Luton Rising
Our airport.
Our community.
Our planet.

October 2023

London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 8 Additional Submissions (Examination)

8.49 Applicant's Post Hearing Submission - Issue Specific Hearing 3 (ISH3)

Infrastructure Planning (Examination Procedure) Rules 2010

Application Document Ref: TR020001/APP/8.49

The Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

London Luton Airport Expansion Development Consent Order 202x

8.49 APPLICANT'S POST HEARING SUBMISSION – ISSUE SPECIFIC HEARING 3 (ISH3)

Deadline:	Deadline 3
Planning Inspectorate Scheme Reference:	TR020001
Document Reference:	TR020001/APP/8.49
Author:	Luton Rising

Version	Date	Status of Version
Issue 1	October 2023	Additional Submission - Deadline 3

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1 INTRODUCTION

1.1.1 This document contains Luton Rising's (a trading name of London Luton Airport Limited) (the Applicant) oral summary of evidence and post hearing comments on submissions made by others at Issue Specific Hearing 3 (ISH3) held on 27 September 2023. Where the comment is a post-hearing comment submitted by the Applicant, this is indicated. The Applicant has also included tabulated responses to each of the action points raised by the Examining Authority (ExA) for ISH1 published on 4 October 2023.

1.1.2 The document uses the headings for each item in the agenda published for ISH 3 by the Examining Authority (ExA) on 19 September 2023.

2 AGENDA ITEM 1 - WELCOME, INTRODUCTIONS, ARRANGEMENTS FOR THE HEARING

2.1.1 The Applicant, which is promoting a proposal to expand London Luton Airport (the Proposed Development), was represented at Issue Specific Hearing 3 (ISH3) by Rebecca Clutten, of Counsel. The following persons were also introduced to the Examining Authority (ExA):

- Tom Henderson, Partner, BDB Pitmans, Legal Advisers to the Applicant.
- Dr. Calum Sharp, Senior Acoustic Consultant at Arup, Noise and Vibration Lead for the Applicant.
- Eddie Robinson, Associate Consultant at AECOM, Noise modelling lead.
- Richard Connelly, Aviation Planner at York Aviation.
- Louise Congdon, Managing Partner at York Aviation.
- Mark Day, Associate at Arup, Green Controlled Growth Lead.

2.1.2 Following introductions, the Applicant responded to a query raised in Issue Specific Hearing 2 (ISH2) on whether this application was the first application for an airport expansion project to be made since the sixth carbon budget had been adopted. the Applicant confirmed that it is not the first and that the Bristol Airport inquiry took place after the adoption of the sixth carbon budget. the Applicant confirmed that the assessment for the Proposed Development is with relation to national targets and that this is in line with approaches for other projects that have been undertaken or been approved since the sixth carbon budget has been adopted.

3 AGENDA ITEM 2 - CONSTRUCTION NOISE AND VIBRATION

3.1.1 The ExA asked that, given 24 hour working is likely, is the assessment based on daytime hours of working a realistic worst-case assessment, or should a quantitative night-time construction noise assessment be provided?

3.1.2 The Applicant noted that, as with all assessments of noise and vibration, for the Proposed Development the construction noise and vibration assessment takes a reasonable worst-case approach. The methodology for the construction assessment, along with assumptions relating to the reasonable worst-case, are set out in Section 16.5 and 16.6 of the **Chapter 16** of the Environmental Statement **[REP1-003]**, with further detail provided in Section 5 of **Appendix 16.1 [AS-096]**.

3.1.3 The Applicant noted that methods of working and types of plant used were taken from the **Construction Method Statement and Programme Report [AS-082]**. Within each assessment phase, predictions were broken down into key periods considered to generate the highest levels of noise and vibration and hence provide a reasonable worst-case.

3.1.4 The Applicant noted that predictions assume that all plant are positioned at the edge of the construction areas closest to the nearest sensitive receptors and the predictions assume that all items of plant are operating simultaneously, again as a reasonable worst-case. No hoardings were accounted for in the construction noise predictions as a reasonable worst-case.

3.1.5 The Applicant noted that the core working hours are 08:00 to 18:00 on weekdays (excluding bank holidays) and 08:00 to 13:00 on Saturdays, as set out in the **Code of the Construction Practice (CoCP) [APP-049]**.

3.1.6 The Applicant noted that measures to control noise and vibration impacts both inside and outside of core hours are set out in the **CoCP [APP-049]** which would be secured through Requirement 8 of the Development Consent Order (DCO). The CoCP requires the use of Best Practicable Means to reduce noise and vibration, which would include the use of hoardings as well as other standard measures to reduce and control construction noise and vibration. The CoCP requires prior approval to be sought under Section 61 of the Control of Pollution Act 1974 for any construction activities that are likely to be noisy or generate perceptible vibration. This applies for inside and outside core hours. Paragraph 14.2.9 of the CoCP requires specific consideration for activities outside of core hours, noting that these time periods are more sensitive.

3.1.7 The ExA queried whether a quantitative assessment can be provided for night-time activities the Applicant confirmed they would respond in writing.

3.1.8 **Action 1: Provide a quantitative assessment of night-time construction noise impacts based on the proposed night time works.**

3.1.9 ***Post Hearing Note****: response to Action 1 to be provided at Deadline 4.*

3.1.10 The ExA noted that the use of static conveyor belts is referenced in the **Construction Method Statement and Programme Report [AS-082]** and

asked the Applicant to explain how this had been taken into account in the noise assessment. ER confirmed that the Applicant would respond in writing.

3.1.11 **Action 2: Identify where in the Environmental Statement (ES) an assessment of the static conveyer belt can be found and if it isn't included provide an assessment.**

3.1.12 ***Post Hearing Note**: paragraph 4.3.34 of the **Construction Method Statement and Programme Report [AS-082]** states:*

3.1.13 *"Given the proximity of the cut and fill areas, two main systems are presently envisaged to be feasible to transport the excavated material to the fill area. These comprise:*

a. traditional trucks/dump trucks; or

b. a conveyor system, with a feed screening plant".

3.1.14 *Paragraph 4.3.38 goes on to identify that the conveyor system would have several benefits including: "reduced noise as conveyor units driven by electric motors".*

3.1.15 *The assessment of construction noise was undertaken based on the reasonable worst-case assumption that excavated material would be moved by traditional trucks/dump trucks. Noise from traditional trucks/dump truck movements on earthworks haul routes was modelled based on information in Table 7.2 of the **Construction Method Statement and Programme Report [AS-082]**. Noise from traditional trucks/dump truck movements within the construction site boundaries (internal movements) was modelled based on daily movement numbers in Inset 7.3 of the **Construction Method Statement and Programme Report [AS-082]**.*

3.1.16 The ExA noted that in the **Applicant's Response to Relevant Representations - Part 3 of 4 [REP1-026]** that it was confirmed that a noise screen would be provided between the Airport Access Road (AAR) and the Holiday Inn. The ExA asked for plans, sections, locations or acoustic specifications for the barrier to be provided and a confirmation of how it would be secured. RC confirmed that the Applicant would respond in writing. Luton Borough Council (LBC) noted that they would provide details of what was proposed as part of the New Century Park planning permission.

3.1.17 **Action 3: Provide details (sections/ plans/locations/ acoustic specification) for the acoustic screen in relation to the Airport Access Road (AAR) and where/ how it would be secured.**

3.1.18 **Action 4 (for Luton Borough Council): Provide details of the acoustic screen for the AAR that were provided as part of the New Century Park/Green Horizons Park planning application.**

3.1.19 ***Post Hearing Note**: details of the AAR acoustic screen are provided in **Holiday Inn Acoustic Barrier - Change Notification [TR020001/APP/8.45]**. The screen would be secured through the DCO as it falls within the existing scope of ancillary works described as 'lettered works' within Schedule 1 of the Draft DCO*

[AS-067] - specifically lettered work (g) which provides for noise barriers. It is within the area depicted for Work No. 6a(02) as shown in the Work Plans (Part 6 of 6) [AS-017].

3.1.20 The ExA asked the Applicant to confirm if and where construction noise hoardings would be located.

3.1.21 The Applicant responded that this information would be provided as part of the Section 61 consent applications, should hoardings be required, based on construction activities and the distance to the nearest sensitive receptors. The Applicant confirmed that hoardings were not taken into account in the construction noise assessment presented in the ES.

3.1.22 Michael Reddington raised a query through the ExA as to whether an acoustic screen would be provided at the eastern end of the AAR. The Applicant confirmed that the Applicant had not identified the need for any road noise screens on the eastern end of the AAR.

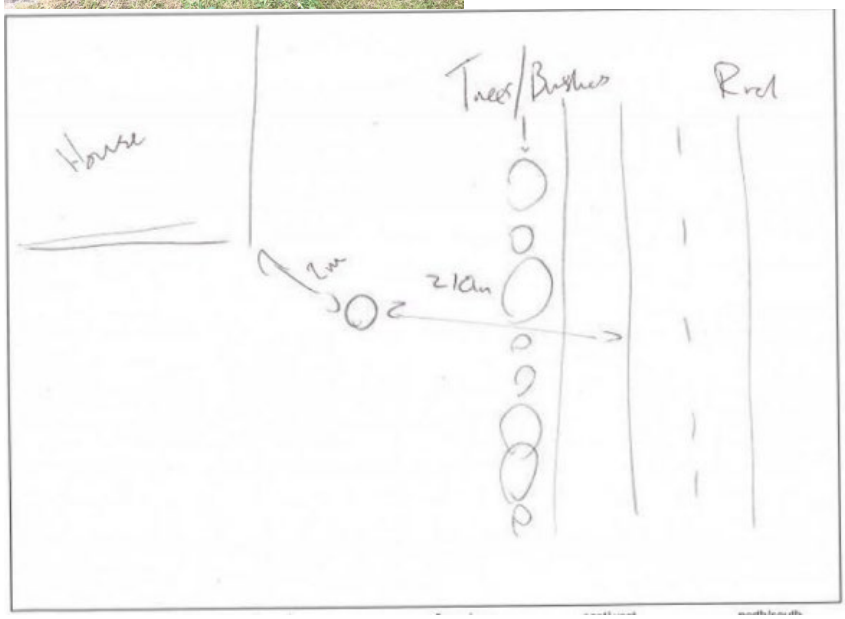
3.1.23 The ExA asked the Applicant to confirm whether the measurements summarised in Table 4.1 of **Appendix 16.1 [AS-096]** were free-field or façade measurements. ER confirmed that they are free-field measurements. The ExA further queried measurement locations ML2 and ML15 with reference to **Ambient noise monitoring data and survey sheets [AS-120]** and asked the Applicant to confirm whether a façade correction should have been applied to these measurements and whether this would have an effect on the construction noise assessment. ER confirmed that the Applicant would respond in writing.

3.1.24 **Action 5: Table 4.4 of Appendix 16.1 of the ES [AS-096] in relation to Monitoring Location (ML)2 (p21) and ML15(p48) and monitoring datasheets in AS-120 both appear to be within 3.5m of reflective surfaces. Should a 3dB façade correction have been applied and if it had how would this affect the results of the construction noise assessment?**

3.1.25 ***Post Hearing Note**: Additional information on monitoring locations ML2 and ML15 is provided in Table 3.1. The photos demonstrate that the monitoring locations are not influenced by nearby reflective surfaces that would require a façade correction to be applied, therefore there is no implication for the results of the construction noise assessment.*

Table 3.1 *Additional Noise Monitoring Information*

Description	Photo/ Drawing of Location
ML2 - Garden of property with nearby garden walls of approximately 1m height	

Description	Photo/ Drawing of Location
ML15 - The illustration of the monitoring location provides an indication of the monitoring set up relative to the property and the main source of noise (the road). The photo, clearly shows that the monitoring equipment is sufficiently offset from the property that any road traffic noise reflected from the house façade would have no material effect on measured sound levels.	 

