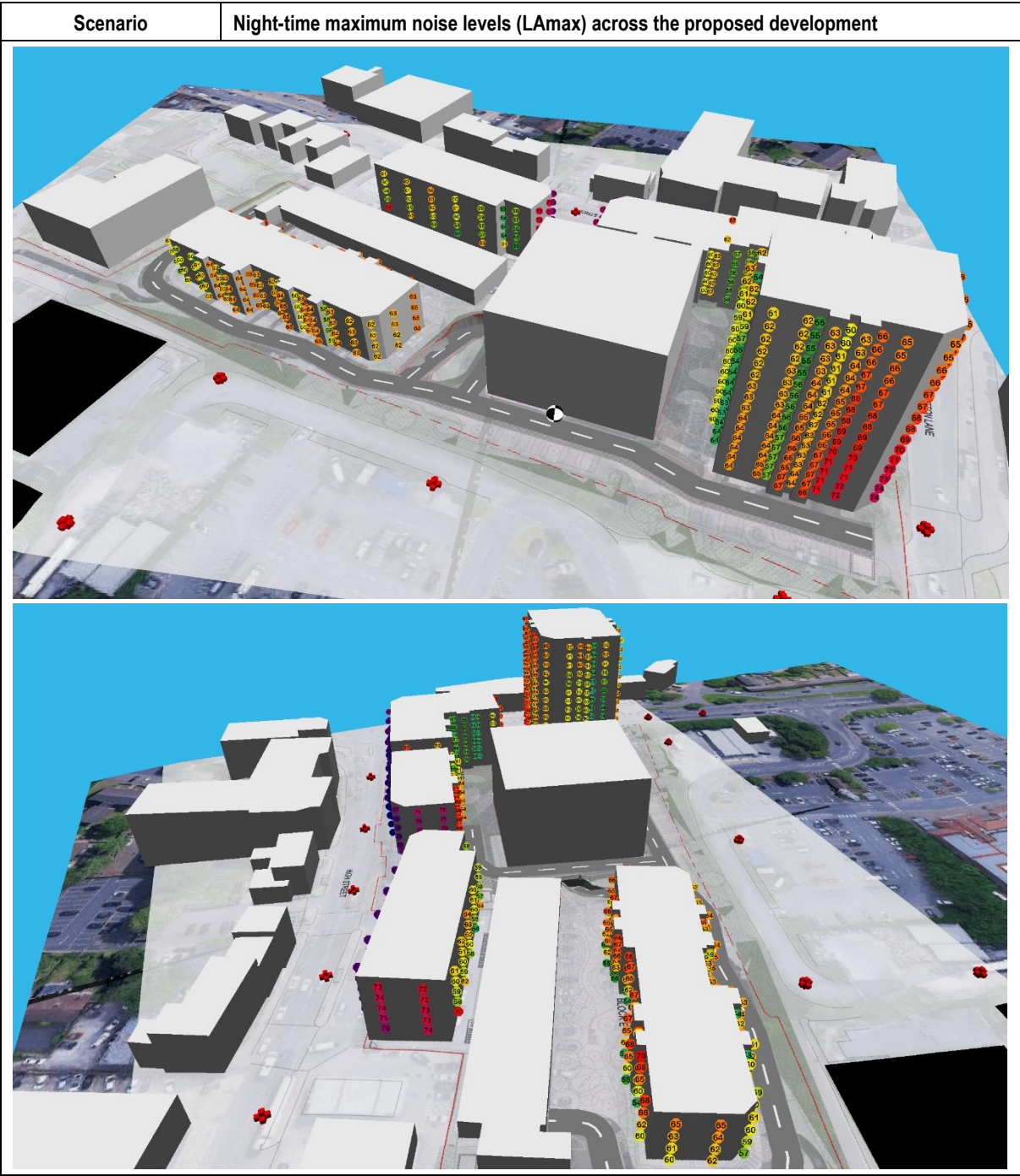
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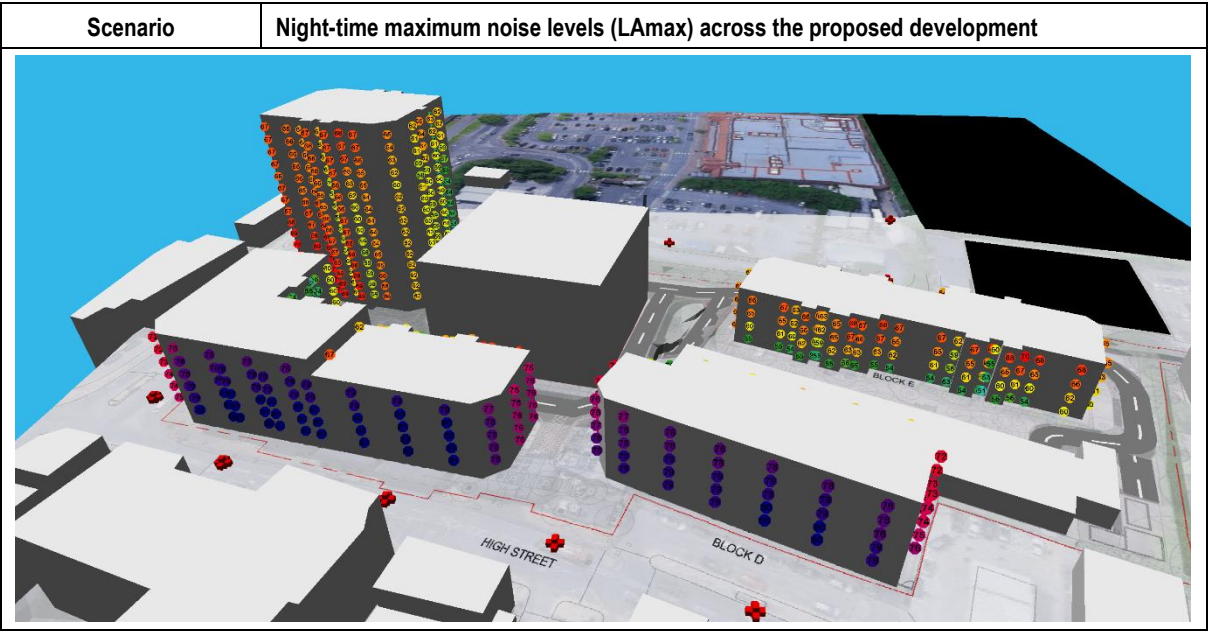
Modelling Printout:



Modelling Printout:



Modelling Printout:



Appendix 4 Outline Acoustic Facade Specification

Reference	Colour	Bedroom Glazing Specification	Living Room Glazing Specification	Ventilator Specification
FC01		36 dB Rw+Ctr	36 dB Rw+Ctr	MVHR
FC02		33 dB Rw+Ctr	33 dB Rw+Ctr	
FC03		30 dB Rw+Ctr	30 dB Rw+Ctr	
FC04		27 dB Rw+Ctr	27 dB Rw+Ctr	

NOTES:

Values must include the Ctr correction. Manufacturers or suppliers should provide laboratory test data demonstrating that the proposed systems are capable of achieving the values given. Windows should be tested as complete systems (rather than just the glazing in isolation).

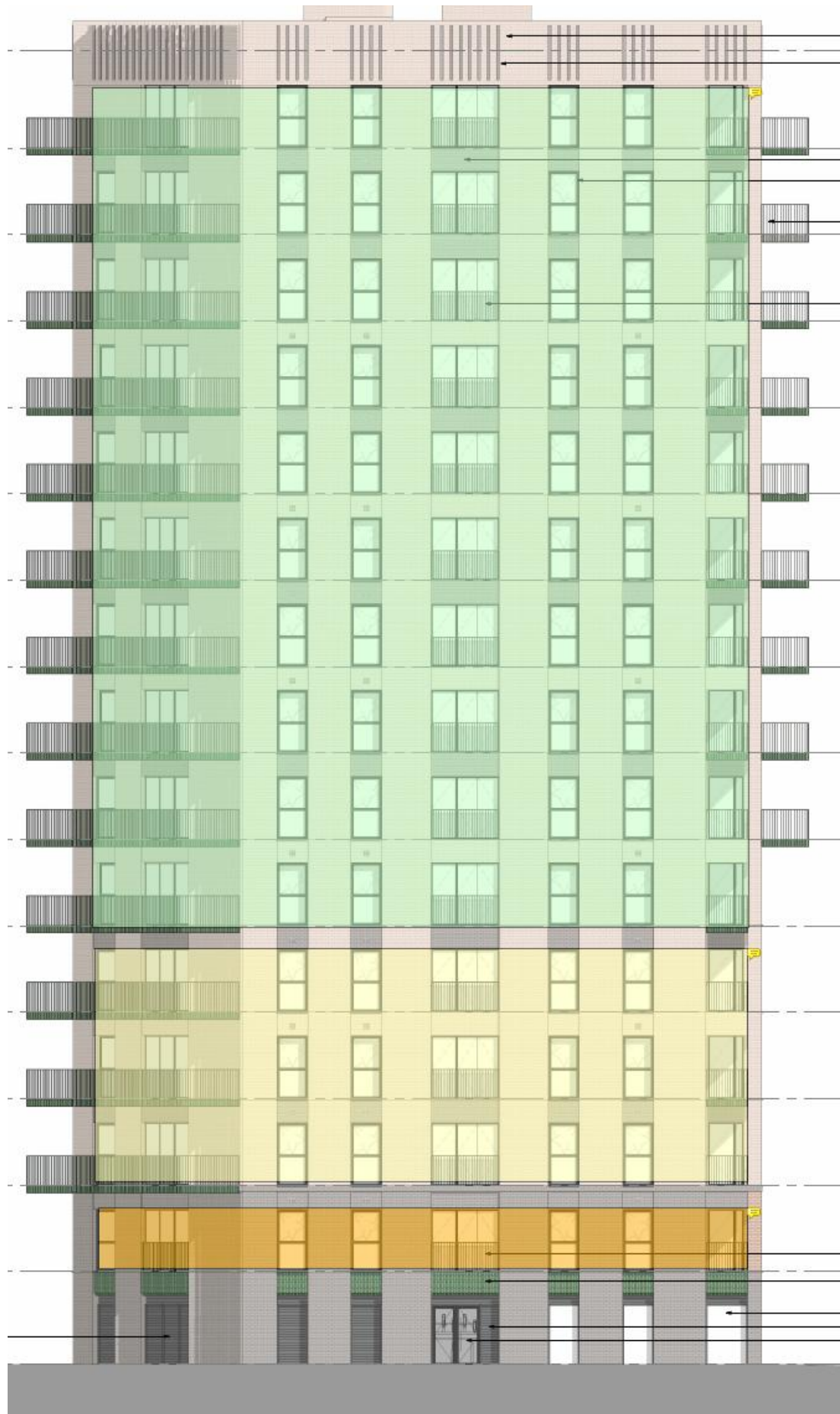
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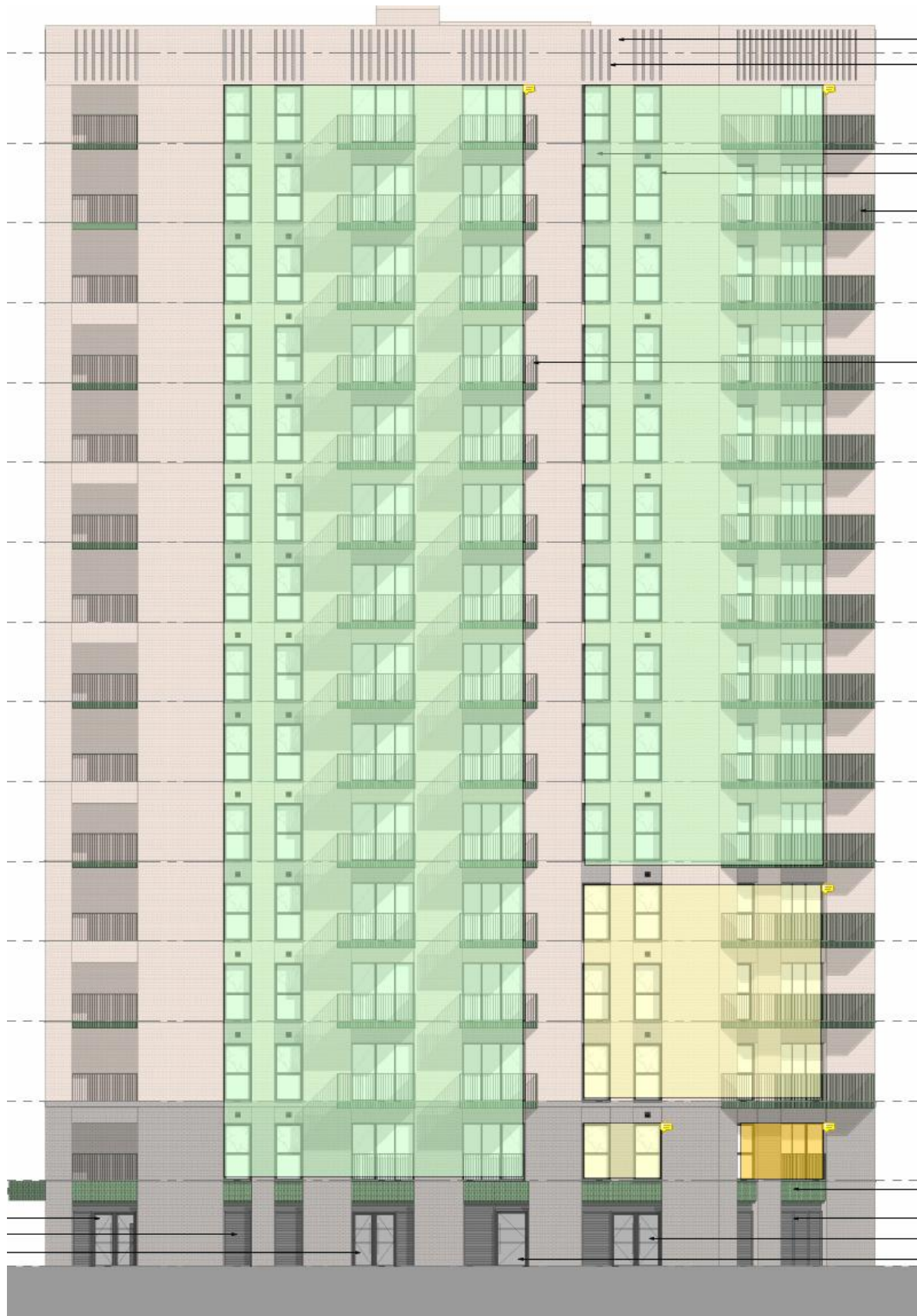
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Block A South Elevation:



Block A West Elevation:



Block B North Elevation:



Block B - North Elevation 01
1 : 100



Block B - North Elevation 02
1 : 100

Block B East Elevation:



Block B - East Elevation 01
1 : 100



Block B - East Elevation 02
1 : 100

Block B South Elevation:



Block B - South Elevation
1 : 100

Block B West Elevation:



Block B - West Elevation 02
1 : 100



Block B - West Elevation 01
1 : 100

Block D East Elevation:



Block D - East Elevation
1 : 100

Block D South Elevation:



Block D - South Elevation
1 : 100

Block D West Elevation:



Block D - West Elevation
1:100

Block E North Elevation:



Block E East Elevation:



Block E South Elevation:



Block E West Elevation:



Block E - West Elevation 01
1 : 100



Block E - West Elevation 02
1 : 100

Appendix 5 Facade Calculations

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Appendix 6 Part O Acoustic Requirements for Bedrooms at Night

Ref.	Colour	Outside-to-inside noise reduction requirement	Part O Requirement for Bedrooms
ADO01	Green	4 dB	Energy assessment (e.g. TM59) to show that bedrooms will not overheat at night with windows fully open (e.g. 13% of floor area, which is typically around 1.3m ²) and ventilators fully open.
ADO02	Yellow	9 dB	Energy assessment (e.g. TM59) to show that bedrooms will not overheat at night with windows open (e.g. 4% of floor area, which is typically around 0.4m ²) and ventilators fully open.
ADO03	Orange	13 dB	Energy assessment (e.g. TM59) to show that bedrooms will not overheat at night with windows partially open (e.g. ~2% of floor area, which is typically around 0.2m ²) and ventilators fully open.
ADO04	Red	>13 dB	Energy assessment (e.g. TM59) to show that bedrooms on these facades will not overheat at night with windows fully closed and ventilators fully open.

