



APPENDIX C

Hillingdon Council Policy EM8: Noise

8.121 Noise can have a significant effect on the environment and on the quality of life enjoyed by individuals and communities. In Hillingdon, environmental noise arises from a variety of different sources, in particular aircraft (Heathrow Airport & RAF Northolt), major roads (M4, A4 and A40) and railways (London Underground, the Paddington, Marylebone and Heathrow Express lines).

8.122 The GLA forecasts Hillingdon to be the largest outer London growth borough⁽⁵⁵⁾ and estimates that a large proportion of new jobs will be accommodated within the Heathrow Opportunity Area. These uses play a vital role in promoting a successful and vibrant economy in the borough, creating jobs and attracting business, though it is also important to note that such uses can create neighbourhood noise impacts.

8.123 As such, noise remains a main challenge in the borough. The impact of existing noise and the possible impact of future noise remains a challenge to be considered as part of the Hillingdon Local Plan: Part 1- Strategic Policies.

8.124 Land Contamination: Land affected by contamination due to the presence of metals, liquid chemicals, gases and/or vapours, that remains untreated can present a risk to users of the land, cause damage to buildings and infrastructure and restrict development potential in the developed area of the borough or prevent the introduction of uses involving public access, where it is left untreated. Contaminants may also migrate to and affect nearby land by polluting ground and surface water or areas of ecological value.

8.125 The borough has a number of former industrial sites and landfill sites that are potentially contaminated. Land can also become contaminated as a result of accidental spills and leaks, unauthorised disposal of contaminated wastes and offsite migration and atmospheric deposition of contaminants.

8.126 The prevention of further contamination of land and remediation of land affected by contamination plays a key role in sustainable development by reducing damage to land and by bringing damaged land back into beneficial use. This contributes towards improving land and environmental quality and the quality of life in general for the borough.

Main Challenges

8.127 Table 3.1 in Chapter 3 identifies four main challenges relating to land, water, air and noise management:

- National and European Union (EU) requirements to meet climate change and carbon dioxide emission targets
- The need to maintain and improve the current water resources and quality
- The need to control, reduce and mitigate noise, especially around Heathrow and the major road network
- The need to mitigate air quality impacts especially around the strategic road network and Heathrow Airport, in order to work towards achievement of both national and European Union standards at relevant locations and improve the local air quality for communities.

8.128 Water Quality: New development near to watercourses is likely to have an adverse impact on water quality unless proper measures are put in place to mitigate this. The rivers outlined above that are not meeting good ecological potential under the Water Framework Directive⁽⁵⁶⁾ are particularly vulnerable from uncontrolled new development. New development near these rivers will need to be delivered so as not to harm these important water features, and should actively contribute to their revival.

8.129 Water Resources: Accommodating a growing population and new development will be a major challenge for safeguarding water resources. Developments must be designed to be water efficient to reduce demand on potable water supplies. The Council will require that all new residential proposals can demonstrate water consumption levels of 105 litres or less per person per day. All development will be expected to demonstrate proposals to capture, store and reuse grey water and rainwater run-off in accordance with London Plan (2011) Policy 5.15 Water use and supplies.

8.130 In addition, the Council will work with the Environment Agency and water authorities to help manage and plan for future uses.

8.131 Air Quality: Maintaining, promoting, and distributing growth is a primary goal of the Hillingdon Local Plan: Part 1- Strategic Policies. A growing population and the need to deliver more jobs puts pressure on areas already badly affected by poor air quality. Adverse impacts on air quality come from a range of sources. Some of these are outside the direct influence of the Council, such as the strategic highway networks or on Heathrow Airport. Policy EM8 will assist the Council in developing the controls to minimise future increases through new development. However, it will be necessary to work closely with partners such as the GLA, the Highways Agency and Heathrow Airport to provide a strategic approach for improving areas with existing poor air quality, particularly regarding the areas outside the direct influence of the Council. Air quality impacts will be a major topic within the Hillingdon Local Plan: Part 2- Heathrow Area Policies LDD.

8.132 Heathrow Airport remains an economic hub and cannot be ignored in the continued growth of the borough. The Heathrow Opportunity Area is a strategic growth point within the borough. It is also home to the main road corridors where air quality impacts generate from. These corridors are used by those entering London from the west of England, and some of the emissions will derive from vehicles that will not even stop within the borough.

8.133 Increasing development and commercial activity around Heathrow is required to sustain the economic competitiveness of the borough; however, this will invariably lead to greater impacts on air quality through increased traffic and usage of existing services. This poses a significant challenge for the borough. The borough has limited control over vehicles using the strategic road network to travel throughout the borough. The Council can set higher standards for buildings but cannot control the type and number of vehicles that utilise them. The airport has its own emission targets, but there is no easy solution to redressing the existing air quality problems, nor is there a solution to delivering growth without adding to the impacts.

56 Source: Environment Agency River Basin Management Plan, Thames River Basin District Annex A Current state of waters December 2009

8.134 Airports are a major source of emissions that can have a damaging impact on local air quality as well as contributing to climate change. These impacts can be generated directly by aircraft, as well as the associated activities that occur on the ground. Heathrow is the busiest international airport and attracts a significant amount of visitors each year. It also attracts significant amounts of associated office and commercial uses. All development exploiting the benefits of Heathrow contribute to the poor air quality in the area. Further growth will exacerbate the problem. All new development associated with Heathrow should be challenged to minimise its impacts on air quality as far as possible.

8.135 Air quality issues in the borough are clearly linked to transportation, including Heathrow Airport, so an integrated approach is proposed to mitigate these issues. Air quality issues caused by transportation are also dealt with in the Transport chapter through Policy T4. The planning process presents an opportunity to reduce air quality impacts through section 106 agreements and/or Community Infrastructure Levy (CIL) funding. These opportunities will be specifically investigated within the Heathrow Area Policies LDD.

8.136 The use of certain renewable technologies also poses a threat to local air quality. In particular biomass units that operate by burning fuel may be considered to be a more sustainable form of energy generation, but the emissions can have an adverse impact on local air quality. The use of biomass cannot easily be constrained by planning policy as new technology and fuel types may result in improved systems that do not have the same level of air quality impacts. Accordingly, the Council will continue to promote the use of all renewable energy technologies providing it can be demonstrated they can show a neutral impact on air quality. The subsequent Hillingdon Local Plan: Part 2- Development Management Policies LDD will include policies on the use of biomass, particularly in areas designated as an air quality management area.

8.137 Climate Change: Water and air quality in Hillingdon is likely to decline with climate change as a result of increased temperatures and extreme weather events including flooding as predicted in the borough's Climate Change Strategy. The Hillingdon Local Plan: Part 1- Strategic Policies will need to include measures to protect and improve the quality of the borough's water and air.

8.138 Noise: Guidance has already been set out at the national level by the NPPF. This guidance sets out a clear rationale as to where sensitive development should be located in relation to existing noise/ pollution sources, and also provides guidance on where potentially noise polluting development should be located.

8.139 The Secretary of State for Environment, Food and Rural Affairs formally adopted Noise Action Plans for 23 agglomerations (large urban areas), major roads, and major railways in England on 15 March 2010 ⁽⁵⁷⁾. The Plans identify several target areas in Hillingdon including 'First Priority Areas' through a series of noise maps for noise reduction measures. Hillingdon will investigate these areas to see what further noise mitigation can be carried out. The 'First Priority Areas' for road and rail noise are shown on Map 8.5.

57 Source: Noise Action Plan London Agglomeration Environmental Noise (England) Regulations 2006, as amended March 2010

8.140 The Environmental Noise (England) Regulations 2006 require identification of Quiet Areas, which Noise Action Plans should aim to protect. The London Plan (2011) also requires borough's to identify and protect Quiet Areas. The Mayor's Ambient Noise Strategy contains a number of policies for minimising the adverse impacts of noise on people living and working in, and visiting London and will be reflected in the Hillingdon Local Plan: Part 2- Development Management LDD.

8.141 Operators of civil airports are required to produce their own Action Plans under the terms of the Environmental Noise (England) Regulations 2006. A draft Noise Action Plan was prepared in 2009 for Heathrow. In Heathrow, policy for issues such as noise levels and flight paths are set by the Department for Transport.

8.142 The Council will prepare a strategy for the Heathrow Opportunity Area that will mitigate negative effects of airport operations such as air and noise pollution (see Policy E3 and Transport Policy T4).

8.143 Land contamination: New development is normally directed to Brownfield land in the first instance. This removes pressure on the Greenbelt, and minimises the impacts on natural habitats. However, it does increase the chance of developing land that is in a contaminated state. New development can mobilise dormant pollutants and provide a pathway to sensitive receptors such as people using the site or the water environment.

8.144 New development also provides the opportunity to clean up land that is contaminated from historic uses which helps to improve environmental quality significantly.