3.1.26 The ExA noted that Table 14.2 of the **CoCP [APP-049]** contains temporary vibration thresholds for receptors above the Significant Observed Adverse Effect Level (SOAEL) and asked whether the relevant councils have agreed to these thresholds. The Applicant noted that the Luton Borough Council, Hertfordshire County Council; North Hertfordshire District Council; and Central Bedfordshire Council (the **Host Authorities**) had each agreed to the assessment criteria used in **Chapter 16** of the ES **[REP1-003]** but that discussions with respect to the thresholds in the CoCP were ongoing.

3.1.27 **Action 6: The CoCP [APP-049] Table 14.2 identifies additional temporary vibration thresholds for receptors that are above SOAEL. Confirm whether the councils agreed to the relaxed thresholds above SOAEL.**

3.1.28 ***Post Hearing Note**: The vibration thresholds in the CoCP have not yet been agreed with the councils but engagement with the Host Authorities with regard to noise and vibration matters are ongoing and further matters of agreement will be recorded in future updates to the relevant Statements of Common Ground.*

3.1.29 **Action 7: Provide an explanation of the receptor response to vibration levels ≤3mm/s and ≤5mm/s similar to that presented in CoCP [APP-049] Table 14.1 for lower values.**

3.1.30 ***Post Hearing Note**: Table 14.2 of the **CoCP [APP-049]** notes 3.0 and 5.0 mm/s Peak Particle Velocity (PPV) as construction vibration thresholds equivalent to the Significant Observed Adverse Effect Level (SOAEL) defined in **Chapter 16** of the ES **[REP1-003]** as a PPV of 1.0 mm/s. These are for people experiencing the vibration in residential and office buildings respectively. These thresholds apply only where "prior warning" has been provided. As noted in **Chapter 16** of the ES, this is in line with the relevant British Standard (BS5228-2, Ref 1) which advises that for vibration between 1.0 and 10.0 mm/s PPV "It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents".*

3.1.31 *The Applicant will continue to engage with the Host Authorities with regard to the noise and vibration section of the CoCP and provide an update of those discussions at Deadline 4.*

3.1.32 The ExA noted that the assessment in **Chapter 16** of the ES **[REP1-003]** assumes the use of continuous flight auger (CFA) piling and asked the Applicant to confirm what is in place to secure quieter piling techniques.

3.1.33 The Applicant confirmed that the CoCP requires the implementation of Best Practicable Means which includes the selection of quiet and low vibration equipment and that the reference to this within the CoCP would be provided in writing.

3.1.34 **Action 8: Provide the reference/ location in the CoCP [APP-049] where it states 'no vibration equipment and quiet equipment'**

3.1.35 ***Post Hearing Note**: paragraph 14.2.2 of the **CoCP [APP-049]** notes: "The lead contractor will have a duty to avoid, reduce, control and/or manage construction noise and vibration through BPM, including: a. Noise and vibration control at source – for example, the selection of quiet and low vibration equipment"*

3.1.36 The ExA queried whether discussions had been had with the local authorities on the subject of piling. LBC confirmed that they would respond in writing on that point.

3.1.37 **Action 9 (for LBC): Confirm whether any discussions have been held with the Applicant on the subject of piling.**

3.1.38 The ExA queried whether there was a specific restriction related to piling over and above the use of Best Practicable Means in the **CoCP [APP-049]**. RC confirmed that the Applicant would respond in writing.

3.1.39 **Action 10: Consider whether a restriction on piling would be needed and if so how and where would this be secured.**

3.1.40 ***Post Hearing Note**: response to Action 10 to be provided at Deadline 4.*

4 AGENDA ITEM 3 - SURFACE ACCESS NOISE

4.1.1 The ExA noted that the construction traffic noise assessment compares the construction traffic in assessment Phase 2a to the Do-Something scenario from assessment Phase 1 and asked the Applicant to explain this approach. The Applicant clarified that this is a comparison of the Do-Something scenario (with construction traffic) to the Do-Something scenario (without construction traffic) of the previous phase to account for the increase in traffic within the assessment phase due to construction traffic only.

4.1.2 The ExA noted that the daytime surface access noise Unacceptable Adverse Effect Level (UAEL) of 74dB$L_{Aeq,16h}$ had been questioned by the Host Authorities. The ExA asked the Applicant to explain why the A14 DCO precedent was applicable to the local conditions of the Proposed Development.

4.1.3 The Applicant explained that whilst due regard had been made to DCO precedent, the setting of the UAEL had also been informed by British Standard 8233 (Ref 2) and the Association of Noise Consultants and Institute of Acoustics Professional Practice Guidance on Planning and Noise (Ref 3) as set out in the **Surface access noise modelling additional information [REP2-040]**. The Applicant explained that the starting point for the derivation of the UAEL is BS8233 which provides guidance for acceptable internal noise levels which are equally as applicable to the local conditions of Luton as they are for other projects.

4.1.4 ***Post Hearing Note****: this is reinforced by Luton Borough Council's Planning and Noise Guidance (Ref 4) which uses the same internal noise level criteria, with reference to BS8233, as used to define the UAEL for the Proposed Development*

4.1.5 The ExA noted that Table 16.25 of **Chapter 16** of the ES **[REP1-003]** provides a comparison of measured and modelled surface access data with discrepancies of between 1 and 8dB. The ExA asked if an equivalent table could be provided for the $L_{Aeq,8h}$ night-time. The Applicant explained that this would only be possible for ML41 where long-term measurements were undertaken, as the remainder of the measurements were short-term measurements made during the daytime only.

4.1.6 **Action 11: Applicant to provide an equivalent table to that provided in Table 16.25 [REP1-003] for LAeq8hr night-time traffic noise, where monitoring data allows?**

4.1.7 ***Post Hearing Note****: the equivalent data for ML41 for the LAeq8h night is provided in Table 4.1. All other measurements were short-term daytime measurements only.*

*Table 4.1: Comparison of baseline noise monitoring and modelling results at roadside locations (night-time equivalent of Table 16.25 from **[REP1-003]**)*

Ref.	Description	Measured	Predicted	Comments
		$L_{Aeq,8h}$ dB	$L_{Aeq,8h}$ dB	
ML41	Brick Kiln Lane	43-47	44	A very quiet rural area with only occasional traffic on Brick Kiln Lane.

4.1.8 The ExA asked the Applicant to explain, with reference to relevant modelling guidance, how the level of variance between the modelled and measured data constitutes an acceptable level of correlation.

4.1.9 The Applicant noted that this has been discussed with the Host Authorities and has provided additional information on the validation of the noise model in **Surface access noise modelling additional information [REP2-040]**. The assessment uses the Calculation of Road Traffic Noise (CRTN, Ref 5) methodology and guidance in the Design Manual for Roads and Bridges (DMRB, Ref 6).

4.1.10 The Calculation of Road Traffic Noise methodology is an empirical methodology that was validated at the time of its creation with thousands of long-term measurements (Ref 7). There is no requirement in DRMB or the CRTN methodology to take further measurements to re-validate the methodology for a particular scheme. DMRB guidance itself, in a note following paragraph 4.2, cautions that short-term measurements cannot provide a like-for-like comparison to modelled noise levels which represent 18-hour annual average weekday noise levels.

4.1.11 However, it is standard practice to undertake spot check measurements to quality assure the model and in general these spot checks show good agreement within 3dB between measured and predicted values for the majority of measurement locations. Four locations have been identified as having a wider variation.

4.1.12 Further analysis of the spot measurement where measurement and predicted data differ by more than 3dB has been undertaken in collaboration with the Host Authorities' noise consultant and has demonstrated that the discrepancies are attributable to specific factors local to the measurement locations:

a. Planned rather than actual noise measurement locations being used in the spot check exercise;

b. Comparison of 3-hour short term measurements to annual average weekday predictions; and

c. Localised poor road surface conditions.

4.1.13 Following this exercise it is understood that the Host Authorities noise consultant considers the noise model to be appropriate and that the discrepancies in the spot check do not affect the validity of the surface access noise model.

4.1.14 The ExA queried whether this additional information can be provided. The Applicant confirmed that this can be provided for Deadline 3.

4.1.15 **Action 12: Provide a copy of the modelling report provided to the councils which addresses the level of variance between modelled/monitored data and includes additional monitoring information.**

4.1.16 ***Post Hearing Note**: the additional information has been provided in a revision of **Surface access noise modelling additional information [TR020001/APP/8.41]** submitted at Deadline 3.*

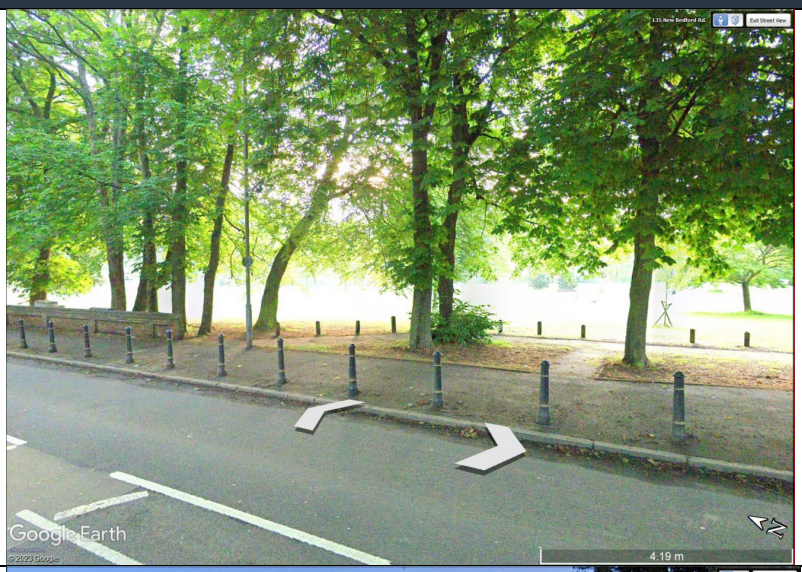
4.1.17 The ExA queried whether measurement locations ML26, ML28, ML29, ML41 and ML43 require a façade correction, and if details of setup could be confirmed where not already provided. The Applicant confirmed that they would respond in writing.

4.1.18 **Action 13: Check whether the survey data collected at ML26, ML28, ML29, ML41 and ML43 requires application of any façade corrections due to monitoring setup and confirm details of set up where not provided.**

4.1.19 ***Post Hearing Note:** Additional information on monitoring locations ML26, ML28, ML29, ML41 and ML43 are provided in Table 4.2. The photos demonstrate that the monitoring locations are not influenced by reflective surfaces that may have affected measured noise data.*

Table 4.2: Additional Noise Monitoring Information

Monitoring Location	Description	Photo/ Drawing of Location
ML26	No photos of the monitoring location are available. It was confirmed with site staff that the monitoring location was on the path at the side of the road in free-field conditions.	

Monitoring Location	Description	Photo/ Drawing of Location
ML28	No photos of the monitoring location are available. It was confirmed with site staff that the monitoring location was at the edge of Wardow Park in free-field conditions.	
ML29	No photos of the monitoring location are available. It was confirmed with site staff that the monitoring location was in the car park of The Greek Orthodox Church of St. Charalambos in free-field conditions.	

Monitoring Location	Description	Photo/ Drawing of Location
ML41	*At the roadside with no reflecting surfaces nearby*	
ML43	*At the roadside with no reflecting surfaces nearby*	

4.1.20 The ExA asked the Applicant to confirm how future changes to carriageway widths have been taken into account in the road traffic noise model and how this has affected receptor distances.

4.1.21 The Applicant confirmed that upgrades to the existing road network have been taken into account in the road traffic noise model, both in terms of physical changes to the road (which would account for changes in receptor distances) and in terms of any impact that has on traffic data. The ExA asked where this is confirmed in the ES. The Applicant confirmed this would be provided in writing.

