

Cricket Field Road, Uxbridge

Noise Impact Assessment

21105-RP-NIA-01

23 August 2026

Hunter & Partners Limited

Space One
Beadon Road
London
W6 0EA

Document Ref.	Rev.	Date	Author	Comments
21105-RP-NIA-01	-	23 August 2026	Jamie Murray MIOA, Director	-

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1.0 Introduction

1.1 Overview

Murray Acoustics Ltd has been commissioned by Hunter & Partners Limited to undertake a noise impact assessment of the proposed residential care home at the Civic Centre Car Park, Cricket Field Road, Uxbridge, UB8 (herein the Site).

The Site is bounded to the north by Hillingdon Road (A4020) and to the west by Cricket Field Road. The dominant influence on the noise climate at the Site is road traffic noise from Hillingdon Road, with local road traffic on Cricket Field Road a secondary and much lower contributor. There are no industrial or commercial noise sources of consequence in the vicinity; the Civic Centre car park on the opposite side of Hillingdon Road generates only occasional low-level vehicle movements which were not distinguishable from the road traffic stream.

An environmental noise survey has been undertaken at the Site to establish the prevailing conditions, and a three-dimensional noise model of the Site, calibrated against the survey results, has been used to establish the noise levels incident on each facade of the proposed building and within the external areas. The measured and modelled data have been used to assess the suitability of the Site for the proposed use and to derive the acoustic performance requirements of the building envelope.

This report sets out the assessment methodology, findings, and recommended mitigation measures where relevant.

1.2 Site Description

The Site lies within the administrative boundary of the London Borough of Hillingdon, a short distance to the east of Uxbridge town centre. It is currently occupied by a multi-storey car park, which serves the adjacent Civic Centre and which is to be demolished as part of the proposals.

The northern boundary of the Site faces Hillingdon Road (A4020), a classified two-way distributor road, across a landscaped verge. The western boundary fronts Cricket Field Road, beyond which are two-storey residential properties on Cricket Field Road and Whitehall Road. To the south and east the Site adjoins the rear gardens of residential properties on Cricket Field Road and Manor Way. The Civic Centre lies to the north beyond Hillingdon Road.

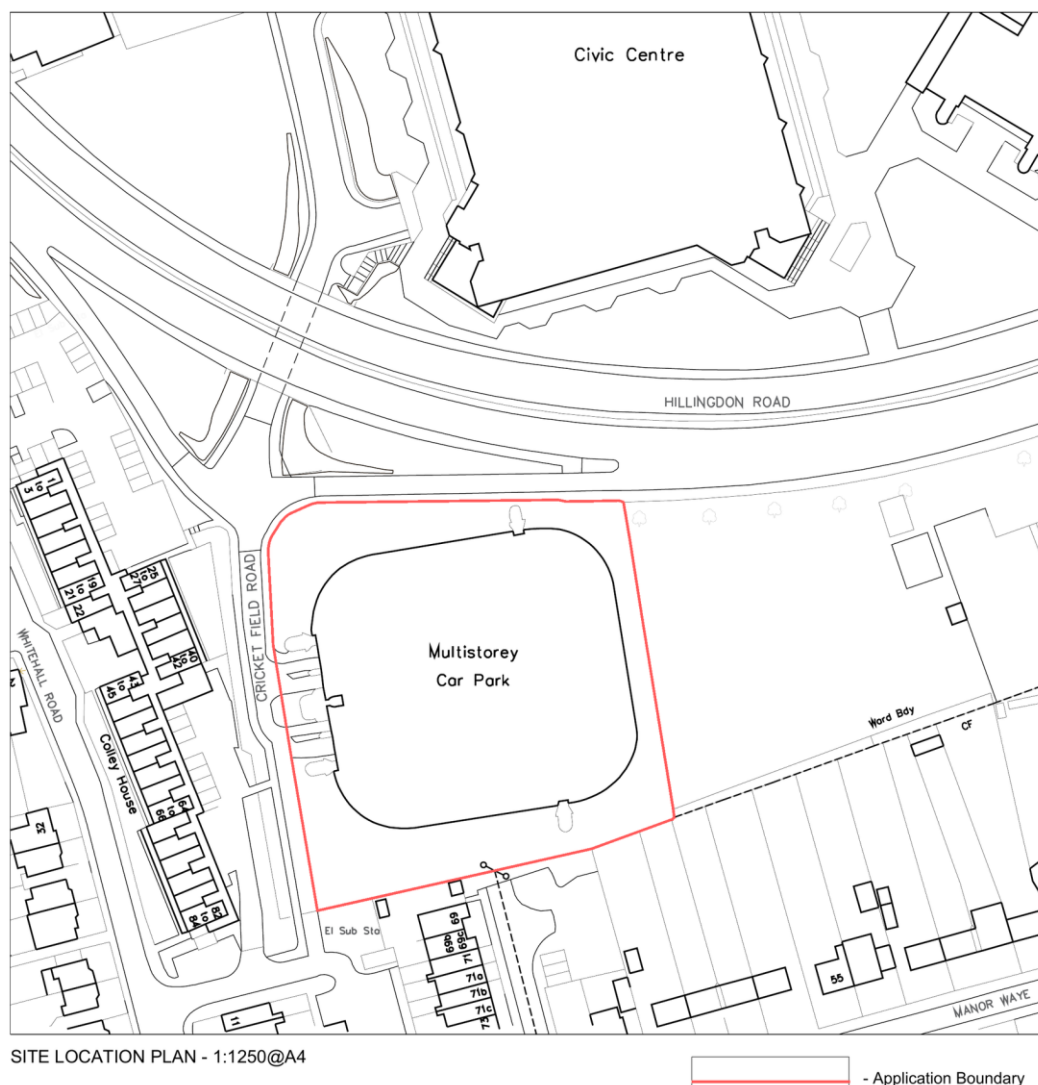


Figure 1.1 Site location plan (reproduced from drawing M10224/APL001 Rev A)

The nearest existing noise-sensitive receptors are the residential properties on the western side of Cricket Field Road, directly opposite the Site, and the residential properties adjoining the southern and eastern Site boundaries. These properties are considered to represent the nearest noise-sensitive receptors (NSRs) for the purposes of assessing noise from the completed development.

1.3 Development Proposals

The proposals comprise the demolition of the existing multi-storey car park and the erection of a residential care home (Use Class C2), together with associated vehicular access, car and cycle parking, hard and soft landscaping and external amenity space.

Bedrooms are arranged in household communities of 8No to 11No beds, each served by its own lounge and dining area.

Landscaped courtyard gardens, incorporating an activity lawn, a sensory garden and seating areas, are provided within the re-entrant angle of the building.



Figure 1.2 Proposed Site layout (reproduced from drawing M10224/APL008 Rev E)

The building is arranged as two principal wings. The north-eastern wing presents its long elevation towards Hillingdon Road, and the western wing fronts Cricket Field Road. Bedrooms on the northern elevation of the north-eastern wing are therefore the most exposed to road traffic noise; bedrooms addressing the courtyard, and those on the southern and eastern elevations, are substantially screened by the building itself.



1.4 Assessment Scope

- internal ambient noise levels within the bedrooms and communal rooms of the proposed care home, assessed with reference to BS 8233:2014 and Health Technical Memorandum 08-01;
- external amenity noise levels within the proposed courtyard gardens, assessed with reference to BS 8233:2014;
- the suitability of openable windows as a means of removing excess heat, assessed with reference to Approved Document O of the Building Regulations;
- the ventilation strategy required to achieve the internal criteria, with reference to Approved Document F and CIBSE Guide A;

- noise from fixed building services plant serving the proposed development at the nearest existing noise-sensitive receptors, assessed with reference to BS 4142:2014+A1:2019; and
- noise and vibration arising from the construction of the development, assessed with reference to BS 5228-1 and BS 5228-2.

There are no railway lines, industrial premises or other significant fixed noise sources in the vicinity of the Site, and ground-borne vibration is not considered to be a constraint on the proposals. No vibration survey has therefore been undertaken.

Sound insulation between rooms within the building, which is governed by Approved Document E of the Building Regulations and by the room-to-room criteria of HTM 08-01, and the internal room acoustics of the communal spaces, are matters for the detailed design and are not addressed in this report.

2.0 Assessment Guidance & Requirements

2.1 Planning Policy

The relevant national planning framework for noise is set out in the National Planning Policy Framework (NPPF) and the Noise Policy Statement for England (NPSE). The NPPF requires planning decisions to avoid, mitigate or reduce to a minimum the adverse impacts of noise on health and quality of life, and to avoid new development being subject to unacceptable levels of noise pollution. The NPSE introduces the concepts of NOEL, LOAEL and SOAEL (No Observed Effect Level, Lowest Observed Adverse Effect Level and Significant Observed Adverse Effect Level).

At the regional level, Policy D14 'Noise' of the London Plan (2021) requires development to manage noise by avoiding significant adverse noise impacts on health and quality of life, by mitigating and minimising the existing and potential adverse impacts of noise without placing unreasonable restrictions on existing noise-generating uses, and by separating new noise-sensitive development from major noise sources through the use of distance, screening, layout, orientation and materials. Where such separation is not possible, the policy requires the adverse effects to be controlled and mitigated through the application of good acoustic design principles. Policy D13 'Agent of Change' places the responsibility for mitigating impacts from existing noise-generating uses on the proposed new noise-sensitive development.

At the local level, Policy EM8 'Land, Water, Air and Noise' of the Hillingdon Local Plan Part 1 (2012) and Policy DMHB 11 'Design of New Development' of the Hillingdon Local Plan Part 2 (2020) require development to protect the amenity of existing and future occupiers and to avoid unacceptable disturbance from noise.

2.2 Local Authority Guidance

The development falls within the jurisdiction of the London Borough of Hillingdon. The Council's Local Validation Checklist requires a Noise and Vibration Impact Assessment to accompany applications for noise-sensitive uses in the vicinity of classified roads, and requires that assessments outline the existing noise environment, the noise sources likely to affect the development and the noise sources arising from the development, together with any mitigation measures. The checklist specifically refers to BS 4142 in respect of plant noise, and requires the sound power levels and resultant site boundary levels of noise-producing machinery to be provided.

At the time of writing no specific noise requirements have been received from the Council's Public Protection Service in respect of this proposal. It is recommended that the plant noise criterion set out in Section 5.0 is confirmed with the Council.

2.3 BS 8233 Assessment Methodology

BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' (herein BS 8233) provides guidance on suitable internal ambient noise levels within residential buildings, along with recommended external amenity noise levels. The guidance draws on the World Health Organization (WHO) 'Guidelines for Community Noise' (1999) and 'Night Noise Guidelines for Europe' (2009).

The internal ambient noise levels recommended by BS 8233 for dwellings are reproduced below. A residential care home is not a dwelling in planning terms, but its bedrooms and communal living rooms serve the same function as those of a dwelling, and the BS 8233 values are therefore adopted as the primary criteria for those rooms.

Table 2.1 Internal ambient noise levels for dwellings (BS 8233:2014)

Activity	Location	07:00-23:00	23:00-07:00
Resting	Living room	35 dB $L_{Aeq,16h}$	-
Dining	Dining room / area	40 dB $L_{Aeq,16h}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16h}$	30 dB $L_{Aeq,8h}$

In addition to the steady internal ambient noise levels above, the WHO 'Night Noise Guidelines for Europe' advise that individual noise events within bedrooms should not regularly exceed 45 dB L_{AFmax} at night, where 'regularly' is generally interpreted as more than 10 to 15 occurrences per night.

For external amenity areas, BS 8233 advises that it is desirable for the external noise level not to exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$. The standard further recognises that these guideline values are not achievable in all circumstances where development might be desirable, and that in higher noise areas a compromise might be warranted, with development designed to achieve the lowest practicable levels in external amenity spaces but not prohibited.

2.4 HTM 08-01 Assessment Methodology

Health Technical Memorandum 08-01 'Acoustics' (herein HTM 08-01) sets out the acoustic design criteria applied to healthcare premises in England. Whilst the proposed development is a residential care home rather than a healthcare facility, it contains a number of clinical and consulting spaces of the type covered by HTM 08-01, and the standard has therefore been referenced for those rooms. The relevant indoor ambient noise levels are reproduced below.