8.145 The NPPF sets the framework for assessing land contamination in new development and the requirements for mitigation, although developers should be seeking more innovative ways to treat contamination. Historically, contaminated land may be sent to landfill sites but this may not be the most sustainable solution. Developers will be required to assess contamination to a level where a planning application can be determined with all the impacts known. Major development proposals will also be required to demonstrate sustainable forms of managing contaminated land which reduces the need to landfill, and minimises the impacts on climate change.

Policy EM8: Land, Water, Air and Noise

Water Quality

The Council will seek to safeguard and improve all water quality, both ground and surface. Principal Aquifers, and Source Protection Zones will be given priority along with the:

- River Colne
- Grand Union Canal
- River Pinn
- Yeading Brook
- Porter Land Brook
- River Crane
- Ruislip Lido

Air Quality

All development should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors.

All major development within the Air Quality Management Area (AQMA) should demonstrate air quality neutrality (no worsening of impacts) where appropriate; actively contribute to the promotion of sustainable transport measures such as vehicle charging points and the increased provision for vehicles with cleaner transport fuels; deliver increased planting through soft landscaping and living walls and roofs; and provide a management plan for ensuring air quality impacts can be kept to a minimum.

The Council seeks to reduce the levels of pollutants referred to in the Government's National Air Quality Strategy and will have regard to the Mayor's Air Quality Strategy. London Boroughs should also take account of the findings of the Air Quality Review and Assessments and Actions plans, in particular where Air Quality Management Areas have been designated.

The Council has a network of Air Quality Monitoring stations but recognises that this can be widened to improve understanding of air quality impacts. The Council may therefore require new major development in an AQMA to fund additional air quality monitoring stations to assist in managing air quality improvements.

Noise

The Council will investigate Hillingdon's target areas identified in the Defra Noise Action Plans, promote the maximum possible reduction in noise levels and will minimise the number of people potentially affected.

The Council will seek to identify and protect Quiet Areas in accordance with Government Policy on sustainable development and other Local Plan policies.

The Council will seek to ensure that noise sensitive development and noise generating development are only permitted if noise impacts can be adequately controlled and mitigated.

Land Contamination

The Council will expect proposals for development on contaminated land to provide mitigation strategies that reduce the impacts on surrounding land uses. Major development proposals will be expected to demonstrate a sustainable approach to remediation that includes techniques to reduce the need to landfill.

Water Resources

The Council will require that all new development demonstrates the incorporation of water efficiency measures within new development to reduce the rising demand on potable water. All new development must incorporate water recycling and collection facilities unless it can be demonstrated it is not appropriate. For residential developments, the Council will require applicants to demonstrate that water consumption will not surpass 105 litres per person per day.

Implementation of Policy EM8 - how we will achieve this

The Council will implement Policy EM8 by:

- Setting high standards for reducing land, water, air and noise pollution and resisting amenity and environmental impacts that affect how we enjoy the environment in which we live and work. This includes making sure developments are designed to cope with climate conditions as they change during the development's lifetime.
- Preparing a Local Development Document for the Heathrow area set out in Policy E3 and paragraph 5.32 of Chapter 5.
- Requiring developments to minimise water use and use local sources of water where possible.
- Revising the existing Air Quality SPG into an updated Air Quality SPD.
- Review the current Air Quality SPG to take into account the Mayor of London's guidance on achieving air quality neutral development;
- Review the Air Quality Action Plan to ensure new developments in areas of poor air quality are prioritised for low emission strategies aimed at working towards securing compliance with the national and EU air quality limits and standards.
- Using planning conditions and Section 106 agreements to improve air quality and where appropriate, apply a Community Infrastructure Levy (CIL) on new developments.
- Implementing the Climate Change Strategy to secure reductions in local air pollutants and mitigate climate change.
- Implementing the borough Transport Strategy to ensure reductions in emissions from transport within the borough.

Flexibility

Figures for reducing CO2 emissions in Hillingdon take account of national targets and regional targets in the London Plan (2011).