4.1.22 **Action 14: Confirm what road upgrade carriageway width assumptions have been used in the noise model or signpost to where this information is included in the ES.**

4.1.23 ***Post Hearing Note**: Paragraph 9.2.2 of **Appendix 16.1** of the Environmental Statement **[AS-096]** sets out the data that has been utilised in the surface access noise modelling, including changes to the road network and traffic forecast data. To provide further clarification, the surface access drawings referenced in this paragraph are those presented in Appendix A of the **Transport Assessment [APP-200]** and the operational traffic data is provided in Appendix F of the **Transport Assessment [APP-201]***

4.1.24 The ExA noted that the Airport Access Road (AAR) has a vertical Limit of Deviation (LoD) of 2m and asked whether, if the road was dropped by 2m, would that constitute a worst-case. RC confirmed that the Applicant would respond in writing.

4.1.25 **Action 15: In relation to the AAR explain whether noise impacts would be worse/better if the road was dropped 2 meters due to reduced distance to receptors to the north as would be allowed by the proposed limits of deviation.**

4.1.26 ***Post Hearing Note**: with reference to **Airport Access Road and Luton DART Long Section Plans [APP-027]**, the closest the AAR gets to residential properties to the north is 100 m. If the road elevation was two meters lower, as allowed within the limits of deviation, the associated road traffic noise would be decreased in some locations due to greater screening from intervening land and structures but could be increased in some locations due to the reduced distance to the ground floor of residential properties. However, such an elevation change would, at most, alter the distance to the closest residential properties by less than 0.1 m which would in turn change the road traffic noise level at these locations by less than 0.1 dB. This is considered a negligible change which would not impact the conclusions of the assessment.*

4.1.27 The ExA noted that Transport Research Laboratory (TRL) Method 3 has been used by the Applicant to derive night-time noise levels for the purpose of the surface access noise assessment and asked the Applicant to explain how they had determined that movements on the local road network were not atypical such that Method 3 can be used..

4.1.28 **Action 16: Having selected TRL method 3 and given the airport context, explain how you determined that movements on the local road network were not 'atypical'**

4.1.29 ***Post Hearing Note**: response to Action 16 to be provided at Deadline 4.*

4.1.30 The ExA noted that **Chapter 16** of the ES **[REP1-003]** notes that there would be a residual significant adverse effect for properties on Stony Lane, but that the Applicant is committed to investigating and if necessary funding opportunities for parking controls traffic management and calming measures. The ExA asked the Applicant to confirm how this would be secured.

4.1.31 **Action 17: Applicant to provide clarity regarding how noise mitigation for properties on Stony Lane would be secured.**

4.1.32 ***Post Hearing Note**: response to Action 17 to be provided at Deadline 4.*

4.1.33 The ExA also queried how mitigation for properties on Crawley Green Rd would be secured. RC confirmed (later in the hearing) that noise insulation for these properties is set out in **Draft Compensation Policies, Measures and Community First [REP2-005]** and would be secured by a Section 106 agreement.

5 AGENDA ITEM 4 - FIXED PLANT NOISE

5.1 Fixed plant noise – residential assessment

5.1.1 The ExA noted that the **Fixed Plant Noise Management Plan [APP-112]** requires that fixed plant should be designed to achieve a rating level of 5dB below background, whereas the Green Horizons Park permission condition fixed plant noise levels to be 10dB below background. The ExA asked whether the 5dB below background for the Proposed Development had been agreed with the local authority. LBC confirmed that the general methodology had been agreed, but that discussions were ongoing with respect to 5dB or 10dB below background.

5.1.2 The Applicant confirmed that the thresholds set for the Proposed Development are sufficient to avoid significant effects on health and quality and adverse likely significant effects from noise. The criteria and methodology, which have been applied elsewhere such as for High Speed 2 and the Manston DCO, are based on British Standard 4142 (Ref 8) which notes (in Section 11): "*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.*" It is therefore considered that the criteria used for the Proposed Development, which is already 5dB lower than the 'low impact' threshold for BS4142, is appropriate. However, the Applicant confirmed they would be happy to continue to discuss this with LBC.

5.1.3 **Action 18 (for Applicant and LBC): Discuss whether the maximum 5dB above background noise levels for fixed plant is appropriate.**

5.1.4 ***Post Hearing Note****: the Applicant will continue to discuss the fixed plant noise assessment and thresholds with LBC and record any agreements in the Statement of Common Ground (SoCG).*

5.1.5 The ExA queried whether any fixed plant noise had been in included in the ground noise assessment and modelling, or whether any allowance had been made for noise levels being 5dB above background. The Applicant confirmed that fixed plant noise had not been included in the noise modelling, and that the approach outlined in the **Fixed Plant Noise Management Plan [APP-112]** is to avoid adverse effects from fixed plant by designing and operating fixed plant to be 5dB below background as far as reasonably practicable.

5.1.6 The ExA queried whether the criteria in the Fixed Plant Noise Management Plan could allow for the baseline noise levels to increase. The Applicant outlined that the metric used in BS4142 and the **Fixed Plant Noise Management Plan [APP-112]** is the L_{A90} metric which represents the quietest 10% within a given time period and so is not generally affected by intermittent sounds such as aircraft noise. As the L_{A90} represents the quietest 10% and the criteria is 5dB below the background L_{A90}, the rating noise levels will be substantially below the L_{Aeq} used as the baseline for other noise assessments.

This provides sufficient protection from fixed plant noise adding to other noise sources and increasing the overall ambient baseline sound levels.

5.2 Fixed plant noise – non-residential assessment

5.2.1 The ExA noted that the **Fixed Plant Noise Management Plan [APP-112]** requires that an assessment for non-residential receptors shall be undertaken using a methodology first approved in writing by the relevant planning authority. The ExA asked whether discussions had been held with LBC on this methodology, and what the methodology would entail.

5.2.2 The Applicant noted that discussions are ongoing with LBC, but that as noted in the **Fixed Plant Noise Management Plan [APP-112]**, the methodology has not been defined at this stage. This is because the methodology will necessarily depend on detail that is not available at this time, such as detail of the plant items, which receptors are exposed and the context of the use of the non-residential receptor and its sensitivity to noise.

6 AGENDA ITEM 5 - AVIATION NOISE ASSESSMENT (INCLUDING GROUND NOISE)

6.1 Brief explanation of AEDT and the validation process

6.1.1 The ExA invited the Applicant to provide a summary of the Aviation Environmental Design Tool (AEDT).

6.1.2 The Applicant provided an outline of AEDT as follows:

a. AEDT is an aircraft noise modelling software package produced by the United States Federal Aviation Authority.

b. AEDT supersedes the previous incarnation of the noise model known as the Integrated Noise Model, as of 2015.

c. AEDT is the only software, other than ANCON which can only be used by the Civil Aviation Authority (CAA), advocated by the CAA as "a recognised and validated noise model".

d. AEDT can generate a number of noise metrics including noise contours which represent equal areas of noise exposure.

e. AEDT takes into account the number of aircraft, type of aircraft, their noise level and how they fly both horizontally and vertically (flightpaths).

f. The Applicant's validation of the AEDT noise model follows guidance from the CAA in their Policy on Minimum Standards for Noise Modelling CAP2091 (Ref 9) and exceeds the recommended requirements.

g. The validation involves adjusting noise levels and flight procedures of individual aircraft types based on noise monitoring terminal data and radar track data specific to Luton Airport.

h. The validation has been demonstrated to be successful and details are presented in Section 6 of **Appendix 16.1** of the ES **[AS-096]**.

i. Validation has been scrutinised in detail by HAs' noise consultant and the model and its validation has been accepted by all the HAs in their **Statements of Common Ground [REP2-020 to REP2-024]**.

6.1.3 The ExA noted that representations had been made that the airport was in breach of its noise contour area limits in 2019. The ExA asked the Applicant to explain how the 2019 baseline has affected the model validation and the assessment of significant effects.

6.1.4 The Applicant explained that it would first respond on how the 2019 baseline informs the model validation and then move on to describing how it has affected the assessment of significant effects. The Applicant confirmed that the breach of noise contour area limits in 2019 has not affected the model validation, which is based on measurement of individual aircraft movements, rather than the overall noise exposure generated by aircraft over a fixed time period such as the $L_{Aeq,16h}$ or $L_{Aeq,8h}$.

6.1.5 Andrew Lambourne (AL) of LADACAN noted that there are noise performance issues with the A321neo and queried, via the ExA, whether the noise model could be validated annually.

6.1.6 The Applicant responded that the issue with the A321 is acknowledged within **Chapter 16** of the ES **[REP1-003]** and as a result the performance of the A321 is based on measured noise levels in Assessment Phase 1.

6.1.7 The Applicant also noted that there is a commitment within the **Aircraft Noise Monitoring Plan [APP-221]** that the noise model validation (in terms of adjusting underlying noise data for individual aircraft types) would be updated every five years. However, the inputs to the noise model each year would be based on what was actually flown at the airport which would take into account the gradual changes in fleet mix year on year.

6.1.8 The ExA queried whether there would be any scrutiny of the annual update to the noise model and noise model reporting. MD confirmed that the annual noise monitoring report would be submitted to the Noise Technical Panel and Environmental Scrutiny Group for commentary. This process is set out and secured in the **Green Controlled Growth Framework [APP-218]**.

6.1.9 The ExA queried whether there would be any merit in an annual validation of the noise model. The Applicant noted that noise levels from individual aircraft are unlikely to change significantly year on year but agreed that the Applicant would take this away and respond in writing.

6.1.10 **Action 20: Applicant to provide commentary on undertaking an annual validation of the noise model against noise monitoring.**

6.1.11 ***Post Hearing Note**: the **Aircraft Noise Monitoring Plan** in Appendix C of the Green Controlled Growth Framework **[TR020001/APP/7.08]** has been updated at Deadline 3 to require that the aircraft noise model should be validated annually, rather than every five years.*

6.2 Use of 2019 Actuals and Consented baseline

6.2.1 The Host Authorities set out their position with regards to the use of 2019 Actuals baseline being inappropriate in their view and the ExA invited the Applicant to respond.

6.2.2 The Applicant summarised that the use of either the 2019 Actuals or Consented baseline does not affect the identification of adverse likely significant effects in Environmental Impact Assessment (EIA) terms, nor does it affect the conclusions of residual significant adverse effects on health and quality of life in noise policy terms.

6.2.3 The Applicant outlined that there are two methods that have been used to identify significant effects in the noise assessment.

6.2.4 The first method to identify adverse likely significant effects in Environmental Impact Assessment terms (EIA) due to noise change as a result of the Proposed Development. This method identifies noise change by comparing the situation with the Proposed Development (the Do-Something scenario) to the

situation without the Proposed Development (the Do-Minimum scenario) in each future assessment year. The future air noise baseline (the Do-Minimum) is compliant with the airport's current consented long term noise limits in each assessment year and therefore demonstrates a scenario where the airport is operating within its currently consented noise limits. The 2019 baseline does not factor into this assessment.

6.2.5 The second method is to identify significant effects on health and quality of life in Government noise policy terms. These are identified when noise exposure with the Proposed Development exceeds the SOAEL threshold. Again, the identification of significant effects on health and quality of life is with reference to the noise exposure from the Proposed Development in a given assessment year and is not affected by the 2019 baseline.

6.2.6 The criteria for these two methods, in terms of noise change criteria and assessment thresholds for significant effects on health and quality of life, have been agreed as appropriate with the Host Authorities in their **Statements of Common Ground [REP2-020 to REP2-024]**.

6.2.7 Where the 2019 baseline does come into play is when comparisons are made to the 'current baseline'. This has been done in the first instance using the 2019 Actuals baseline to provide context so that people can understand how noise levels will change with the Proposed Development by comparison to what was actually flown and was actually experienced by communities in the baseline year. This is in line with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (which refers to the baseline scenario as "a description of the relevant aspects of the current state of the environment" in Schedule 4, paragraph 3) (Ref 10).