Table 2.2 Indoor ambient noise levels for healthcare spaces (HTM 08-01)

Room type	Daytime 07:00-23:00	Night-time 23:00-07:00
Single-bed ward / recovery	40 dB $L_{Aeq,1h}$	35 dB $L_{Aeq,1h}$, 45 dB L_{AFmax}
Consulting room	40 dB $L_{Aeq,1h}$	-
Treatment room	40 dB $L_{Aeq,1h}$	-
Small office	40 dB $L_{Aeq,1h}$	-

The HTM 08-01 values for a single-bed ward are less onerous than the BS 8233 values for a bedroom. Where the two overlap, the more onerous BS 8233 criteria have been adopted, and HTM 08-01 has been relied upon only for the clinical, consulting and office spaces for which BS 8233 gives no guidance.

2.5 Approved Document O Assessment Methodology

Approved Document O 'Overheating' (herein ADO) of the Building Regulations came into force in June 2022 and applies to new residential buildings in England. Its scope expressly includes institutions, defined as a home, school or other similar establishment where people sleep on the premises, which serve older or disabled people; the proposed care home therefore falls within the scope of ADO. It sets out requirements to limit unwanted solar gains and to provide an adequate means of removing heat from the indoor environment.

Where the strategy for removing excess heat relies upon openable windows, ADO requires consideration of whether external noise makes opening windows unreasonable at night. The indicative criteria adopted are an internal level of 40 dB $L_{Aeq,8h}$ in bedrooms at night (23:00 to 07:00) and 55 dB L_{AFmax} exceeded no more than ten times per night. Where these levels would be exceeded with windows open, either an alternative means of removing excess heat must be provided, or it must be demonstrated that windows can remain closed. Overheating mitigation itself must be led by an overheating specialist.

2.6 Ventilation Guidance

Ventilation to the proposed care home must be identified with reference to Approved Document F, Volume 2 (buildings other than dwellings), such that the internal ambient noise criteria are not compromised. Where trickle ventilators are proposed, an allowance of 2No ventilators per bedroom or communal room has been assumed; where a greater number is required, the sound insulation performance of the ventilator should be

increased by $10 \cdot \log(N/2)$, where N is the number of ventilators serving the room. Any mechanical ventilation system should be designed to achieve the internal noise levels recommended by CIBSE Guide A (2015) and, for the clinical and consulting spaces, HTM 08-01. Purge ventilation may be provided via openable windows, as the internal noise criteria are not applicable during occasional purge ventilation.

2.7 BS 4142 Assessment Methodology

BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' (herein BS 4142) describes a method for assessing the likely effects of sound of an industrial or commercial nature on people living nearby. The method compares the rating level of the specific sound source with the background sound level at the receptor.

The specific sound level is the level produced by the source under assessment at the receptor. A rating penalty of up to +9 dB is then applied to account for the acoustic character of the sound, including tonal, impulsive, intermittent or otherwise distinctive features, to give the rating level. The background sound level is the L_{A90} measured at the receptor in the absence of the specific sound.

BS 4142 states that the greater the difference between the rating level and the background sound level, the greater the magnitude of the impact. A difference of around +10 dB or more is likely to be an indication of a significant adverse impact; a difference of around +5 dB is likely to be an indication of an adverse impact; and where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact. The context in which the sound occurs must also be taken into account.

2.8 BS 5228 Assessment Methodology

BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites - Part 1: Noise' and BS 5228-2:2009+A1:2014 'Part 2: Vibration' (herein BS 5228) set out methods for predicting, assessing and controlling noise and vibration from construction activities.

Annex E of BS 5228-1 sets out the 'ABC method' for determining the threshold of significant effect at residential receptors. For standard daytime working hours the Category A threshold of 65 dB L_{Aeq} applies where the existing ambient level, rounded to the nearest 5 dB, is below the Category A value; Category B applies where it is equal to the Category A value; and Category C applies where it is above. Where the existing ambient noise level already exceeds the applicable threshold, a significant effect is indicated by a total increase in the ambient level of more than 3 dB.

3.0 Environmental Noise Survey

3.1 Procedure

Continuous automated noise measurements were undertaken from 12:46 hours on Wednesday 29 July 2026 until 12:03 hours on Thursday 30 July 2026 at an unattended measurement position on the Hillingdon Road frontage of the Site. Two short attended measurements were additionally undertaken within the Site on the morning of Thursday 30 July 2026.

The unattended logger was initially installed at the entrance gate to the car park at the top of the access stairs, at the position selected as the reference position for the road traffic noise source. At 15:00 hours on 29 July the logger was relocated approximately 15 m to the east, to a more secure position for the overnight period. The two positions lie on the same frontage at the same set-back from the carriageway. The two records have therefore been treated as a single measurement position, MP1, throughout this report. Data were recorded continuously other than during an 18-minute gap between 15:00 and 15:18 hours whilst the logger was moved.

Weather conditions throughout the survey were dry with light winds and were therefore suitable for the measurement of environmental noise.

The measurement procedure complied with ISO 1996-2:2017 Acoustics 'Description, measurement and assessment of environmental noise - Part 2: Determination of sound pressure levels'.

All measurements were undertaken free-field, with the microphone positioned at a height of approximately 1.5 m above local ground level and fitted with a windshield.

3.2 Noise Climate

The noise climate at the Site is governed by road traffic noise from Hillingdon Road. The source is steady and continuous and follows the characteristic diurnal pattern of an urban distributor road, with levels rising sharply from approximately 05:00 hours to a morning peak of 69 dB $L_{Aeq,1h}$ between 07:00 and 09:00 hours, remaining within about 1 dB of that level through the working day, and falling away through the evening to a minimum of 58 dB $L_{Aeq,1h}$ between 02:00 and 05:00 hours.

No other noise source of consequence was identified. Local road traffic on Cricket Field Road, occasional aircraft and birdsong were audible during the attended measurements, but none was dominant. There are no industrial or commercial premises in the vicinity that influence the noise climate at the Site.

3.3 Measurement Positions

Measurement position MP1 was located on the northern boundary of the Site adjacent to Hillingdon Road, at the entrance gate to the car park, with the overnight position approximately 15 m further east along the same boundary. Scaling from the site location plan, MP1 lies approximately 20 m from the near kerb of Hillingdon Road. It is representative of the facades of the proposed building most exposed to road traffic noise.

Attended measurement position MP2 was located on the western frontage of the Site at Cricket Field Road, and is representative of the western elevation of the proposed building. Attended measurement position MP3 was located towards the southern boundary of the Site, at the rear, and is representative of the southern elevations and of the proposed courtyard gardens. Both attended positions are screened from Hillingdon Road by the intervening built form.



Figure 3.1 Noise survey measurement positions

3.4 Equipment

The equipment used during the survey is detailed below. All instrumentation is Class 1 to BS EN 61672-1. The field calibration of each instrument was checked using its associated acoustic calibrator and no significant drift was observed.

Table 3.1 Environmental noise survey equipment

Equipment	Serial No.	Calibration Date
01dB Fusion Sound Level Meter (MP1)	14087	30 Oct 2025
01dB CAL31 Acoustic Calibrator (MP1)	87801	16 Apr 2026
Svantek SVAN 971A Sound Level Meter (MP2, MP3)	176447	25 May 2026
ACO Pacific 7152 Microphone (MP2, MP3)	97310	15 May 2026
Svantek SV33B Acoustic Calibrator (MP2, MP3)	188914	26 May 2026

3.5 Results

A summary of the measured sound levels is presented below. Daytime values relate to the 16-hour period 07:00 to 23:00 hours and night-time values relate to the 8-hour period 23:00 to 07:00 hours. Note that these are free-field sound levels.

Table 3.2 Summary of measured sound levels

Position	Period	$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB)	L_{AFmax} (dB)
MP1 - Hillingdon Road frontage (unattended)	Daytime / 07:00-23:00	68	54	-
MP1 - Hillingdon Road frontage (unattended)	Night-time / 23:00-07:00	62	41	79 / 78

The night-time L_{AFmax} values quoted are the 10th- and 15th-highest 1-minute L_{AFmax} within the 8-hour night, which is the appropriate basis for comparison against the WHO guidance on individual noise events; the highest single value recorded during the night was 85 dB L_{AFmax} .

The full measured sound levels throughout the survey duration are presented graphically in Appendix A.

3.6 Derivation of Levels at the Screened Positions

The attended measurements at MP2 and MP3 were made concurrently with the unattended record at MP1, which allows the attenuation between the exposed frontage and each screened position to be established directly from the measured data. Over the equivalent measurement windows the results are as follows.

Table 3.3 Measured level difference between MP1 and the attended positions

Position	MP1, same window L_{Aeq} (dB)	Attended L_{Aeq} (dB)	ΔL_{Aeq} (dB)
MP2 - Cricket Field Road	68	53	-15.6
MP3 - southern boundary	68	46	-21.9

Applying the measured attenuation to the full-period levels at MP1 gives the following derived sound levels at the two screened positions. Only the L_{Aeq} and the night-time L_{AFmax} are derived in this way: the governing source is the same at all three positions, so the measured attenuation transfers directly to those parameters. The derived night-time L_{AFmax} values are the 10th- and 15th-highest 1-minute maxima at MP1 reduced by the measured L_{Aeq} difference. Background L_{A90} levels have not been derived; the background sound levels used in the plant noise assessment are the measured values at MP1, as set out in Section 5.0. The derived values are calculated from the unrounded measured levels and may therefore differ by 1 dB from the same calculation performed on the rounded values presented in Tables 3.2 and 3.3.

Table 3.4 Derived sound levels at the attended positions

Position	Period	$L_{Aeq,T}$ (dB)	Night-time L_{AFmax} (dB)
MP2 - Cricket Field Road	Daytime / 07:00-23:00	53	-
MP2 - Cricket Field Road	Night-time / 23:00-07:00	47	63 / 62
MP3 - southern boundary	Daytime / 07:00-23:00	46	-
MP3 - southern boundary	Night-time / 23:00-07:00	41	57 / 56

It is emphasised that both attended measurements were undertaken at a height of 1.5 m above ground level. The screening from which they benefit reduces with height, and the upper storeys of the proposed building are more exposed than these figures suggest. The noise model described in Section 4.0 accounts for this directly, and the facade specifications set out in that section are based on the modelled facade levels at each floor.

4.0 Noise Impact Assessment

4.1 Criteria

The internal ambient noise criteria adopted for the assessment of the proposed care home are set out below. They comprise the BS 8233 values for the resident bedrooms and communal living rooms, supplemented by the WHO guidance on individual night-time noise events and by the HTM 08-01 values for the clinical and consulting spaces.

Table 4.1 Internal and external noise criteria adopted

Room type	Period	Criterion	Source
Resident bedroom	Daytime 07:00-23:00	35 dB $L_{Aeq,16h}$	BS 8233
Resident bedroom	Night-time 23:00-07:00	30 dB $L_{Aeq,8h}$	BS 8233
Resident bedroom (individual events)	Night-time 23:00-07:00	45 dB L_{AFmax} , not regularly exceeded	WHO / HTM 08-01
Lounge / communal living room	Daytime 07:00-23:00	35 dB $L_{Aeq,16h}$	BS 8233
Dining room / area	Daytime 07:00-23:00	40 dB $L_{Aeq,16h}$	BS 8233
External amenity area	Daytime 07:00-23:00	50 dB $L_{Aeq,T}$ desirable, 55 dB $L_{Aeq,T}$ upper guideline	BS 8233

Bedrooms within a residential care home differ from those in a dwelling in that they are used for resting throughout the day as well as for sleeping at night. The daytime bedroom criterion of 35 dB $L_{Aeq,16h}$ has therefore been applied to every bedroom, and not only to those bedrooms which also serve as living space.

4.2 Acoustic Barrier

The landscape proposals show a 2 m high close-boarded timber fence to the northern and eastern Site boundaries. **It is proposed that this fence is increased in height to 3 m** and constructed as an acoustic barrier, in order to reduce noise levels within the Site, and within the ground-floor rooms and external areas in particular, so far as is reasonably practicable. The noise barrier should:

- Be solid, homogenous and imperforate, with no gaps
- Be of a mass of no less than 15 kg/m²
- Be of a relative height of no less than 3 m above the local ground level

- Be continuous, with no gaps at its base or between adjoining panels, and with any gates or access doors formed to the same mass and close fitting
- Be maintained in that condition for the lifetime of the development

A surface mass of 15 kg/m² is readily achieved by close-boarded timber fencing of at least 18 mm finished board thickness with boards lapped or rebated so that no gaps open as the timber dries, or by a proprietary acoustic fencing system; the specification is not onerous and does not require a specialist product. The 3 m height is measured relative to the finished ground level of the areas which the barrier serves. It is recommended that the position, extent and specification of the barrier are shown on the landscape drawings and secured by planning condition.