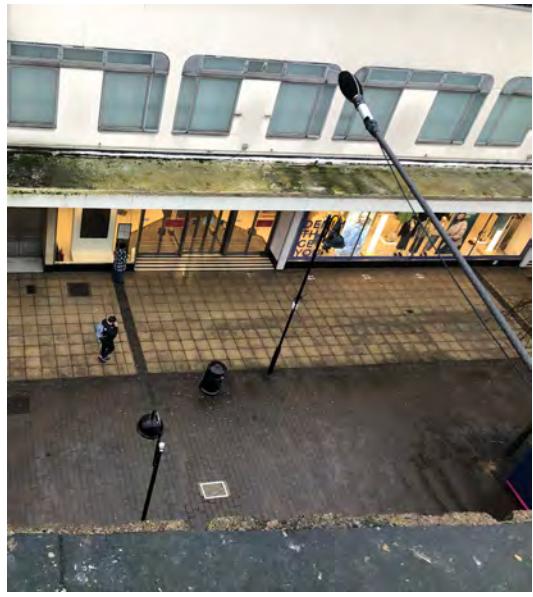


APPENDIX D

Photographs showing noise monitoring locations



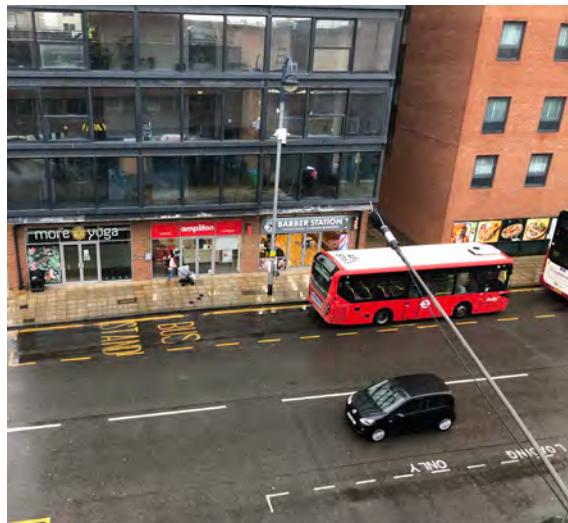
LT1



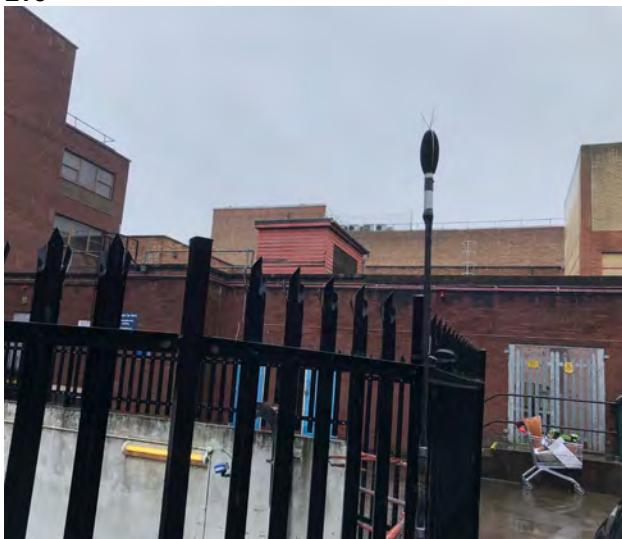
LT2



LT3



LT4



LT5

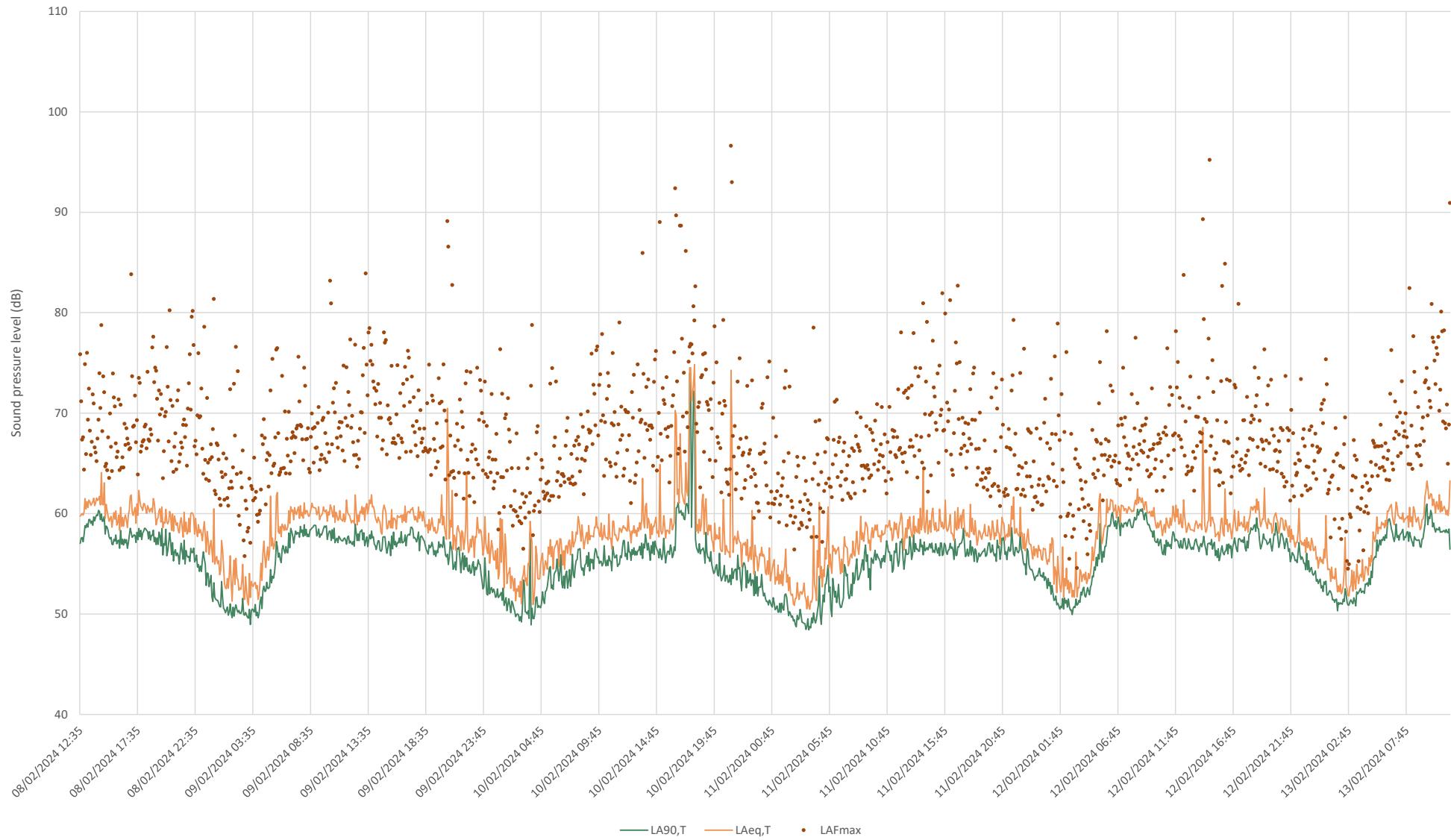


APPENDIX E

Charts showing results of noise monitoring

LT1

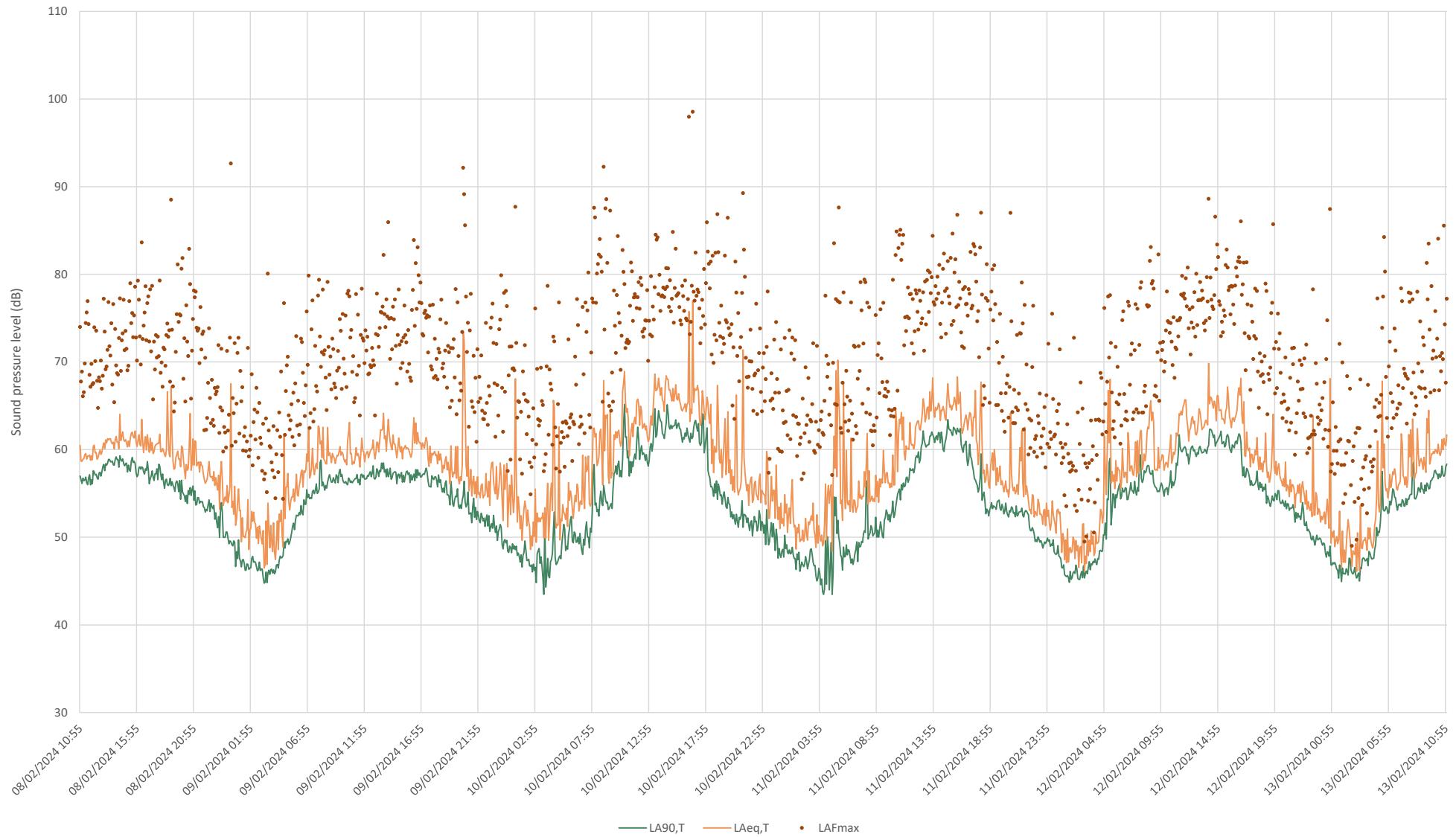
Measured sound level (T = 5min)



LT2



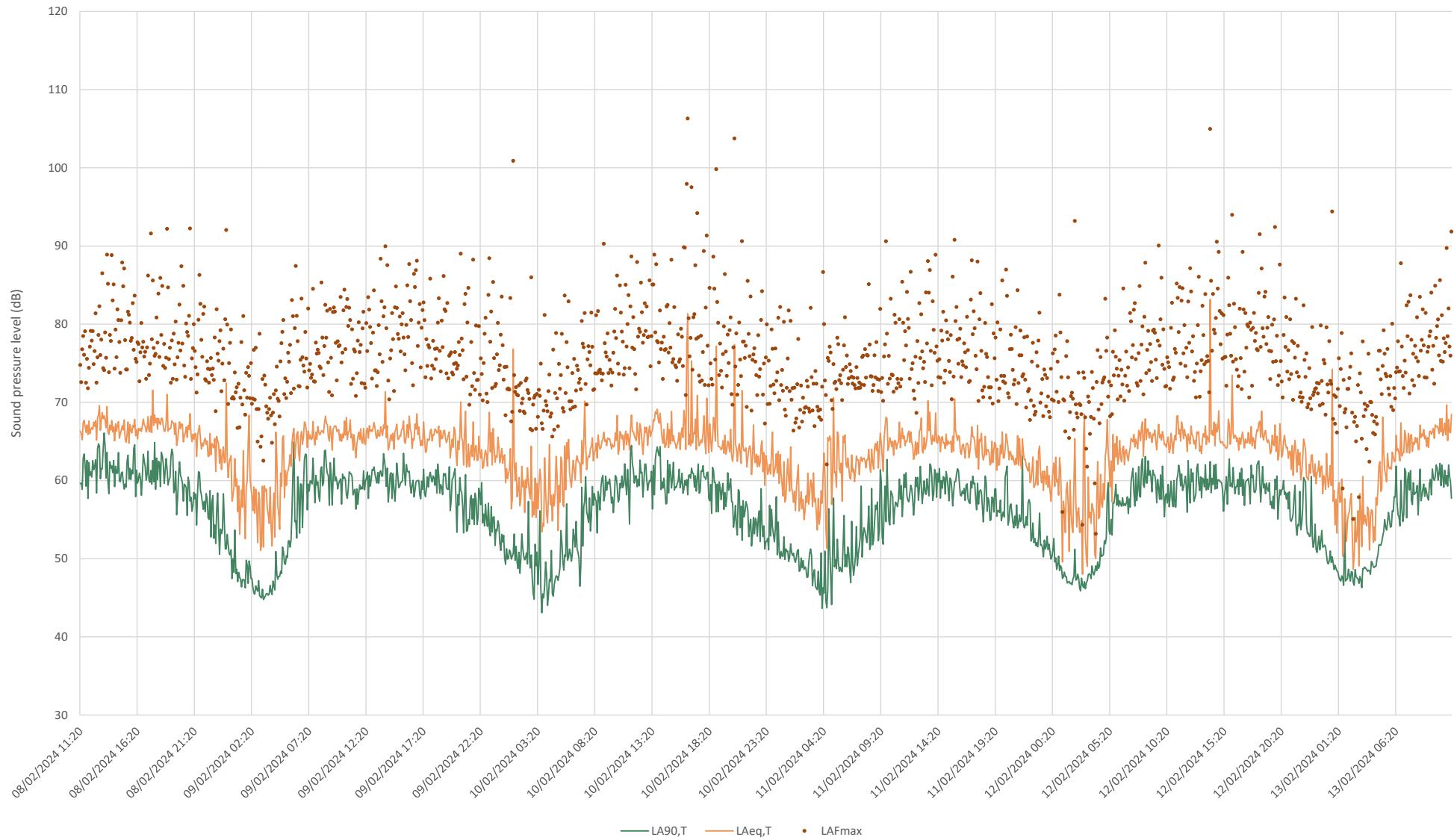
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LT3