6.2.8 The Applicant recognised that the noise contour area limits were exceeded in 2019, so this comparison has also been repeated using the 2019 Consented baseline. This has been presented as a sensitivity test in Table 16.74 of **Chapter 16** of the Environmental Statement **[REP1-003]** with full details provided in Section 12.2 of **Appendix 16.1 [AS-096]**. As described previously the conclusions drawn from this comparison in terms of EIA likely significant effects and residual significant effects on health and quality of life are unchanged. The only nuance to this is that whilst the identified significant effects on health and quality of life is unchanged by the 2019 Actuals or Consented baseline, a proportion of those identified effects during the night-time in Phase 1 and Phase 2b only (between 5 and 18%) could be considered 'new' effects as they would not have been exposed above the significant adverse effect level threshold in 2019 had the 2019 Consented baseline occurred in reality. Regardless of whether these effects are considered new or not, they occur over the same population and they are avoided through the provision of the full cost of noise insulation above the significant adverse effect level thresholds.

6.2.9 The ExA noted that the Consented baseline had been derived by adjusting the 2019 fleet mix and queried whether this approach would result in supplementary metrics like the above contours being less likely to show absolute changes. The Applicant responded that this may be the case, but that the supplementary

metrics are used to provide additional information in line with government and CAA guidance and have not been used to draw any conclusions in the 2019 baseline comparison exercise. The comparison focuses on the L_{Aeq} contour so the focus on deriving the 2019 Consented baseline was to ensure that the L_{Aeq} contour was compliant with the current consented noise contour area limits (which are based on the L_{Aeq} metric only).

6.2.10 The ExA noted that paragraph 5.58 of the Airports National Policy Statement (ANPS) (Ref 11) requires a comparison back to a historic baseline (2013 in the case of Heathrow). The Applicant noted that whilst the ANPS does not have effect for the Proposed Development, the Applicant has had due regard to its principles, and this is part of the reason why the Applicant has compared back to the historic 2019 baseline.

6.3 Future fleet mix and assumptions of quieter planes

6.3.1 The ExA asked the Applicant to provide evidence on airlines fleet orders that has informed the future fleet mix.

6.3.2 The Applicant confirmed this data can be provided and that fleet mix modernisation has been developed with consideration to real world airline orders and re-fleeting patterns, as well as consideration of annual reports from the airlines, such as Wizz Air, which reports its plan to be 100% new generation aircraft by 2027.

6.3.3 **Action 21: Provide information regarding airline orders and annual reports to demonstrate certainty in relation to the assumptions on fleet replacement/ modernisation.**

6.3.4 ***Post Hearing Note****: Figure 1 to Figure 3 provide information from Wizz Air, easyJet and Ryanair on their airline orders. Note that the easyJet orders relate to Airbus Neo aircraft. easyJet is also seeking additional orders, subject to delivery slots from Airbus, to replace older generation A320ceo aircraft before they reach the age of 20 years.*

Figure 1: Wizz Air orders (Source: Wizz Air Analyst Presentation 25/26 September 2023)

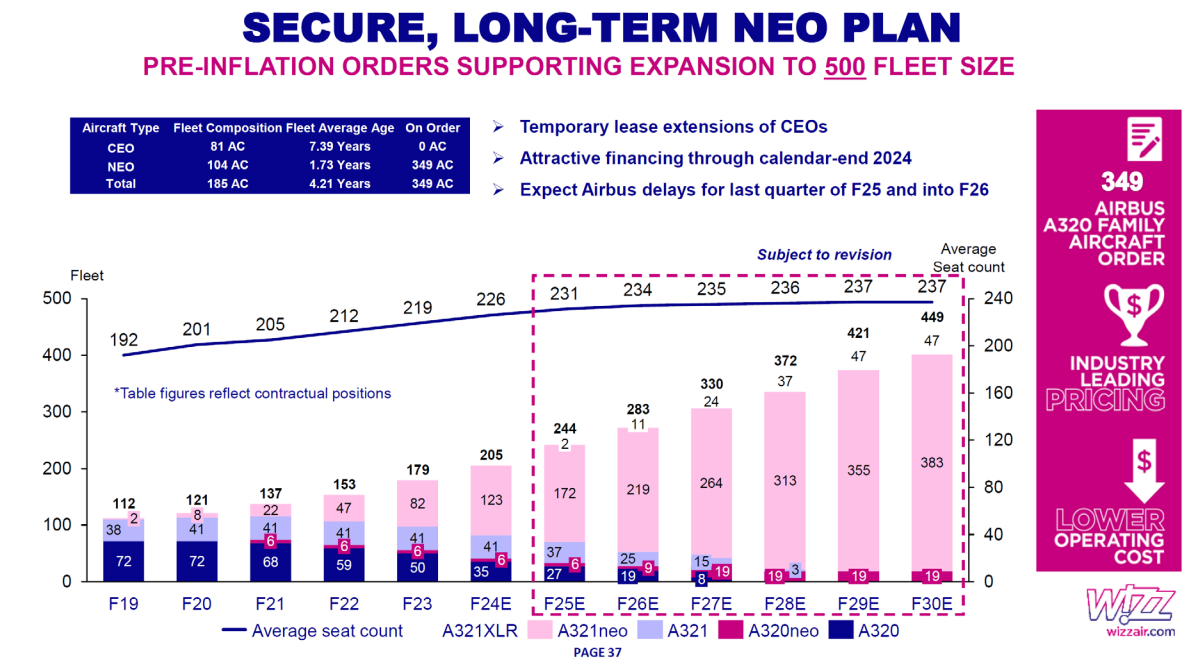


Figure 2: easyJet orders (Source: easyJet Operations and Customer Seminar July 2023)

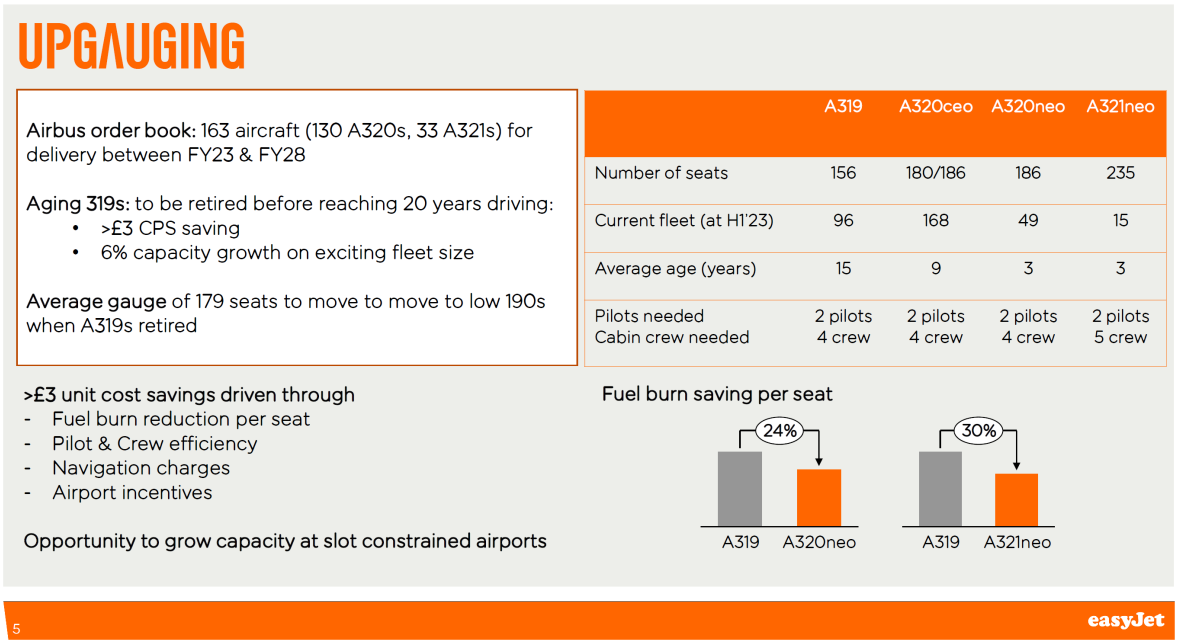
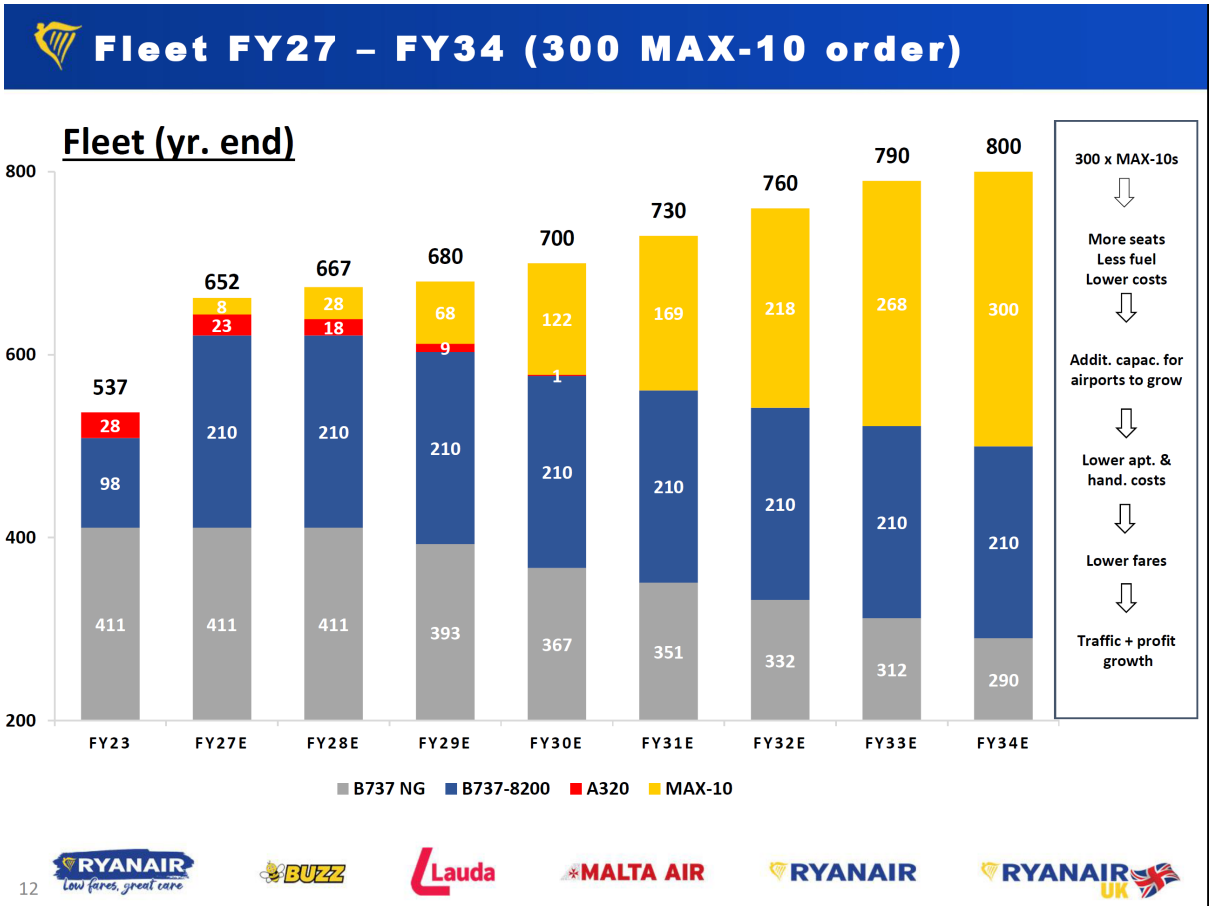


Figure 3: Ryanair orders (Source: Ryanair Q1 FY24 Results Jul 2023)



6.3.5 The ExA queried what noise control measures the Applicant is proposing with regards to the incentivisation of quieter aircraft and how this would be secured. The Applicant responded that the overall principals of Green Controlled Growth are to secure the noise environmental outcomes, including the transition to quieter new generation aircraft, rather than pre-defining the control measures required to achieve that outcome. Given that the airport expansion is planned over an extended period of time, this approach provides appropriate flexibility for the airport operator to identify and implement the optimum mitigation at the time it may become required and draw on future technology improvement whilst also providing certainty of the outcomes.

