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Examination Reference No:
TR020005

Interested Party URN: 20044578

15 May 2024

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By online submission

Deadline 4 Submission

Dear Inspector,

In preparing its response for Deadline 4 (D4) (15 May 2024) of the examination, Mole Valley District Council ("MVDC", "the Council") has continued to work with the wider joint authorities across Surrey and West Sussex to explore shared impacts, challenges and resolutions where they arise. As such, the comments and considerations for the Council are set out both below and through other relevant and joint submissions where it is beneficial to do so. The Council has fed into and/or had sight of D4 submission documents which include:

Joint Surrey Council's (JSC) Deadline 4 Response

Submitted by Surrey County Council on behalf of the JSC's[1] the joint response has been written in partnership and focuses on several Deadline 3 Submission documents and those items required by the Rule 8 letter:

i) GAL Deadline 3 Submissions: Post Covid VISSIM modelling sensitivity tests for 2032 and 2047 [REP3-108]; Updated Surface Access Commitments (SACs) and the Applicant's response to National Highways' SAC comments [REP3 - 029] and [REP3-030]; Applicant response to Deadline 2 submissions [REP3-106]; Draft Development Consent Order Schedule of Changes [REP3-005]; Applicant response to Local Impact Reports [REP3-078]; Draft ESBS Implementation Strategy [REP3- 069]; Supporting Noise and Technical Notes to SoCG [REP3-071]; Construction Carbon Management Strategy [REP3-107] and the Applicant's Outline Landscape and Ecology Management Plan (oLEMP) [REP3-036].

[1] Surrey County Council (Ref. 20044665), Mole Valley District Council (Ref: 20044578), Reigate and Banstead Borough Council (Ref. 20044474) and Tandridge District Council (Ref: GATW-S57419)

ii) Other relevant submissions received by Deadline 3 including: Relevant submissions from both National Highways Network Rail.

Appendix 1 of this response includes specific and additional comments to those which are included in the JSC's D4 response, but made by the Council only.

Joint Legal Partnership (JLP) Comments on the Applicant's Response to ExA Written Questions (ExQ1)

The Council has had sight of and is aware of the comments set out in the Legal Partnership Authorities' comments on the Applicants' response to the ExA Written Questions (ExQ1), which are being submitted by West Sussex County Council on behalf of the Partnership.

As MVDC is not part of the legal partnership on this element, the Council is making comments independently of the partnership where it is necessary to do (Appendix 2). Due to the overlap with technical consultants used by both Mole Valley and the JLP authorities, there is some necessary duplication (Appendix 3 and 4) with that of the JLP submission and is done to ensure the view of MVDC is comprehensively set out.

Wider Joint Authorities Submissions

Additional submissions made on behalf of MVDC and submitted on its behalf by Crawley BC and West Sussex, also form part of the Council's D4 response and include:

- York Aviation Response to D3 Submissions
- Rule 17 ExA Questions response prepared by York Aviation regarding the Applicants case, need and capacity matters.
- Comments on Construction Dust Management Plan
- Comments on Air Quality Action Plan
- Comments on the Applicants Supporting Noise and Vibration Technical Notes to the Statements of Common Ground (REP3-071); and
- The Joint Local Authorities Proposal for the introduction of an Environmentally Managed Growth Framework

Traffic and Transport

The Council has continued to work closely with Surrey County Council as the Highways Authority and supports the comments made across the relevant Deadline 4 submissions, including through the Joint Surrey Council's Response, and the Joint Legal Partnership Comments on the Applicant's Response to ExA Written Questions (EXQ1). Traffic and transport comments are not duplicated below.

Other Matters: Forthcoming proposed change consultation (Change 4)

In its letter dated 8th May 2024, sent to Crawley Borough Council, the Applicant notified of the intention to consult (14 May 2024 – 11 June 2024) on a further proposed change to the project ("project change 4") relating to a wastewater treatment plant. The Council wishes to highlight that to date MVDC has not been contacted directly about this consultation, but via another authority.

The Council in its response to the Applicant during the consultation on the initial proposed changes (AS-142 and REP3-136), MVDC raised concerns over the efficacy of the Applicants consultation and

expressed the need to confirm who had been consulted to ensure parishes and relevant IPs were included.

It is recognised that the Applicant has chosen to carry out a targeted consultation once more, and the ExA is asked to reflect on this and whether consultation has been suitably carried out.

I hope this is of use to you.

Yours Sincerely

Marie Killip
Principal Planning Policy Officer

Appendix 1: Additional Local Comments on Applicant's Response to Joint Surrey Councils Local Impact Report

The following should be read in addition to the comments set out in the Joint Surrey Council's Response to Deadline 4.

Document link and Reference	Topic	Ref	Comments
10.15 The Applicant's Response to the Local Impact Reports **REP3-078**	Ecology	E10	In addition to the comments made regarding E10 within the Joint Surrey Council's, which MVDC endorse, it wishes to add that it does not consider the Gatwick Greenspace Partnership (GGP) to be an effective funding mechanism in all cases. The GGP is paid to Sussex Wildlife Trust and its relevance to Surrey and its work within the county is unclear. it is considered prudent that any ongoing discussions and consideration of continuing it, should be informed by clarification as to which authorities have benefitted from the fund and in what way. This will enable more meaningful discussion so that it can be established whether the GGP should be perpetuated wholesale, or updated to form a more modern and effective fund that is only applicable to those that gain from it.

Appendix 2 – Local Comments on Applicant's Response to Examining Authorities Comments (ExAQ1)

Document link and Reference	Topic	Ref	Comments
10.16 The Applicant's Response to the ExA's Written Questions (ExQ1) - Climate and Greenhouse Gases **REP3-086**	Climate Change	CC.1.3	The Council does not consider the Applicant's response to be sufficient or reassuring. As has been highlighted throughout the DCO process to date and at ISH6, the Applicant is not considered to be doing enough to assist the national climate efforts and its reluctance to hold itself more keenly to the Jet Zero targets is disappointing. While it is noted that Jet Zero includes legally binding targets, questions remain over how stringently those targets will be enforced and sanctioned etc. As such, it remains important for the aviation industry to set its own suitable and challenging targets and holds itself to account. It is the Council's view that a mechanism for doing this would be through the implementation to an Environmentally Managed Growth Framework which would balance its growth against any environmental impacts in a manged and proportionate way.
10.16 The Applicant's Response to the ExA's Written Questions (ExQ1) - Climate and Greenhouse Gases **REP3-086**	Climate Change	CC.1.9	The Council does not agree with the response given by the Applicant and argues that it is unwise to rely on proposed fuels that have yet to be suitably implemented. It is the Council's view that there is a requirement for sensitivity testing in the climate impact related modelling to consider if and what would be the outcome should hydrogen fuels not be implemented by 2050 or sooner. This information would enable additional impacts to be understood and alternative mitigation strategies to be implemented. One such mitigation strategy could be through the commitment and implementation to a framework of Environmentally Managed Growth that would be proportionate to any progress towards the roll out of hydrogen fuels (or not) and the impacts of growth to the environment and communities.
10.16 The Applicant's Response to the ExA's Written Questions (ExQ1) - Climate and Greenhouse Gases	Climate Change	CC.1.11	See CC.1.9

REP3-086			
10.16 The Applicant's Response to the ExA's Written Questions (ExQ1) - Compulsory Acquisition and Temporary Possession **REP3-087**	Compulsory Acquisition	CA1.44	It is understood that this is a matter for the drafting of the DCO document and further comments regarding (Works No 40) will be submitted through that process. The Council notes that it is the Applicant's intent to submit the plans for the Landscaping and Ecology Management Plan (LEMP) for the replacement open space to CBC for sign off, in consultation with MVDC and RBBC. However, it is suggested that as the land resides within Mole Valley, any sign-off should be conducted by the local planning authority in consultation with others (RBBC, CBC and SCC).
10.16 The Applicant's Response to the ExA's Written Questions (ExQ1) - Landscape, Townscape and Visual Resources **APP- 033**	Landscape	LV.1.8	It is the Council's understanding that no regard to the Natural England's review of the Surrey Hills National Landscape (SHNL) boundaries has been had within the Environmental Statement and this is confirmed at Paragraph 2.14 of the Deadline 1 iteration of the draft Statement of Common Ground with MVDC (REP1-043). The Consultation on NE's proposed extensions to the SHNL were published for consultation for 14 weeks between 7 March 2023 – 13 June 2023. While it is accepted that the information regarding the Mole Valley proposed extension will not have been available to the Applicant at that time, NE's proposals for an amended boundary were available from early March, some 4 months, prior to the NRP submission. Furthermore, regarding the Council's proposed extension to the boundary extending down to Okewood Hill, (REP1 -097) it is unclear why views from Bletchingley and Reigate Park (Priory Park) are mentioned within the Applicant's response which are some 13miles and 11miles (as the crow flies) respectively, to the northeast of Ockley, on the other side of the airport. As such, there are no visual images pertaining to the area referenced in the Joint Surrey Council's Local Impact Report (REP1-097), and some of the proposed extension would fall within the 10km Zone of Theoretical Visibility (ZTV) (APP-033), which has already been set by the Applicant.

			For context, the area which has been proposed to NE to include within the amended Surrey Hills National Landscape Boundary, is characterised by significant areas of established and ancient woodland, deep wooded valleys and undisrupted views of Leith Hill and the wider chalk ridges of the Surrey Hills. It has experienced limited human impacts although the proximity of Gatwick Airport and associated noise can undermine the otherwise silent landscape and disrupt the sense of isolation. It is the Council's position that an extension to the National Landscape should be made regardless of the noise and on the basis of the intrinsic qualities of the landscape and not prevented from being designated due to the proximity of a piece of national strategic infrastructure. In the absence of Gatwick, the tranquillity of this landscape would not be in question. Should the ExA consider it to be of use, the Council can submit its response to the Natural England consultation as an examination document.

Appendix 3: Air Quality Comments on Applicant's Response to Examining Authorities Comments (ExAQ1)

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
AIR QUALITY			
AQ.1.1	The Applicant	**Air Quality Monitoring** Paragraph 8.5.15 of the Planning Statement [APP-245] states that "*a commitment is made to the continuation of current monitoring with new monitoring locations on the airport site and external to the airport are proposed to allow future monitoring of concentrations as set out in Table 13.9.1 in ES Chapter 13.*" What is the purpose of the monitoring and how would the data be used?	It is important to note that air pollution such as nitrogen dioxide is a 'no threshold' pollutant and thus has a health impact on the communities surrounding the airport effectively down to zero exposure. This is reflected in the fact that the WHO guideline value for nitrogen dioxide is considerably below the UK standard that is being used by the airport in its assessment. As such an important part of certified monitoring including diffusion tube monitoring (as opposed to the indicative monitoring the airport is also planning) is to assess the ongoing impact on the local community and ensure that pollution levels are falling and not rising regardless of the standard, as while the applicant makes much of no UK standards being breached it appears to miss the fact that UK policy in relation to air pollution has moved on from a simple pass / fail approach, to ensuring that levels of pollution exposure are reduced over time and that any new developments should help in this process - as outlined at the start of the AQ sections for the Surrey LIR [REP1-097] and West Sussex LIR [REP1-068]. The certified monitoring (as opposed to the indicative monitor the airport is also planning to use) is also important to check that the results of the modelling work completed as
		In the context of the conclusions of the assessment in **Chapter 13: Air Quality** [APP-038], and the absence of any significant effects identified as a result of the Project, it was not considered necessary for this monitoring to be secured as a requirement to the DCO. However, in acknowledgment of the monitoring arrangements under the existing 2022 s106 Agreement, the Applicant is happy to support the understanding of air pollution effects more generally in the local area, and accordingly it is proposing to commit to continued monitoring obligations under the new s106 Agreement set out in Schedule 1, Air Quality in the **Draft Section 106 Agreement** [REP2-004]. The Applicant has provided the proposed monitoring site locations and a draft Air Quality Action Plan (AQAP) at Appendices 1 and 5 of the **Draft Section 106 Agreement** [REP2-004]. In summary, the monitoring will	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		include funding for three monitoring sites to be managed by Reigate and Banstead Borough Council. The Applicant will manage two automatic reference standard monitors on the airport site, as well as four continuous indicative monitors. The monitoring will allow continuous collection of air quality concentrations in the vicinity of the airport to support the understanding of air pollution effects in the local area. The data will be used to compare against national standards, provide data to understand the sources of emissions, allow investigation of any changes in concentration in future and for transparency, the data will be reported by the airport. The Defra Emission Factor Toolkit version 11 (EFT v11) was used for the assessment of air quality in **ES Chapter 13: Air Quality** [APP-038]. EFT v11 includes the vehicle fleet composition data as detailed in Section 3.10, **ES Appendix 13.6.1: Air Quality Assessment Methodology** [APP-158]. **Appendix F** of the **Supporting Air Quality Technical Notes to Statements of Common Ground** [REP1-050], addresses how the air quality assessment has accounted for the topic of uncertainty in emissions over time. a) The Applicant provided an assessment of the delay in the ban of diesel and petrol vehicle sales in Appendix F, Section 1.3 of **Supporting Air Quality Technical Notes to Statements of Common Ground** [REP1-050]. In summary, it concluded that the EFT v11 had not incorporated the ban on the sale of new petrol and diesel cars and vans in 2030 and therefore the five year delay would have limited or no impact on the emission factors used in the ES.	part of the DCO are correct in practice. For obvious reasons the model being used by the applicant (i.e. a two runway set up with the emergency runway further north and in full time use) has not been validated and the monitoring will form an important part of this process going forward. The key points that the inspector may wish to consider here are: i) The applicant's refusal to fund monitoring of nitrogen dioxide / PM / and ozone beyond 2038. This is despite the fact the applicant has not modelled 2047 (full capacity) using dispersion modelling and the emissions inventory shows pollution from the airport increasing between 2038 and 2047. The local authorities have stated that funding should be to 2047 or 389,000 movements whichever occurs later i.e. the airport at full capacity. ii) The applicant has refused to fund the real time NOx and PM analyser operated by Crawley borough council to the SE of the airport. Given this site will provide important information in the future to validate the computer model used for the DCO outputs this site should be funded. iii) The joint local authorities would ask that the indicative monitoring data - if it is to be placed on a public facing website - is marked as 'indicative only not suitable for compliance monitoring'.