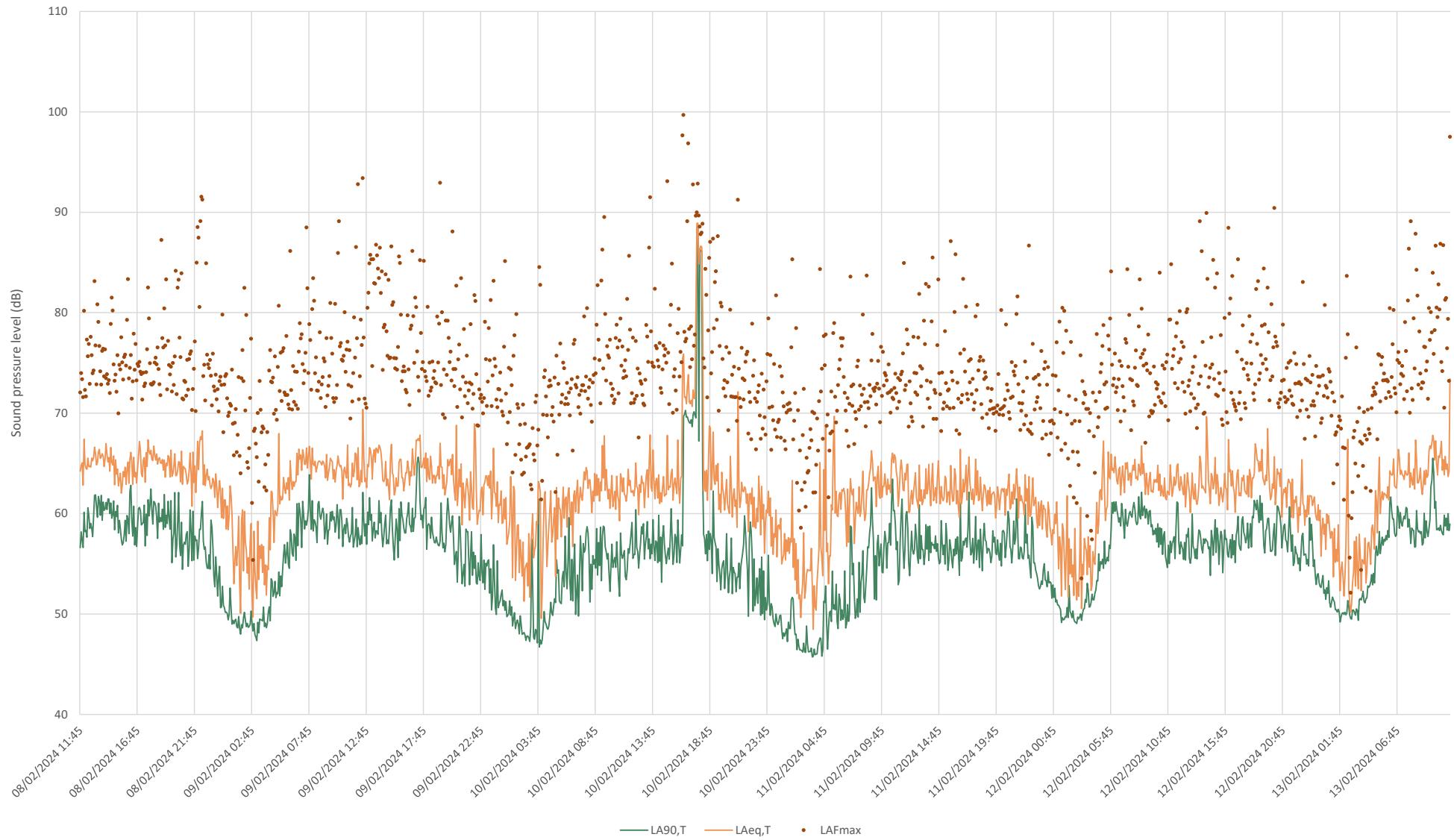
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LT4



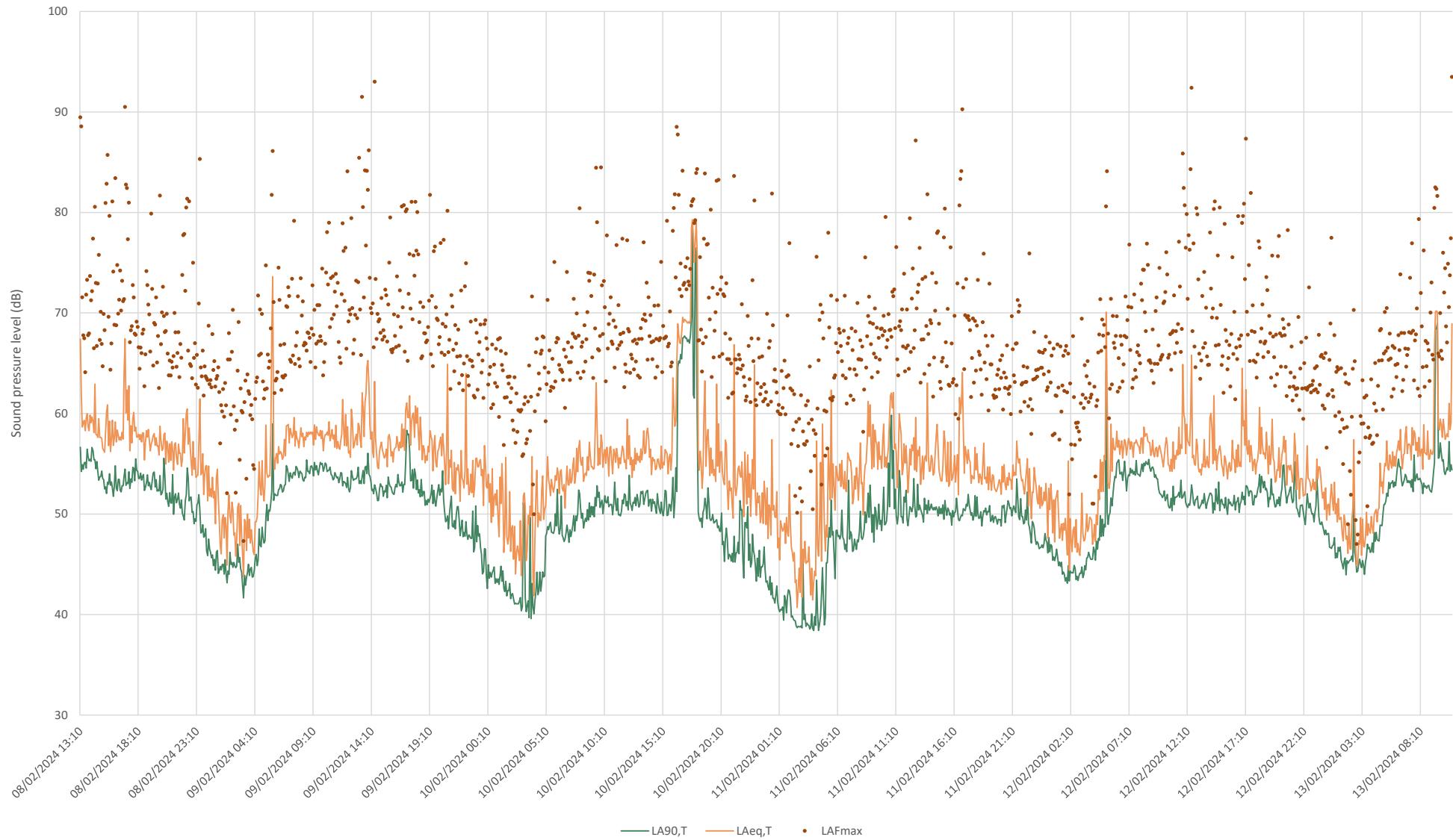
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LT5