All specifications and assessment set out in the following sections assume that the acoustic barrier described above is in place.

4.3 Noise Modelling

In order to establish the noise levels incident upon each facade of the proposed building, a three-dimensional noise model of the Site and its surroundings has been constructed using CadnaA environmental noise prediction software. Road traffic noise from Hillingdon Road and Cricket Field Road has been modelled in accordance with the Calculation of Road Traffic Noise (CRTN) methodology, with propagation calculated in accordance with ISO 9613-2. The model has been calibrated against the sound levels measured at MP1, MP2 and MP3 during the survey, the attended positions providing the check on the screening afforded by the intervening built form.

Noise levels have been calculated at receiver points on every facade of the proposed building at each floor level, and over a receiver grid at 1.5 m above ground across the Site. Three parameters have been calculated: the daytime $L_{Aeq,16hr}$, the night-time $L_{Aeq,8h}$ and the night-time L_{AFmax} . The facade levels quoted in this section include the +3 dB facade reflection correction and are therefore directly comparable with the internal noise criteria via the sound insulation of the envelope.

The model incorporates the proposed building massing, the local topography and the surrounding buildings, together with the 3 m acoustic barrier, and the model outputs are presented in Appendix B. The facade zones, glazing and ventilation specifications set out in the following sections are derived from the modelled facade levels.

4.4 Facade Zones

The predicted facade noise levels follow a consistent pattern. The highest levels occur on the northern elevation facing Hillingdon Road, with daytime facade levels of 67 to

69 dB $L_{Aeq,16h}$ at all floors. The courtyard and southern facades are well screened, at 57 dB $L_{Aeq,16h}$ or less. The night-time $L_{Aeq,8h}$ and L_{AFmax} levels follow the same spatial pattern.

Facade zones have been assigned per below, named by the colours used on the figures:

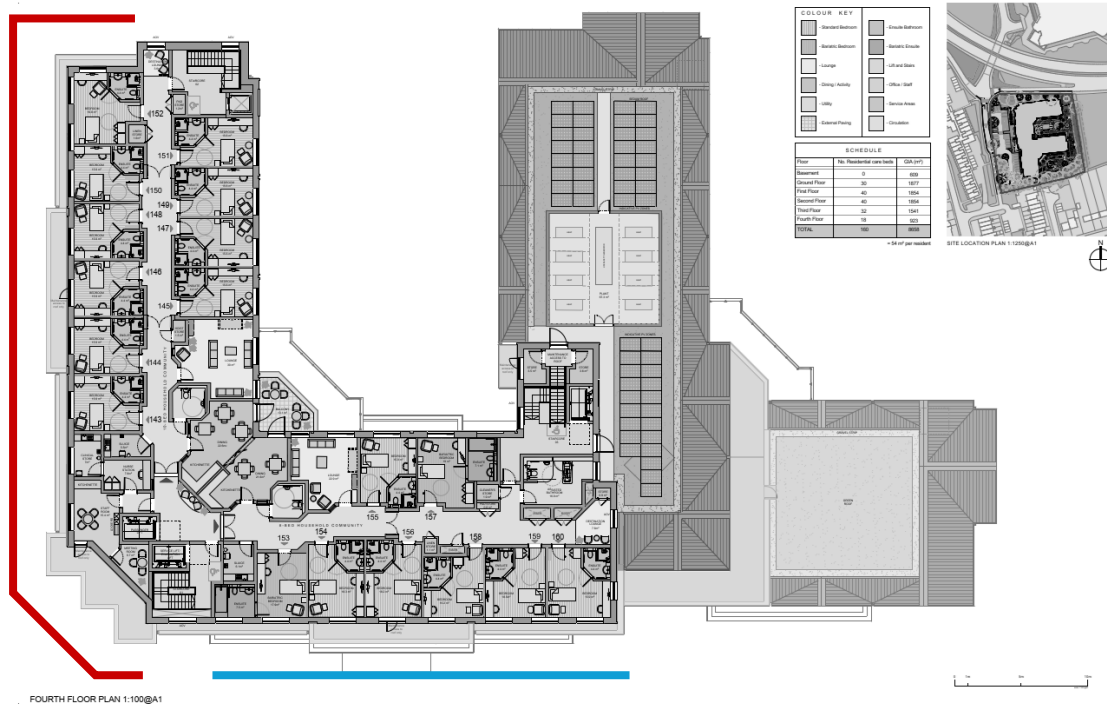
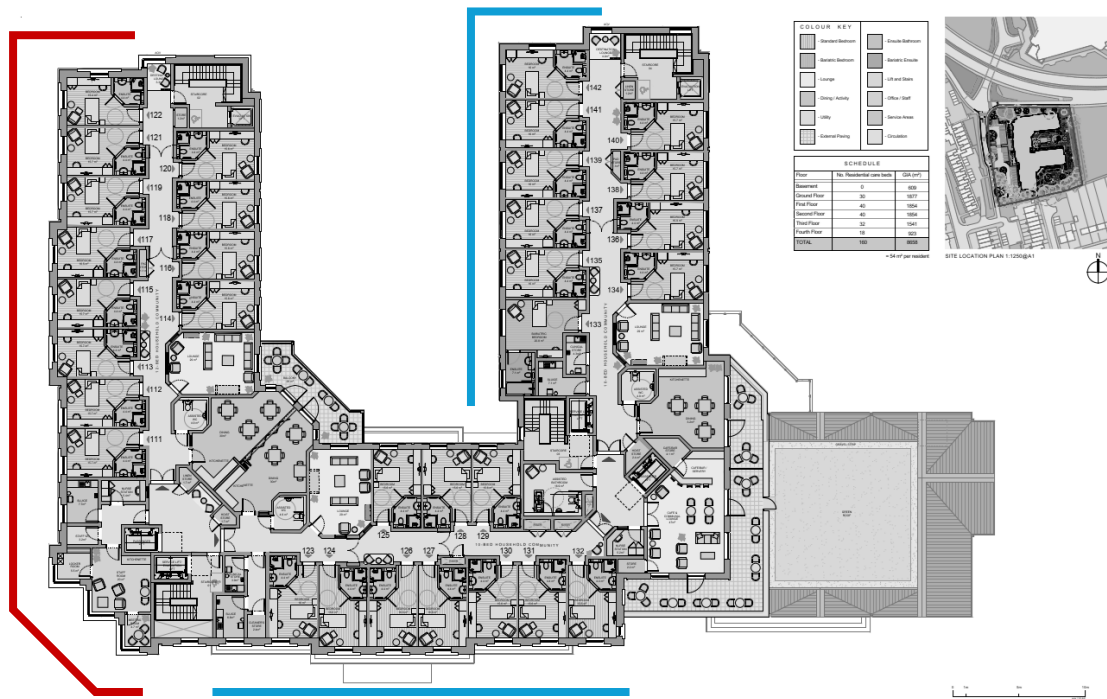
- Zone A (**red**) - the most exposed facades: the northern elevation to Hillington Road, and the northern half of the eastern gable of the northern wing above ground floor level
- Zone B (**blue**) - facades set further back but still affected by noise from the main road
- Zone C (not highlighted) - all other facades, including the courtyard elevations and the southern parts of the building

The zones vary over the height of the building, because the screening provided by the 3 m boundary barrier and by the surrounding built form is greatest at ground floor level and reduces with height. The extent of each zone at each floor level is shown on the figures below. Where a facade is not highlighted, Zone C applies.

Note that these zones apply to habitable rooms only.



Figure 4.1 Glazing and ventilation zones - ground floor to second floor



M10224/APL103 Rev A, the build-up should be confirmed as achieving the same performance, and particular attention is required to the roof construction over the fourth-floor bedrooms, which sit within the roof form.

4.6 Glazed Elements

The minimum acoustic performance required of the glazing in each zone is set out below. The zones are as described in Section 4.4 and shown floor by floor on Figures 4.1 to 4.3.

Table 4.2 Minimum glazing performance by zone

Zone	Minimum glazing performance	Indicative specification
Zone A	$R_w + C_{tr}$ 35 dB	Acoustic double glazing with a laminated pane, e.g. 8.8 mm acoustic laminate / 16 mm cavity / 6 mm
Zone B	$R_w + C_{tr}$ 30 dB	Asymmetric double glazing, e.g. 10 mm / 16 mm cavity / 6 mm
Zone C	$R_w + C_{tr}$ 26 dB	Standard double glazing with panes of dissimilar thickness, e.g. 6 mm / 16 mm cavity / 4 mm

The specifications given above are indicative only and are provided to demonstrate that the required performance is readily achievable with commercially available units. Secondary glazing is not required anywhere on the building. The Zone A requirement of $R_w + C_{tr}$ 35 dB is achievable in a conventional sealed double-glazed unit incorporating an acoustic laminated pane; the frame, seals and installation detailing are as important as the glass build-up, and the achieved performance should be confirmed by test data from the selected supplier.

The above shall be subject to further detailed design as the project progresses.

4.7 Ventilation

4.7.1 Normal Ventilation

Ventilation to the proposed care home should be provided such that the internal ambient noise criteria set out in Table 4.1 are achieved with windows closed. Where background ventilation is provided by trickle ventilators, the ventilators serving bedrooms and communal rooms should achieve the element-normalised level difference set out below. Where more than 2No ventilators serve a single room, the required performance should be increased by $10 \cdot \log(N/2)$, N being the number of ventilators serving the room.

Table 4.3 Minimum ventilator acoustic performance by zone

Zone	Minimum ventilator performance (2No per room)	Equivalent for 3No per room
Zone A	$D_{n,e,w} + C_{tr}$ 41 dB	$D_{n,e,w} + C_{tr}$ 43 dB
Zone B	$D_{n,e,w} + C_{tr}$ 36 dB	$D_{n,e,w} + C_{tr}$ 38 dB
Zone C	$D_{n,e,w} + C_{tr}$ 32 dB	$D_{n,e,w} + C_{tr}$ 34 dB

Acoustic trickle ventilators achieving $D_{n,e,w} + C_{tr}$ of up to approximately 44 dB are commercially available, and the Zone A requirement of 41 dB (43 dB where 3No ventilators serve a room) is therefore within the range of proprietary acoustic units. Trickle ventilation is accordingly feasible on every elevation. Notwithstanding this, a care home of this scale would in any event be expected to be served by a mechanical ventilation system, and it is recommended that mechanical ventilation is provided throughout, designed to the internal noise levels of CIBSE Guide A and, for the clinical and consulting spaces, HTM 08-01. This removes the reliance on ventilator performance on the exposed elevations and provides greater design flexibility.

4.7.2 Overheating (Approved Document O)

Where the strategy for removing excess heat relies upon openable windows, the internal noise levels achieved with windows open have been considered against the ADO criteria of 40 dB $L_{Aeq,8h}$ and 55 dB L_{AFmax} at night. An open window is conventionally assumed to provide a level difference of approximately 13 to 15 dB.

On that basis the ADO night-time criterion of 40 dB $L_{Aeq,8h}$ with windows open would be met where the facade night-time level does not exceed approximately 53 to 55 dB $L_{Aeq,8h}$, and the 55 dB L_{AFmax} criterion where the facade maximum level does not exceed approximately 68 to 70 dB L_{AFmax} . The Zone C facades, which comprise the courtyard elevations and the southern parts of the building, are predicted to experience night-time levels of up to 55 dB $L_{Aeq,8h}$ and maxima of up to 70 dB L_{AFmax} , and windows may therefore generally be relied upon as a means of removing excess heat for rooms on those facades. Rooms on the Zone A and B facades would exceed one or both criteria with windows open, with facade levels rising to 63 dB $L_{Aeq,8h}$ and 79 dB L_{AFmax} on the northern elevation, and an alternative means of removing excess heat will be required to those rooms so that windows may remain closed at night.

The overheating strategy itself must be led by an overheating specialist, and this assessment should be read alongside the dynamic thermal model for the development. Further input may be required room by room in coordination with the overheating assessment as the ventilation and overheating design develops.