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		A review of the Transport Decarbonisation Plan[2] (TDP) and the Department for Transport (DfT) Transport Analysis Guidance (TAG) Data Book[3] was also undertaken to evidence that the proportions of EVs have been revised upwards since the Defra EFT v11 was released. The review provides the estimates of the EFT v11 EV proportions used in the assessment. The review showed that the uptake of EVs in the DfT datasets are greater than that assumed in the EFT. The TAG or TDP would result in reduced emissions compared to those assessed in the ES. Therefore, the uptake of EVs assumed in **ES Chapter 13: Air Quality** [APP-038] is considered conservative and the delay to the ban on the sale of new petrol and diesel cars from 2030 to 2035 will have no significant implications on the air quality assessment in the ES. b) Given the answer set out in (a), the delay to the ban is not likely to give rise to a change of significance. c) Given the answer set out in (a), no changes to mitigation measures are proposed.	To date (25 years) the airport and the local authorities have agreed and operated on the basis that pollution monitoring data collected around the airport will be undertaken using equipment and methods that are suitable for compliance monitoring. This is to ensure that all parties – airport and local communities – can have full confidence in the data and that any decisions being made can be done so on the basis of a robust and scientifically sound data set. The applicant's intention to use indicative monitoring equipment (which can significantly overestimate or underestimate compared to certified methods) goes against this long standing convention and has the potential to 'muddy the waters'. Hence the need for such data to be clearly flagged, and for operational monitoring to form part of the examination discussions.
AQ. 1.3	The Applicant	**Detailed Odour Assessment** Paragraph 8.5.22 of the Planning Statement [APP-245] states that a detailed odour assessment can be provided at the detailed design stage to demonstrate management of odour effects.	Project Change 3 [AS-139] proposes an alteration to the treatment works for de-icer pollution and surface water runoff from the airport. A constructed wetland (reed bed) solution is now proposed at the site adjacent to Crawley Sewage Treatment Works. Although odour is a known risk for this type of facility, the applicant states there will be no

[2] Department for Transport (Defra) (2021) Decarbonising Transport: a better, greener Britain
[3] Department for Transport (2023) Transport Analysis Guidance data book, May 2023 v1.21

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		Can the Applicant set out the basis on which a decision would be taken as to whether to provide such an assessment? What would be included in a 'detailed odour assessment'? Where is this set out and secured through the DCO? If not, why not?	significant odour effects and therefore no further mitigation for odour is proposed. No evidence is provided to support this conclusion other than the implementation of best practice. The authorities remain concerned about odour impacts from the reedbeds due to the potential for anaerobic decomposition, and the proximity of residential properties (within 55m) to the works boundary. Where controls are imposed via environmental permits, the local planning authority, would want to see a detailed assessment of the odour impacts including the risk under both normal and abnormal operating conditions, and whether the management and control measures proposed are appropriate for mitigating the risks. In addition, the authorities would point out that the applicant has failed to produce a quantified odour impact assessment for aviation fuel as part of the DCO, despite the fact that it managed such an assessment in 2019 (see air quality chapter - Surrey LIR [REP1-097]) and fuel odour is an on going issue for local residents around the airport. Given (in the absence of any other information) any aviation fuel odour impact is likely to be proportional to the change in aircraft movements, it is likely that the odour impact on the local community will increase as a result of the DCO. The local authorities have asked the airport to commit to undertake the measures (listed below) to investigate odour around the airport as part of a s106 agreement in light of
		It should be noted that Paragraph 8.5.22 of the **Planning Statement** [APP-245] is referring to the replacement CARE facility and the proposed water treatment works. As detailed in Paragraph 8.5.22, the proposed water treatment works are not considered to be significant in relation to odour as it would not handle highly odorous of offensive contaminants. As detailed in Section 4 of the **Change Application Report** [AS-139], the Applicant has put forward a change to the DCO Application to remove the proposed biomass boilers and to change in the purpose of the CARE facility to become a waste sorting facility only. **Basis for decision** – The facilities which could result in odour from the processes would be subject to environmental permits. Best practice methods following industry guidelines would be followed to scope the nature and level of detail of environmental assessment required for the environmental permit. As odour is a known risk for these types of facilities, it would be included in the planning and permitting requirements for the environmental assessment. **What would be included in the assessment** – The risk of effects would be scoped to determine a proportionate assessment following industry best practice guidance (e.g. IAQM Guidance on the assessment of odour for planning v1.1, Environment Agency 'H4 odour management' for environmental permitting). This would determine the level of detail required to inform recommended mitigation and effects, this could	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		include source pathway receptor assessment or dispersion modelling. **Where is this secured** – The environmental permitting processes for these sites, dictated by the Environment Agency, will secure the assessment to be undertaken and any required mitigation.	both the ongoing issues with odour and the likely increase in the problem, but the applicant has refused to do so. *Prior to the construction of the northern runway a commitment to a two-stage odour study to:* *a) determine the ambient concentration of aviation fuel at which odours are perceived on the Horley Gardens Estate, using a tracer for aviation fuel such as 1,3,5 trimethlybenzene.* *b) subject to the concentrations determined a) being sufficiently high that a field based detection system can be used, to install a monitor at an appropriate site around the airport for a 1 year period to examine the distribution of odour events to understand the meteorological and operational practices that give rise to the odour issues for local residents.* Given: - the lack of a quantified odour assessment, - the risk that odour issues will increase, - and the failure of the applicant to countenance measures to investigate the issue, if the Secretary of State is minded to grant permission for the DCO the joint local authorities would wish to see article 49 (Defence to proceedings in respect of statutory nuisance) of the draft DCO [REP3-006] amended in accordance with the drafting set out at row 39 of Appendix M to the West Sussex LIR [REP1-069].

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
AQ.1.4	The Applicant	**Air Quality Management Areas** With reference to paragraph 5.43 of the ANPS, does the Applicant consider that the impact of the Proposed Development would be sufficient to bring about the need for new Air Quality Management Areas (AQMA) or change the size of the existing AQMAs? If a need is identified, can the Applicant provide summary information in ES Chapter 13 [APP-038], including the number of additional people located in the extended area compared with the numbers in the existing area(s) in the reasonable worst case operating scenario? (There are further questions below on matters of detail). The air quality assessment in **ES Chapter 13: Air Quality** [APP-038] has demonstrated that the Project will not result in any new exceedances of the national air quality standards, as such the local authority would not be required to consider extending any existing AQMA or creating new AQMA. The impact at the AQMAs in future years have been assessed with the results presented in Section 13.10 of **ES Chapter 13: Air Quality** [APP-038] and within **ES Appendix 13.9.1 Air Quality Results Tables and Figures** [APP-162 - APP-167]. The air quality impacts at receptors including those within AQMAs demonstrate that there are forecast to be no new exceedances of the air quality standards with the Project. At locations of predicted exceedances, the future baseline concentrations without the Project also exceed the air quality standard. For context, there are two AQMAs declared for exceedances of the	The joint authorities note the comment by the applicant that: *Monitoring within these AQMAs demonstrate that annual mean NO_2 concentrations have consistently been below the air quality standards since 2015 as reported in Section 13.7 of* ***ES Chapter 13: Air Quality*** *[APP-038].* The authorities would point out for clarity that within the Horley AQMA monitoring point RB149 breached the standard in 2015, 2016, 2017, 2018, and 2019. Residential premises within the AQMA breached the standard in 2015, 2016, 2017, and were very close to the 40µg m^{-3} limit value with a concentration of 39 µg m^{-3} in 2018 and 2019. Similarly, NO_2 concentrations at sites CR62, CR69 within Crawley's Hazelwick AQMA have breached the standard from 2015 to 2019. Relevant exposure at CR93 and CR97 within the extended area of Crawley's AQMA also exceeded the NO_2 standard during this period, with an annual mean NO_2 concentration of 65 µg m^{-3} measured at CR93 in 2017 and borderline exceedances of 39 µg m^{-3} during the post Covid years 2021 and 2022. It is therefore unclear how the applicant can make a claim that annual mean NO_2 concentrations have consistently been below the air quality standards since 2015 within these AQMAs. The authorities have not seen breaches of the standard from 2020 to 2022 reflecting COVID. The 2023 data is yet to be processed but given the airport had not fully recovered to 2019 passenger numbers and aircraft movements in 2023

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		annual mean NO_2 air quality standard within the 11 km by 10 km domain centered on the Airport, Horley AQMA and Hazelwick AQMA. Monitoring within these AQMAs demonstrate that annual mean NO_2 concentrations have consistently been below the air quality standards since 2015 as reported in Section 13.7 of **ES Chapter 13: Air Quality** [APP-038]. The air quality assessment has demonstrated that predicted NO_2 concentrations at all receptors in the two AQMAs are below the air quality standard with and without the Project and would therefore not create exceedances of the air quality standard in these areas.	the monitoring results are still likely to be an underestimate of the 'true' situation. The joint authorities would also point out that the applicants modelled nitrogen dioxide concentration at the RB149 site (GAL ref M_421) for 2018 was 31.8 µg m^{-3} whereas the actual measured value in 2018 was 43.4 µg m^{-3}. Similarly modelled NO_2 at CR97 in Crawley was reported by the applicant as 24.1µg m^{-3} when the measured concentration in 2018 was 40 µg m^{-3}. (Note the points referred to here was actually modelled and is not an interpolation from the contour plots). While these large differences don't necessarily represent an error with the road traffic model, they do demonstrate that road traffic modelling can miss localised hot spots and demonstrates the need for ongoing monitoring (to when the airport is at full capacity) allied to local knowledge to ensure that the air quality standards are met in practice. It should also be noted that there are number of technical queries that relate, in part, to air quality modelling undertaken by the applicant that were submitted at Deadline 3 [REP3-117].
AQ.1.5	The Applicant	**ANPS Mitigation** The ANPS mitigation section (5.35 to 5.41) is omitted from Table 13.2.4 of ES Chapter 13 [APP-038]. Can the Applicant confirm which of the measures identified, including	The inspector may wish to note the following in relation to the submitted draft air quality action plan (Annex 5 in the draft s106) [REP2-004].

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		those listed under 5.39, are committed to by the Applicant and where are these secured in the DCO? For those that are not committed to, can the Applicant explain its position?	The draft AQAP submitted by GAL only refers to the carbon action plan, surface access commitments and Construction code of Practice. There is no commitment to individual measures, and the CAP, SAC and CoCP have been drafted to be self-regulatory, with no control threshold levels or action levels. The applicant's conclusion that the impact of the Proposed Development would not be significant, is based solely on meeting air quality standards. The applicant uses this as justification for providing no additional mitigation beyond that designed into the scheme or required by regulation. As such it appears to miss the fact that UK policy in relation to air pollution has moved on from a simple pass / fail approach, to ensuring that levels of pollution exposure are reduced over time and that any new developments should help in this process. There is no account taken of the health impacts to the local community as a result of the additional emissions associated with the project (£83m damage cost to health (Table 7.2.1 Needs Case [APP-251]), which the JLAs believe should be addressed by the applicant within its AQAP in line with ANPS 5.23 and the Emissions and Mitigation Guidance for Sussex (CBC Local Plan Policy ENV12). The JLAs consider that the AQAP would work better as a Requirement in DCO. In part this is because as currently drafted the s106 expires 9 years after opening (2038), yet emissions from the airport are still increasing beyond this point.
		ES Chapter 13: Air Quality [APP-038] has provided an assessment of air quality impacts from all related sources (road vehicles, aircraft and airport sources) following the methodology agreed with the local authorities. A robust assessment of the construction and operational periods presenting reasonable worst case effects has been provided in line with best practice guidance and available data. The assessment concludes that the impact of the Proposed Development would not be significant. Notwithstanding this, the Applicant has provided a draft Air Quality Action Plan (AQAP) at Appendix 5 of the **Draft Section 106 Agreement** [REP2-004] which details the mitigation proposed. The actions taken to reduce emissions would be secured in the following documents, should the DCO be granted: • **The Carbon Action Plan (CAP)** [APP-091] secured by Requirement 21 of the Draft DCO (Doc Ref. 2.1): • **The Surface Access Commitments (SAC)** [APP-090] secured by Requirement 20 of the Draft DCO (Doc Ref. 2.1); • **The Code of Construction Practice** [REP1-021] secured by Requirement 7 of the Draft DCO (Doc Ref. 2.1); • **The Outline Construction Traffic Management Plan** [APP-085] secured by Requirement 12 of the Draft DCO (Doc Ref. 2.1); • **The Outline Construction Workforce Travel Plan** [APP-084] secured by Recruitment 13 of the Draft DCO (Doc Ref. 2.1); and • **Deadline 2 Submission – 10.11 Draft Section 106 Agreement** [REP2-004]	

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		The ANPS example mitigation measures (paragraph 5.39) have been considered within the above documents. The commitments within the CAP (e.g., specific to Airport Buildings and Ground Operations, to achieve Net Zero for the Applicant's Scope 1 and 2 GHG emissions by 2030, and zero emission by 2040) and SAC (e.g. the sustainable transport mode share commitments for passenger and staff journeys) will require emission reductions from a wide range of sources across the airport operations and surface access journeys to and from the airport. All measures from those included in the ANPS example have been considered within the toolkit of measures in the CAP and SAC, other than consideration of 'physical barriers to trap or better disperse emissions and speed control on roads', which are not considered as there are no localised air quality impacts to mitigate, which would benefit from such an action. As noted in those documents, in general terms, it is the absolute outcomes which are committed to, rather than the individual measures themselves, which are purposely not prescriptive to allow the Applicant flexibility to select the most effective combination of them (or others) based on circumstances and knowledge that exist at the time (particularly in respect of the fast-evolving technological and regulatory landscape in terms of those measures informing the CAP).	Other key issues with the current air quality action plan include: i) The document in essence simply provides a long list of measures that the applicant says it *may* implement, not what it will implement. ii) It fails to set out which of the measures in the plan are the 'embedded mitigation' i.e. measures the airport has already assumed in place in the DCO air quality assessment, so it is possible to assess if these measures are on track given the air quality assessment in the DCO application is dependant on all of these measures being implemented successfully. iii) It fails to identify which additional measures are intended to mitigate the increased airport related pollution, as reflected by the difference in the emissions inventories for the 'with' and 'without' project scenarios. iv) It is unclear why the airport is only going to produce an air quality action plan 5 years after the commencement of the project (para 1.3.1 [REP2-004]) rather than one which applies from the outset (commencement) given by 2029 under the 'with' project scenario the airport will be handling 330,000 movements vs 313,000 without the development, and 61.3 mppa with the development vs 57.3 without the development.