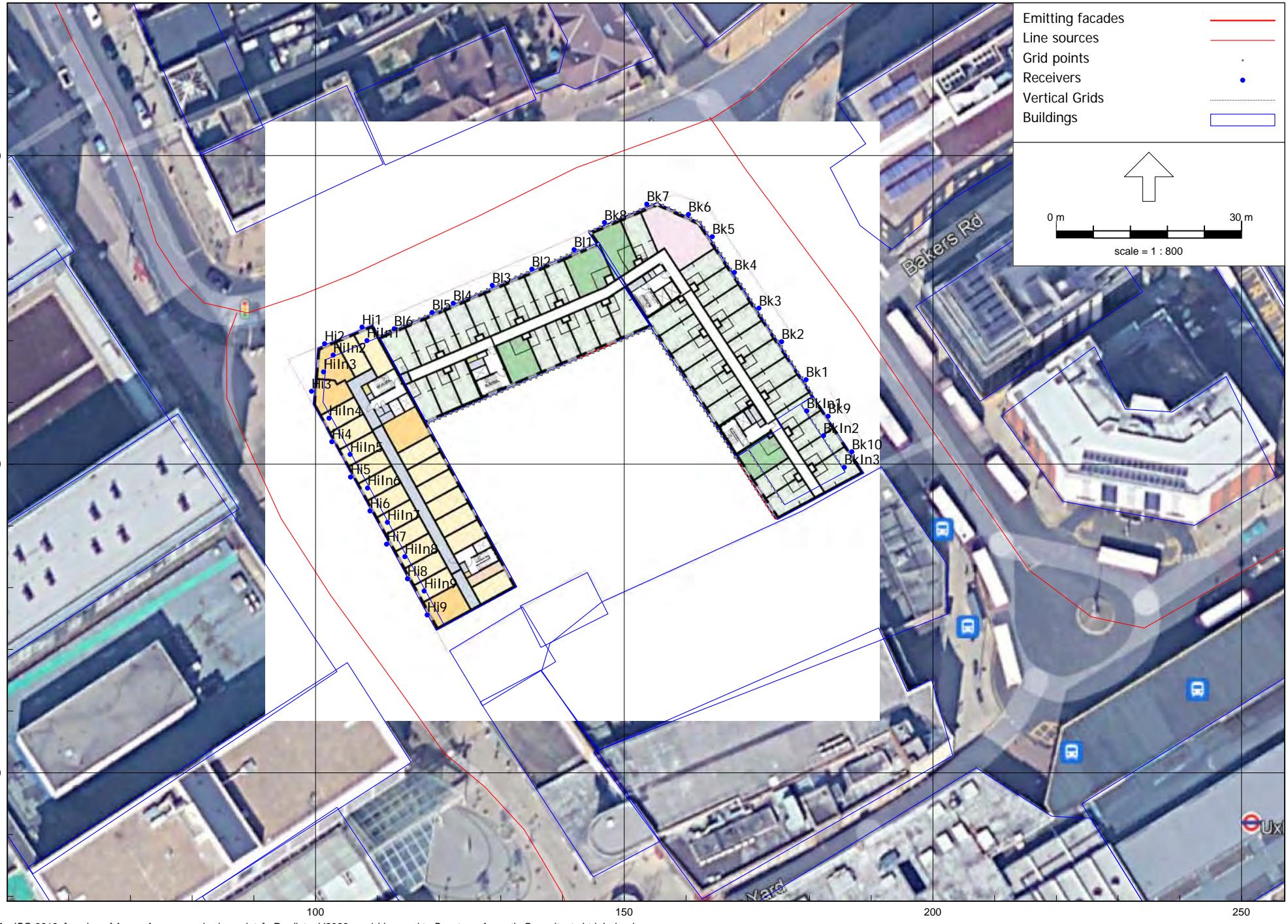
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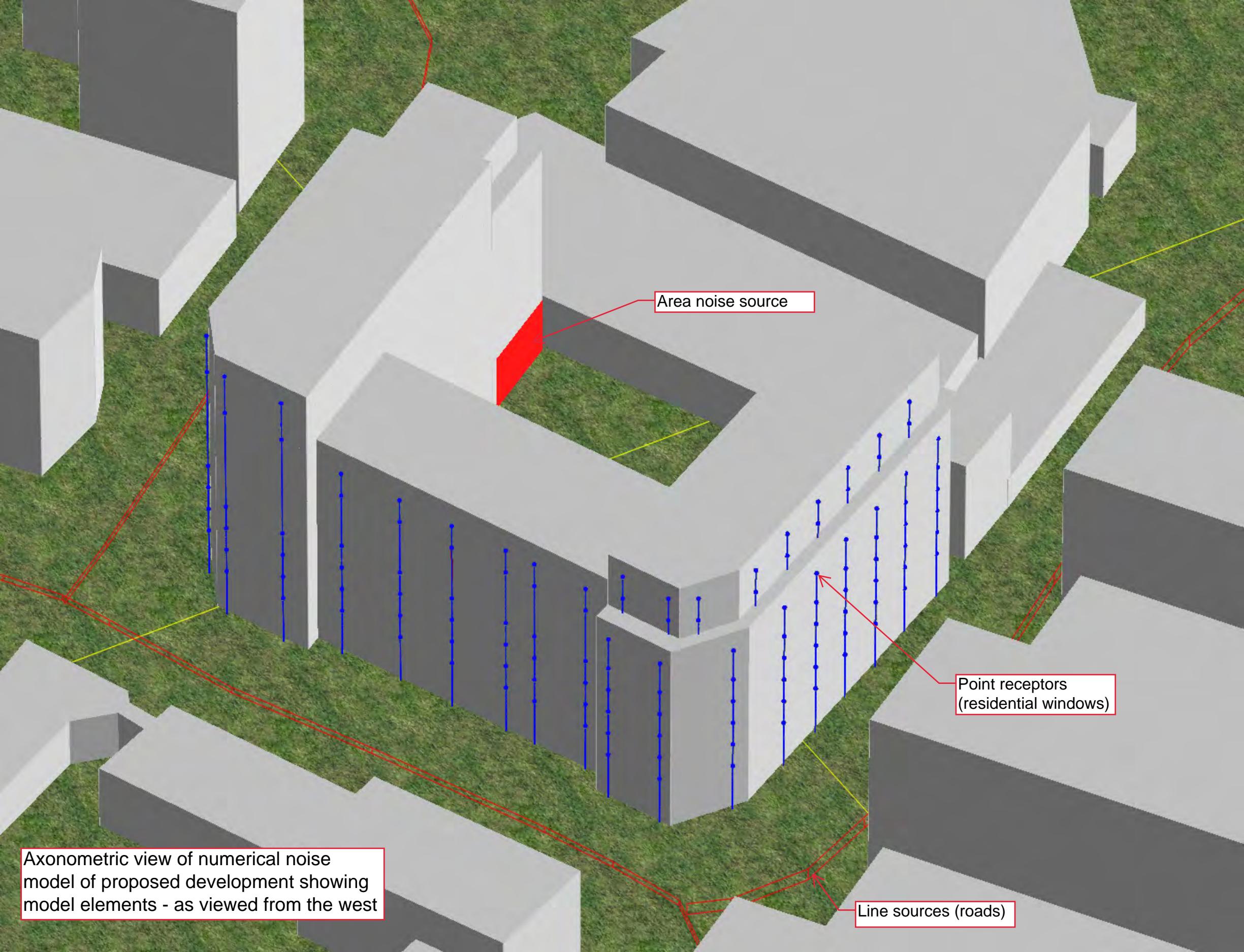