6.3.6 The Applicant noted that, whilst the mitigation measures are not pre-defined, the Applicant has already been having discussions with the Host Authorities on including a brief outline of what the mitigation measures that could be employed by the airport operator at a given time to meet the Noise Envelope Limits. The Applicant noted that this would be provided in an update to the Green Controlled Growth documents at Deadline 3.

6.3.7 **Action 22: Provide examples of the potential measures that could be used to deliver the outcomes secured by the Green Controlled Growth (GCG) 'mitigation toolbox'**

6.3.8 ***Post Hearing Note**: the **Green Controlled Growth Explanatory Note [TR020001/APP/7.07]** has been updated to include, at paragraph 3.2.16, to*

note that key to maintaining growth whilst controlling the noise impacts with respect to the Noise Envelope Limits will be the forward planning of capacity declaration and slot management measures. However, examples of noise control measures currently available to the airport operator have also been provided within the same paragraph.

6.3.9 The ExA queried what level of certainty can be placed on the future fleet mix.

6.3.10 In terms of the certainty with regard to future fleet mix, the Applicant noted that movement to new generation aircraft has been actively ongoing with airlines. The economic imperative for airlines to move towards this is primarily based around the minimisation of fuel burn and reduction in carbon. This is particularly notable at London Luton Airport where low fare airlines are the predominant users both now and expected in the future. Low fare airlines tend to replace their aircraft earlier than many legacy airlines due to the imperative to keep costs low, including the costs of maintaining aircraft as they age. The Applicant noted a cycle of aircraft manufacturers to develop new types of aircraft over around a 10 - 20 year period. Replacement periods for low fare airlines are typically around 14 years.

6.3.11 With regard to next generation aircraft, the Applicant noted that guidance in terms of the rate of introduction was taken from the Jet Zero Strategy (Ref 12) which details when next generation aircraft are expected to enter service.

6.3.12 The ExA notes that representations have queried the level of noise reduction that may be provided by next-generation aircraft, and that noise levels may be higher in some circumstances and asked the Applicant to comment on this.

6.3.13 The Applicant clarified that the ES assumes no noise benefit from the next-generation aircraft in the core assessment. If noise increases from next-generation were to occur, noise levels would need to increase across the whole fleet to result in a significant increase in the overall noise contour footprint. However, were that to be the case, the airport would still need to operate within the GCG Noise Envelope Limits, so other forms of control or mitigation would need to employed to offset any such increase.

6.3.14 AL of LADACAN noted that the cycle of aircraft replacement can also be influenced by aircraft being recalled on safety grounds within two or three years. ExA invited the Applicant to respond on this comment.

6.3.15 The Applicant noted comments with regard to the speed at which new generation aircraft are being produced and the likelihood of faults arising as a result (for example Boeing 787). The Applicant highlighted that as the problems are being detected now, within 2-3 years these faults are likely going to be resolved.

6.4 AEDT model validation

6.4.1 The ExA noted that the AEDT noise model validation targets the 50th percentile of measured data and asked whether this is specified in any modelling standards and whether a 75th or 95th percentile would have been more representative.

6.4.2 ER clarified that there is no specification in aircraft noise modelling guidance or standards and that the use of the 50th percentile represents the typical noise level of a spread of aircraft movements which tends to follow a standard gaussian distribution.

6.4.3 ***Post Hearing Note**: the use of a 75th or 95th percentile would result in a general bias and systematic overestimation of typical and representative noise levels.*

6.4.4 The ExA queried whether blanket corrections to aircraft noise data is appropriate and whether specific corrections should be applied for each measurement location.

6.4.5 The Applicant noted that blanket correction source data validating aircraft noise is an industry standard approach and that it is not possible to apply specific corrections to different location sources as adjustments can only be made to the underlying source data.

6.4.6 The ExA queried how ambient noise monitoring data has been used to provide context for the aircraft noise assessment and why extensive noise monitoring has been undertaken but not used to inform the assessment.

6.4.7 The Applicant confirmed it is not possible to categorise the aircraft noise baseline for such a large area using measurement, so it is necessary to model the baseline. The Applicant outlined that a summary of how the ambient noise data had been used in the assessment has been provided in the **Ambient noise monitoring data and survey sheets [AS-120]**. This confirms that the ambient noise monitoring has not generally been relied upon for the assessment, but has been used to provide context for specific assessment locations, with data provided for each assessment location in Section 7.7 of **Appendix 16.1** of the ES **[AS-096]**.

6.4.8 The ExA queried whether it is typical for aircraft noise assessments to rely on a modelled baseline. The Applicant confirmed that this is typical and the only way that it is generally done.

6.5 Outdoor space

6.5.1 The ExA query whether it is appropriate to use the same assessment criteria for indoor and outdoor spaces, whether standards and design guidance had been considered for outdoor space, and whether the local planning guidance of 55dB$L_{Aeq,1h}$ for external spaces had been considered.

6.5.2 The Applicant confirmed that the methodology employed is considered appropriate as the assessment has been undertaken on a community basis which takes into account the impacts on people where they live which includes exposure over a given time period, both indoors and outdoors. The Applicant confirmed that the World Health Organization (WHO) Guidelines for community noise (Ref 13), which includes the same criteria as referenced in the local policy, had informed the noise assessment. The Applicant noted, however, that the assessment is undertaken over a 16 hour day rather than 1 hour, in line with CAA guidance and research specific to aircraft noise (Ref 14) which explicitly

considers the effects on people both indoors and outside, for example in their gardens and balconies.

6.5.3 ***Post Hearing Note**: : the 1 hour time period for the outdoor noise level of 55dBL$_{Aeq}$ appears only to be defined in the Luton local policy (Ref 4) and does not appear to originate from the WHO Guidelines for community noise or British Standard 8233 (Ref 15), both of which include the 55dBL$_{Aeq}$ criteria but do not specify a 1 hour time period. WHO Guidelines specify a 16 hour time period for outdoor living areas and BS8233 does not specify the time period. It should be noted that the 51dBL$_{Aeq}$ Lowest Observed Adverse Effect Level used in the noise assessment is more conservative than the 55dBL$_{Aeq}$ external noise criteria. Furthermore, BS8233 notes with respect to external noise guidelines that "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." It is therefore considered, as noted in the hearing, that the assessment has had due regard to relevant standards and guidance for outdoor noise, and that the assessment is appropriate.*

6.5.4 The ExA asked whether any form of mitigation is proposed for outdoor space.

6.5.5 The Applicant noted that the mitigation hierarchy of the Proposed Development is set out in **Appendix 16.2** of the ES **[APP-111]** and starts with mitigation at source, so controls such as those within the Noise Envelope are employed first, and apply equally to indoor and outdoor noise exposure. There is no specific mitigation applied to outdoor space only, the approach employed is to reduce and control aircraft noise in general, which benefits both indoor and outdoor space.

6.6 Non-residential assessment

6.6.1 The ExA asked whether the Applicant could provide some of the underlying detail of the non-residential assessment that was used to inform conclusions of significance.

6.6.2 The Applicant noted that sufficient detail had been provided in **Chapter 16** of the ES **[REP1-003]** for any receptors that are identified as being at risk of adverse likely significant effects due to exceedance of the noise assessment criteria. Where non-residential receptors do not exceed the assessment criteria no further assessments were made, therefore it was not considered proportionate to provide further detail in the ES. The Applicant confirmed that they can provide the underlying data if it would assist the ExA, noting that it would not have a bearing on the conclusions of the assessment.

6.6.3 **Action 23: Provide more detailed information to demonstrate what facilities were considered in relation to non-residential receptors, how the**

screening criteria was applied and the information used to inform conclusions of significance?

6.6.4 ***Post Hearing Note**: response to Action 23 to be provided at Deadline 4.*

6.7 Ground noise modelling

6.7.1 The ExA queried to what extent does the air and ground noise modelling depend on the build out sequence and the specific building dimensions on the airfield, in particular the two large hangers on the northern boundary of the airport.

6.7.2 The Applicant confirmed that the air noise modelling does not take into account any screening so would not be affected, but the ground noise modelling does take into account screening from the Proposed Development. The Applicant noted that slight changes to building layouts would be unlikely to alter the conclusions of the ground noise assessment due to the relatively large amount of building infrastructure on the airfield and the distance to the nearest sensitive receptors. The Applicant also noted that any noise impacts would be due to growth at the airport which requires the physical infrastructure to be built to facilitate that growth. The ExA asked whether the Applicant could model the implications for ground noise without the two hangers for Phase 2b.

6.7.3 **Action 24: To model noise contours without the two large hangers on the northern boundary of the airport in Phase 2b.**

6.7.4 ***Post Hearing Note**: response to Action 24 to be provided at Deadline 5.*

6.8 Combined and cumulative noise effects

6.8.1 The ExA noted that combined noise effects from multiple noise sources are assessed qualitatively in **Chapter 16** of the ES **[REP1-003]** and asked the Applicant to justify this approach.

6.8.2 The Applicant confirmed that whilst it is technically possible to add decibel levels from different noise sources together, this would not account for the difference in how these noise levels are experienced, for example aircraft noise which is intermittent compared to road traffic noise which is generally continuous and there is no standard approach or evidence base which we could use to draw conclusions on this. The standard approach is therefore to consider qualitatively, which allows the consideration of context for the noise sources, for example, whether they are experienced on the same building façade, which cannot be taken into account when simply adding decibels.

6.8.3 The ExA asked whether AEDT can model multiple noise sources and the Applicant confirmed that it cannot.

6.8.4 The ExA noted that representations had been raised about being overflown by planes from multiple airports, which is consistent with the experience of the ExA on site visits, and asked the Applicant to explain how this is counted for in the modelling.

6.8.5 The Applicant confirmed again that AEDT models the noise impact of air noise from a single airport so cannot by itself take into account the cumulative effects from multiple airports. The way that cumulative effects are assessed is set out in the Cumulative Effects Assessment (CEA) set out in **Chapter 21** of the ES **[AS-032],** for which the screening criteria and list of projects considered has been developed in consultation with the Host Authorities. The CEA considers operation and proposed development at other airports including Stansted, Heathrow, Gatwick and London City. The methodology for the CEA is set out in that chapter and involves looking at any areas of potential overlap where adverse likely significant effects could be identified from multiple airports. The conclusion of that assessment is there are no identified cumulative significant effects because there are no areas in the study areas within which adverse likely significant effects or overlap between different airports would be anticipated.

6.8.6 The Applicant noted that this doesn't mean that aircraft from other airports are not audible or experienced within the vicinity of Luton Airport, but what it does mean is that the aircraft are at sufficient altitude and at a noise level lower than the Lowest Observed Adverse Effect Level (LOAEL) below which policy and guidance would indicate that there is no likelihood of adverse effects. Planning Practice Guidance Noise (Ref 16) provides a helpful descriptor of this experience, noting that noise levels below the LOAEL *"Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life."* This is consistent with the conclusions of the CEA.

6.8.7 Michael Reddington raised a query, through the ExA, of how mitigation for combined effects is dealt with.

6.8.8 The Applicant noted that the conclusions of the combined effects assessment presented in **Chapter 16** of the ES **[REP1-003]** are that only six residential properties to the south of the airport near Someries Castle and on Dane Street are expected to experience adverse likely significant effects from more than one noise source (air and ground noise during the night). The approach to mitigating the combined noise effects is to provide the full cost of noise insulation, for which these properties are eligible, which is equally capable of mitigating either aircraft or ground noise, or the combination of both aircraft and ground noise.

7 AGENDA ITEM 6 - GREEN CONTROLLED GROWTH (GCG) AND WIDER NOISE MITIGATION APPROACH

7.1 Night noise controls

7.1.1 The ExA queried what consideration had been given to a ban on scheduled night flights and the importance of respite, and what the implications of a ban would be for the commercial viability of the airport.

7.1.2 The Applicant confirmed, following Issue Specific Hearing 1, the Applicant will remove the 'tailpiece' at Requirements 27 (Night Movement Cap) of the DCO.