4.8 External Amenity Areas

The proposed external amenity space comprises the two landscaped courtyard gardens set within the re-entrant angles of the building, the sensory gardens and further garden areas at the southern end of the Site, and the informal landscaped and wildlife areas along the eastern boundary. All of these spaces are screened from Hillingdon Road by the building itself, which forms a continuous five-storey barrier along the northern frontage, supplemented by the 3 m acoustic barrier to the northern and eastern boundaries described in Section 4.3.

With the barrier in place, the predicted daytime levels within the southern part of the Site, including the southern courtyard garden and the garden areas along the southern boundary, are below the 55 dB $L_{Aeq,16h}$ upper guideline value of BS 8233. The north-eastern courtyard garden, which lies nearer to Hillingdon Road and is influenced by noise passing over and around the building, is predicted to experience between 55 and 60 dB $L_{Aeq,16h}$, marginally above the upper guideline value. The predicted external noise levels are presented in Appendix B.

The model is, moreover, considered to be conservative within the screened parts of the Site. It has been calibrated against MP1 on the exposed Hillingdon Road frontage, and the attended measurements within the Site recorded levels below the model's predictions at the equivalent locations: the derived daytime level at MP3, within the screened southern part of the Site, is 46 dB $L_{Aeq,16h}$ against predicted levels of 50 to 55 dB $L_{Aeq,16h}$ in that area, with a similar margin at MP2 on the western frontage. The predicted levels within the amenity areas, including the marginal exceedance within the north-eastern courtyard garden, are therefore likely to overstate the levels that will actually occur.

BS 8233 recognises that its external amenity guideline values will not be achievable in all circumstances where development is nonetheless desirable, and states:

"...it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited."

The Site fronts the A4020 Hillingdon Road, one of the principal radial road corridors of west London, in an established urban area. The circumstances described by BS 8233 therefore apply directly to this Site, and the appropriate test is whether the development has been designed to achieve the lowest practicable noise levels within its external amenity spaces. The following measures have been incorporated into the design for that purpose:

- The building itself is placed along the Hillingdon Road frontage as a continuous five-storey screen between the road and the amenity space, which is the single most effective measure available on this Site
- The 2 m close-boarded boundary fence shown on the landscape proposals is increased to a 3 m acoustic barrier along the northern and eastern boundaries
- The principal garden spaces are concentrated in the screened southern and eastern parts of the Site, and the courtyard gardens are enclosed on their most exposed sides by the wings of the building

Every practicable measure to reduce noise within the external amenity areas has therefore been incorporated into the scheme, and the residual levels are the lowest that can reasonably be achieved on this Site and, on the evidence of the attended measurements, are likely to be lower in practice than predicted. The southern garden areas meet the BS 8233 upper guideline value in full, and the north-eastern courtyard exceeds it only marginally while remaining usable, sheltered amenity space, with the fully compliant southern gardens available to all residents. On that basis, and having regard to the guidance of BS 8233 set out above, it is considered that the external amenity provision is acceptable and that the development should not be prohibited on external amenity noise grounds.

5.0 Fixed Plant Noise Assessment

5.1 Overview

A care home of this scale will require fixed building services plant, likely to include air source heat pumps or chillers, ventilation plant, kitchen extract, and standby generation. No plant schedule, plant locations or manufacturers' sound data are available at the time of writing. This section therefore establishes the noise limits which the plant installation must satisfy, so that the mechanical design can proceed against a defined target. A full BS 4142 assessment should be undertaken once the plant selection and locations are known.

5.2 Nearest Noise-Sensitive Receptors

The nearest existing noise-sensitive receptors to the proposed development are:

- **R1** - the two-storey residential properties on the western side of Cricket Field Road and on Whitehall Road, directly opposite the western Site boundary and approximately 20 m from it; and
- **R2** - the residential properties adjoining the southern and eastern Site boundaries, on Cricket Field Road and Manor Waye, whose rear gardens abut the Site.

There are no noise-sensitive receptors to the north of the Site, the Civic Centre and its car park lying on the opposite side of Hillingdon Road.

5.3 Plant Noise Limits

In order to demonstrate a low impact under BS 4142, the rating level of the proposed plant should not exceed the background sound level at the nearest noise-sensitive receptor.

Table 5.1 Plant noise limits at the nearest noise-sensitive receptors

Period	Reference time interval	Background L_{A90} (dB)	Plant rating level limit, $L_{A,Tr}$ (dB)
Daytime / 07:00-23:00	1 hour	54	54
Night-time / 23:00-07:00	15 minutes	41	41

The limits above are free-field values at the nearest noise-sensitive receptor, consistent with the free-field basis on which the background sound levels were measured, and

apply to the cumulative contribution of all plant operating in the relevant period. Where any item of plant exhibits tonal, impulsive or otherwise distinctive acoustic characteristics, a rating penalty of up to +9 dB will apply under BS 4142 and the specific sound level must be correspondingly lower.

The following measures are recommended to be incorporated into the mechanical design from the outset:

- locate plant on the northern side of the building, or at roof level set back behind a parapet or screen, so that the building mass screens the plant from the receptors to the west and south;
- avoid siting plant at low level adjacent to the western, southern or eastern Site boundaries;
- select plant with low sound power levels and, where available, specify night-time or quiet operating modes for equipment which must run continuously;
- provide attenuation to ventilation intakes and discharges, and anti-vibration mountings to all rotating plant; and
- provide acoustic screening or enclosures where the above measures alone are insufficient.

A full BS 4142 assessment, incorporating manufacturers' sound power data and the final plant locations, should be undertaken once the mechanical design is developed and prior to the discharge of any plant noise planning condition.

6.0 Construction Noise & Vibration

6.1 Overview

No contractor has been appointed at this stage and detailed construction methodologies, plant selections and programme information are therefore not available. The following assessment is initial and indicative, undertaken on a reasonable worst-case basis. It is recommended that a Construction Noise and Vibration Management Plan (CNMP) is prepared by the appointed contractor and secured by planning condition.

The proposals involve the demolition of an existing multi-storey car park, which is a noisier activity than new build construction and which will take place close to the Site boundaries. The demolition methodology and its noise and vibration control measures should be addressed explicitly within the CNMP.

6.2 Construction Noise

The nearest existing noise-sensitive receptors to the construction works are the residential properties opposite the western Site boundary on Cricket Field Road (R1) and those adjoining the southern and eastern boundaries (R2). The derived daytime ambient noise levels at those receptors are 53 dB $L_{Aeq,16h}$ and 46 dB $L_{Aeq,16h}$ respectively. Rounded to the nearest 5 dB these are 55 dB and 45 dB, both of which are below the Category A value of 65 dB, giving Category A under the ABC method of BS 5228-1 Annex E at both receptors. The threshold of significant effect for standard daytime working is therefore 65 dB L_{Aeq} at both receptors.

It is not unusual for construction noise levels to approach or exceed the threshold of significant effect for limited periods during the noisiest activities, and that is particularly so for demolition works at close range. The application of best practicable means (BPM), as determined within the CNMP, is the established mechanism for controlling such effects. It is recommended that working hours are restricted to 08:00 to 18:00 hours Monday to Friday and 08:00 to 13:00 hours on Saturdays, with no working on Sundays or Bank Holidays, unless otherwise agreed with the Council.

6.3 Construction Vibration

Vibration during construction would principally arise from the demolition works, any piling operations, vibratory compaction of the ground and the movement of heavy plant. Given the proximity of the Site boundaries to existing dwellings, the risk of vibration being perceptible at the nearest receptors is considered to be moderate, although the risk of cosmetic damage is low. Guide values for the onset of cosmetic damage in residential structures are given in BS 5228-2 and BS 7385-2 and are reproduced below.

Table 6.1 Vibration guide values (BS 5228-2 / BS 7385-2)

Effect	Guide value
Vibration just perceptible in residential environments	0.14 to 0.3 mm/s PPV
Vibration likely to give rise to complaint	1.0 mm/s PPV
Cosmetic damage, unreinforced or light framed structures	15 mm/s PPV at 4 Hz, rising to 20 mm/s at 15 Hz and 50 mm/s at 40 Hz and above

It is recommended that the CNMP adopts an action trigger of 0.3 mm/s PPV and a not-to-exceed limit of 1.0 mm/s PPV at the nearest residential facades for continuous vibratory activities, that a pre-condition survey of the adjoining properties is undertaken prior to the commencement of demolition, and that vibration monitoring is provided during the demolition and any piling works.

7.0 Conclusion

Murray Acoustics Ltd has been commissioned by Hunter & Partners Limited to undertake a noise impact assessment of the proposed residential care home at the Civic Centre Car Park, Cricket Field Road, Uxbridge. An environmental noise survey has been undertaken at the Site over 29 and 30 July 2026.

The noise climate at the Site is governed by road traffic noise from Hillingdon Road (A4020) along the northern boundary.

A three-dimensional noise model of the Site, calibrated against the survey results, has been used to establish the acoustic performance required of the building envelope. Three facade zones have been identified. The most exposed facades, comprising the Hillingdon Road frontage and the northern part of the eastern gable of the northern wing, require glazing of $R_w + C_{tr}$ 35 dB; facades set further back but still affected by road traffic noise require $R_w + C_{tr}$ 30 dB; and all other facades require $R_w + C_{tr}$ 26 dB. The extent of each zone at each floor level is shown on Figures 4.1 to 4.3. With the specified envelope in place the internal ambient noise criteria of BS 8233 and HTM 08-01 are expected to be achieved throughout.

On the Zone A and B facades the Approved Document O criteria would be exceeded with windows open at night, and an alternative means of removing excess heat will be required to those rooms so that windows may remain closed; rooms on the courtyard facades may rely on openable windows.

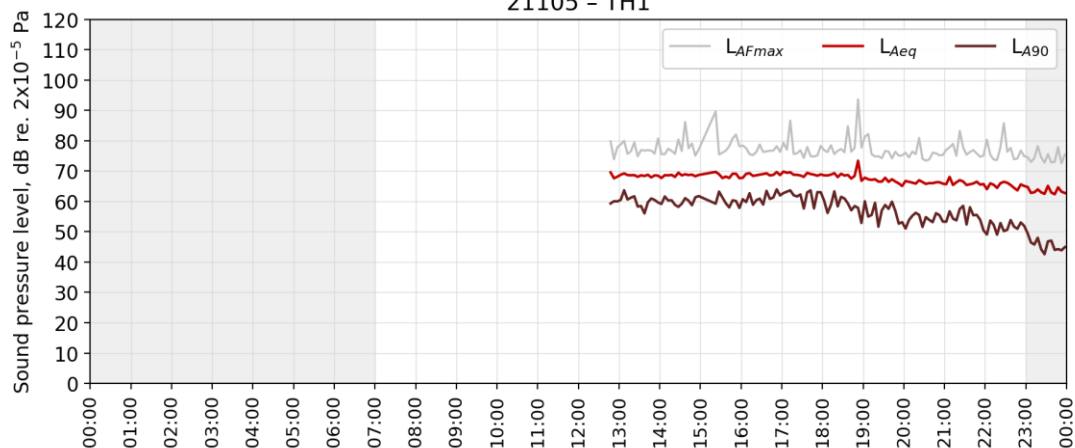
A 3 m acoustic barrier is proposed to the northern and eastern boundaries, formed by increasing the height of the 2 m close-boarded fence already shown on the landscape proposals. With the barrier in place the southern garden areas meet the BS 8233 external amenity upper guideline value and the north-eastern courtyard garden exceeds it only marginally; the attended measurements within the Site indicate that the model over-predicts within these screened areas, and levels in practice are expected to be lower than predicted. The development has been designed to achieve the lowest practicable noise levels within its external amenity spaces, in accordance with the approach that BS 8233 commends for urban sites adjoining busy transport corridors, and external amenity noise should not weigh against the grant of permission.

Noise limits for the fixed building services plant have been established at 54 dB $L_{Ar,1h}$ during the day and 41 dB $L_{Ar,15min}$ at night at the nearest noise-sensitive receptors, on the basis of a rating level not exceeding the background sound level measured at MP1 on the Hillingdon Road frontage. The adopted background values should be agreed with the Council's Public Protection Service, and a full BS 4142 assessment should be undertaken once the plant selection and locations are known.