APPENDIX F

Figures showing elements of the noise prediction model







APPENDIX G

Results of noise predictions

Report: Table of Results
Model: As proposed - day points
LAEQ per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name Receiver	Height	Total	Day							
			63	125	250	500	1000	2000	4000	8000
Bk7_A	6.00	66	44	50	54	58	61	60	56	48
Hi2_A	6.00	66	44	50	54	58	60	60	56	48
Hil_A	6.00	66	44	50	54	58	60	60	56	48
Bk8_A	6.00	65	43	50	53	58	60	60	56	48
Bk6_A	6.00	65	44	49	53	58	60	60	55	48
Bk7_B	9.00	65	43	49	53	58	60	60	55	48
Hi2_B	9.00	65	43	50	53	58	60	60	55	47
B16_A	6.00	65	43	49	53	57	60	60	55	47
Hil_B	9.00	65	43	49	53	57	60	60	55	47
B15_A	6.00	65	43	49	53	57	60	60	55	47
B14_A	6.00	65	43	49	53	57	60	60	55	47
B13_A	6.00	65	43	49	53	57	60	60	55	47
Bk5_A	6.00	65	44	49	53	57	60	59	55	47
Bk8_B	9.00	65	43	49	53	57	59	59	55	47
Bk6_B	9.00	65	43	49	53	57	60	59	55	47
B12_A	6.00	65	42	49	53	57	59	59	55	47
B16_B	9.00	64	43	49	53	57	59	59	54	47
Hi2_C	12.00	64	42	49	53	57	59	59	54	46
B15_B	9.00	64	42	49	52	57	59	59	54	47
Bk7_C	12.00	64	43	48	52	57	59	59	54	47
B14_B	9.00	64	42	49	52	57	59	59	54	47
Bk4_A	6.00	64	43	48	52	57	60	58	54	47
B13_B	9.00	64	42	49	52	57	59	59	54	47
Hil_C	12.00	64	42	49	52	57	59	59	54	46
Bk5_B	9.00	64	43	48	52	57	60	58	54	47
B12_B	9.00	64	42	49	52	57	59	59	54	46
B11_A	6.00	64	42	48	52	57	59	59	54	47
Bk3_A	6.00	64	43	48	52	57	60	58	54	46
Bk8_C	12.00	64	42	48	52	57	59	59	54	46
Bk6_C	12.00	64	43	48	52	56	59	58	54	46
Bk2_A	6.00	64	42	48	52	56	59	58	54	46
Bk4_B	9.00	64	43	48	52	56	59	58	54	46
B15_C	12.00	64	42	48	52	56	59	59	54	46
B16_C	12.00	64	42	48	52	56	59	59	54	46
Hi2_D	15.00	64	42	48	52	56	59	58	54	46
B14_C	12.00	64	42	48	52	56	59	59	54	46
Bk1_A	6.00	64	42	48	52	56	59	58	54	46
B13_C	12.00	64	42	48	52	56	58	58	54	46
Bk3_B	9.00	64	42	48	52	56	59	58	54	46
Bk5_C	12.00	64	42	48	52	56	59	58	54	46
Hil_D	15.00	64	42	48	52	56	58	58	54	45
B12_C	12.00	64	41	48	52	56	58	58	54	46
Bk2_B	9.00	64	42	48	52	56	59	57	54	46
B11_B	9.00	64	41	48	52	56	58	58	54	46
Bk7_D	15.00	63	42	48	51	56	58	58	54	46
Bk6_D	15.00	63	42	47	51	56	59	58	53	46
Hi3_A	6.00	63	41	48	52	56	58	58	53	45
Bk4_C	12.00	63	42	47	51	56	59	57	53	45
B15_D	15.00	63	41	48	51	56	58	58	53	45
Bk1_B	9.00	63	42	47	51	56	59	57	53	45

All shown dB values are A-weighted

Report: Table of Results
Model: As proposed - day points
LAEQ per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name Receiver	Height	Total	Day							
			63	125	250	500	1000	2000	4000	8000
Bk8_D	15.00	63	41	48	51	56	58	58	53	45
B16_D	15.00	63	42	48	51	56	58	58	53	45
B14_D	15.00	63	41	48	51	56	58	58	53	45
Bk3_C	12.00	63	42	47	51	56	59	57	53	45
B13_D	15.00	63	41	48	51	56	58	58	53	45
Hi2_E	18.00	63	41	48	51	56	58	58	53	45
Bk5_D	15.00	63	42	47	51	55	58	57	53	45
Bk2_C	12.00	63	41	47	51	56	58	57	53	45
Hi3_B	9.00	63	41	48	51	56	58	57	52	44
Bk9_A	9.00	63	42	47	51	55	59	57	53	45
B12_D	15.00	63	41	47	51	56	58	58	53	45
B11_C	12.00	63	41	47	51	55	58	58	53	45
Hi1_E	18.00	63	41	47	51	55	58	58	53	45
Bk4_D	15.00	63	41	47	51	55	58	57	53	45
Bk10_A	9.00	63	42	47	51	55	58	57	53	45
Bk1_C	12.00	63	41	47	51	55	58	57	53	45
Bk3_D	15.00	63	41	46	51	55	58	57	53	44
Hi3_C	12.00	62	40	47	51	55	58	57	52	44
Bk9_B	12.00	62	41	47	50	55	58	56	52	44
Bk2_D	15.00	62	41	46	51	55	58	56	52	44
Bk10_B	12.00	62	41	47	50	55	58	56	52	44
Hi2_F	22.00	62	40	47	51	55	57	57	52	43
B11_D	15.00	62	40	46	50	55	57	57	52	44
Bk1_D	15.00	62	41	46	50	55	58	56	52	44
Hi3_D	15.00	62	40	47	50	55	57	56	51	43
Bk9_C	15.00	62	41	46	50	55	58	56	52	44
Bk10_C	15.00	62	41	46	50	54	58	56	52	44
Hi1_F	22.00	62	40	47	50	55	57	57	52	43
B15_E	22.00	62	40	46	50	54	56	56	52	43
B16_E	22.00	62	39	47	50	54	56	56	52	43
Hi4_A	6.00	62	39	46	50	55	57	56	50	42
Hi3_E	18.00	62	39	46	50	54	57	56	51	42
B14_E	22.00	62	40	46	50	54	56	56	51	43
Bk9_D	18.00	61	40	46	50	54	57	55	51	43
Bk10_D	18.00	61	40	46	49	54	57	55	51	43
Hi4_B	9.00	61	39	46	50	54	57	56	50	41
B13_E	22.00	61	40	46	50	54	56	56	51	43
B15_F	25.00	61	39	46	50	54	56	56	51	42
Hi5_A	6.00	61	39	46	50	54	57	55	49	41
B12_E	22.00	61	40	46	49	54	56	56	51	43
B16_F	25.00	61	38	46	49	54	56	56	51	42
B14_F	25.00	61	39	46	49	54	56	56	51	42
Hi4_C	12.00	61	39	45	50	54	56	55	49	41
Bk9_E	21.00	61	40	45	49	54	57	55	51	42
Hi9_A	6.00	61	38	45	50	54	56	55	49	41
Hi5_B	9.00	61	39	45	50	54	56	55	49	41
Hi6_A	6.00	61	39	46	50	54	56	55	49	41
Bk10_E	21.00	61	40	45	49	53	56	55	51	42
B13_F	25.00	61	39	46	49	54	56	56	51	42
Hi7_A	6.00	61	38	45	50	54	56	55	49	40

All shown dB values are A-weighted



APPENDIX H

Sample intrusive noise calculation results

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Uxbridge High Street
Project number:	23358
Date:	06/03/2024

Plot: Most-affected Co-Living Apartment - Leq Day
Room: LKD

RESULTS
Total calculated indoor noise level

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Uxbridge High Street
Project number:	23358
Date:	06/03/2024

Plot: Most-affected Co-Living Apartment - Leq - night
Room: LKD

RESULTS
Total calculated indoor noise level

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Uxbridge High Street
Project number:	23358
Date:	06/03/2024

Plot: Most-affected Co-Living Apartment - Lmax - night
Room: LKD

RESULTS
Total calculated indoor noise level



APPENDIX I

Note on acoustic conditions during overheating

Description	High Street, Uxbridge - Overheating Summary for ADO compliance
Date	26 February 2024
Issued by	Phill Banks
Issued to	Ellie Cannon
Ref No	PJB9640/23358

INTRODUCTION

We understand that the High Street, Uxbridge development is required to comply with the requirements of Approved Document O (ADO). The noise requirements of ADO are:

Noise

- 3.2 In locations where external noise may be an issue (for example, where the local planning authority considered external noise to be an issue at the planning stage), the overheating mitigation strategy should take account of the likelihood that windows will be closed during sleeping hours (11pm to 7am).
- 3.3 Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits.
 - a. 40dB $L_{Aeq,T}$ averaged over 8 hours (between 11pm and 7am).
 - b. 55dB L_{AFmax} , more than 10 times a night (between 11pm and 7am).

These requirements relate:

- Only to bedrooms
- Only at night-time

Therefore, if it is possible to mitigate overheating in bedrooms during the daytime by using open windows / vents and then shut them overnight, then compliance with ADO will be achieved.

For the purposes of this assessment, Co-Living Rooms are considered to be bedrooms. Also, we understand that the hotel rooms are to be mechanically ventilated / cooled, therefore, this analysis does not relate to hotel bedrooms.

NUMERICAL NOISE MODEL

Using the results of ambient noise monitoring carried out at the site, we have derived a numerical noise model of the proposed development that calculates the predicted external noise level at night-time, both as an $L_{Aeq,8hr}$ and as an $L_{AFmax,typ}$. In the case of the $L_{Aeq,T}$ noise, this can be displayed as façade contours, showing colour-coded noise level bands across the building. These are as shown attached.

At the same time, I have checked the equivalent L_{AFmax} level for each of the colour-coded areas and determined the allowable bedroom window open area as a proportion of the floor area.

If, in order for the ADO criteria to be met, the side vents need to be open during the night-time, then these will need to be an acoustic type. The specifications for these are as follows:

Table 1 - outward-facing facades (those directly adjacent to a road), and
 Table 2 - the courtyard-facing facades.

The fourth column specifies the sound reduction index of the side vent necessary to achieve ADO compliance with vents open. The equivalent TEK vent units which achieve this performance are shown as Attachment 2. It is not known whether the open area these units provide will be sufficient to mitigate overheating during the night-time. This will be for the mechanical consultant to ascertain.