7.1.3 **Action 25: Confirmed that the tailpiece included within Requirement 27 (night quota cap) would be deleted and this would be included in the next version of the draft DCO.**

7.1.4 ***Post Hearing Note****: the Applicant can confirm that the tailpiece will be deleted in the next revision of the draft DCO.*

7.1.5 The Applicant provided a response to the ExA queries on night noise controls, respite and a ban on scheduled night flights.

7.1.6 The Applicant summarised that the impact of night flights has been assessed and, as set out in **Chapter 16** of the ES **[REP1-003]**, the conclusion of the assessment is that there are no residual significant effects from night-time aircraft noise due to the combination of mitigation measures and compensation which include:

a. the Noise Envelope and its legally binding framework of night-time noise Limits and Thresholds, and a mechanism to reduce these Limits in the future where possible (secured through the **Green Controlled Growth Framework [APP-218]**);

b. the 9,650 movement limit in the night-quota period (23:30 – 06:00) (secured via Requirement 27 of the draft DCO) (track changed version [TR020001/APP/2.01]); and

c. the extended noise insulation scheme which include full cost of insulation for bedrooms exposed above the night-time SOAEL (set out in **Draft Compensation Policies Measures and Community First [REP2-005]** and secured via a Section 106 agreement).

7.1.7 In relation to respite, the Applicant outlined that aviation policy and guidance considers and defines a 'ban' and 'respite' as two distinct things. The following Government policy and guidance documents provide clear and separate definitions of bans and respite (*quotes are provided in full as a* ***Post Hearing Note***):

a. Paragraph 3.32 of the Aviation Policy Framework (Ref 17): " …in certain circumstances, such as where there is intensive use of certain routes, and following engagement with local communities, it may be appropriate to explore options for respite which share noise between communities on an

equitable basis, provided this does not lead to significant numbers of people newly affected by noise."

b. Air Navigation Guidance (Ref 18) Glossary in Annex A: "Noise Respite: The principle of noise respite is to provide planned and defined periods of perceptible noise relief to people living directly under a flight path." Relief is then defined as "when multiple routes are designed and operated far enough apart to offer a perceptible reduction in noise for communities. Respite is one form of relief, but multiple flight paths could also be operated at the same time but with an alternating pattern of operation."

c. Paragraph 5.61 of the ANPS (Ref 11): "The applicant should put forward plans for a runway alternation scheme that provides communities affected with predictable periods of respite."

7.1.8 These policy documents make clear that respite is provided by sharing noise between communities in a predictable manner through runway or flightpath alternation.

7.1.9 Luton has only one runway, so respite as described in Government policy and guidance can only be delivered through flightpath alternation via an airspace change. The Applicant has already clarified that the airspace change is a separate process (see **Relationship between the Development Consent Order Process and the Airspace Change Process [REP1-028]**), however, the airspace change being put forward by the airport operator include a specific Design Principal that options and mechanisms for respite through flightpath alternation should be considered.

7.1.10 Turning to the concept of a ban on scheduled night flights, the Applicant outlined that Government policy refers only to a ban 'or curfew' in the context of Heathrow:

a. Paragraph 3.35 of the Aviation Policy Framework (Ref 16) refers to a curfew in context of voluntary curfew at Heathrow (distinct from respite): "In recognising these higher costs upon local communities, we expect the aviation industry to make extra efforts to reduce and mitigate noise from night flights through use of best-in-class aircraft, best practice operating procedures, seeking ways to provide respite wherever possible and minimising the demand for night flights where alternatives are available. We commend voluntary approaches such as the curfew at Heathrow which ensures that early morning arrivals do not land before 4.30am."

b. Paragraph 5.62 of the ANPS (Ref 10) refers to a ban on scheduled night flights in the context of Heathrow expansion only: "The Government also expects a ban on scheduled night flights for a period of six and a half hours, between the hours of 11pm and 7am, to be implemented". This is an extension of a voluntary curfew that already exists at Heathrow and is a proposal put forward by Heathrow for the Airports Commission in the context of the benefits brought about from the third runway expansion.

7.1.11 The Applicant concluded therefore that there is no policy which requires, or sets expectation, for a ban on scheduled night flights, other than in the specific context of Heathrow expansion.

7.1.12 LC outlined that the Government's Overarching Aviation Noise Policy Statement (OANPS) (Ref 19) requires a balance between economic and consumer benefits and the noise and health impacts of night flights, and notes that adverse effects may be offset by an increase in economic and consumer benefits. Economic and consumer benefits are therefore a key consideration in the context of night flights. Applying this to London Luton Airport, a complete ban is not possible at the airport due to the high dependence on based aircraft operating short haul flights. The airlines depend on being able to use their aircraft efficiently, departing early in the morning operating 2 or 3 round trips a day with the last flight operating back late in the evening, sometimes after midnight.

7.1.13 This pattern of operation is fundamental to the economics of the airline and a ban on night operations would result in lower utilisation of expensive aircraft that would make operating from the airport uneconomic or result in substantial increases in air fares that would not be in the interests of consumers. More likely, airlines would simply choose to base those aircraft elsewhere.

7.1.14 It is the basing of aircraft at the airport that drives much of the economic benefit in terms of employment of aircrew and maintenance activity – non-based operations are a small part of the activity and could not replace any activity lost from based aircraft.

7.2 Noise controls from the existing planning permission

7.2.1 The ExA questioned why the controls within the existing planning permission are not carried over.

7.2.2 The Applicant clarified that it is not considered effective or appropriate to retain the existing controls from planning permission 15/00950/VARCON as the controls proposed in the DCO have been designed not only to replace but improve upon the existing controls. The Applicant's position on this has been provided in the **Comparison of consented and proposed operational noise controls [AS-121]** document which goes through each control in turn and describes how either the control is improved upon by the DCO proposed controls, or justification is provided as to why it would not be effective to retain them. As noted previously, the Noise Envelope defines the noise environmental outcomes to be achieved, or bettered, rather than pre-defining the means and multiple controls to achieve that outcome.

7.2.3 Further analysis of the existing controls has been provided in **Noise Envelope - Improvements and worked example document [REP2-032]** and within that document the Applicant has looked at the effectiveness of the existing controls in relation to the noise limit breaches that occurred in 2017 to 2019. The Applicant has used that learning as well as the analysis of the current conditions to make updates and improvements to the noise envelope, which the Applicant has demonstrated with a worked example that shows movement to a forward looking approach, which would have been successful in keeping within the current consent in terms of the contour area limit in a way that the Applicant has been able to demonstrate that the current noise controls were not able to do.

7.2.4 The ExA queried in particular the removal of the night-time Quota Count (QC) limit. The Applicant outlined that the current QC limit covers only part of the night-time (23:30 – 06:00) and does not consider shoulder periods, meaning that it was ineffective in avoiding night-time contour breaches which applied over a full 8-hour night-period. Additionally, the improvements to the Noise Envelope requires, on exceedance of L1 Threshold, noise Limits to be converted into a full 16-hour daytime and 8-hour night-time QC budget and for those budgets to be used in five year forward plans to plan growth and inform the slot allocation process to ensure that Limits are not exceeded in the future. These full daytime and night-time hour QC budgets cover the full 24 hours and are an improvement over the current QC controls which cover only 6.5 of the 24 hours.

7.2.5 The ExA asked the Applicant to comment on Condition 9 of the current permission (15/00950/VARCON) which requires that measures are put in place to phase out operations by aircraft with a QC value of greater than 1 during the night, in the context of the potential for aircraft to get noisier in the future.

7.2.6 The Applicant responded that, as noted in **Comparison of consented and proposed operational noise controls [AS-121]** it is not considered necessary to retain this control as aircraft with QC greater than 1 have been effectively phased out and are no longer part of the fleet. The Applicant also restated that the night-time contour area limit will provide certainty of the outcome for the situation in which aircraft may get noisier in the future.

7.2.7 The Applicant further confirmed with regard to long haul aircraft, that these are taken into account of in the QC budget and noise assessment.

7.3 Noise insulation

7.3.1 The ExA asked the Applicant to describe how the proposals meet the aims of the Noise Policy Statement for England (NPSE) (Ref 20) and Airports National Policy Statement (ANPS) to avoid significant adverse effects on health and quality of life, given that there will be a period within which properties are uninsulated until such time as the insulation can be provided.

7.3.2 The Applicant summarised that **Chapter 16** of the ES **[REP1-003]** and the **Planning Statement [AS-122]** sets out how the Proposed Development meets the three aims of Government noise policy in the NPSE, which are the same aims as those in the ANPS.

7.3.3 The Applicant also noted that the insulation scheme is a substantial improvement to the current scheme and goes beyond expectations set out in Aviation 2050 (Ref 21). However, it is acknowledged within **Chapter 16** of the ES **[REP1-003]** that there is a challenge with what can practically be achieved in terms of the timing of noise insulation installation.

7.3.4 The Applicant noted that it is important not to consider aims of the NPSE in isolation. The aims are expressly in the context of sustainable development and are:

a. First, to avoid significant adverse impacts on health and quality of life;

b. Second, to mitigate and minimise adverse impacts on health and quality of life; and

c. Third, where possible, contribute to the improvement of health and quality of life.

7.3.5 As set out in the mitigation hierarchy in **Appendix 16.2 [APP-111]**, the three aims are met by combination of the embedded mitigation, including the Noise Envelope and Noise Insulation.

7.3.6 The second aim of NPSE is in line with the OANPS and is to mitigate and minimise adverse effects. Paragraph 2.24 of the NPSE states that *"all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur."* The sustainable development point is key because that's referenced across the three aims.

7.3.7 This is an aim to mitigate and minimise adverse effects 'as far as reasonably practicable' and is equivalent to Best Practicable Means in environmental legislation such as the Control of Pollution Act 1974 (Ref 22). This requires mitigation to be considered in terms of local conditions (practicalities of market supply and delivery) and financial implications (cost).

7.3.8 The approach to meeting the second aim therefore is to offer and install noise insulation as proactively and as fast as is reasonably practicable, within the context of sustainable development. The approach to meeting the first aim is that the noise insulation scheme will prioritise, and provide the full cost of insulation, for properties exposed above SOAEL.

7.3.9 The Applicant noted that, picking up on discussions in Compulsory Acquisition Hearing 1, the Applicant is actively exploring means to accelerate roll-out of insulation and anticipates being able to report back on the outcomes of this at Deadline 4.

7.3.10 **Action 26: Provide a note regarding the accelerated noise insulation delivery programme and the practicalities of market supply.**

7.3.11 ***Post Hearing Note****: response to Action 26 to be provided at Deadline 4.*

7.4 Operating within consented noise contour area limits

7.4.1 The ExA queried how on a given day would a member of the public know if the Proposed Development was operating within its consented noise contour limits.

7.4.2 The Applicant responded that there is no compliance 'on a given day' per se because the compliance is based on the previous 92-day summer average. However, that compliance would be reported in the publicly available annual noise monitoring reports so on any given day, a member of the public would be able to see those annual noise monitoring reports and check that the airport was in compliance.

7.5 Reporting

7.5.1 The ExA questioned whether a shorter reporting period than annually would be more appropriate.

7.5.2 The Applicant clarified that, because Noise Envelope Limit compliance is based on a 92- day average for the summer, reporting can only take place once a year. The Applicant confirmed that the airport operator does offer quarterly reports which detail noise and other relevant interests for the community developed over time within the airport operator's Noise Action Plan and whilst this is not secured in the DCO there is no expectation that that will change. Annual reporting is secured within the **Aircraft Noise Monitoring Plan [APP-221]** .