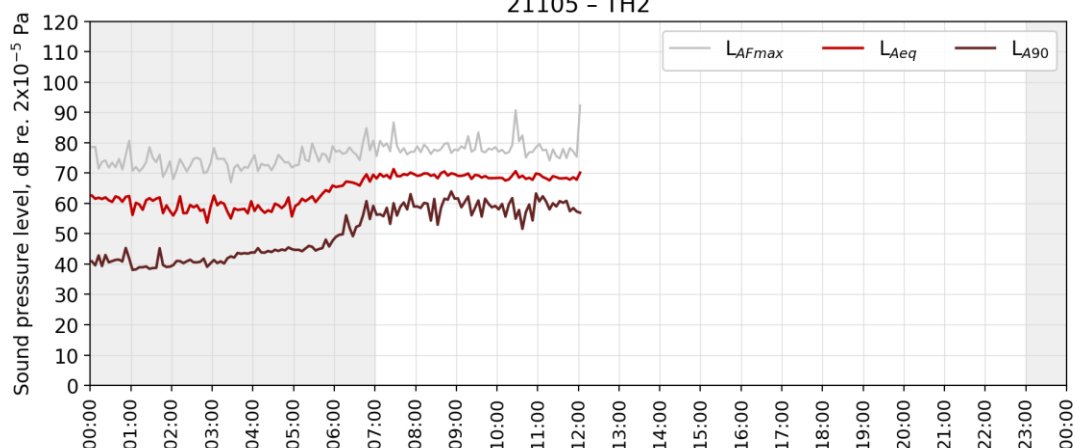
Subject to the incorporation of the building envelope specification, ventilation strategy and plant noise limits set out in this report, it is considered that a suitable internal and external acoustic environment can be provided for the future residents of the proposed care home, and that the development can be delivered without unacceptable noise impact upon existing receptors.

Appendix A - Environmental Noise Survey Results