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			v) It fails to present costings, performance indicators, delivery timescales, the level of pollution reduction the measure is likely to deliver (either as a concentration reduction on the Horley Gardens Estate or tonnage released to atmosphere) vi) To help the applicant to design their air quality action plan template the joint authorities would suggest the following columns are included in the action plan which are taken from the DEFRA air quality action plan template[4]: • Measure No. • Measure • Estimated Year Measure to be Introduced • Estimated / Actual Completion Year • Estimated Cost of Measure • Measure Status • Target Reduction in Pollutant / Emission from Measure • Key Performance Indicator • Progress to Date • Comments / Potential Barriers to Implementation vii) The joint authorities would also draw the inspectors' attention to the concern raised in the Surrey LIR at para 11.68 [REP1-097] where the applicant appears to think that burning Hydrogen

[4] https://laqm.defra.gov.uk/air-quality/action-planning/uk-regions-aqap-report-templates/

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
			or SAF will lead to a reduction in NOx emissions, as the current measures proposed in the action plan (annex 5 [REP2-004]) fail to address these concerns with for example para 3.3.2 of the action plan claiming that SAF will lead to a reduction in NOx emissions, but no evidence is supplied to support this despite the JSA making the evidenced point that (in relation to SAF) 'there are no measurable impacts seen to date on NOx emissions '. Equally action plan measure FL13 simply says 'supporting hydrogen fuelled aircraft' with no supporting evidence that this will in fact reduce NO_X emissions in practice. A hydrogen powered combustion based jet engine enables the use of higher pressure ratios in the engine which, all else being equal, will lead to higher NOx emissions that a kerosine engine. **A review of the Draft AQAP has been undertaken by AECOM on behalf of the Joint Local Authorities and submitted at Deadline 4.**
AQ.1.6	The Applicant	**Code of Construction Practice – Air Quality** Can the Applicant add air quality, dust and odour management to the list of topic specific plans identified as annexes of the CoCP [APP-083 to APP-087]?	**Construction Dust Management Plan (CDMP)** A draft Construction Dust Management Plan (CDMP) has been provided by the Applicant to the Joint Local Authorities. This was not provided at the submission of the DCO and so is welcome. The draft construction DMP draws together and builds on the information provided within the CoCP and ES. The drafting suggests there will not be one CDMP but several CDMPs.
		Management measures to mitigate air quality, dust and odour impacts are addressed within the body of the **Code of Construction Practice**	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		(CoCP) [REP1-021]. The CoCP (para 2.2.7) requires Construction Dust Management Plans (CDMPs) to be prepared in accordance with the measures within the CoCP. CDMPs will be prepared prior to the construction of each planned work package for the construction of the Project. The mitigation measures within the CDMPs will be confirmed based on the level of dust risk associated with each work package, taking into account the magnitude of work and cumulative effects in relation to works across the site as a whole that could be occurring in parallel. The level of risk will be assessed in line with STEP 2 of the IAQM guidance as provided in Section 2 of the **ES Appendix 13.6.1 Air Quality Assessment Methodology** [APP-158]. The mitigation measures will be in accordance with the measures outlined in the **CoCP** [REP1-021] and best practice. Measures for odour management and for managing emissions from vehicles and machinery are set out in Section 5.8 of the **CoCP** [REP1-021] and are based on best practice industry guidance.	The draft CDMP importantly confirms the CDMPs will be submitted for approval linked to the Draft DCO through the inclusion of the CDMP within the CoCP. The draft CDMP sets out in greater detail how the work package DMPs will be prepared and provides one example. This is helpful, but it is unclear why the draft CDMP cannot be developed at this stage for more than just one example and be completed for all work packages identifying where the higher risk locations are, prior to mitigation, and where monitoring is envisaged to be required. It is believed that GAL have sufficient information to do this and it would provide the Councils with confidence that higher risk areas have been identified and suitable monitoring has been identified consistently. At a later stage several contractors may be required by GAL and this could lead to inconsistencies. This could be avoided if future contractors only had to make minor alterations to draft plans that have already been developed. There are a number of other points including: • Dust soiling is only discussed in terms of visual techniques, not dust soiling or deposition methods needed to understand dust nuisance risks. • Further specifics on procedures and data sharing are needed within the draft CDMP. • It is not clear that these should be completed by a relevant air quality specialist and this could be included with the CDMP.
		The road traffic emissions were obtained from the Defra Emissions Factor Toolkit (EFT) version 11[5] as set out in Paragraph 13.7.16 of **ES Chapter 13: Air Quality** [APP-038]. This was the most recently available toolkit at the time of the assessment. Section 1.4 of **Appendix F** of **Supporting Air Quality Technical Notes to Statements of Common Ground** [REP1-050] addresses the implications of EFT version 12, released following the submission of the DCO Application.	

[5] Department for Environment Food and Rural Affairs (Defra) (2021) Emissions Factors Toolkit (EFT) (Version 11.0)

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
			A technical note reviewing the Draft CDMP has been prepared by AECOM on behalf of the Joint Local Authorities and submitted at Deadline 4. **Construction Odour** The Applicant states the construction works have the potential to release unpleasant odours. But, beyond stating that suitable mitigation following best practice will be implemented via the CoCP (para 5.8.3 APP-082) no further details of how mitigation would be secured are provided. The LA would welcome a more proactive approach to odour management in the form of a draft Odour Management Plan (OMP) within the CoCP for approval by the LPA, to provide additional confidence in the control measures in place during the construction phase. This is particularly important given the defence of statutory authority against nuisance claims (ANPS 5.231). A draft or outline OMP should be made available for the Examination phase and should outline proposed odour mitigation measures, procedures for monitoring, complaints and resolution process and communications with local authorities.
AQ.1.9	The Applicant	**Air Quality - Study Area** ES Chapter 13, paragraph 13.5.56 [APP-038] states that the operational study area is the 11km x 10km study area. However, paragraph 13.5.5 states that the wider study area includes the Affected Road Network	There are number of technical queries that relate, in part, to the clarity of the study areas (ARN) utilised by the applicant. These queries were submitted at Deadline 3 [REP3-117], Appendix 3 (See Page 27 Affected Road Network.)

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		(ARN) along which there is potential for impacts during operation. Can the Applicant confirm whether the ARN is assessed for the operational phases and if not, provide justification?	
		The Applicant can confirm that the ARN is assessed for the operational phases. Paragraphs 13.5.4 to 13.5.10 of **ES Chapter 13: Air Quality** [APP-038] sets out the construction and operational phase study areas. The study area assessed for construction traffic and the operational phases includes the 11 km by 10 km domain plus the modelled Affected Road Network (ARN) outside this area. Figure 4.1.1 Modelled Road Network of **Air Quality Figures – Part 2** [REP1-018] presents the ARN network for the wider study area.	
AQ.1.10	The Applicant	**Air Quality – Cumulative Effects** Can the Applicant explain how an assessment of construction and operation cumulatively in 2029 captures a worst-case scenario noting that ES Chapter 13, Tables 13.10.5 and 13.10.6 [APP-038] demonstrate an increase in operational emissions that could act cumulatively with construction emissions?	There are number of technical queries that relate, in part, to cumulative effects. These queries were submitted at Deadline 3 [REP3-117], Appendix 3 (See Page 29 Cumulative Effects and Inter-Relationships). Please also see comments under AQ1.14 relating to applicant's assessment and management of the cumulative impacts of construction and operational traffic emissions in Crawley's AQMA.
		The 2029 Highways (Surface Access) Construction scenario represents years 2029 to 2032, during which there will be an overlap with the operation of the Project. The Construction scenario assessed is a combined scenario considering the cumulative contribution from both construction and operational traffic during this period to represent a	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		realistic worst-case assessment. **Appendix D** of **Supporting Air Quality Technical Notes to Statements of Common Ground** [REP1-050] addresses Relevant Representation queries on the modelling scenarios included in the **ES Chapter 13: Air Quality** [APP-038], including further detail on cumulative construction and operation impacts.	
		The forecast proportions of next generation aircraft in the fleet over time in the 'central case' (most likely rate of fleet transition) is provided in Section A1.3 of **Annex 1** to **ES Appendix 4.3.1 Forecast Data Book** [APP-075]. Detailed fleet information, including how it is anticipated to change from 2029 to 2047 is provided in Table A1.3.2. The forecast proportions in Table A1.3.1 show 100% next generation aircraft in the 2038 and 2047 scenarios in both the base case and Northern Runway case. The proportions of next generation forecast in the Slow Fleet Transition scenarios are provided in **Annex 3**, which shows proportion of next generation aircraft being 82% of the fleet in 2038, but reaching 100% in 2047, matching the 'central case'. Therefore, by 2047, the fleet mix in terms of next generation aircraft in the 'central case' and the Slow Fleet Transition case will be aligned. An assessment of the 2047 central case was undertaken and is presented in **ES Chapter 13: Air Quality** [APP-038] and therefore an air quality assessment of the 2047 Slow Fleet Transition sensitivity scenario was not considered necessary, as it would be assumed to be the same as the central case already assessed. **ES Appendix 4.3.1 Forecast Data Book** [APP-075] sets out the consultation and engagement which informed the forecasts used including consideration of the Jet Zero Strategy[6]. The Jet Zero Strategy	

[6] Department for Transport (2022) Jet Zero Strategy: delivering net zero aviation by 2050.

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		sets out UK Government's framework and plan for achieving net zero aviation in the UK by 2050. The strategy considers improvements in aircraft fleet, considering sustainable aviation fuel and introductions of zero emission aircraft.	
AQ.1.12	The Applicant	**Effects due to Modelled Traffic Noise** ES Chapter 13, paragraphs 13.10.24 and 13.10.51 [APP-038] report locations where there are predicted exceedances of the PM2.5 objective in the do minimum and do something scenarios for 2024 leading to a moderate adverse effect (for 2024 R_117 and R_147 and for 2029 R_147). The ES states that the Proposed Development is unlikely to change traffic in those areas and changes are attributed to 'modelled traffic noise' which is explained in Transport Assessment (TA) Annex E [APP-263]. However, this Annex does not identify Sutton Common Road (R_147) as a receptor that is subject to model noise in 2024 or 2029. Can the Applicant explain why the moderate adverse effects at R_147 in 2024 are not considered significant?	There are number of technical queries that relate, in part, to traffic model noise. These queries were submitted at Deadline 3 [REP3-117], Appendix 3 (See Page 29 Model noise).
		The Applicant addresses the change in concentration at Sutton Common Road (R_147) receptor at Section 3 of **Appendix C** of **Supporting Air Quality Technical Notes to Statements of Common Ground** [REP1-050]. In summary, at R_147 an anomaly in the emissions data was identified within the construction scenarios. The traffic data represent an overall	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		decrease in AADT and the closest receptor H_166 demonstrates that the concentration change at R_147 Sutton Common Road is likely to be 0.1 µg/m^3 for NO_2, PM_{10} and $PM_{2.5}$ corresponding to no significant effects.	
AQ.1.14	The Applicant	**Effects on the Hazelwick AQMA** ES Chapter 13 paragraph 13.7.2 [APP-038] identifies that the Hazelwick AQMA extension is within the 10km x 11km study area. However, the modelled figures are not referenced with the assessment. For example, ES Chapter 13, paragraph 13.10.21 states that the highest annual mean NO2 concentration at Hazelwick AQMA is anticipated at receptor R_538 as 31.8 µg/m^3 as shown in the Air Quality Modelling Results in ES Appendix 13.9.1 Part 2 [APP-163]. However, receptor R_442 shows an anticipated NO2 concentration at Hazelwick AQMA as 34.8 µg/m^3. Can the Applicant either explain why the extension is not included in the discussion or update the ES Chapter and assessment to include the extension modelling?	Crawley borough council has specific concerns regarding the impact of construction traffic within its AQMA. Whilst the applicant has modelled the effects on the Hazelwick and extended Hazelwick AQMA, further discussion regarding mitigation is not forthcoming from the applicant because of its firm stance that there are negligible impacts in the AQMA as a result of the Project. The council believes that the potential for localised AQ impacts within the AQMAs are likely for a number of reasons: • The sequencing of the airfield construction works and surface access improvements will result in highways works coinciding with a fully operational northern runway (2029). The combined effect is likely to result in redistribution or rerouting of traffic across the local road network, leading to the risk of localised hotspots along affected roads, including within areas of already high NO_2 concentrations such as AQMAs. • The assessment of AQ impacts from the Project assumes minimum impact on Crawley's AQMA from construction traffic. The CMTP and CWTMP are intended to ensure construction traffic adheres to designated routes. However the draft CMTP identifies the route through Crawley's AQMA as a
		The extension of the Hazelwick AQMA is considered in Paragraph 13.7.2 of **ES Chapter 13: Air Quality** [APP-038]. A figure showing the location of the extension and receptors considered within the ES assessment is provided above in AQ.1.13. Results for the 12 modelled receptors within Hazelwick AQMA extension are reported in **ES Appendix 13.9.1: Air Quality Results Tables and Figures Part 4 - Part 6** [APP-165, APP-166, APP-167], identifiable by '*Hazelwick AQMA (extension)*' within all results tables. The results of the original AQMA	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		are reported separately, within which the highest anticipated annual mean NO_2 concentration for the 2024 construction scenario is 31.8 µg/m^3 at receptor R_538, as reported in Paragraph 13.10.21 of **ES Chapter 13: Air Quality** [APP-038]. Including the extension, R_442, has the highest anticipated annual mean NO_2 concentration of 34.8 µg/m^3 for the 2024 construction scenario, as reported in Table 3.1.1 of **ES Appendix 13.9.1 Air Quality Results Tables and Figures – Part 2** [APP-163]. This does not change the conclusions of the assessment as the receptors in the extension, including R_442, show negligible impacts as a result of the Project.	contingency access for construction traffic to the airport. This is because it is the only alternative route to the airport from the M23. • Little information on monitoring or mechanisms for compliance are provided within the CMTP and CWTMP. Without adequate controls and monitoring in place local pollution hot spots may be created within the AQMA. These management plans should therefore be provided for scrutiny during the examination and must be prepared for approval by local and highways authorities. • Other non-construction traffic would also use the contingency re-routed from the motorway through the AQMA, and/or use it as an alternative to avoid disruption from highways works. • Operational monitoring will be important to understand if changes in air quality are occurring or unacceptably worsening. This places additional burdens on the Authorities to maintain monitoring networks across their districts which are impacted by the Project. This should be addressed through mitigation by the applicant. • This matter has been discussed in more detail in the West Sussex LIR Air Quality Section (para13.55 - 13.73 [REP1-068].