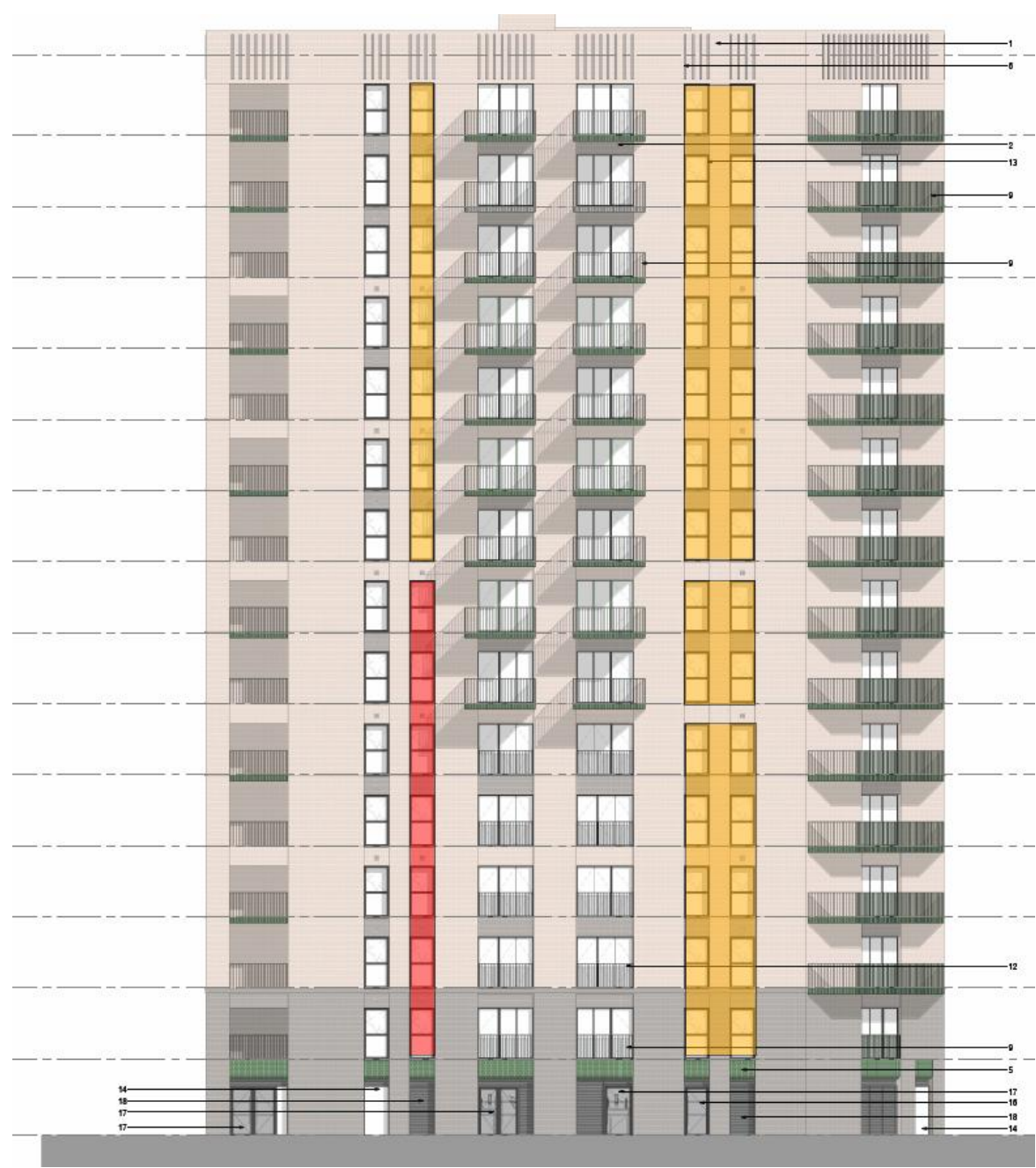
Note 1 ADO requirements only apply to bedrooms during night-time hours (23:00-07:00)

Note 2 The window open area is specified above as an actual open area, not 'equivalent open area' and the values may therefore need to be converted as part of the overheating assessment.