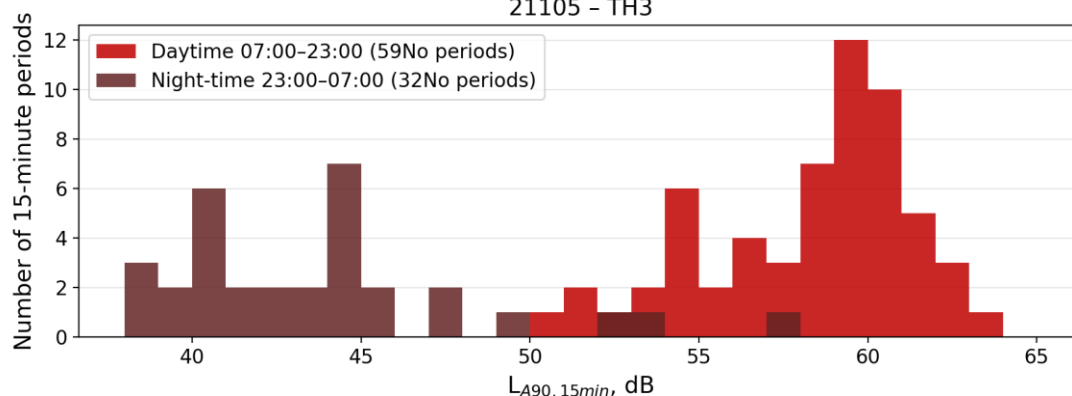
Civic Centre Car Park, Cricket Field Road, Uxbridge
MP1 - Hillingdon Road frontage - Wednesday 29 July 2026
21105 - TH1



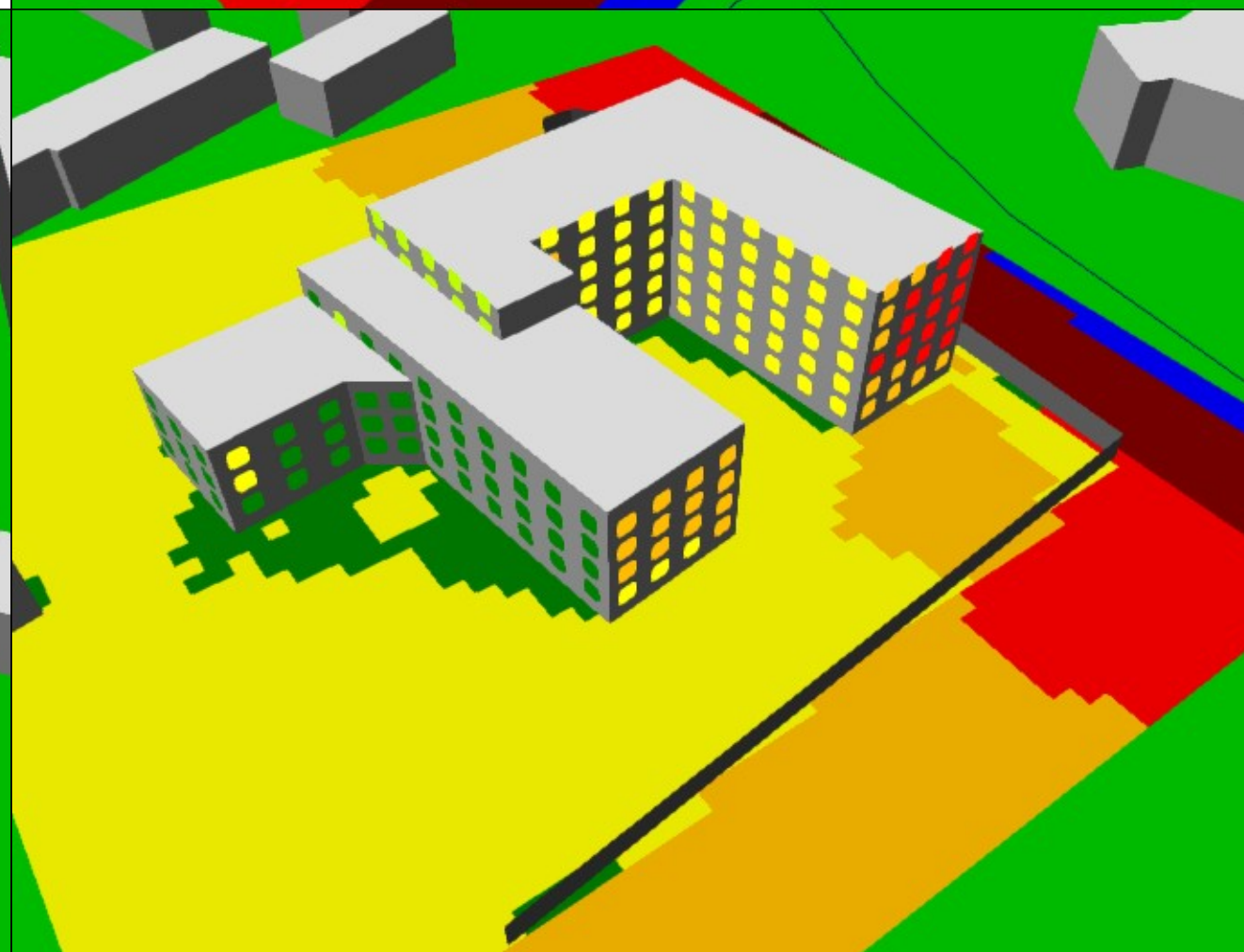
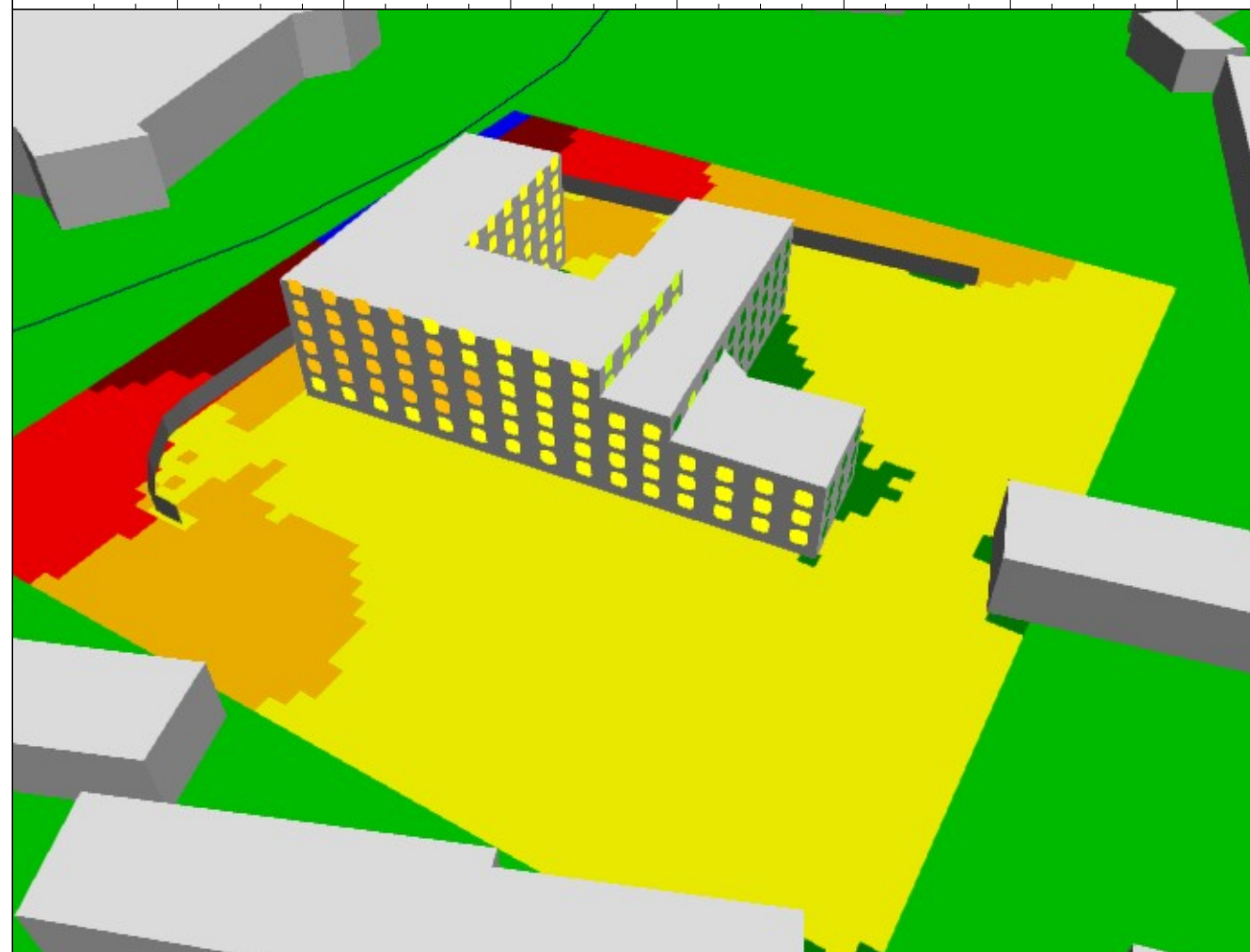
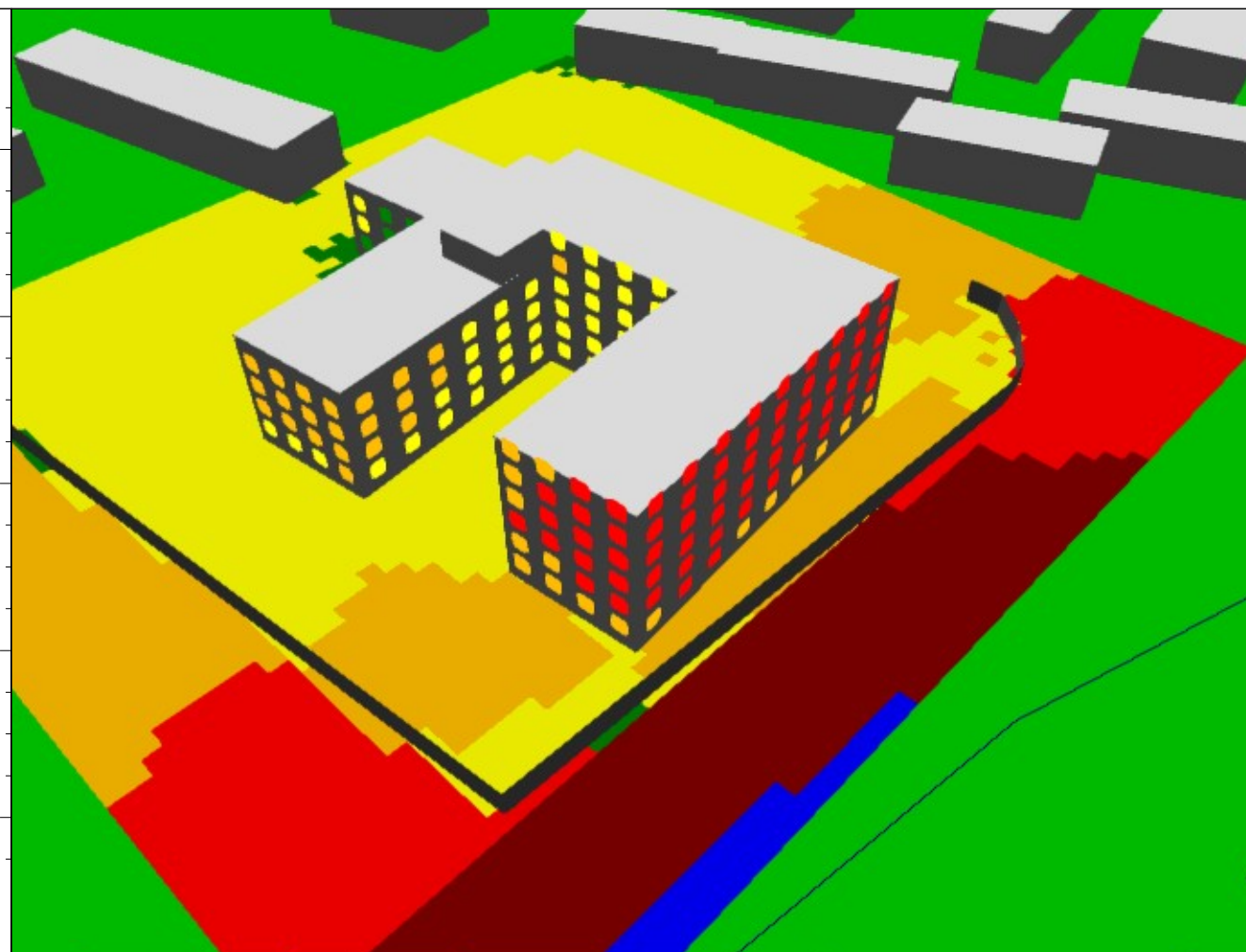
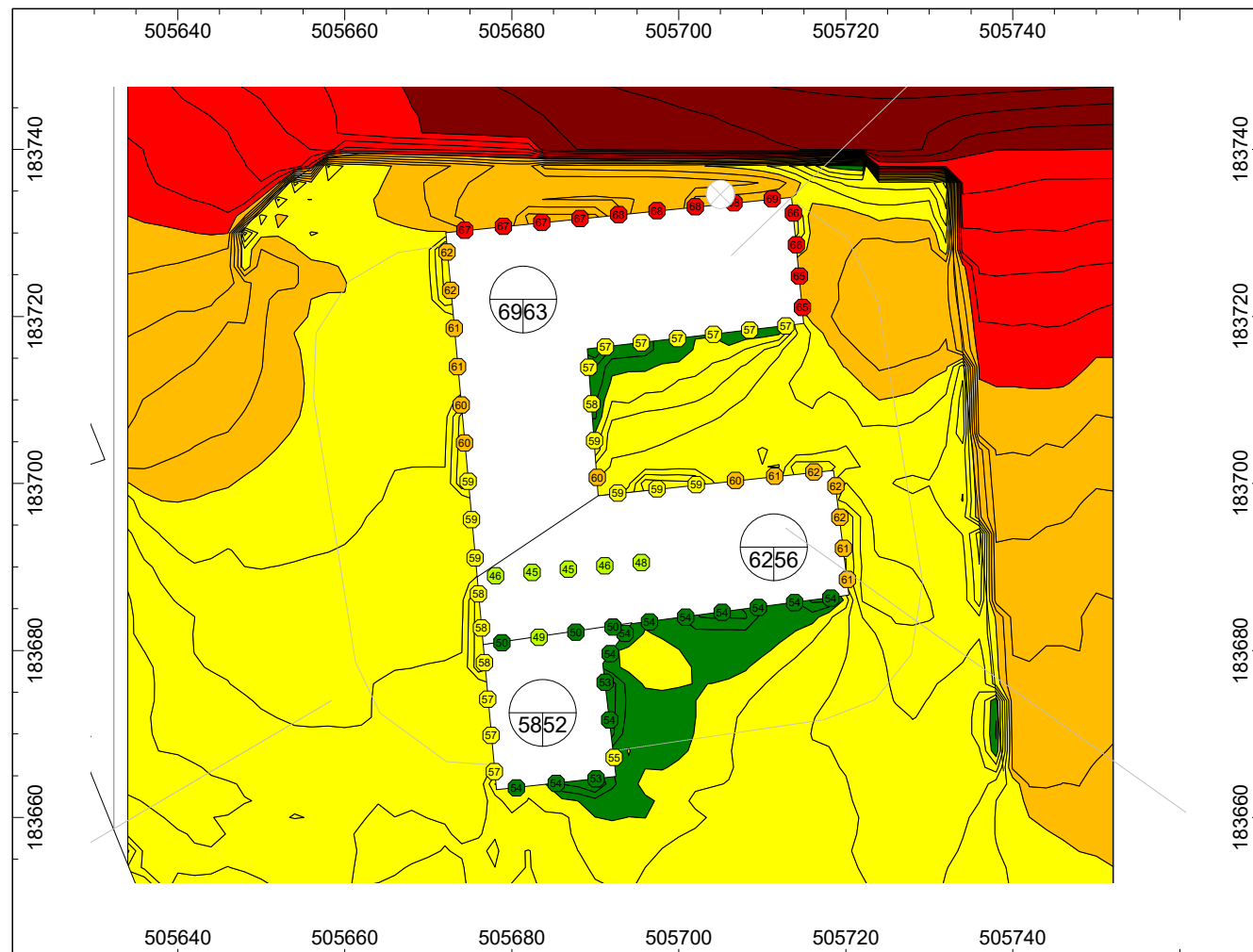
Civic Centre Car Park, Cricket Field Road, Uxbridge
MP1 - Hillingdon Road frontage - Thursday 30 July 2026
21105 - TH2