7.5.3 ***Post Hearing Note****: in response to reporting points raised in Issue Specific Hearing 3, the Applicant has updated Appendix C of the Green Controlled Growth Framework, the* ***Aircraft Noise Monitoring Plan [TR020001/APP/7.08]*** *to secure the continuation of quarterly, as well as annual, reporting.*

7.6 Noise Action Plan

7.6.1 The ExA asked the Applicant to summarise the status of the updated Noise Action Plan (NAP).

7.6.2 The Applicant noted that the updated NAP would run from 2024 until 2028 in line with the period set by the Environmental Noise (England) Regulations 2006 (Ref 23). The NAP is produced by the airport operator, not the Applicant, and has been developed in consultation with local stakeholders including airlines, community groups and the joint Host Authorities. It is currently in draft form and has been submitted to the Department for Environment Food and Rural Affairs for adoption.

7.6.3 The Applicant confirmed that the NAP would be updated to refer to noise controls within the DCO, should the DCO be granted, in line with the Environmental Noise (England) Regulations 2006 which require that NAPs are reviewed and updated should a major development occur.

7.6.4 The ExA asked the Applicant to confirm how the NAP is secured and whether the controls within the existing NAP would fall away if the DCO were granted.

7.6.5 The Applicant explained that the NAP is not secured by the current planning permission (15/00950/VARCON) and is produced in response to the requirements of Environmental Noise (England) Regulations 2006. The controls within the NAP are not secured in a legal sense, and the NAP therefore reflects and summarises controls that are secured within the planning permission (or the DCO were it to be granted), as well as additional voluntary measures being employed by the airport operator.

7.7 Reduction in noise contour areas

7.7.1 With reference to the current planning permission, the ExA queried whether target reductions in noise contour areas could be set.

7.7.2 The Applicant noted that the reason that the current planning permission steps down in noise contour area is due to ongoing transition of new generation aircraft into the fleet without further growth beyond 18mppa. For the Proposed Development, there are continuous decreases in the Noise Envelope contour area Limits up to 2039, after which point the fleet is almost entirely new-generation, so there is no further noise benefit from new-generation aircraft to offset growth.

7.7.3 The Applicant explained that it is not possible to define the reduction attributable to next-generation aircraft at this time and hence the Noise Envelope contains a defined mechanism to review the noise Limits and reduce them in the future once the performance of next-generation aircraft is known. A sensitivity test has been undertaken based on an assumption that next-generation aircraft could provide the same noise reduction from the previous generation as new-generation aircraft have shown. Using the results of this sensitivity test, Figure 3.3 and Figure 3.4 of the **Green Controlled Growth Explanatory Note [TR020001/APP/7.07]**, demonstrate that in this instance the noise contour area limits would continuously step down over time.

7.8 Noise Envelope improvements made at Deadline 2

7.8.1 The ExA noted that improvements had been made to the Noise Envelope at Deadline 2, and that new controls have been introduced in terms of the use of Quota Counts (QC) on exceedance of a Level 1 Threshold. The ExA queried whether these controls should be in place regardless of exceedance of a Level 1 Threshold.

7.8.2 The Applicant responded that the purpose of the Threshold controls are to introduce a series of additional controls as the outcomes start to approach the Limits. For reasons of proportionality, it is not considered necessary to introduce such controls in the situation where the airport is operating substantially below the Limits.

7.8.3 The ExA questioned whether Table 6.1 of **Noise Envelope - Improvements and worked example document [REP2-032]** suggests that even if the Noise Envelope were in place at that time that a breach would still have occurred but been delayed by one year.

7.8.4 The Applicant clarified that Table 6.1 represents the forward look that would have been required to be undertaken in 2015 had the Noise Envelope controls been in place at that time. The forward look would have shown in 2015 that the forecast growth would lead to a breach of the noise contour area limits in 2017, giving the airport operator enough time to implement slot management measures, or other forms of noise control, to avoid the breach before it occurred. This is explained in paragraphs 6.1.9 to 6.1.11 of the document.

7.9 Slot allocations

7.9.1 The ExA asked the Applicant whether there is any mechanism to remove a slot that has been allocated and has grandfather rights. The Applicant noted that

there is no straightforward yes or no answer and that it would be best to respond in writing to provide a clear response.

7.9.2 **Action 28: Confirm whether there is any mechanism to remove a slot once it has been allocated, has accrued grandparent rights and is operating in accordance with the slot rules.**

7.9.3 ***Post Hearing Note****: response to Action 28 to be provided at Deadline 4.*

7.10 Night-time noise insulation eligibility

7.10.1 The ExA asked the Applicant to describe how the current insulation scheme eligibility contours satisfy the NPSE aims to mitigate and minimise effects between LOAEL and SOAEL for the night-time period, given that there is only one night-time noise contour used for eligibility.

7.10.2 The Applicant noted that the previous discussions on how the noise insulation scheme meets the aims of the NPSE similarly apply to night-time (***Post Hearing Note****: see Section 7.3*).

7.10.3 The Applicant noted that there is no policy requirement to introduce noise insulation at the LOAEL, and the Applicant is not aware of any airport insulation scheme with eligibility based on LOAEL contours.

7.10.4 ***Post Hearing Note****: current and emerging aviation noise policy only expects airport operators to provide noise insulation based on daytime noise contours, see paragraphs 3.37 and 3.39 of the Aviation Policy Framework and paragraph 3.122 of Aviation 2050.*

7.10.5 The Applicant explained that the insulation scheme is only relied upon to meet the first aim of the NPSE that is applicable above SOAEL, which is why separate eligibility for bedrooms exposed above the SOAEL has been introduced. The Applicant also confirmed that the noise assessment has only identified adverse likely significant effects in noise change terms above the SOAEL, so the insulation schemes above SOAEL are able to avoid both adverse likely significant effects and significant effects on health and quality of life.

7.10.6 The Applicant explained that there are additional voluntary and discretionary eligibility thresholds for noise insulation below the SOAEL that extend down to the 54dB$L_{Aeq,16h}$ daytime contour. Additional lower night-time thresholds have not been introduced as they would duplicate and overlap with the daytime contours and overcomplicate the insulation scheme which is already quite complex with five different eligibility thresholds.

7.10.7 The Applicant noted that those exposed between the night-time LOAEL and SOAEL would be eligible for insulation under the daytime scheme. For example paragraph 16.9.147 of **Chapter 16** of the ES **[REP1-003]** notes that for Assessment Phase 1 (there are equivalent paragraphs for Assessment Phase 2a and 2b) there would be 13,250 below exposed above the night-time LOAEL but below the SOAEL that would be eligible for insulation under the daytime schemes.

7.11 Other forms of aircraft noise mitigation

7.11.1 The ExA asked what Green Controlled Growth noise interventions would be available within the noise mitigation toolbox. The Applicant noted that this had been discussed and agreed that information will be added to the GCG documents at Deadline 3 (***Post Hearing Note***– *see response to Action 22*).

7.11.2 The ExA queried which operational noise controls are available to the airport operator to control noise outside of an airspace change, for example slightly steeper approaches, late landing gear deployment, continuous descent approaches and minimum altitude requirements.

7.11.3 The Applicant noted that these are controls that are addressed within the airport operator's ongoing noise control process and are described in their Noise Action Plan. For example, the airport operator has set Continuous Descent Approach (CDA) targets that are generally met by airlines and the airport operator has trialled steeper descent approaches which continuous to be reviewed under safety grounds. These measures are available to the airport operator but it is not considered appropriate to secure these within the DCO. This is partly because they aren't entirely within the gift of the airport operator and are controlled by the airlines and how they fly. Therefore it is about engaging, setting targets and proactively discussing with airlines on an ongoing basis to control noise within the context of Noise Envelope Limits.

7.12 Flighpaths

7.12.1 The ExA asked the Applicant to provide evidence to support the statement made in the **Deadline 1 Cover Letter [REP1-001]** that there had been no changes to flightpaths. The ExA noted this information could be compiled based on the airport operator's monitoring reports. RC confirmed this would be provided in writing.

7.12.2 **Action 29: Provide the evidence that informed the response that there had been no change to flightpaths, including a decrease in altitude, over Luton provided by the Applicant in response to a query raised at the OFH.**

7.12.3 ***Post Hearing Note****: response to Action 29 has been provided in* ***ISH 3 Action 29 Response Paper - Historical Flight Path Information [TR020001/APP/8.39]*** *submitted at Deadline 3.*

7.13 Ground noise control

7.13.1 The ExA noted that ground noise controls and complaints handling would be retained as part of the ongoing noise management process, but would not be secured under the DCO. The ExA queried what the mechanism would be to ensure these are continued to be implemented.

7.13.2 The Applicant confirmed that representations with regard to this point had been noted by the Applicant and that an Outline Ground Noise Management Plan is currently being developed and would be secured by a new Requirement in the DCO. The Applicant confirmed that the intention is for the plan will be submitted at Deadline 4.

7.13.3 **Action 30: Explain how the outline ground noise management plan would be secured through a requirement in the draft DCO and whether the plan would include a complaints procedure.**

7.13.4 ***Post Hearing Note**: the requirement to continue to operate a complaint handling system has been added to Appendix C of the Green Controlled Growth Framework, the **Aircraft Noise Monitoring Plan [TR020001/APP/7.08]** at paragraph C3.1.5. The Outline Ground Noise Management Plan will be submitted at Deadline 4 and will be secured through a new DCO Requirement.*

7.14 General noise insulation eligibility

7.14.1 The ExA noted that representations have indicated that local residents consider that they're likely to be subjected to higher noise levels than assessed in the ES. The ExA asked the Applicant how residents could demonstrate eligibility for noise insulation if they fell outside of eligibility contours.

7.14.2 The Applicant responded that the standard practice for determining noise insulation eligibility is using the noise modelling outputs, which in turn are validated by noise measurements at noise monitoring terminals, where we are able to verify quite accurately the noise level and exactly which aircraft are flown for the purpose of validation. The Applicant has also seen representations from local communities about their own measurement showing higher noise levels, but it is not clear how measurements were made and what was measured. It is also likely that there is a confusion between instantaneous peak noise level metrics such as L_{Amax} and the L_{Aeq} metric used to determine noise insulation eligibility in line with Government policy. The Applicant therefore considers that the process for determining noise insulation eligibility is appropriate and robust.

8 AGENDA ITEM 7 - ACTION POINTS ARISING FROM HEARING

8.1.1 See Table 1.1 below.

9 AGENDA ITEM 8 - ANY OTHER BUSINESS

9.1.1 The Applicant had no additional comments.

Responses to Action Points from ISH3

Table 1.1: Applicant's Response to ISH3 Action Points

Action	Description	When	Applicant's response
1	Provide a quantitative assessment of night-time construction noise impacts based on the proposed night time works.	D4	The Applicant noted this action and will address at the relevant deadline.
2	Identify where in the Environmental Statement (ES) an assessment of the static conveyer belt can be found and if it isn't included provide an assessment.	D3	Paragraph 4.3.34 of the **Construction Method Statement and Programme Report [AS-082]** states: *"Given the proximity of the cut and fill areas, two main systems are presently envisaged to be feasible to transport the excavated material to the fill area. These comprise:* *a. traditional trucks/dump trucks; or* *b. a conveyor system, with a feed screening plant".* *Paragraph 4.3.38 goes on to identify that the conveyor system would have several benefits including: "reduced noise as conveyor units driven by electric motors".* *The assessment of construction noise was undertaken based on the reasonable worst-case assumption that excavated material would be moved by traditional trucks/dump trucks. Noise from traditional trucks/dump truck movements on earthworks haul routes was modelled based on information in Table 7.2 of the **Construction Method Statement and Programme Report [AS-082]**. Noise from traditional trucks/dump truck movements within the construction site boundaries (internal movements) was modelled based on daily movement numbers in Inset 7.3 of*

Action	Description	When	Applicant's response
			*the **Construction Method Statement and Programme Report [AS-082]**.*
3	Provide details (sections/ plans/ locations/ acoustic specification) for the acoustic screen in relation to the Airport Access Road (AAR) and where/ how it would be secured.	D3	Details of the AAR acoustic screen are provided in **Holiday Inn Acoustic Barrier - Change Notification [TR020001/APP/8.45]** submitted at Deadline 3. The screen would be secured through the DCO as it falls within the existing scope of ancillary works described as 'lettered works' within Schedule 1 of the Draft DCO [AS-067] - specifically lettered work (g) which provides for noise barriers. It is within the area depicted for Work No. 6a(02) as shown in the Work Plans (Part 6 of 6) [AS-017].
5	Table 4.4 of Appendix 16.1 of the ES [AS-096] in relation to Monitoring Location (ML)2 (p21) and ML15(p48) and monitoring datasheets in AS-120 both appear to be within 3.5m of reflective surfaces. Should a 3dB façade correction have been applied and if it had how would this affect the results of the construction noise assessment?	D4	Please see response at paragraph 3.1.25 of this hearing summary.
6	The Code of Construction Practice (CoCP) [APP-049] Table 14.2 identifies additional temporary vibration thresholds for receptors that are above the significant observed adverse effect level (SOAEL). Confirm whether the council agreed to the relaxed thresholds above SOAEL.	D3	The vibration thresholds in the CoCP have not yet been agreed with the councils but engagement with the Host Authorities with regard to noise and vibration matters are ongoing and further matters of agreement will be recorded in future updates to the relevant Statements of Common Ground.