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
AQ.1.15	The Applicant	**Modelling – Reduction in PM10 and NOx Pollutants** ES Chapter 13, Table 13.10.1 [APP-038] sets out the modelling results for construction year 2024 with the project for NOx, PM10 and PM2.5. The change in emissions is compared to the 2024 construction period without the Project, as shown in ES Table 13.7.3. This demonstrates a reduction in emissions of PM10 and NOx with the Project at peak construction year in 2024 without explanation as to why there is such an improvement considering the anticipated increase in construction activity. Can the Applicant explain the justification as to why the modelling demonstrates a reduction in PM10 and NOx pollutants?	There are number of technical queries that relate, in part, to changes in emissions presented. These queries were submitted at Deadline 3 [REP3-117], Appendix 3 (See Page 26 Emission Ceiling).
		Table 13.10.1 of **ES Chapter 13: Air Quality** [APP-038] shows a small reduction in NO_x emissions (-1.9 t/yr) and increase in emissions for PM_{10} (1.0 t/yr) and $PM_{2.5}$ (0.6 t/yr) for the 2024 construction period. The changes in emissions are due to changes in road traffic between the Without and With Project scenarios. The reduction in NO_x emissions can be explained by a slight decrease in road traffic across the modelled network. The small increases in PM emission can be attributed to changes in fleet composition between with and without Project scenarios. As there is a slightly greater proportion of heavy goods vehicles with the Project, the PM emissions show a small increase as HGVs have higher PM exhaust emissions than light duty vehicles and have more brake and tyre wear due to their heavier weight. The reductions in traffic have been reviewed by the transport consultants and the small changes in traffic flows are considered reasonable in the strategic model with small changes in input	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		assumptions (HGV construction vehicles and workers). Whilst the analysis indicates small reductions in emissions in some locations, the scale is within the tolerances of the model and should not be considered as an impact of any significance. Further detail on AADT information can be found in the **Transport Assessment - Annex B Strategic Transport Modelling Report** [APP-260]. Figure 200 shows that there are small reductions in AADT through the Gatwick corridor and on the M25, with small increases elsewhere. These AADT figures are the product of micro changes in flows at the hourly level. The subtle changes to the model to generate the Airfield Construction traffic (the employee demand and the HGVs) will lead to small changes in traffic volumes on links with localised rerouting across the network in the assignment.	
		For Table 13.7.3 which presents the pollutant emissions for the 2024 construction period (Without Project), the Applicant confirms that the emissions reported are correct, however there is an error in the Total $PM_{2.5}$ emissions reported, as these do not reflect the sum of the sources. The Applicant has revised the 'Total (all sources)' and 'Total (airport-related)' $PM_{2.5}$ emissions in an updated version of **ES Chapter 13: Air Quality** (Doc Ref. 5.1 v2) submitted at Deadline 3. The $PM_{2.5}$ emissions and change presented in Table 13.10.1 of **ES Chapter 13: Air Quality** [APP-038] for the 2024 construction scenario (With Project) are accurate. Therefore, there is no impact to the air quality assessment or conclusions.	
AQ.1.18	The	**Cross-referencing with Odour Management and Financial Costs**	Chapter 17 (Needs Case Appendix 1 – National Economic Impact Assessment [APP-251]) provides a TAG assessment

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
	Applicant	ES Chapter 10 [APP-035] and Chapter 17 [APP-042] are cross referenced in Chapter 13 paragraphs 13.12.6 and 13.12.7 [APP-038] where odour management and the financial cost of air pollution are discussed respectively. Can the Applicant signpost exactly where in these Chapters these topics are discussed and explain how/ if they influence the assessment in ES Chapter 13?	identifying the air quality damage costs of the Project (£83m) representing an assessment of the cost of the health impacts of the Project in line with the requirements of the Air Quality and Emissions Mitigation Guidance for Sussex (Crawley Borough Council Local Plan policy ENV 12). The Applicant states that the assessment of air quality does not rely on information from Chapter 17. However, the JLAs believe that the damage cost approach is consistent, not only with the local Sussex policy, which addresses how emissions from the development can be offset at a local level proportionate to the value of the damage to health, but it is also central to Defra's damage cost guidance and the UK Air Quality Strategy , which encourages authorities to *"robustly assess the monetised benefits of air quality interventions"* And acknowledges that: *"improving air quality has direct, proven economic benefits, even when the up-front cost of intervention is high"*. The damage costs also allow the Applicant to determine the appropriate level of mitigation to offset local health impacts from their emissions.
		Inter-related effects on odour impacts during groundworks are referred to in **ES Chapter 10: Geology and Ground Conditions** [APP-035], with paragraphs 10.6.3 to 10.6.38 on the Baseline Environment and Table 10.6.3, highlighting historical activity which may give rise to odour risk. **ES Appendix 5.3.2 Code of Construction Practice** [REP1-021] includes measures to mitigate odour risks. The financial costs have been presented in Table 7.2.1 of **Needs Case Appendix 1 – National Economic Impact Assessment** [APP-251]. The cross references are for information to demonstrate where other air quality related aspects are also being considered within the DCO Application. The assessment of air quality does not rely on information from Chapter 10 or Chapter 17, therefore they do not influence the conclusions provided in **Chapter 13: Air Quality** [APP-038].	
AQ.1.19	The Applicant	**Mitigation – Dispersal of Emissions** ES Chapter 13, paragraph 13.5.55 [APP-038] states that mitigation	It is unclear from the applicant's response if the need for greater dispersal from increasing the release height of emissions are provided for in the CoCP, or whether the

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		measures for the concrete batching plant and non-road mobile machinery may include increasing the release height of emissions for sufficient dispersion and that this is set out in the CoCP. However, there appears to be no such wording in the CoCP. Can the Applicant explain where such mitigation measures are secured through the DCO?	applicant is saying that since their assessment shows no significant impacts predicted, that they have scoped out the need for any such mitigation. The JLAs are concerned that there is a lack of clarity on how and where many of the construction impacts will be mitigated. Despite requests for more specific information, the details of mitigation and how it will be implemented, monitored and complied with is either missing or vague, and often non-committal.
		Section 5.8 of **ES Appendix 5.3.2 Code of Construction Practice (CoCP)** [REP1-021] includes measures to control and minimise emissions from non-road mobile machinery (NRMM). The reference in paragraph 13.5.5 of **ES Chapter 13: Air Quality** [APP-038] that *'increasing the release height of emissions for sufficient dispersion (if necessary)'* is deliberately not framed as a prescriptive requirement. This is because the NRMM assessment has been based on a number of conservative assumptions, as detailed in Section 13.12 of **ES Appendix 13.4.1** [APP-158] and the assessment demonstrates that there are no significant impacts predicted. The risk of impacts from NRMM is mitigated under the secured measures contained within Section 5.8 of the **CoCP** [REP1-021], '*site preparation/ maintenance'* where it is stated to *'Plan site layout so that machinery and dust causing activities are located away from receptors, as far as possible.'* The detailed design process (post-DCO) would provide an opportunity to review the need for additional measures, if considered necessary, and any requirement for Environmental Permits for combustion plant if necessary as a result of design information, plans and site layout details. This may include, for example, the concrete batching plant or	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		other NRMM requiring Environmental Permits. Release height of emissions would be considered and assessed as part of an Environmental Permit application to satisfy the regulator, the Environment Agency. The **CoCP** [REP1-021] secures monitoring following best practice guidance. Monitoring will be used to assess if the agreed mitigation measures are being applied effectively. This will be described in the Construction Dust Management Plan, which will be developed and secured in accordance with the **CoCP** [REP1-021].	

Appendix 4: Noise and Vibrations Comments on Applicant's Response to Examining Authorities Comments (ExAQ1) - Written in Partnership with the Wider Joint Authorities

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
NOISE AND VIBRATION			
NV.1.1	The Applicant	**Replacement Noise Bund** Paragraph 5.2.72 of the ES [APP-030] describes the existing bund which attenuates noise as having a height of up to 12m. It is to be replaced with a new bund and wall which would be up to 8m high in the west and 10m in the east. Why is the height of the replacement lower than the existing?	
		Noise modelling of different bund heights was carried out as a sensitivity test to confirm the optimal height. It was found that a height of 10m gave only 0.5dB less attenuation than 12m at the nearest receptor, so 10m was adopted for the preferred design. The height of the bund is 10m and reduces to 8m at its western end due to height restrictions for the main runway.	The Applicant states that the change in attenuation between a 10m and 12m bund is only 0.5dB; however, no information to support this statement is provided in the application. The JLA's position is that this reduction in bund height is a worsening on the current situation and there should be no opportunity to reduce the level of mitigation provided. If anything the development provides the opportunity to improve the situation by consideration of both extending and increasing the height of the bund and the JLAs would expect the Applicant to have undertaken this work. This is consistent with national planning policy.

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
NV.1.2	The Applicant	**Replacement Noise Bund** Paragraph 8.6.27 of the Planning Statement [APP-245] describes existing and proposed noise bunds. Will the replacement bund be constructed before the existing bund is removed? How would this be secured through the DCO?	
		As explained in **ES Chapter 5: Project Description** [REP1-016] (paras 5.2.93 to 5.2.94), the western end of the existing noise bund would be removed, before the new noise bund and wall is built to replace it. The western end would be removed within the first year of the airfield works, and there will be a period up to six months when part of the bund will be missing. **ES Appendix 5.3.3: Indicative Construction Sequencing** [REP2-016] shows the removal and replacement of the western noise mitigation as taking place between 2024 and 2026. Noise modelling was undertaken that showed during this period levels of ground noise could increase by up to 3dB at the nearest noise sensitive receptor, Westfield Place. This property is within the Noise Insulation Scheme Inner Zone and the Applicant would ensure the full package of noise insulation is offered and provided to this property before the bund is removed, as required by the property owner. The requirement to do so will be confirmed in updates to be made in the Code of Construction Practice, to ensure there is a clear secured need to follow this methodology. Noise modelling showed that further away beyond this property the biggest noise increase would be	The Applicant has not answered the question adequately. The removal of the bund is covered in Work No. 18 **[APP-008]** and the new barrier is secured as item DBF14 in Table 1.11.1 of **Appendix 1 – Design Principles [REP2-037]**. However, no reference is provided in **Appendix 1 – Design Principles [REP2-037]** to **ES Figure 5.2.1g [AS-135]** for both the western noise bund/ wall and noise barriers at the north and south terminal junctions (item N3 in Table 1.11.1 **[REP2-037]**). It would be appropriate to include a reference to **ES Figure 5.2.1g [AS-135]** in Table 1.11.1 of **Appendix 1 – Design Principles [REP2-037]**. The Applicant states that there would be a period of six months when part of the bund will be missing; however, there does not appear to be any information within the application to support this statement. We would request that the Applicant provide more detail on the removal of the existing bund and construction of new mitigation and provide information on how long that nearby receptors experience unmitigated levels of ground noise. Additionally, it should be identified whether this period of increased noise would constitute a likely significant effect. The Applicant states that noise modelling of a scenario with the existing bund removed has been undertaken, but no details of

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		no more than 1dB during this temporary period, which would not generate any additional significant effects.	this modelling have been provided. We would request that the Applicant provide more details on this additional ground noise modelling. We welcome the commitment to secure noise insulation for properties affected by increased levels of ground noise prior to removal of the existing bund. The retention of this noise bund to provide acoustic mitigation is currently controlled under Condition 4 of planning application CR/125/1979 (see Chapter 4 [REP1-068] and the Applicant has not explained how the retention of any replacement acoustic feature once constructed is to be secured in perpetuity to safeguard affected properties.
NV.1.3	The Applicant	**Noise Designated Airport** Paragraph 8.6.3 of the Planning Statement [APP-245] states that Gatwick is a noise-designated airport. What does this status mean?	
		Section 80 of the Civil Aviation Act 1982 provides the Secretary of State with the power to designate aerodromes in Great Britain for the purpose of regulating noise and vibration from aircraft using those airports, including by setting noise controls. Heathrow, Gatwick, and Stansted airports have been designated to avoid, limit or mitigate the effect of noise from aircraft since 1971. Section 78 of the Act then provides the basis upon which	The JLAs are of the opinion that the concept of designated airport is a historical anomaly whereby state owned airports were designated for control by the Secretary of State. In any event, the designation status does not and should not preclude the securing of additional controls in the DCO. Whilst recent consultation showed communities viewed designation favourably, this was mainly due to the belief that designation would bring about stricter controls[7].