Civic Centre Car Park, Cricket Field Road, Uxbridge
MP1 - Distribution of measured background sound level
21105 - TH3

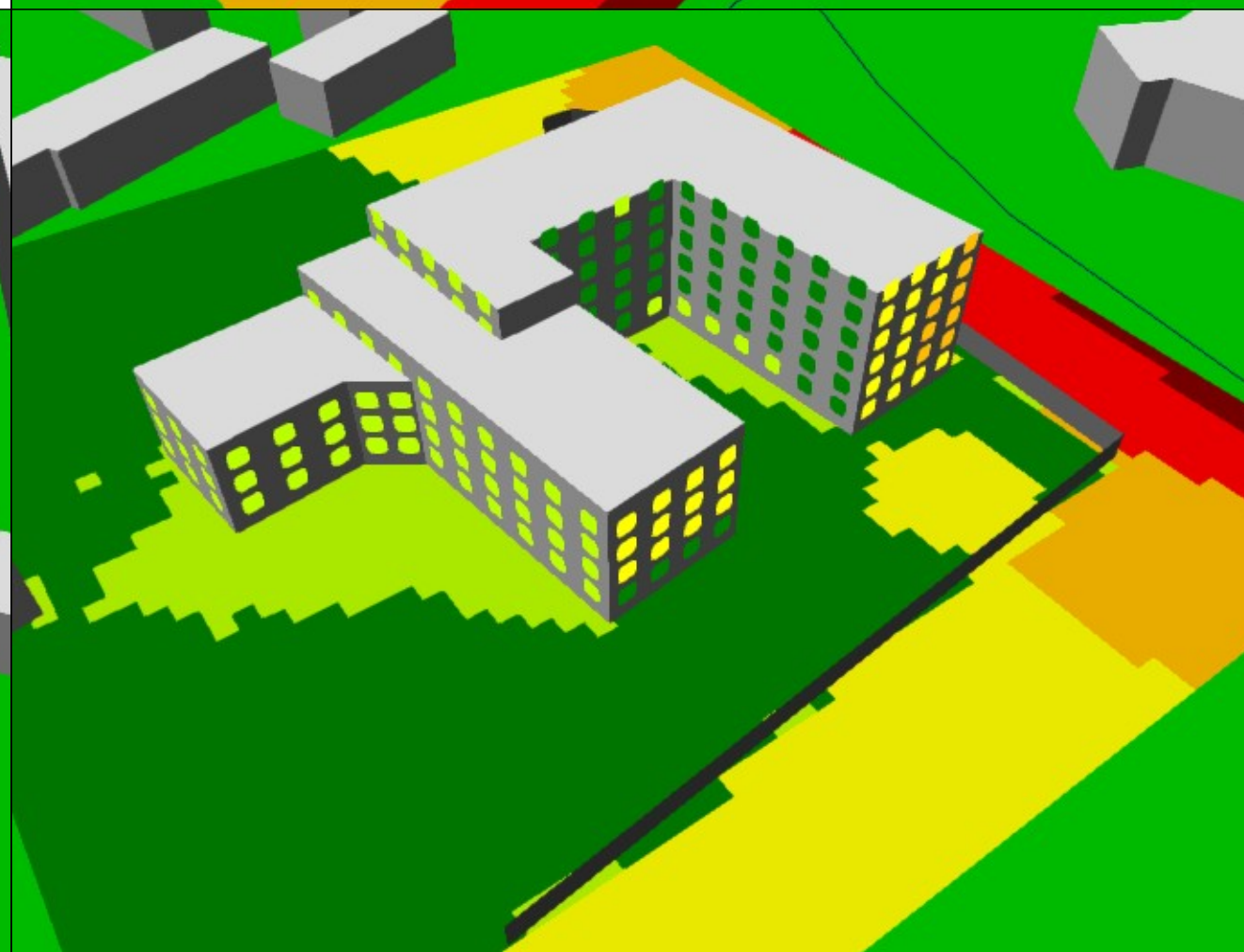
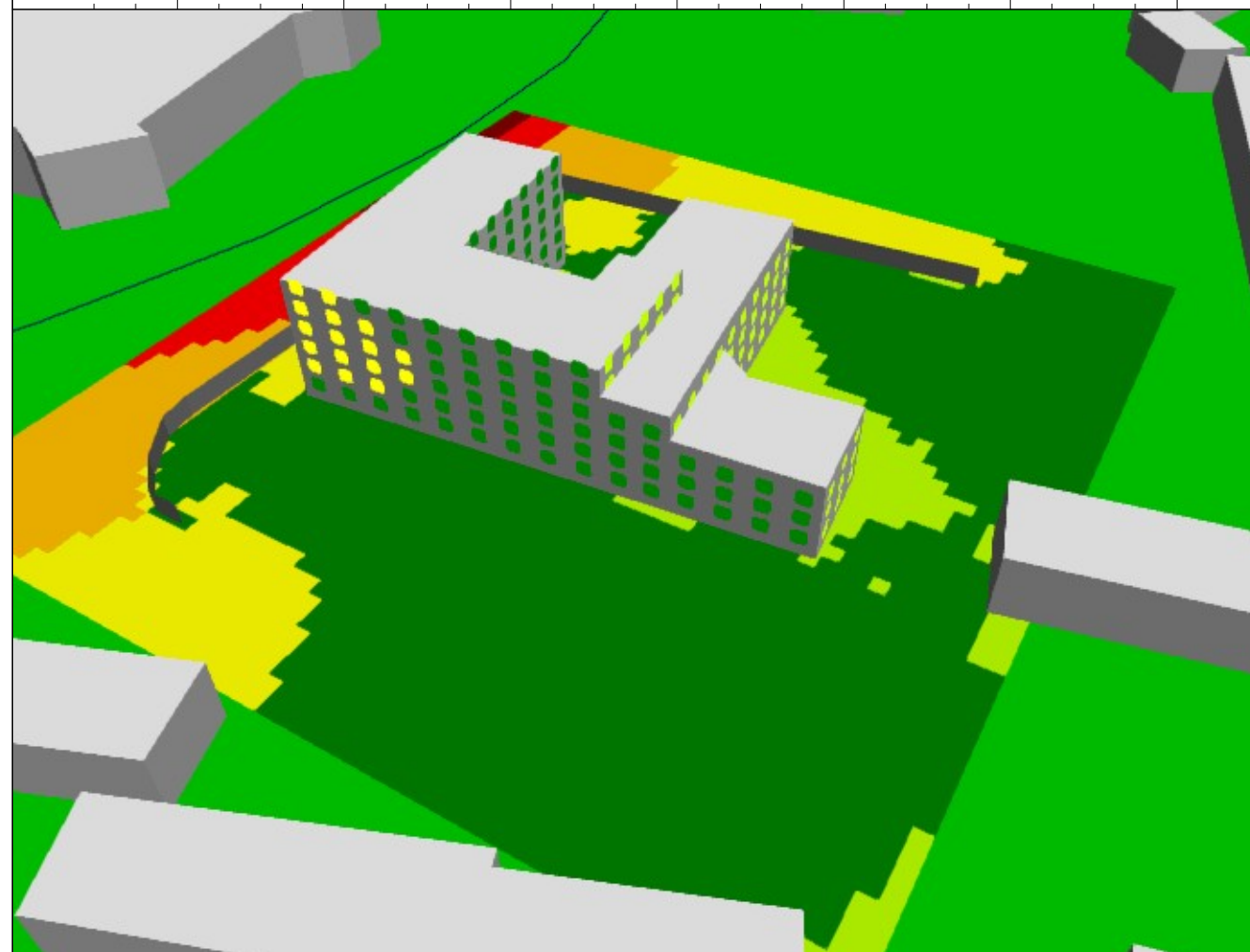
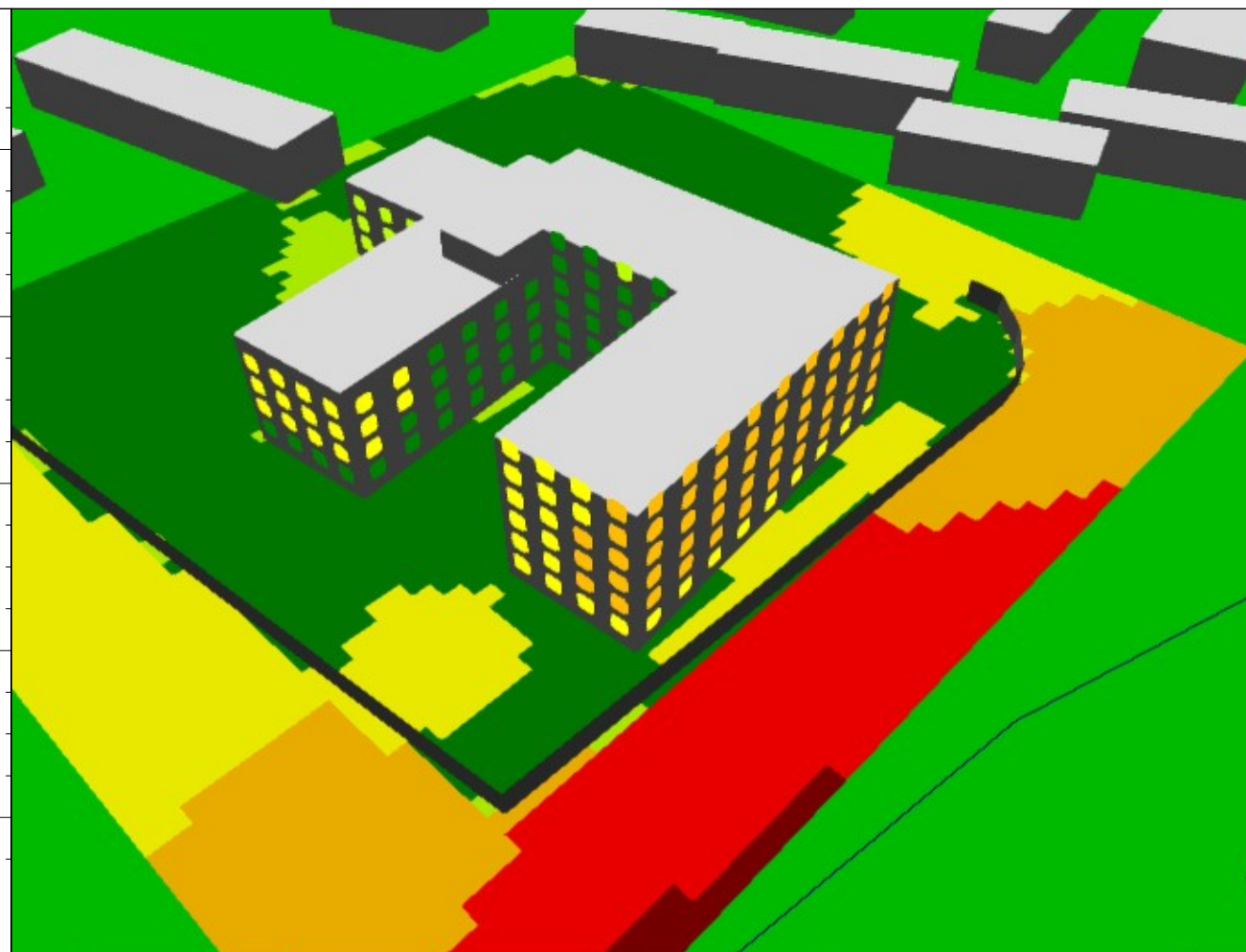
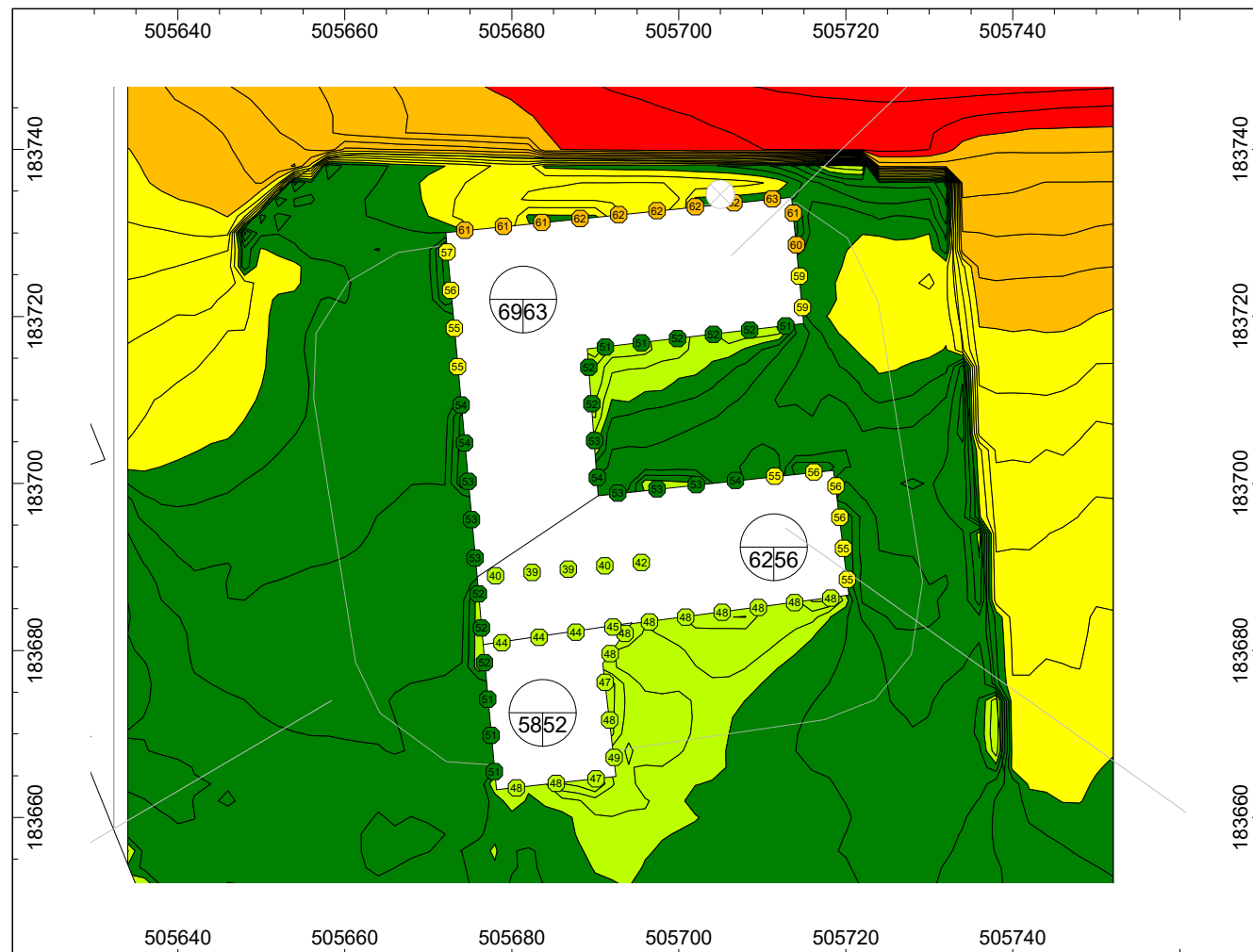