Action	Description	When	Applicant's response
7	Provide an explanation of the receptor response to vibration levels ≤3mm/s and ≤5mm/s similar to that presented in CoCP [APP-049] Table 14.1 for lower values.	D3	Table 14.2 of the **CoCP [APP-049]** notes 3.0 and 5.0 mm/s Peak Particle Velocity (PPV) as construction vibration thresholds to the Significant Observed Adverse Effect Level (SOAEL) defined in **Chapter 16** of the ES **[REP1-003]** as a PPV of 1.0 mm/s. These are for people experiencing the vibration in residential and office buildings respectively. These thresholds apply only where "prior warning" has been provided. As noted in **Chapter 16** of the ES, this is in line with the relevant British Standard (BS5228-2) which advises that for vibration between 1.0 and 10.0 mm/s PPV "It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents". The Applicant will continue to engage with the Host Authorities with regard to the noise and vibration section of the CoCP and provide an update of those discussions at Deadline 4.
8	Provide the reference/ location in the CoCP [APP-049] where it states 'no vibration equipment and quiet equipment'	D3	Paragraph 14.2.2 of the **CoCP [APP-049]** notes: "The lead contractor will have a duty to avoid, reduce, control and/or manage construction noise and vibration through BPM, including: a. Noise and vibration control at source – for example, the selection of quiet and low vibration equipment"
10	Consider whether a restriction on piling would be needed and if so how and where would this be secured.	D4	The Applicant noted this action and will address at the relevant deadline.
11	Applicant to provide an equivalent table to that provided in Table 16.25 [REP1-003] for LAeq8hr night-time traffic noise, where monitoring data allows?	D3	The equivalent data for ML41 for the L_{Aeq8h} night is provided in Table 4.1. All other measurements were short-term daytime measurements only.

Action	Description	When	Applicant's response
12	Provide a copy of the modelling report provided to the councils which addresses the level of variance between modelled/monitored data and includes additional monitoring information.	D3	The additional information has been provided in a revision of **Surface Access Noise Modelling Additional Information [TR020001/APP/8.41]** submitted at Deadline 3.
13	Check whether the survey data collected at ML26, ML28, ML29, ML41 and ML43 requires application of any façade corrections due to monitoring setup and confirm details of set up where not provided.	D3	Please see response at paragraph 4.1.19 of this hearing summary.
14	Confirm what road upgrade carriageway width assumptions have been used in the noise model or signpost to where this information is included in the ES.	D3	Paragraph 9.2.2 of **Appendix 16.1** of the Environmental Statement **[AS-096]** sets out the data that has been utilised in the surface access noise modelling, including changes to the road network and traffic forecast data. To provide further clarification, the surface access drawings referenced in this paragraph are those presented in Appendix A of the **Transport Assessment [APP-200]** and the operational traffic data is provided in Appendix F of the **Transport Assessment [APP-201].**
15	In relation to the AAR explain whether noise impacts would be worse/ better if the road was dropped 2 meters due to reduced distance to receptors to the north as would be allowed by the proposed limits of deviation.	D3	With reference to **Airport Access Road and Luton DART Long Section Plans [APP-027]**, the closest the AAR gets to residential properties to the north is 100 m. If the road elevation was two meters lower, as allowed within the limits of deviation, the associated road traffic noise would be decreased in some locations due to greater screening from intervening land and structures but could be increased in some locations due to the reduced distance to the ground floor of residential properties. However, such an elevation change would, at most, alter the

Action	Description	When	Applicant's response
			distance to the closest residential properties by less than 0.1 m which would in turn change the road traffic noise level at these locations by less than 0.1 dB. This is considered a negligible change which would not impact the conclusions of the assessment.
16	Having selected TRL method 3 and given the airport context, explain how you determined that movements on the local road network were not 'atypical'.	D4	The Applicant noted this action and will address at the relevant deadline.
17	Applicant to provide clarity regarding how noise mitigation for properties on Stony Lane would be secured.	D4	The Applicant noted this action and will address at the relevant deadline.
18	Discuss whether the maximum 5dB above background noise levels for fixed plant is appropriate.	Ongoing	The Applicant noted this action and will address at the relevant deadline.
20	Applicant to provide commentary on undertaking an annual validation of the noise model against noise monitoring.	D4	The **Aircraft Noise Monitoring Plan** in Appendix C of the Green Controlled Growth Framework **[TR020001/APP/7.08]** has been updated at Deadline 3 to require that the aircraft noise model should be validated annually, rather than every five years.
21	Provide information regarding airline orders and annual reports to demonstrate certainty in relation to the assumptions on fleet replacement/ modernisation.	D3	Figure 1 to Figure 3 provide information from Wizz Air, easyJet and Ryanair on their airline orders. Note that the easyJet orders relate to Airbus Neo aircraft. easyJet is also seeking additional orders, subject to delivery slots from Airbus, to replace older generation A320ceo aircraft before they reach the age of 20 years.
22	Provide examples of the potential measures that could be used to deliver the outcomes secured by the Green Controlled Growth (GCG) 'mitigation toolbox'	D3	The **Green Controlled Growth Explanatory Note [TR020001/APP/7.07]** has been updated to include, at paragraph 3.2.16, to note that key to maintaining growth whilst controlling the noise impacts with respect to the Noise Envelope Limits will be the forward planning of capacity declaration and

Action	Description	When	Applicant's response
			slot management measures. However, examples of noise control measures currently available to the airport operator have also been provided within the same paragraph.
23	Provide more detailed information to demonstrate what facilities were considered in relation to non-residential receptors, how the screening criteria was applied and the information used to inform conclusions of significance?	D4	The Applicant noted this action and will address at the relevant deadline.
24	To model noise contours without the two large hangers on the northern boundary of the airport in Phase 2b.	D5	The Applicant noted this action and will address at the relevant deadline.
25	Confirmed that the tailpiece included within Requirement 27 (night quota cap) would be deleted and this would be included in the next version of the draft DCO.	Next draft of the DCO	The Applicant confirms that this point is being addressed in the **Draft DCO [TR020001/APP/2.01]** being submitted at Deadline 3.
26	Provide a note regarding the accelerated noise insulation delivery programme and the practicalities of market supply.	D4	The Applicant noted this action and will address at the relevant deadline.
28	Confirm whether there is any mechanism to remove a slot once it has been allocated, has accrued grandparent rights and is operating in accordance with the slot rules.	D4	The Applicant noted this action and will address at the relevant deadline.
29	Provide the evidence that informed the response that there had been no change to flightpaths, including a decrease in altitude, over Luton	D3	The response to Action 29 has been provided in **ISH 3 Action 29 Response Paper - Historical Flight Path Information [TR020001/APP/8.39]** submitted at Deadline 3.

Action	Description	When	Applicant's response
	provided by the Applicant in response to a query raised at the OFH.		
30	Explain how the outline ground noise management plan would be secured through a requirement in the draft DCO and whether the plan would include a complaints procedure.	D4	The Applicant noted this action and will address at the relevant deadline.

GLOSSARY AND ABBREVIATIONS

Term	Definition
AAR	Airport Access Road
AEDT	Aviation Environmental Desing Tool
ANPS	Airports National Policy Statement
BPM	Best Practicable Means
CAA	Civil Aviation Authority
CFA	Continuous Flight Auger
CoCP	Code of Construction Practice
CRTN	Calculation of Road Traffic Noise
CS	Calum Sharp
CEA	Cumulative Effects Assessment
DMRB	Design Manual for Roads and Bridges
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ER	Eddie Robinson
ES	Environmental Statement
ExA	Examining Authority
GCG	Green Controlled Growth
HA	Host Authorities
ISH2	Issue Specific Hearing 2

Term	Definition
ISH3	Issue Specific Hearing 3
LBC	Luton Borough Council
LC	Louise Congdon
LOAEL	Lowest Observed Adverse Effect Level
LoD	Limit of Deviation
MD	Mark Day
ML	Measurement Location
NAP	Noise Action Plan
NPSE	Noise Policy Statement For England
OANPS	Overarching Aviation Noise Policy Statement
PPV	Peak Particle Velocity
QC	Quota Count
RC	Rebecca Clutten
RCo	Richard Connelly
SOAEL	Significant Observed Adverse Effect Level
SoCG	Statement of Common Ground
TH	Tom Henderson
TRL	Transport Research Laboratory
UAEL	Unacceptable Adverse Effect Level
WHO	World Health Organization

REFERENCES

Ref 1 British Standards Institute (2014), BS 5228-2:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites. Part 2: Vibration. BSi, London.
Ref 2 British Standard Institute (2014), BS 8233:2014, Guidance on sound insulation and noise reduction for buildings.
Ref 3 Association of Noise Consultants/ Institute of Acoustic/ Chartered Institute of Environmental Health (2017), Professional Practice Guidance: Planning and Noise.
Ref 4 Luton Borough Council Environmental Protection Planning and Noise Guidance, accessed from https://m.luton.gov.uk/Page/Show/Environment/Environmental%20health/Noise/Pages/Noise-and-planning.aspx
Ref 5 Calculation of Road Traffic Noise (1988) HMSO
Ref 6 Highways England (2020), Design Manual for Roads and Bridges, LA111 Noise and Vibration Revision 2
Ref 7 Delany ME, Harland DG, Hood RA and Scholes WE (1976), The prediction of noise levels L10 due to road traffic, Journal of Sound and Vibration 48(3), 305-325
Ref 8 British Standard Institute (2019), BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound.
Ref 9 Civil Aviation Authority (2021), CAP2091: CAA Policy on Minimum Standards for Noise Modelling.
Ref 10 Her Majesty's Stationery Office (2017), The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Ref 11 Department for Transport (2018). Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England.
Ref 12 Department for Transport (2022) Jet Zero Strategy: delivering net zero aviation by 2050
Ref 13 World Health Organisation (1999), Guidelines for Community Noise.
Ref 14 Civil Aviation Authority (2021), CAP1506: Survey of Noise Attitudes 2014: Aircraft Noise and Annoyance, Second Edition
Ref 15 British Standard Institute (2014), BS 8233:2014, Guidance on sound insulation and noise reduction for buildings.
Ref 16 Department for Communities and Local Government (2019), Planning Practice Guidance: Noise.
Ref 17 Her Majesty's Stationery Office (2013), The Aviation Policy Framework.
Ref 18 Department for Transport (2017), Air Navigation Guidance.
Ref 19 Department for Transport (2023), Policy Paper: Overarching Aviation Noise Policy
Ref 20 Department for Environment Food and Rural Affairs (2010), Noise Policy Statement for England
Ref 21 Department for Transport (2018), Aviation 2050 – the future of UK aviation.
Ref 22 Her Majesty's Stationery Office (1974), Control of Pollution Act.
Ref 23 Her Majesty's Stationery Office (2006), The Environmental Noise (England) Regulations.