[7] https://assets.publishing.service.gov.uk/media/65d5f26c2ab2b3001a759638/dft-annex-c-summary-consultation-responses-longer-term-reform.pdf

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		the Secretary of State may regulate to direct aircraft operators using designated airports, or the designated airport operators themselves, to adopt procedures which limit noise and vibration. An example of the controls which the Secretary of State may impose by virtue of an airport being designated is the night flight movement limit and quota count restrictions on Gatwick Airport, and the other designated airports.	The JLAs' view is that overall there is a lack of adequate legislative control for aviation noise and that aviation noise policy is inadequate to deal with the issues communities face. By way of example, in 2003 The Future of Air Transport cm 6406 identified the need for new legislation in relation to the control of noise yet none has come to pass. The Green Paper 'UK airspace policy: a framework for balanced decisions on the design and use of airspace', 2017, refers to the limited controls imposed on designated airports and states "Due to the regulatory nature of these controls and the associated processes any changes need to go through, the noise operating procedures set by Government at the designated airports have not changed for many years and now represent minimum industry practice. Therefore, they do not necessarily reflect the latest developments in noise management or the measures that an airport could put in place if they were not bound by the Government's controls." In other words, the designated airports have some of the weakest controls in the country but as they are the largest they have the greatest impacts on the population. The night noise regime is one of the controls set by the DfT and has been commented upon by both community groups and the JLAs as it applies controls to the period 23:30 to 06:00. This is inconsistent with other aviation policy that defines the night

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
			period as the 8 hours between 23:00 and 07:00 (the $L_{Aeq\ 8hr\ night}$). The JLAs raised their concerns in ISH5 about the lack of control in the shoulder periods and have also highlighted the importance of these hours as this is when disturbance makes it more difficult to get to sleep in the evening (23:00 to 23:30) or can cause premature conscious awakenings early in the morning (06:00 to 07:00) and sleep cannot be resumed. In their written summary of the oral case for ISH-05, the Applicant rejected the suggestion that the 'shoulder periods' should be given special consideration or be subject to additional controls via the DCO, stating that (i) the DfT consultation on night flight controls did not propose to change definition of nighttime and (ii) "other controls must be taken into account and assumed to operate effectively." (Document 10.9.6 at §2.2.1, [REP1-066]) The DfT Consultation referred to was published on 22 February 2024 and considers proposals for night flight restrictions at Heathrow, Gatwick and Stansted from October 2025 when the current regime ends. It is correct that DfT are not proposing to change the definition of nighttime for the next regime, commencing in October 2025, however the passage highlighted by the Applicant in the hyperlink included in their summary of ISH-05 presents an incomplete picture when taken out of context. It reads: "We believe the existing restrictions on night flights are sufficient to meet the new night-time noise abatement objective. Therefore, while we await further evidence, we now propose to keep movement limits and noise quota limits the same for the next

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
			regime, with the possible exception of Stansted." However the preceding paragraph makes it clear that the regime being referred to is a "bridging regime" designed to operate from October 2025 to October 2028, while the outcomes of two important studies on aviation noise are awaited. These are the Aviation Night Noise Effects ("ANNE") study and the Aviation Noise Attitudes Study "ANAS". The consultation explains that the outcomes of the ANNE study will "inform questions such as whether there should be a change to the 6.5 hour night quota period". DfT has chosen a 3-year bridging regime instead of a 5-year regime because "5 years was considered too long as we wish to be able to review the night flight regime again – once we have the evidence from the ANNE study and the aviation noise attitudes survey". The section of the consultation on Gatwick Airport notes that the application for development consent to bring the northern runway into routine use has been accepted for detailed examination and "Depending on the outcome of the examination and the Secretary of State for Transport's decision on the application, the airport anticipates that the project could be completed and ready for operational use by the end of the decade." Therefore, the project would not be expected to be operational before the end of the bridging regime in October 2028 and certainly not before the publication of the ANNE study and the next round of consultation on the subsequent regime. In the section on Stansted, the consultation notes that, following planning permission granted in June 2021 for the airport to serve up to 43 million passengers per annum, a planning condition has imposed a night noise limit on operations at Stansted for the full 8-hour period of 23:00 – 07:00. The consultation suggests three

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
			options for how the bridging regime might deal with Stansted, two of which involve the removal of Government night controls and reliance being placed on the planning condition. It states that: "We believe option 1 and option 2 both have merit, as they fit with the Government's expectation that appropriate noise controls are usually best set locally through the planning system. This is the case at all other airports currently, except the noise-designated airports: Heathrow, Gatwick and Stansted. There are airports which impact more people with night noise than Stansted, where the Government is content for local controls to be in place." Thus, the DfT consultation read as a whole does not support the Applicant's characterisation of it for several reasons: a. The position from October 2028 is very uncertain, with the next regime explicitly described as a bridging regime while further research and evidence gathering is underway. There is a possibility that DfT night controls may be extended to cover a longer period after the publication of the ANNE and ANAS studies. b. The project permitted by the DCO would not be operational until after the end of the 3-year bridging regime. c. There is precedent for a designated airport to secure limits on night noise across the whole 8-hour nighttime period via local planning controls in the shape of Stansted. d. DfT has expressed a preference in the consultation for noise controls to be set locally through the planning system where possible.

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			Furthermore, the section of the 2024 DfT night noise consultation dealing with Stansted notes that, following planning permission granted in June 2021 for the airport to serve up to 43 million passengers per annum, a planning condition has imposed a night noise limit on operations at Stansted for the full 8-hour period of 23:00 – 07:00. The consultation suggests three options for how the "bridging regime" intended to operate from October 2025 to October 2028 might deal with Stansted, two of which involve the removal of Government night controls and reliance being placed on the planning condition. The consultation states that these two options *"both have merit, as they fit with the Government's expectation that appropriate noise controls are usually best set locally through the planning system."* Interestingly this is seen as possible because the power of the SoS is discretionary, so he may exercise discretion where appropriate and necessary. By improving controls locally through the planning system it is no longer necessary to secure protections for communities through national controls over designated airports. While the concept of the noise envelope provide some further control, it is not ideal and the JLAs have discussed the concept of an environmental permit by reference to existing UK pollution control legislation and seeks to incorporate features of that regime to the extent possible within the DCO process. The DCO provides an opportunity to improve noise control, and for both outcome-based and process-specific measures, similar to those specified by the Secretary of State, to be contained in a single framework.I If the JLAs were allowed a scrutiny role in the Noise Envelope, it would also allow them to represent the

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
			communities affected in setting strict noise control measures. The JLAs would request that the Examining Authority invite the DfT to provide their opinion on the extent of the controls that could be incorporated into a DCO.
NV.1.4	CAA	**Potential Revisions to Airspace** The 4th row of Table 14.2.1 in ES Chapter 14 [APP-039] states *"Whilst the development of a third runway at Heathrow would be contingent on major revisions to airspace in the South East of England, this Project is not."* a) Does the CAA agree with this statement, noting that IAG/ British Airways has expressed scepticism in their WR [REP1-198]? b) Schedule 2 of the dDCO (Requirements) states *'"independent air noise reviewer" means the CAA'*. Does the CAA agree with this interpretation and consider that the role itself is sufficiently well defined? c) The ExA is aware of the Aircraft Noise Attitudes Survey (ANAS) that is underway. Is it expected that any of the results will be published before the end of the examination on 27 August 2024? If so, what?	

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		Whilst the Applicant notes that the ExA has directed this question to the CAA, it has provided a response to part a) of the question. a) A third runway at Heathrow would be inoperable without the development of a supporting airspace structure to facilitate the movement of air traffic to/from the new runway. The creation of new arrival and departure routes for the new third runway, as well as the existing Heathrow runways, would be required. To facilitate this development, changes to the arrival and departure routes of the other London airports would also be necessary as part of this project, thus major revisions to the airspace would be a critical enabler for Heathrow's third runway project. However, the London Gatwick Northern Runway Project is not developing a new runway. Section 4 of **ES Chapter 14: Noise and Vibration** [APP-039] and **Capacity and Operations Summary Paper** [REP1-053] explain the Project does not require the routings of aircraft to or from the airport to be changed (see CAA airspace change proposal ACP-2019-81). London Gatwick's current airspace design includes Standard Instrument Departures (SID) and arrival procedures for both the 26L/08R (main) and 26R/08L (northern) runways. Departure route separation requirements along with the optimisation of the departing aircraft sequence are described comprehensively in **Capacity and Operations Summary Paper** [REP1-053] with the	The Dublin Airport Northen Runway project made similar assumptions to the Applicant that northern runway departures would follow existing flight paths. However, after consent had been granted, a regulatory review by AirNav concluded it was not safe to operate the northern runway in parallel with the southern runway as northern runway departures may interfere with aborted landings on the southern runway. As such, northern runway aircraft flew on different flight paths to those assessed in the application. The Applicant should confirm whether the proposed northern runway can safely operate during aborted southern runway landings and if this has been agreed with the CAA. The Green Paper referred to above also made a clear linkage between development of infrastructure and airspace and the considerations that should be extended to both. The JLAs have expressed their concern about the effects of the proposed increases in overflight of Wizad (for which overflight datasets for a number of years have still not been provided). While these may not be defined as an air space change it is nonetheless a change to the way in which the airspace is used and contrary to its intention. The JLAs question whether it would be necessary to increase airspace capacity in this way were it not for increasing airport capacity. The two issues are closely linked. We note the Applicant's comment stating that 500 options are being considered but the JLAs were of the understanding that a substantial number had been screened out and that the next stage of the airspace change process would see far fewer options considered. It is understood that the Applicant is

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		supporting model data captured in **Capacity and Operations Summary Paper Appendix Airfield Capacity Study** [REP1-054]. The Applicant is separately taking forward airspace change under the Government sponsored Airspace Modernisation Programme [REP1-053, para 1.2.12] and while the London Gatwick operation will benefit directly as a result of this programme, it is not required to deliver the Northern Runway Project. The London Terminal Manoeuvring Area (LTMA) airspace is complex, necessarily integrating the arrival and departure routes for all of the London airports, and as identified by the JLAs [REP1-069, Appendix F] the timeline for the delivery of this complicated, multi-sponsor enterprise is unknown. The Applicant, alongside NERL (National Air Traffic Services (NATS) En-Route plc), is co-sponsoring the London Airspace South (LAS) airspace deployment under the same programme which is, by comparison, a less complex airspace change that can be deployed sooner than the rest of the LTMA airspace, realising benefits earlier than might otherwise have been the case. In particular for London Gatwick, London Airspace South is expected to increase capacity and reduce the air traffic controllers' workload thereby strengthening resilience, reducing delays on the ground pre-departure caused by capacity constraints in the airspace and potentially increasing runway throughput	seeking to promote airspace change that would in the first phase seek to bring into operation or intensify the use of routes to the south of the airport including those that are likely to have a direct effect on Route 9 (Wizad) and on the residents of Horsham and the AONB for Mid Sussex. The Examining Authority may wish to invite comment from the CAA in relation to this matter and further clarification from Gatwick. There is substantial public interest in this matter.

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		during busy periods. The beneficial geographical location of London Gatwick, that lies to the south of the congested and complex central LTMA airspace, and the supporting airspace that lies to its south, means it is easier to take forward airspace change here compared to the north of London Gatwick, which would involve the other main London airports. The deployment of London Airspace South could be in Q1 2027 if the process is complete and approved. Currently, there are over 500 options being considered, so it is not possible to carry out any noise modelling or assessment of the effect it could have on the Northern Runway Project noise assessment.	
NV.1.5	The Applicant	**Sensitivity Test for Total Aviation Noise** In the context of the ongoing ANAS research and the policy tests described at paragraph 5.68 of the ANPS: Can the Applicant provide for the years 2019, 2029, 2032 and 2047, assuming slow transition, for air and ground noise combined, and accounting for all other residential and noise sensitive development consented at the time the application was made, tables equivalent to Tables 7, 8, 9 and 10 of 'Noise Exposure Contours for Gatwick Airport 2019 ERCD REPORT 2002', with the L_{Aeq} 16 hour day values extended in 3 dB steps down to 45 dB and the L_{Aeq} 8 hour night values extended in 3 dB steps down to 39 dB for operational noise?	