Appendix B - Noise Model Outputs



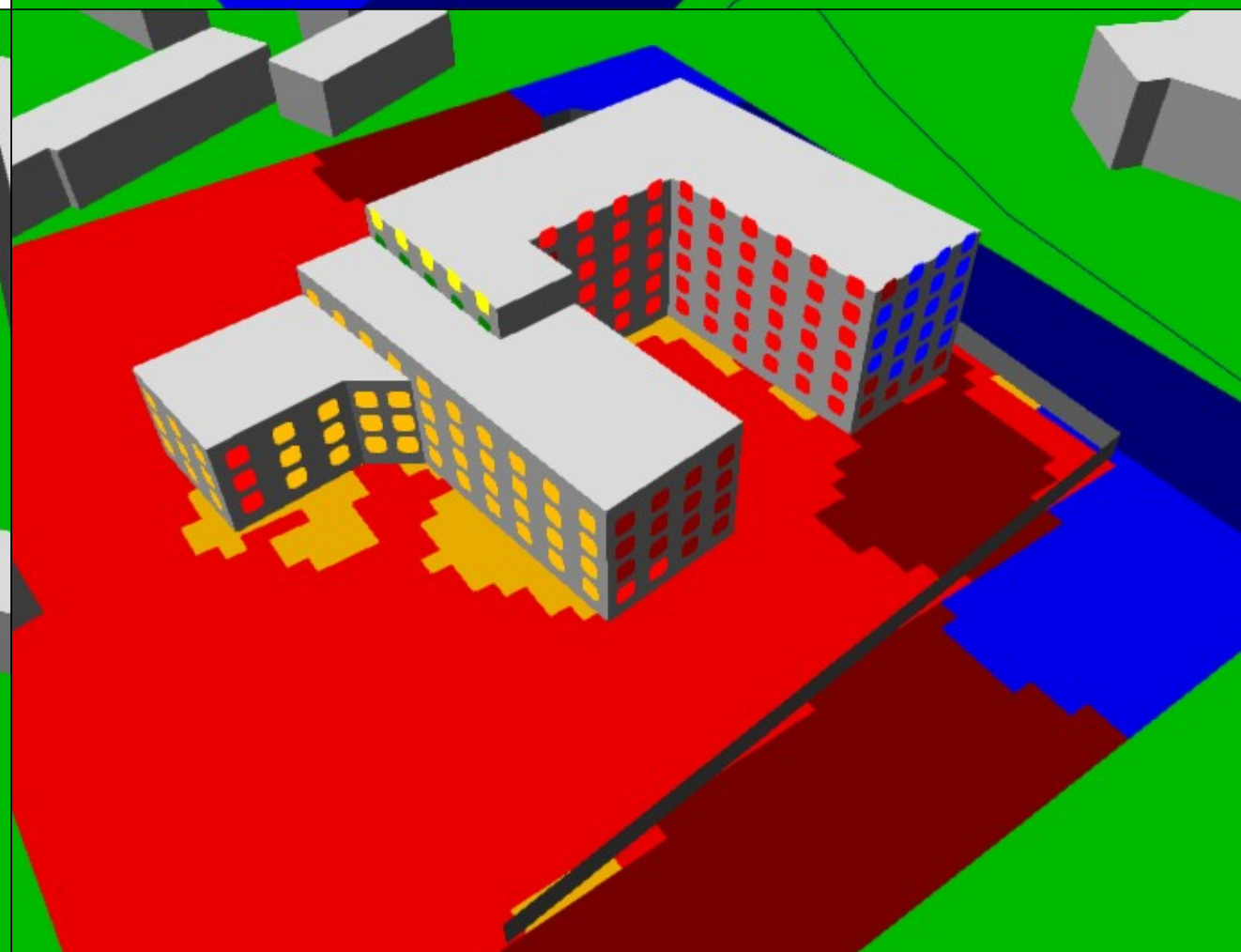
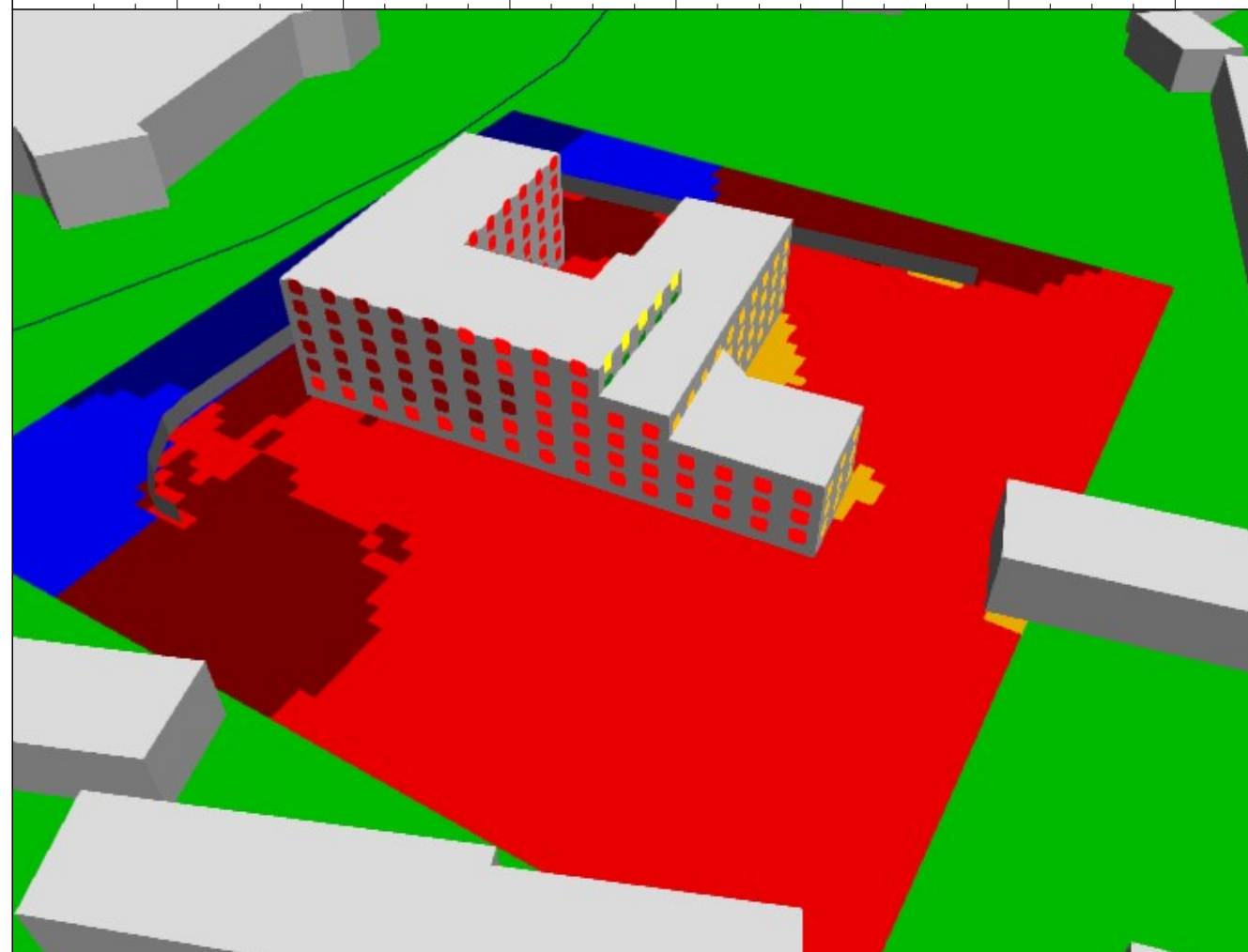
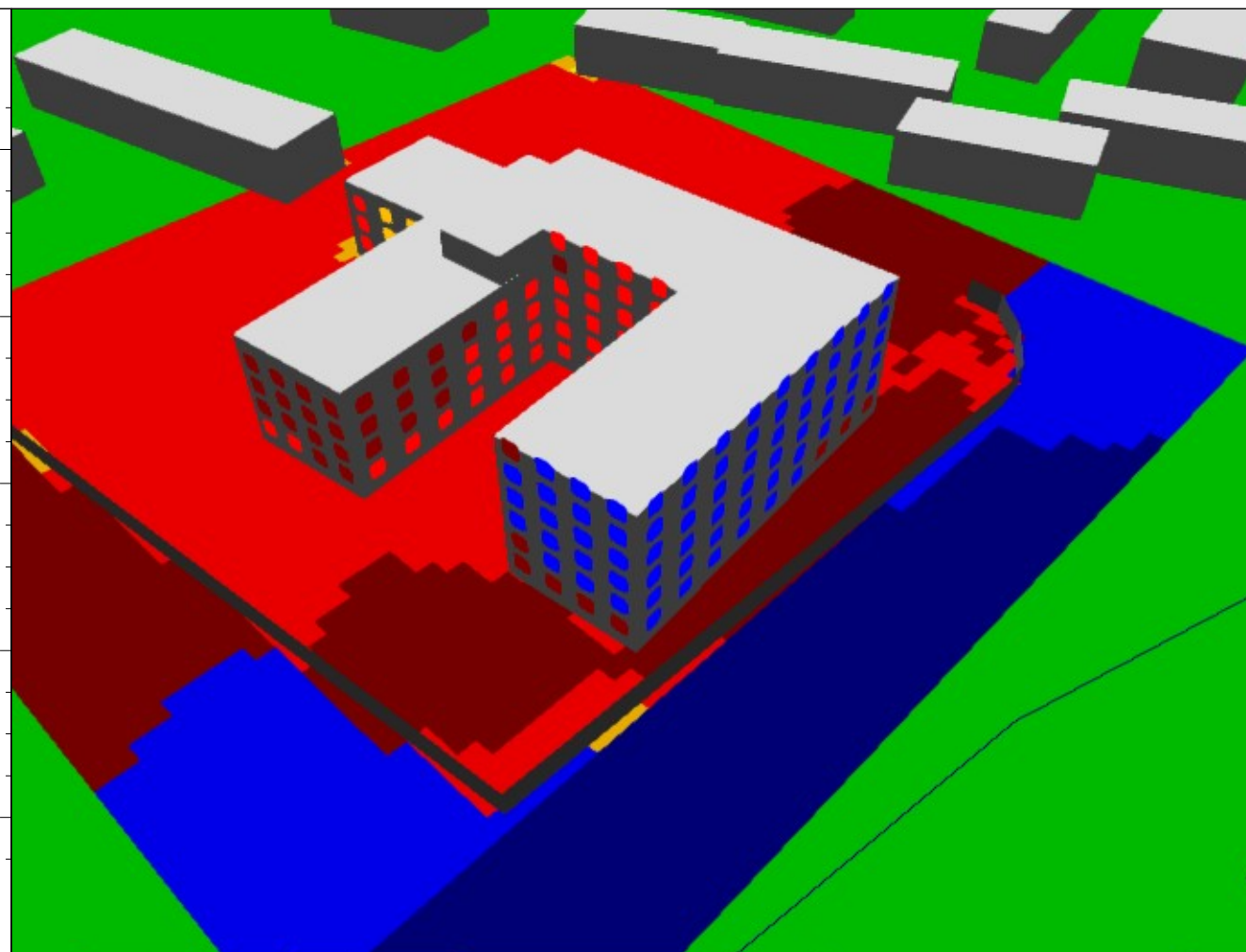
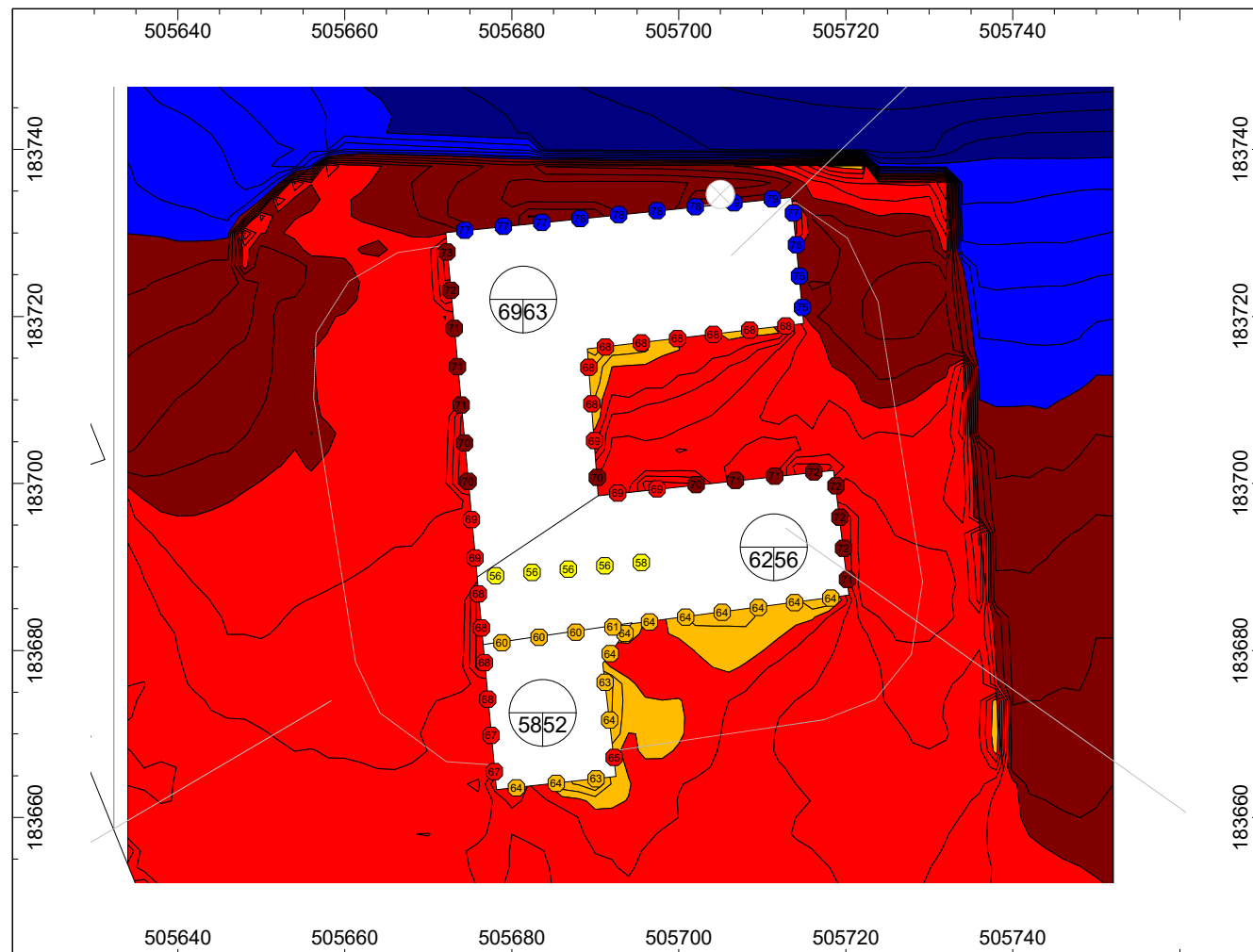
**MURRAY
ACOUSTICS**

Daytime LAeq,16h	
	50.0 <= ... < 55.0
	55.0 <= ... < 60.0
	60.0 <= ... < 65.0
	65.0 <= ... < 70.0
	70.0 <= ... < 75.0
	75.0 <= ... < 80.0
	80.0 <= ...



**MURRAY
ACOUSTICS**

Night-time LAeq,8h	
	50.0 <= ... < 55.0
	55.0 <= ... < 60.0
	60.0 <= ... < 65.0
	65.0 <= ... < 70.0
	70.0 <= ... < 75.0
	75.0 <= ... < 80.0
	80.0 <= ...



**MURRAY
ACOUSTICS**

Night-time LAfmax	
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	55.0 <= ... < 60.0
	60.0 <= ... < 65.0
	65.0 <= ... < 70.0
	70.0 <= ... < 75.0
	75.0 <= ... < 80.0
	80.0 <= ...