$L_{Aeq,8hr}$ (dB)	$L_{AFmax,typ}$ (dB)	Façade Colour	Sound reduction index of side vent (R_w (dB))
≤62	≤81	Dark red	27
≤60	≤76	Light red	17
≤58	≤71	Dark orange	10

Table 1: Facades facing Bakers and Belmont Roads with corresponding noise contour areas and vent R_w requirement

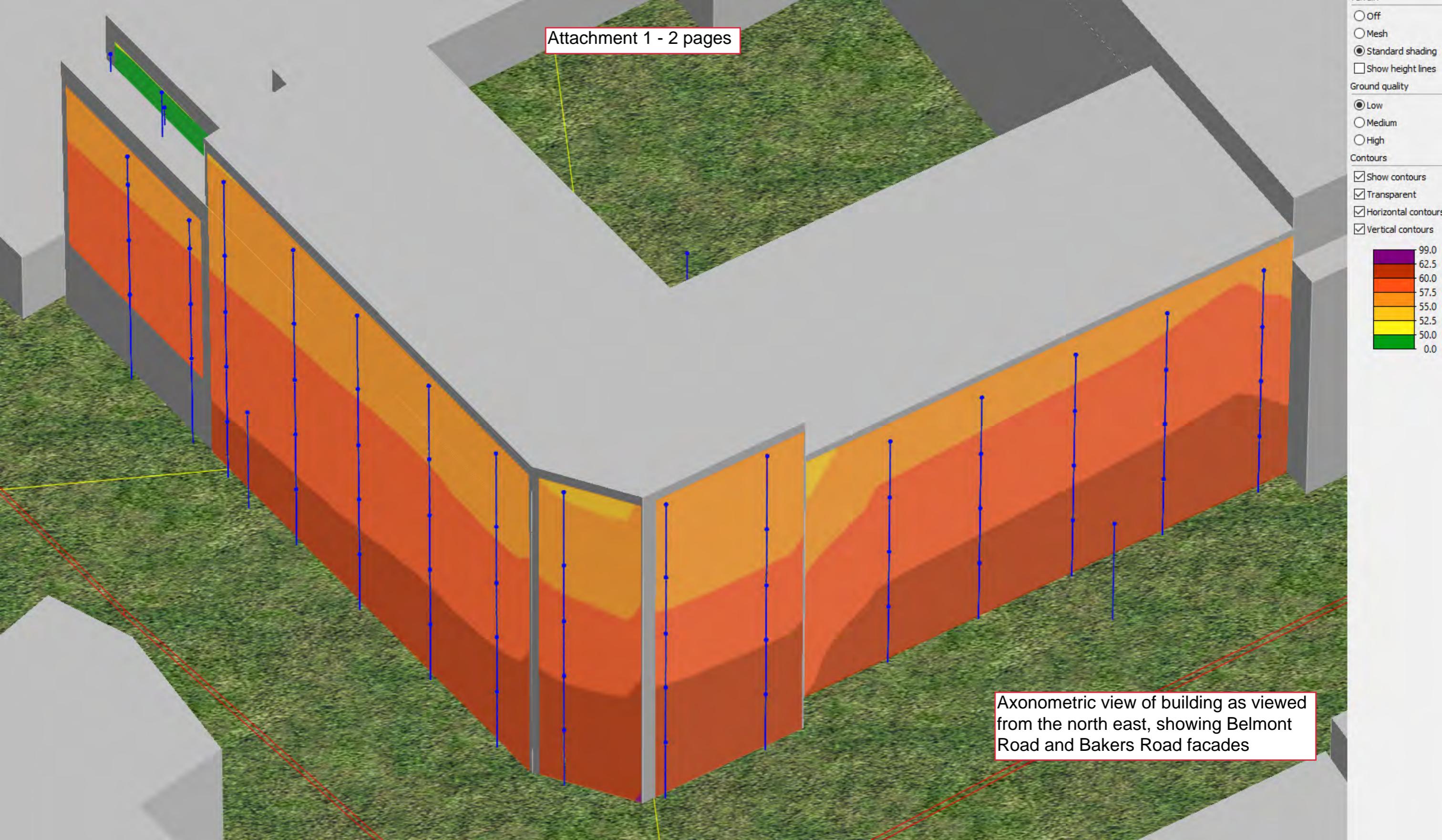
$L_{Aeq,8hr}$ (dB)	Façade Colour	Sound reduction index of side vent (R_w (dB))
≥58	Light red and above	17
≤58	Dark orange and below	10

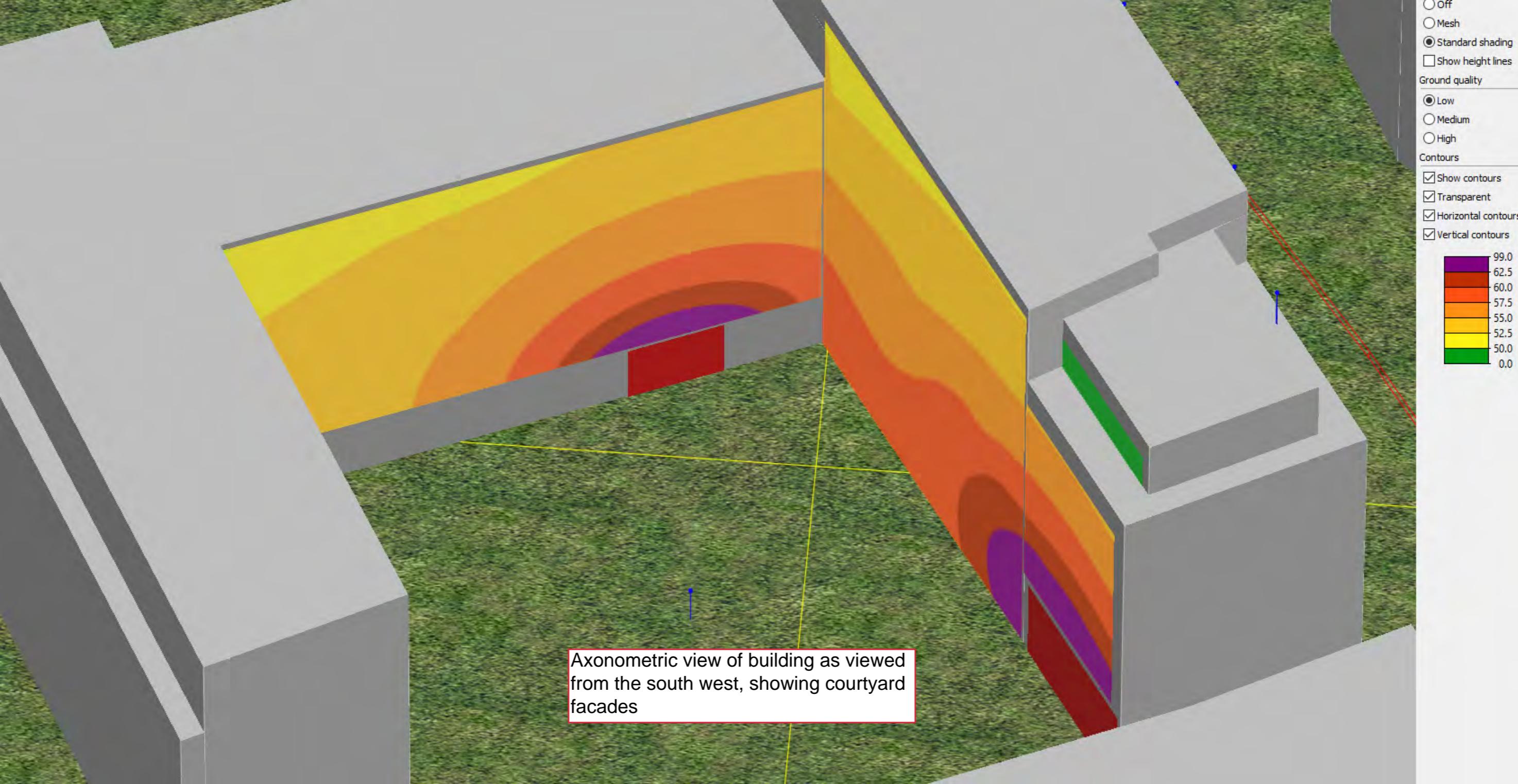
Table 2: Facades facing courtyard with corresponding noise contour areas and vent R_w requirement

Note that:

1. ADO does not consider daytime periods. As far as we are aware, there are no ER or planning policy requirements that specify daytime indoor noise levels during overheating mitigation. If this is not correct, then the above advice will need to be revised.
2. This analysis is carried out in outline only. Further detailed analysis would be required to be able to precisely specify vent R_w requirements for each unit.

If you have any questions or want to discuss this matter further, please get in touch.