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		Can the Applicant support the tabulated information with Figures equivalent to B15 and B16 for the years 2029, 2032 and 2047?	
		Can the noise modelling be done? The request requires air noise to be modelled down to LAeq 16 hr 45 dB and LAeq 8 hr 39dB, ie 6dB below LOAEL. These contours are 6dB below those in the current ANCON model used by the CAA's Environmental Research and Consultancy Department (ERCD) for all the Project's noise modelling. In response to the request of the ExA, the Applicant has asked ERCD if the modelling can be done. ERCD has advised that the current model does not cover the extended area over which the lower noise contours would lie and in its current form is not fit for this purpose. To model to levels 6dB lower as requested the aircraft tracks and profiles would need to be extended to cover the much larger area. This may include the approach stacks making the modelling complex. The model could be developed to do this, but it would be a sizeable task taking months, and it could not be done in time for the Examination Authority to consider the results before the Examination closes on 27 August. Furthermore, to be used with any confidence that model would then need validation through analysis of Noise and Track Keeping data from monitors that would need to be located under the extended arrivals and departure tracks, which would also take some time to arrange. And there is real uncertainty as to whether it is possible to measure these lower noise levels from aircraft at the higher altitudes they	The airport has commenced a separate consultation for airspace change. Earlier this year the Applicant provided some 'workshops' and the process was explained. In answer to an attendee question, the airport confirmed that they would model to the WHO noise levels as a sensitivity test. These broadly correspond to the levels that the examining authority was requesting. Therefore the JLAs would ask the Examining Authority to seek clarification as to for airspace change proposals this can be achieved but for the NRP the airport are declining to do so. The JLAs have requested this information previously. We note the uncertainty that might be associated with producing data for lower noise levels and in part that is why the JLAs consider that provisions for continuously reducing uncertainty need to be incorporated into any DCO. In that way effects of aviation noise on populations can be better understood and with greater degree of confidence. At present the JLAs have not received information on uncertainty and how it will be minimised. Should the Applicant be suggesting that there is no modelling time available then given that work of this nature is in progress for the separate Airspace Change proposals it would not seem

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		are at in this wider area above ambient noise (see ERCD Report 1006, Measurement and Modelling of Aircraft Noise at Low Levels, 2019). Ground noise could be modelled down to LAeq 16 hr 45 dB and LAeq 8 hr 39dB, ie 6dB below LOAEL, although the uncertainty in the predicted levels would be greater. However, the noise levels requested to be modelled are in all cases below the measured baseline levels (see ES Chapter 14: Noise and Vibration [APP-039] Table 14.6.4; during the day 3 to 22dB above and during the night 5 to 22dB above). Since ground noise is assessed relative to ambient noise as well as in terms of noise change, there would be no noise effects at these lower ground noise levels. Modelling noise levels would not show new effects from the Project The purpose of the ES assessment accompanying the DCO Application is to assess the likely significant effects of the Project. Significant effects from air noise arise where a noise change of >3dB arises between LOAEL and SOAEL or >1dB arise above SOAEL using LAeq 16 hr and LAeq 8 hr noise levels. The noise modelling provided (see ES Figure 14.9.5) shows that at the daytime LOAEL, LAeq 16 hr 51dB, noise increases are generally 0-1dB and are 1-	unreasonable to the JLAs for the Examining Authority to require the information to be provided or at least seek clarification from the supplier about timescales. The JLAs consider that if the modeller reallocated time from airspace change to the Northern Runway Proposal then this should be possible. We note that the Applicant was able to produce proposals for the a new wastewater treatment plant promptly and see no reason why practically the modelling is not possible. Accepting that uncertainty will increase with the modelling of lower noise levels, the JLAs consider that they will still provide more information about where potential impacts may occur and that new effects of the Northern Runway may emerge. Whilst the purpose of the Environmental Statement may be to identify significant effects, the ANPS, NPPF and the NPSE consider the adverse effects with appropriate responses at appropriate thresholds. Nothing in national aviation, noise or planning policy prohibits planning decision makers from taking into account noise impacts which do not constitute likely significant effects in EIA terms as material planning considerations. With regards to combined air and ground noise effects, the JLAs believe that sleep disturbance for air and ground noise should be combined. GAL have assessed both air and ground noise in terms of the LAmax metric, which is used to calculate sleep disturbance. It would follow that air and ground noise sleep

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		2 dB in the areas around Route 4 and Route 3 to the north and immediately north of the airport boundary. No changes of >3dB would occur outside the daytime LOAEL, so modelling noise levels below LOAEL would not reveal any new significant effects. Similarly for night-time the noise modelling provided (see ES Figure 14.9.10) shows that at the night-time LOAEL, LAeq 8 hr 45dB, noise increases are generally 0-1dB and are 1-2 dB immediately north of the airport boundary. No changes of >3dB would occur outside the night-time LOAEL, so modelling noise levels below LOAEL would not reveal any new significant effects. At such low levels air noise effects would be lessened by ambient noise from road traffic In the year 2000 the government commissioned the Building Research Establishment (BRE) to carry out a major survey of ambient noise levels around the country. Although the survey is more than 20 years old the results give an indication of the general levels of ambient noise experienced across the country. The survey used measurements obtained outside 1020 dwellings and extrapolated the results for the whole of England and Wales. The headline results include the following: The National Noise Incidence Study 2000 has found that 55±3% of the population of England and Wales live in dwellings exposed to day-time noise levels above the [then] WHO level of 55 dB LAeq,day. The National Noise Incidence Study 2000 has found that 68±3% of the population of England and Wales live in	disturbance could be combined. GAL state that the ground noise assessment adopts principles in BS 4142, which is incorrect. The assessment criteria are based on "the change in the Leq noise above the LOAEL" (paragraph 14.4.89 [APP-039]). The Applicant should explain how BS 4142 principles are adopted in the ground noise assessment. The Applicant also states that the ground noise assessment considers how ground noise compares with noise generated from other ambient noise sources, which is also incorrect. Paragraph 14.9.220 to 14.9.233 [APP-039] discusses ground noise effects with no reference to other ambient noise sources. The Applicant should explain how it has considered other ambient noise sources in the assessment of ground noise. The JLAs welcome the provision of ground noise contours Supporting Noise and Vibration Technical Notes to the Statements of Common Ground [REP3-071]. However, only the SOAEL contours are presented. As the ground noise assessment considers the change in noise above the LOAEL, noise contours should be provided as per air noise contours; in 3 dB increments above the LOAEL. The JLAs also challenge the validity of the ground noise contours as some noise sources (taxiing) are assessed using the LAeq,T metric, whereas other sources (engine testing, auxiliary power units and end around taxiway usage) are assessed using the LAmax metric. Additionally, the JLAs have been requesting the use of the new fire training area is included in the ground noise assessment since scoping and the Applicant has not fulfilled this request. The Applicant maintains that the LAeq,T metric is used to assess likely significant effects and the defines the ground noise LOAEL and

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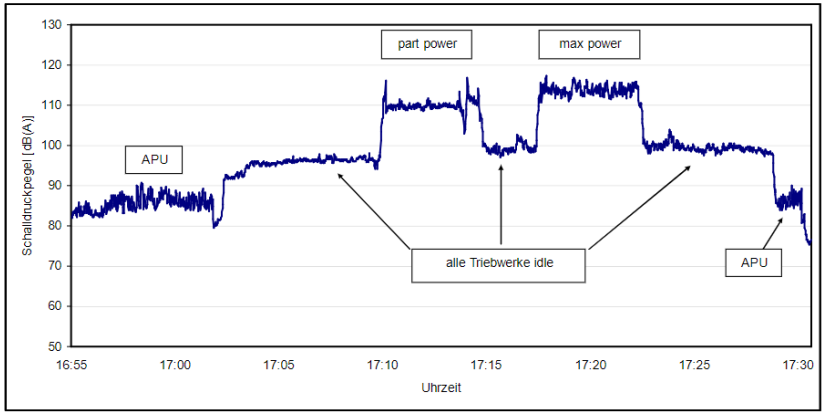
		dwellings exposed to night-time noise levels above the [then] WHO level of 45 dB LAeq,night. BRE released the full set of measured data, from which it is possible to extract estimates of the prevalence of noise at lower levels including those for which aircraft noise modelling has been requested, as follows. The National Noise Incidence Study 2000 data indicates that 99% of the population of England and Wales were living in dwellings exposed to daytime noise levels above 45 dB LAeq,16 hour day and 98% of the population of England and Wales were living in dwellings exposed to night-time noise levels above 39 dB LAeq,8 hour night. The predominant source of ambient noise is road traffic, with rail and air traffic making much smaller contributions. Although this noise exposure data may be out of date and has been superseded by more recent strategic noise mapping studies, it nonetheless indicates that the noise levels down to which the ExA has requested aircraft noise modelling are lower than those experienced by the vast majority of the UK population. It therefore is likely that in locations experiencing these levels of aircraft noise, the effects of noise overall would be caused by other noise sources. What does the WHO say about these levels of air noise ? The Examining Authority asks for noise levels to be modelled 3dB and 6dB below the day and night LOAELs. Effects of noise at levels below LOAEL were discussed in	SOAEL in terms of the LAeq,T metric. Not including all ground noise sources as a reasonable worst-case day in the LAeq,T ground noise predictions shows there is clearly a deficiency in the ground noise assessment. All sources need to be modelled as contributing to the reasonable worst-case day LAeq,T ground noise levels. The Applicant has attempted to provide some indication on how engine testing would contribute to the LAeq,T metric with some highly unrealistic assumptions. Paragraph 2.7.2 [REP1-050] states that peak engine testing noise levels would last for two minutes and events would occur, on average, 0.35 times per day. As such, engine testing noise LAeq,T noise has been calculated based on event lasting for 0.7 minutes (42 seconds). An example of a typical jet aircraft engine test is provided in the figure below8.  The duration of this typical event is 25-minutes and the figure

[8] Figure 1 of Basis of Calculation for Engine Test Runs – Dr Thomas Schenk – KSZ Ingenieürburo GmbH (2013)

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		ISH5 when the Examining Authority referred to the large number of interested parties living outside the LOAEL contours (see Written Summary from Oral Submissions from Issue Specific Hearing 5: Aviation Noise [REP1-060]. Those interested parties have referred to the World Health Organisation guidance which suggests that, to prevent any effects of noise on health, noise levels should be no higher than Lden 45 dB and LNight 40dB. Whilst the Examining Authority's suggested noise levels to model do not match the WHO guidelines precisely, they are similar and the relevance of the WHO guidelines and what those recommendations are, is relevant.	illustrates that high levels of noise (at a distance of 100m) occur for the duration of the event. It would be helpful if the Applicant could provide a typical engine testing profile that could be used to model ground noise such that ground running events would contribute to LAeq,T ground noise levels. This should be modelled as one event occurring on a reasonable worst-case day and should not be modelled as a partial event for an average day. The JLAs would welcome an updated ground noise model to determine whether any additional properties would qualify for noise insulation. Additionally, the JLAs would welcome the Applicant providing justification and supporting evidence as to why ground noise is not covered by the Outer Zone. We also note the reference to the National Noise Incidence Study 2000. As a national study it representative of the country and not this location. Furthermore, different sounds evoke different responses dependent on the nature. The JLAs consider that there is merit in this exercise. We note the Applicant's comments and refer back to the modelling comments on airspace change where they do propose to model to lower levels than those presented in the DCO. It is correct that the Environmental Noise Guidelines do not set policy standards for the UK. However, the Noise Policy Statement for England does set UK policy to allow for authoritative scientific evidence such as that within the ENG to be taken into consideration. (We note that the guidelines were

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			further reviewed by Smith, Basner et al in 2022 and included additional studies to those used to inform the ENG and found that the effect of aviation noise is understated in the ENG.) Where effects are consistent with one of the effects described in the LOAEL or SOAEL range in the NPSEthen the evidence is material. The UK decision maker can then determine what weight is applied to that information in connection with all considerations.
		Firstly, the WHO Environmental Noise Guidelines do not set policy standards for the UK. The setting of those values has taken no account of the cost of achieving those values nor of the economic and social benefits of the source. In setting any limits in policy or standards, the Environmental Noise Guidelines state that cost, feasibility and preferences must be taken into account (page 29).	Presumably then, as the WHO work relates to health effects (although the WHO definition of health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity) the Applicant will be applying those standards in relation to the night effects which are predominantly health based and providing a detailed evidence review of the exposure response functions for health effects that occur during the (day) and night to consider how they should be managed and mitigated ? Nonetheless the Applicant is proposing to do so for airspace change and the JLAS consider it perverse that the promoter refuses to do so for the impacts of airport infrastructure. Furthermore, UK policy has adopted WHO standards previously

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		Secondly the WHO Environmental Noise Guidelines note that 'cultural differences around what is considered annoying are significant, even within Europe' and so the guidelines state that data and exposure-response curves derived in a local context should be applied whenever possible to assess the specific relationship between noise and annoyance in a given situation (page 109). The WHO systematic review did not include the UK's Study or Noise Annoyance (SONA, 2014) because it was published just after the WHO research literature review commenced. The UK government has studied dose response curves in the UK in the SONA study, so as recommended by the WHO these should be used to assess the specific relationship between aircraft noise and annoyance in the UK. Modelling to these lower noise levels would not be consistent with government guidance Paragraph 5.68 of the ANPF states: Development consent should not be granted unless the Secretary of State is satisfied that the proposals will meet the following aims for the effective management and control of noise, within the context of Government policy on sustainable development: • Avoid significant adverse impacts on health and quality of life from noise; • Mitigate and minimise adverse impacts on health and	and the lack of national urgency in considering these matters should not prevent, on a case by case the proper consideration in this process.