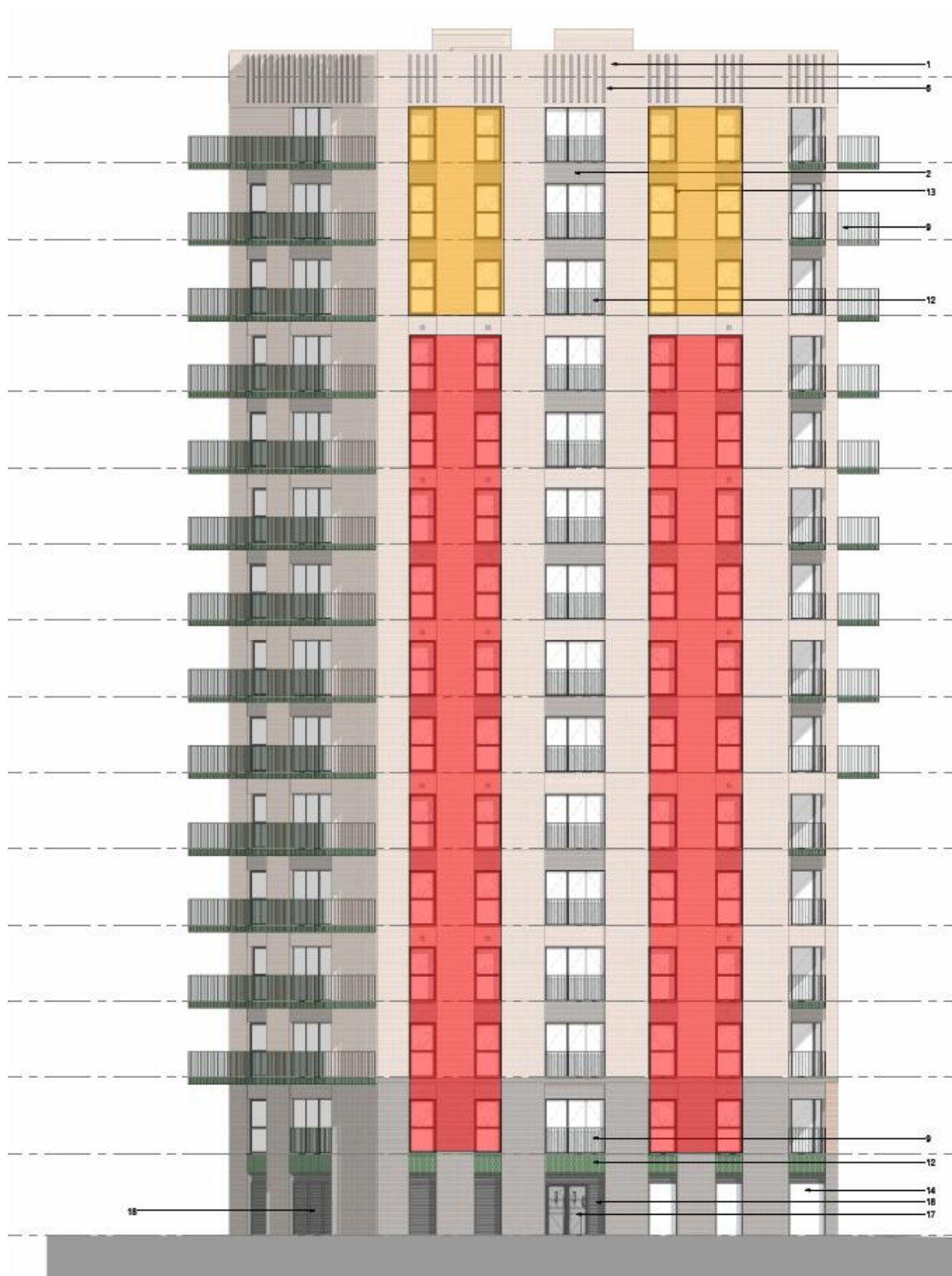
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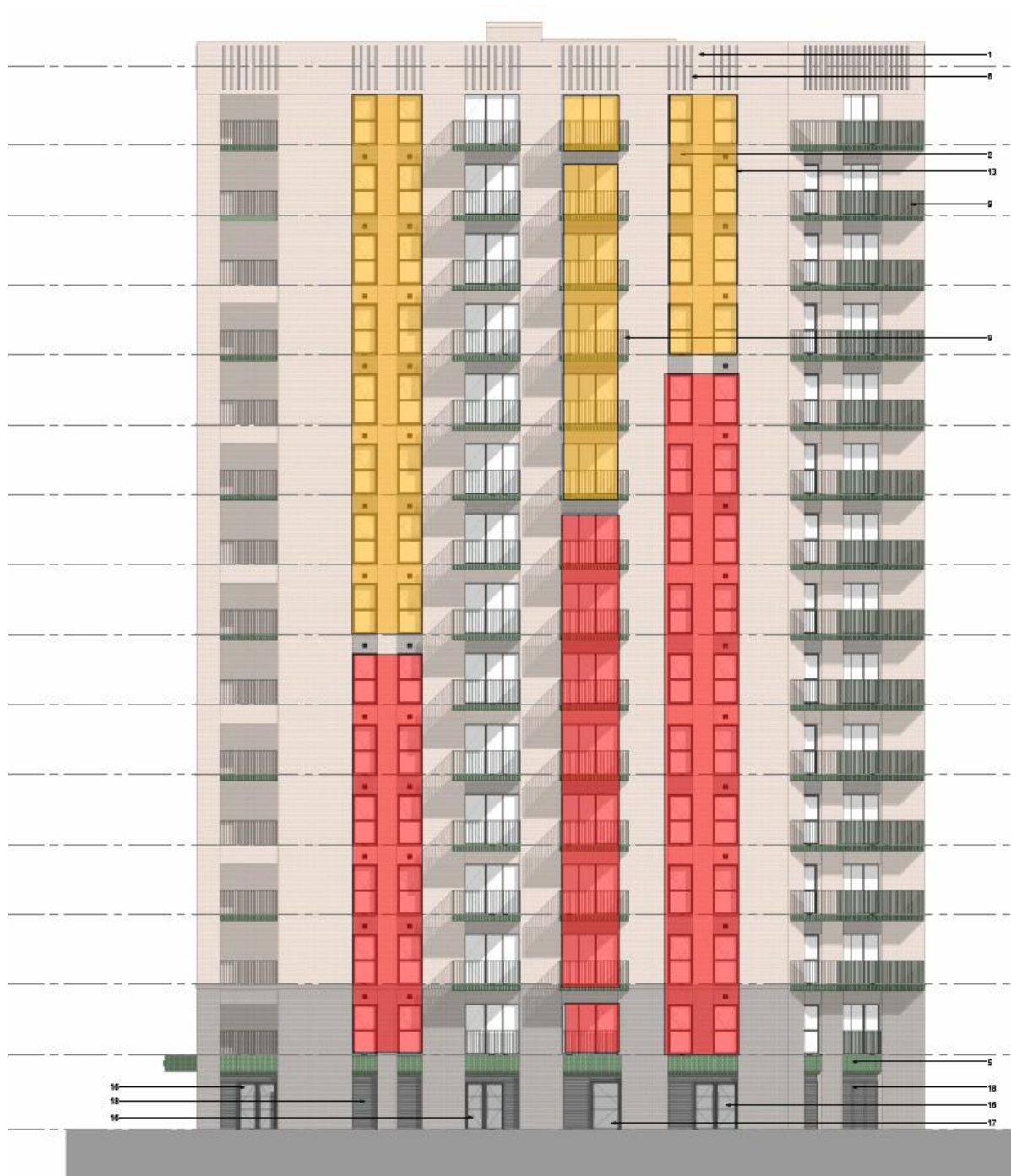
Block A East Elevation:



Block A South Elevation:



Block A West Elevation:



Block B North Elevation:



Block B - North Elevation 01
1 : 100



Block B - North Elevation 02
1 : 100

Block B East Elevation:



Block B - East Elevation 01
1 : 100



Block B - East Elevation 02
1 : 100

Block B South Elevation:



Block B - South Elevation
1 : 100

Block B West Elevation:



Block B - West Elevation 02
1 : 100

Block D East Elevation:



Block D - East Elevation
1:100

Block D South Elevation:



Block D - South Elevation
1:100

Block D West Elevation:



Block D - West Elevation
1 : 100

Block E North Elevation:



Block E - North Elevation
1 : 100

Block E East Elevation:



Block E South Elevation:



Block E West Elevation:





Architectural & Environmental Consultants
Acoustics | Vibration | Air Quality

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