Acoustic Performance for Small Attenuated Unit



Acoustic Performance for Attenuated Unit - Louvre and Attenuator in One Case

(Unit Size: 400mm Wide x 1800mm High)

Test	Attenuator Lengths mm	$D_{n,e,w}(C;C_{tr})$	$R_w(C;C_{tr})$	Free Area %	Free Area m^2
1	150	20 (-1; -1) dB	10 (-1; -1) dB	50	0.36
2	150	22 (-1; -1) dB	11 (0; 0) dB	38	0.27
3	150	25 (-1; -1) dB	15 (-1; -1) dB	25	0.18
4	150	31 (-1; -2) dB	21 (-1; -2) dB	13	0.09
5	300	23 (0; -1) dB	13 (0; -1) dB	50	0.36
6	300	26 (0; -1) dB	16 (-1; -1) dB	38	0.27
7	300	31 (-1; -3) dB	21 (-1; -3) dB	25	0.18
8	300	38 (-1; -4) dB	28 (-1; -4) dB	13	0.09
9	450	27 (-1; -2) dB	17 (-1; -2) dB	50	0.36
10	450	31 (-1; -3) dB	20 (-1; -2) dB	38	0.27
11	450	37 (-2; -4) dB	27 (-2; -4) dB	25	0.18
12	450	43 (-1; -4) dB	33 (-1; -4) dB	13	0.09
13	600	29 (-1; -2) dB	19 (-1; -2) dB	50	0.36
14	600	34 (-1; -3) dB	24 (-1; -2) dB	38	0.27
15	600	41 (-1; -5) dB	31 (-1; -5) dB	25	0.18
16	600	50 (-3; -8) dB	40 (-3; -8) dB	13	0.09

As tested by Sound Research Laboratory in accordance with BS EN ISO 10140-2:2010

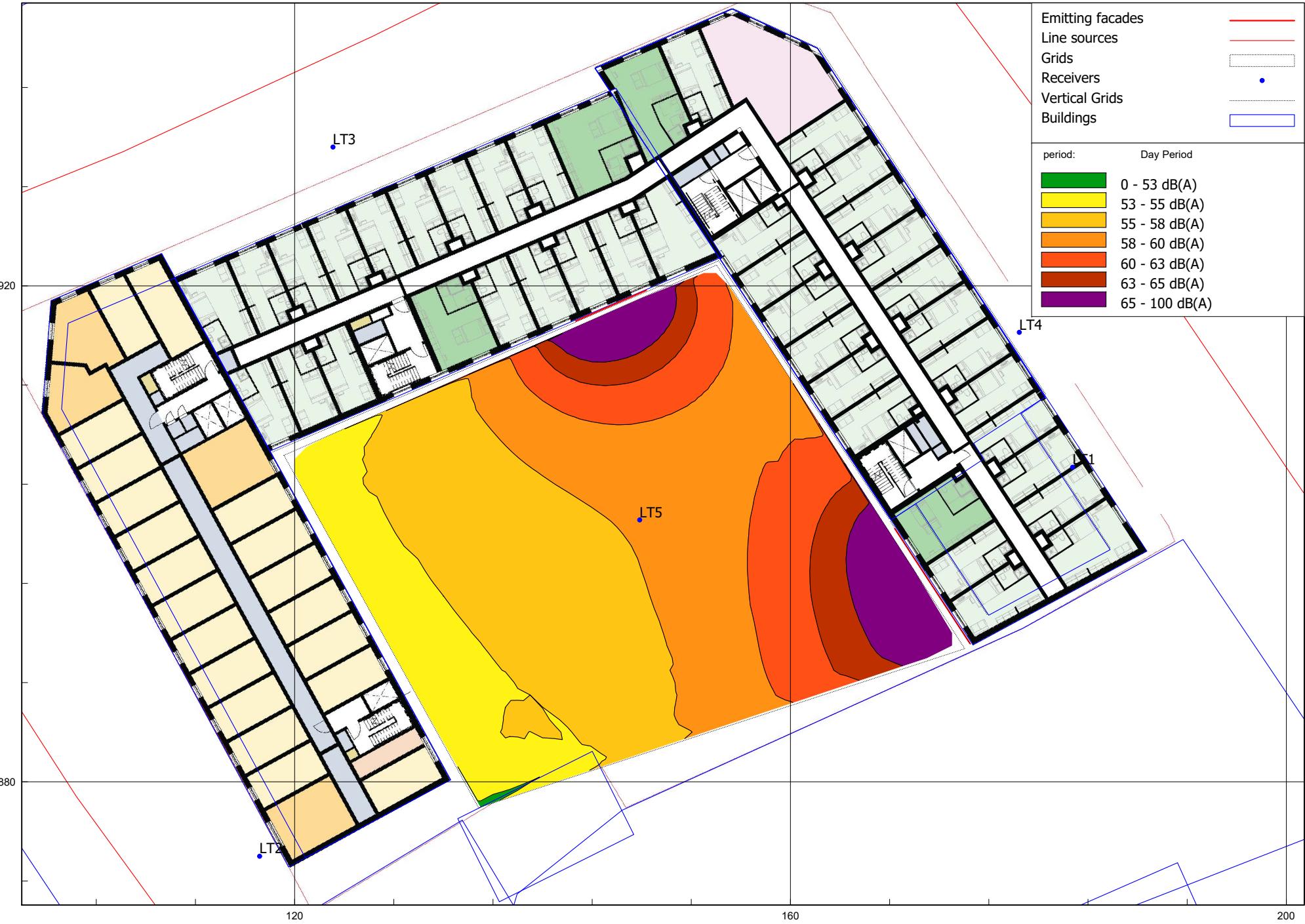
NB: Increasing the height will have a minimal effect on the attenuation.



A P P E N D I X J

Figure showing predicted noise levels in courtyard area

Predicted daytime noise levels in the courtyard (1.5m height)





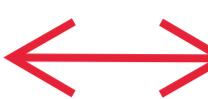
A P P E N D I X K

Mark-up showing residential to occupied non-residential adjacencies

KEY



- sound insulation through floor to above



- sound insulation through wall to adjacent



1 Ground Floor Plan

1:200

2 Mezzanine floor plan

1:200

0 10 20 m

Key

Ancillary
BOH
Co-Living Accessible
Co-Living Amenity
Co-Living Bedrooms
Family Bedroom
FOH
Hotel Ancillary
Retail
Smart Bedroom
Standard Bedroom

G 21.02.202 AD Design Freeze Issue
 F 15.02.202 AD Core updates, re-arrangement of plans on sheets, hotel reconfiguration, mezzanine plan added
 E 4 14.02.202 AD General core and hotel layout updates
 D 4 01.02.202 AD Scale bar and initial furniture layouts added
 C 28.01.202 AD Amendments to co-living amenity, lightwell, car spaces and cycle parking
 B 4 22.01.202 AD Updated in line with latest prepp
 A 02.01.202 AD Draft issue for comment on Option
 - 3 19.12.202 AD First Issue
 Rev Date By Description

Project
 Uxbridge High Street
 LONDON BOROUGH OF HILLINGDON
 Co-Living

Drawing Title
 Lower Floor Plans

Project Status
 PRELIMINARY

Client Logo

MODA
 DNA REAL
 ESTATE

Client
 CADDICK,
 MODA
 Project Number
 P23-110
 Contract Number
 n/a
 Scale @ A1
 1 : 200

Date
 11/12/2023
 Drawn By
 SM
 Checked By
 AD

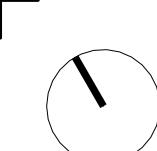
Drawing Number Identifier
 SK0105
 Revision
 G

Drawing Number
 CGL-ZZ-ZZ-DR-A-SK0105

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Child
 Graddon
 Lewis



Key

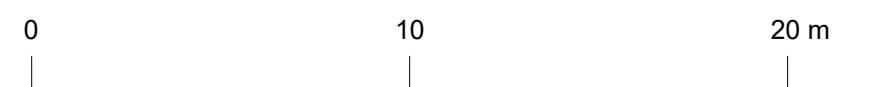
- Ancillary
- BOH
- Co-Living Accessible
- Co-Living Amenity
- Co-Living Bedrooms
- Family Bedroom
- FOH
- Hotel Ancillary
- Retail
- Smart Bedroom
- Standard Bedroom



1 Typical Upper Floor Plan Option
1:200



2 Eighth Floor Option Plan
1:200



F 21.02.202 AD Design Freeze Issue
E 15.02.202 AD Core updates, re-arrangement of plans on sheets, hotel reconfiguration, mezzanine plan added
D 14.02.202 AD General core and hotel layout updates
C 01.02.202 AD Scale bar and initial furniture layouts added
B 30.01.202 AD Reconfiguration of studios
A 12.01.202 AD Updated in line with latest preapp
- 10.01.202 AD Draft issue for comment on Option
Rev Date By Description

Project
Uxbridge High Street
LONDON BOROUGH OF HILLINGDON
Co-Living

Drawing Title
Upper Floor Plans

Project Status
PRELIMINARY

Client Logo

MODA
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Client
CADDICK,
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n/a
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AD

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