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		quality of life from noise; and • Where possible, contribute to improvements to health and quality of life. In October 2017 the DfT published its Consultation Response on UK Airspace Policy: A framework for balanced decisions on the design and use of airspace. This included the following policy guidance on assessing aircraft noise: "2.72 So that the potential adverse effects of an airspace change can be properly assessed, for the purpose of informing decisions on airspace design and use, we will set a LOAEL at 51 dB LAeq 16 hr for daytime, and based on feedback and further discussion with CAA we are making one minor change to the LOAEL night metric to be 45dB LAeq 8hr rather than Lnight to be consistent with the daytime metric. These metrics will ensure that the total adverse effects on people can be assessed and airspace options compared. They will also ensure airspace decisions are consistent with the objectives of the overall policy to avoid significant adverse impacts and minimise adverse impacts." The ES provides an assessment of aircraft noise and recommends mitigation measures to minimise aircraft noise above the LOAELs stated in the 2017 Consultation Response, which notes 'these metrics will ensure that the total adverse effects on people can be assessed'. Hence the ES has assessed the total adverse effects, as required by the ANPS, and there is no policy requirement to	This is discussed further up and the JLAs note that it has been achieved for Dublin City Airport and consider that it should not be so readily dismissed by the Applicant. Accepting that it is not within the UK, Dublin City airport has and continues to do so. Although a slightly different exercise for the London Luton Airport Expansion , the Health and Community Chapter 13 includes a sensitivity test using WHO 2018 exposure response functions to test the outputs of that model. Simply that it has not been done elsewhere in the UK does not prevent it from being appropriate for Gatwick.

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		consider lower noise levels. The Applicant notes the LOAELs used for the Northern Runway noise assessment are consistent with those used by Applicants for other airport seeking consent to expand, and others have not been required to model and assess lower noise levels. The Applicant therefore confirms that it is not possible to model aircraft noise levels down to LAeq 16 hr 45dB and LAeq 8 hr night 39dB within the timescale of the Examination, and that to do so would go beyond government guidance, not be required by policy, and would be at variance with practice in other DCOs by modelling aircraft noise levels below the LOAELs of LAeq 16 hr 51dB and LAeq 8 hr night 45dB. Air and ground noise combined The request is for noise contours and population exposure data for air and ground noise to be combined, i.e. summed together. ES Chapter 14: Noise and Vibration [APP-039] Section 14.11 Combined Effects reports an assessment of the combined effects of construction noise, air noise ground noise and road traffic noise. Paragraph 14.11.2 notes: As there is no reliable means of quantitatively assessing the overall noise effect resulting from different noise sources, this section considers the overall effect of noise from combined sources qualitatively. This takes account	The JLAs have commented on this in other documents and they continue to consider that it would be of value and assistance in demonstrating impacts.

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		of factors including the following: whether the effects from the different sources would be likely to occur at the same time, or the same time of day; the duration of any combined effects; whether one effect dominates or whether effects might be additive; and whether the effects on individual receptors are likely to be on the same façade of the property. The reasons why the ES has not quantitatively assessed air and ground noise together to report the total of air and ground noise are further clarified as follows. Whereas for air noise there is clear guidance on assessment methodology, including metrics to be used and values for LOAEL and SOAEL, this is not the case for ground noise, so an appropriate methodology has been developed and reported in the ES. Whilst the ground noise assessment methodology adopts the same numerical values for LOAEL and SOAEL, the assessment methodology is different, because the nature of the noise is different, as follows. As discussed briefly in ISH5, air noise is a series of peaks separated by much longer periods of no aircraft noise, whereas ground noise fluctuates but is more continuous and rarely absent. Air noise arrives from above so tends to affect all facades of a building, whereas ground noise arrives from ground level, it usually affects only one or	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		two facades of a building. Measures to mitigate ground noise are more readily available including providing bunds and barriers that are present around much of the airport's perimeter and the Applicant has included and maintained in the Project design. Ground noise from an airport is much more like other sources of ground level noise such as that from road traffic or industrial/commercial sources. British Standard 4142 gives a well-established principle in UK noise assessment methodology of comparing noise with background sound and attaching significance to the difference between the two. The ground noise assessment adopts this principle by considering how ground noise compares with noise generated by other ambient noise sources. This is particularly relevant at Gatwick Airport because the airport is surrounded by roads with the majority of noise sensitive receptors beyond these roads, so that the occupants' perception of ground noise from the airport is in the context of road traffic noise on the same building facades. Air noise assessment methodology does not require a comparison with ambient noise, on the basis that the characteristic of air noise is such that aircraft noise peak events are high and will be above ambient noise regardless of its level. Hence ground noise has to be assessed separately from air noise and adding the two together would yield predicted noise levels which could not be assessed in any meaningful way. Supporting Noise and Vibration Technical Notes to Statements of Common Ground, Appendix B - Ground Noise Fleet Assessment of (Doc ref 10.13) provides an	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		update of the ground noise assessment including modelling of the slower transition fleet, as requested. It also provides context on the relatively small extent of ground noise impacts at Gatwick, and more detail on the mitigation measures for ground noise including the 16 properties that would be added to the Air Noise Insulation Scheme Inner Zone to ensure that the predicted significant adverse effects of ground noise are avoided by offering noise insulation in advance. The Noise Insulation Scheme (see ES Appendix 14.9.10 Noise Insultation Scheme [APP-180]) will be updated to include these 16 properties, but will also retain the provision (in paragraph 4.1.11) to monitor ground noise levels where necessary so that the cumulative noise levels from air noise and ground noise can also be considered for other properties in assessing eligibility for the inner Zone.	
NV.1.6	The Applicant	**British Standards** Paragraph 5.53 of the ANPS says *"Operational noise, with respect to human receptors, should be assessed using the principles of the relevant British Standards and other guidance."* ES Chapter 14 [APP-039] Table 14.2.1 says in response *"The assessment draws on various British Standards*	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		including BS 5228…" a) Which other British Standards are drawn upon in the assessment of operational noise? b) What principles from the relevant British Standards are used to inform the assessment of operational noise?	
		British Standard 4142 Methods for rating and assessing industrial and commercial sound is used to assess ground noise from fixed plant as noted in paragraph 14.5.16 of the ES. Paragraph 7.1.1 of **ES Appendix 14.9.3 Ground Noise Modelling** [APP-173] explains how the principle within this standard requiring fixed noise sources to be assessed by comparing predicted levels against background noise has been adopted.	The Applicant presumably also meant to include BS 8233: 2014 'Guidance on sound insulation and noise reduction for buildings', which they referenced when defining "their" non-residential assessment criteria in NV.1.7.
NV.1.7	The Applicant	**Non-residential Receptors** Paragraph 5.52 of the ANPS includes some non-residential receptors as noise sensitive premises requiring assessment. For non-residential receptors can the Applicant explain how their operational noise assessment has accounted for receptor specific effect thresholds derived from receptor specific guidance or project precedent, including schools, premises used for live performance, worship or recording, and activities where intelligibility of verbal instructions or the audibility of warnings is important?	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		This question was raised by the ExA in Issue Specific Hearing 5, and a summary of the Applicant's response is provided at Section 5 of **Written Summary from Oral Submissions from Issue Specific Hearing 5: Aviation Noise** [REP1-060]. The following response provides additional detail. **Non-Residential Receptor Scoping Criteria** In ISH5 the Applicant gave the following verbal response: *5.1.2 The Applicant explained that its methodology for non-residential receptors is summarised in ES Chapter 14 paragraph 14.4.76. Noise assessment criteria for these types of buildings can be drawn from various guidelines and are in all cases at or above $L_{Aeq\ 16\ hour}$ 50 dB, i.e. within 1dB of the daytime residential LOAEL. For non-residential receptors noise change criteria for significant effects are in all cases 3dB or more. In brief, the approach to assessing non-residential receptors was to scope the potential impacts using the LOAEL assessment criteria for residential receptors, and to consider each non-residential receptor above this in terms of the change expected, on a case by case basis.* *5.1.3 The ExA followed up to query whether the Applicant's assessment was limited to only those non-residential*	The Applicant appears to have directly copied the non-residential receptor assessment criteria in Table 2 directly from Chapter 16 of the London Luton Airport Expansion ES including a typo that was corrected at Deadline 9[9]. The Applicant may also wish to explain the relevance of criteria for schools, colleges and nurseries at noise levels of greater than 63 dB LAeq,16h, as this was defined in paragraph 11.2.1 of Appendix 16.1 of the London Luton Airport Expansion ES[10] based on noise measurements at Breachwood Green School. This criterion was based on the difference between LAeq,16h and LA1,30min measurements; the Applicant should explain how the LA1,30min metric is accounted for in their assessment criteria for schools. The JLAs would request that the Applicant revise their response in light of this feedback. The JLAs would like to direct the Examining Authority to section 11 of the London Luton Airport Expansion ES[10] for additional information on how non-residential assessment criteria were defined. The Applicant makes reference to the list of 50 community sensitive locations. The JLAs would request to understand whether this list is exhaustive and account for all noise sensitive non-residential receptors. If it is not exhaustive, why were these receptors selected in favour of others? In addition, the Applicant provided information on secondary noise metrics (excluding overflights) at seven representative community locations. As this information is important for providing context, can the

[9] https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/TR020001/documents?date-from-day=&date-from-month=&date-from-year=&date-to-day=&date-to-month=&date-to-year=&searchTerm=appendix+16.1&itemsPerPage=25

[10] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020001/TR020001-003006-5.02%20Environmental%20Statement%20Appendix%2016.1%20Noise%20and%20Vibration%20Information.pdf

<table>
<tr><th>ExQ1</th><th>Question to:</th><th>Question and Applicant's Answer</th><th>MVDC Response (Written in Partnership)</th></tr>
<tr><td></td><td></td><td>
receptors which are already above the LOAEL? The Applicant responded that no, this was not the case, as it uses the with development values as a scoping tool. So, any of the noise contours that fall above LOAEL would bring the non-residential receptor into the zone of potentially needing an assessment.

Table 1 provides screening criteria that can be used on a precautionary basis to scope potential impacts on non-residential receptors during operation of the Project drawn from WHO Community Noise Guidelines, WHO Night Noise Guidelines and UK Noise Insulation Regulations.

Table 1 Air noise screening Criteria for Non-residential Receptors
<table>
<tr><th rowspan="2">Receptor Type</th><th colspan="2">Noise Level Outdoors (dBA free-field)</th></tr>
<tr><th>Day 0700-2300</th><th>Night 2300-0700</th></tr>
<tr><td>Schools, colleges, libraries</td><td>50 dB $L_{eq\ 16\ hr}$</td><td>n/a</td></tr>
</table>
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Applicant explain why only seven locations have been chosen when impacts are experienced at communities over a wide area? The JLAs' opinion is that overflights are an important part of providing context, through secondary metrics, and requests that the Applicant provides details on overflights when presenting secondary metrics.

The Applicant's response on ground noise and road traffic noise are not adequate for explaining how noise effects at non-residential properties were considered. The Applicant identifies that some non-residential receptors were considered but it is not clear whether these lists are exhaustive. All non-residential receptors should be assessed on a case-by-case basis.
</td></tr>
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ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)

Hospitals and hotels	50 dB $L_{eq\ 16\ hr}$	45 dB $L_{eq\ 8\ hr}$
Auditoria, concert halls, recording studios	60 dB L_{max} 50 dB $L_{eq\ 16\ hr}$	60 dB L_{max} 50 dB $L_{eq\ 16\ hr}$
Places of worship, courts, lecture theatres and museums	50 dB $L_{eq\ 16\ hr}$	n/a
Offices	55 dB $L_{eq\ 16\ hr}$	n/a

These criteria are all within 1dB of the residential LOAEL of 51 dB $L_{Aeq\ 16\ hr}$ for daytime and 45 dB $L_{Aeq\ 8\ hr}$ for night-time.

Whilst the L_{max} metric is used in the screening criteria for critical listening spaces (e.g. auditoria, concert halls, theatres and recording studios) these do not form part of the assessment of likely significant effects for these receptors because L_{max} levels from individual aircraft would be no greater than experienced in the baseline except close to the airport where no auditoria, concert halls or recording studios were identified. The assessment therefore focusses on changes in noise exposure as a result of increases in numbers of aircraft

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		movements and other noise sources. Once non-residential receptors are scoped in, their with Project levels and expected noise change can be assessed against specific assessment criteria. **Table 2** provides specific assessment criteria for non-residential receptors using UK guidance from the following: • Institute of Environmental Management and Assessment (2014), *Guidelines for Environmental Noise Impact Assessment;* • British Standard 8233 (2014) Guidance on sound insulation and noise reduction for buildings; • Department for Education (2015), Building Bulletin 93 Acoustic design of schools: performance standards; • Department of Health (2013), Health Technical Memorandum 08-01: Acoustics; and • Department for Communities and Local Government (2019), Planning Practice Guidance: Noise. **Table 2 Assessment criteria for non-residential receptors** **Receptor Type** | **Noise Level Outdoors (dBA free-field)** | **Change (dB)**	

ExQ1	Question to:	Question and Applicant's Answer				MVDC Response (Written in Partnership)
			Day $L_{eq\ 16\ hr}$ 0700-2300	Night $L_{eq\ 8\ hr}$ 2300-0700		
		Schools, colleges, nurseries	55-59	n/a	>3dB	
			>63	n/a	>2dB	
		Hospitals,	>55	>45	>3dB	
		Doctors surgeries, medical centres	>55	n/a	>3dB	
		Auditoria, concert halls, recording studios	>50	>50	<3dB	
		Places of worship	>50	n/a	<3dB	
		Offices	>55	n/a	<3dB	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)

Museums	>55	n/a	<3dB
Community and village halls	>60	n/a	<3dB
Courts	>50	n/a	<3dB
Libraries	>55	n/a	<3dB
Hotels	>50	>45	<3dB

These criteria are all within 1dB of the residential LOAEL of 51 dB $L_{Aeq\ 16\ hr}$ for daytime and 45 dB $L_{Aeq\ 8\ hr}$ for night-time. So scoping impacts using the residential LOAELs for with Project noise levels ensures all impacts on non-residential receptors are identified. (Noise level without the Project above $L_{Aeq\ 16\ hr}$ 50dB that have increases by at least 1dB with the Project will be identified in this way as above $L_{Aeq\ 16\ hr}$ 51dB with the Project.)

The noise change criteria are in all cases (except Schools above $L_{Aeq\ 16\ hr}$ 63dB) 3dB. The area within which the air noise $L_{Aeq\ 16\ hr}$ noise increases of more than 3dB are expected is 2.9 to 3.1 km^2 (see ES Table 14.9.10), which is mostly within the airport boundary over the apron areas, and outside the airport includes approximately 40 residential properties scattered over the rural area to the

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		west of the airport. The change criterion for schools above $L_{Aeq\ 16\ hr}$ 63dB is 2dB. There is only one school or Nursery above this level of air noise (with the NRP), the Little House Montessori in Burstow, where the greatest noise increase predicted is 0.6dB (See Table 4.3.2 in **ES Appendix 14.9.2 Air Noise Modelling** [APP-172]. The largest increase in air noise at any school is $L_{Aeq\ 16\ hr}$ 1.4dB in 2032 with the Project compared to the 2032 baseline. The area within which $L_{Aeq\ 8\ hr}$ night noise increases of more than 3dB are expected is 0.8 km^2 (see ES Table 14.9.11) and is entirely within the airport boundary. **Air Noise Assessment** The air noise assessment provides modelled noise levels at non-residential properties to scope impacts above the residential LOAELs. Figure 14.9.32 (**ES Noise and Vibration Figures - Part 3** [APP-065] shows 50 noise sensitive community buildings (21 schools, one hospital, 18 places of worship and 7 community buildings) for which noise levels are predicted and assessed. The seven Community Representative Locations chosen to describe impacts in more detail in ES paragraphs 14.9.150 to 14.9.158 are non-residential (6 schools and one care home).	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		Ground Noise Assessment Non-residential receptors were considered in assessing the worst affected properties for baseline surveys, with measurements carried out and used to characterise the ambient noise levels at non-residential receptors in two of the 13 Noise Sensitive Receptor Areas used in the ground noise assessment. Ground noise has been modelled at all buildings regardless of use. The residential LOAELs were used to scope impacts at all receptors within the study area, including non-residential. **ES Appendix 14.9.3 Ground Noise Modelling** [APP-173] provides predicted noise levels at locations representative of a school, a nursery, offices, a care home and an aquatic centre and assesses impacts where relevant on a case by case basis. **Road Traffic Noise** Road traffic noise has been modelled at all buildings regardless of use. The residential LOAELs were used to scope impacts at all receptors within the study area including non-residential. Noise changes in the Riverside Garden Park have been assessed in detail. Potential noise impacts at two hotels and the Gatwick Airport Police Station are assessed on a case by case basis in **ES Chapter 14: Noise and Vibration** [APP-039].	
NV.1.8	The Applicant	**Description and Character of Aviation Noise** Paragraph 5.52 of the ANPS states that the noise assessment should include a description of the noise sources and the characteristics of the existing noise	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		environment, including noise from aircraft. ES Appendix 14.9.3 on Ground Noise Modelling [APP-173] presents sound power levels for taxiing aircraft. At 3.1.2 it says "*The calculated sound power levels for each aircraft type are presented in octave bands at Table 3.1.1 below. It should be noted that due to difficulties with accurately measuring in the 31.5 Hz octave band, calculated levels in the 63 Hz band have been assumed to be representative of levels in the 31.5 Hz band*". a) Can the Applicant explain the difficulties with measuring and justify this assumption? b) Can the Applicant confirm that: i. This assumption only applies to ground noise? ii. Air noise is modelled using the complete audible sound spectrum based on traceable and verifiable information? c) Can the Applicant provide the noise source sound power values for aircraft used in the modelling, as octave band or more granular information, either with reference to an application document, an additional submission or other publicly accessible source over the normal range of operation for those aircraft?	
		a) Sound power has been calculated in line with methodology from the Madrid airport study (as noted	a) There is some confusion about the noise source data that the Applicant has used in the ground noise model. Table

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		at para 2.2.1 of **ES Appendix 14.9.3 Ground Noise Modelling** [APP-173]) which derives sound power levels by reverse implementation of the ISO9613-2 methodology to predict sound power based on measured levels at a known distance. The methodology in ISO9613 includes formulae for deriving ground attenuation and tables of atmospheric attenuation in octave bands. All the formulae and tables start from the 63 Hz octave band which makes it difficult to apply the methodology below this frequency band. Furthermore, during the measurements, there were greater levels of ambient sounds from other sources across the airport in the low frequencies and even in the 63 Hz band, the signal to noise ratio was significantly reduced for a lot of the aircraft pass-bys measured. For the measurements with better signal to noise ratio in the low frequencies, it was observed that noise in the 31.5 Hz octave band was generally the same as, or lower than, that in the 63 Hz octave band. The assumption that noise in the 63 Hz octave band is representative of noise in the 31.5 Hz octave band is conservative, ensuring that noise in this frequency band is taken into account and is not underestimated at residential receptors. b) i) Yes, this assumption only applies to ground noise. ii) Yes, air noise is modelled using the complete audible sound spectrum based on traceable and verifiable information. c) Air noise was modelled with the latest version of the Aircraft Noise Contour Model (ANCON) (v2.4). A full	3.1.1 **[APP-173]** identifies octave band sound power data for four aircraft variants but does not explain how this data is applied in the model. Paragraph 4.5.1 **[APP-173]** identifies 'small' and 'large' aircraft types but does not state the noise source data used to represent these types. b) If the air noise model relies on traceable and verifiable information, it should be provided as part of the DCO application. c) Aircraft noise modelling is undertaken using information on Noise-Power Distance data and approach/ departure profiles from the Air Noise Performance database v2.3. These data are tweaked based on radar track data and measured noise data so local aircraft noise conditions can be modelled. The Applicant identifies that LASmax and SEL noise levels for individual aircraft have been measured at noise monitoring terminals but have not provided these measurements. Nor have they provided information on how this data has been used to validate the ANCON noise model and what the margin of error is for each aircraft variant at each monitoring location. The JLAs consider this information as important for understanding any limitations of noise contours. ECAC Doc 29 4th Edition is used when calculating aircraft noise contours. This method applies a spectral adjustment to aircraft Noise Power Distance based on air absorption coefficients from either SAE-AIR-1845, SAE-ARP-5534 or SAE-ARP-866A. Can the Applicant identify which atmospheric attenuation method was applied when modelling aircraft noise.

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		description of modelling assumptions can be found in Environmental Research and Consultancy Department (ERCD) Report. The Environmental Research and Consultancy Department of the Civil Aviation Authority (or as was) has been producing noise contours for Gatwick airport using the ANCON model since 1988 including annual contours every year. Up until 2015 the contours were produced for the DfT, and since then they have been carried out for GAL. ERCD has a team who maintain the model and calibrate it for Gatwick Airport using thousands of data points measured at the Noise and Track Keeping Noise Monitoring Terminals around the airport. Measurements of SEL and L_{max} levels are captured, in all cases A-weighted, to allow the full audible spectrum of aircraft noise to be modelled. The model uses Noise Power Distance curves specific to each aircraft type to define the decay of A weighted noise level over distance so as to ensure frequency dependent distance attenuation is used specific to each aircraft type.	
NV.1.9	The Applicant	**Noise Envelopes** At paragraph 4.1.11 d) of its RR [RR-3043] MSDC states that "*There should be no allowance for noise contour area limits to increase."* It refers to the APF and Guidance CAP 1129. 5.60 of the ANPS states that "*the design of the envelope should be defined in consultation with local communities and relevant stakeholders, and take account of any*	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		independent guidance such as from the Independent Commission on Civil Aviation Noise", and goes on to state that: *"The benefits of future technological improvements should be shared between the applicant and its local communities, hence helping to achieve a balance between growth and noise reduction."* Where in the ES does it show that the Applicant has taken account of independent guidance?	
		The Independent Commission on Civil Aviation Noise (ICCAN) was a non-statutory advisory body, established to act as the impartial expert adviser to Government and others on all matters relating to aviation noise from January 2019 to September 2021 when it was disbanded with its responsibilities being passed to the CAA. ICCAN published various research and guidance reports which are referred to in ES paragraph 14.2.47 and which have been taken into account in preparing the ES. However, it did not produce guidance on Noise Envelopes. Noting ICCAN's responsibilities were passed to the CAA, CAA guidance is the key source of independent guidance available. The main published CAA guidance on Noise Envelopes is CAP1129 Noise Envelopes (CAA, 2013). It provides the guidance that the DfT referred to in 5.60 of the ANPS. It is notable that CAP 1129 is a summary of research into noise envelopes and options to develop them, rather than	Firstly we would highlight that CAP 1129, whilst forming the basis of useful conversation is limited and dated. Despite this you will see from the comments below that the JLAs consider that this was not applied in the spirit in which it was intended. In addition CAP1731, somewhat misleadingly titled Aviation Strategy: Noise Forecast and Analyses (CAA), also contains further information on noise limits. Both documents were produced prior to The Independent Commission on Civil Aviation Noise being dissolved and responsibilities being transferred to the CAA and so it does not necessarily follow that these documents are independent. Furthermore, CAP1129 actually calls for independent third parties/advice in setting noise envelopes. ICCAN was established precisely because of concerns that existing bodies, including the CAA, were not considered to be impartial and independent in relation to civil aviation noise

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		a set of requirements to be met. **ES Appendix 14.9.5 Air Noise Envelope Background** [APP-175] provides an account of how CAP1129 guidance was taken into account in formulating the Noise Envelope. Section 2 of that ES appendix discusses the noise envelope options considered. Section 2.2 sets out the structure of CAP1129, listing the contents of the six chapters and quoting key sections, and explains how the guidance was used to set the key themes to be discussed by the Noise Envelope Group. Section 2.3 discusses CAP1129 guidance on approaches to noise envelopes. Section 2.4 discuss options for a noise envelope at Gatwick including the 11 metrics described in CAP1129 and their merits for Gatwick Airport. Section 2.5 discuss the preferred option, making reference to CAP1129 guidance on multiple metrics and combining parameters. This section also refers to further CAA guidance in CAP1731 Aviation Strategy Noise Forecast Analysis. CAP1731 analysed the correlation between 13 different noise metrics and annoyance and sleep disturbance in the community. These metrics included ATM limits, QC limits, L_{Aeq} contour areas and population, N60 contours, N65 contours etc. ES Appendix 14.9.3 paragraphs 2.5.7 and 2.5.8 note that $L_{Aeq\ 16\ hr}$ day and $L_{Aeq\ 8\ hr}$ night contours provide the closest correlation to daytime annoyance and night-time sleep disturbance respectively in the CAP1731 analysis, and it is on the basis of this CAA guidance that these were chosen as the two primary noise metrics for the Noise Envelope. Other CAA guidance was also used in developing the Noise Envelope including CAP1616 Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements,	issues. The JLAs repeatedly raised concerns over the envelope design process at the statutory consultation when the Applicant produced a fully developed proposal with metrics and limits in the PEIR that had not been designed in conjunction with community groups and local authorities. Following the consultation, the Applicant set up a Noise Envelope Group (NEG) that included a separate Local Sub-Group for community stakeholders and local authorities and another separate Aviation Sub-Group for aviation stakeholders. The NEG was chaired by the Applicant unlike both Heathrow's and Luton's Noise Envelope Design Groups, which were independently chaired. This was somewhat surprising given the significant concerns of the local authorities and community groups over the process up to that point. The key stages in a noise envelope deign based on CAP 1129 are set out in Appendix 14.9.5 **[APP-175]**: • to identify stakeholders, • set up a design envelope team from the stakeholders, • and produce a proposal. The Applicant followed none of these steps and simply produced its own proposal and undertook Noise Envelope consultation with a proposal already in place. As a result, the process largely consisted of the airport explaining their proposals and stakeholders (community groups and LAs)

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		as also referred to **ES Appendix 14.9.3** [APP-173]. The Noise Envelope Group's Aviation Sub-Group included the CAA, as well as the independent Chairman of the Noise Management Board (NMB) and the independent chairman of the NMB's Noise Community Forum. The NMB's technical advisor's To70 also contributed and NATS were also on represented on that committee. **ES Appendix 14.9.9 Report on Engagement on the Noise Envelope** [AS-023] provides details of the 12 Noise Envelope Group meetings held between May 2022 and October 2022, the material presented and opinions expressed. Pages 92 to 231 of **ES Appendix 14.9.9 Report on Engagement on the Noise Envelope** [APP-179] are the material prepared by the Applicant for the NEG meetings. Pages 232 to 296 provide the main material prepared by Community Noise Groups for the NEG meetings. The consultation was structured around 4 main themes drawn from CAP1129 guidance: 1. Background – policy, Project Noise Objective, PEIR proposal and PEIR Consultation feedback analysis 2. Options – defining the noise envelope 3. Operating the Noise Envelope – monitoring and reporting, actions GAL can take 4. Enforcement – periodic review, enforcement	feeling increasingly frustrated and disenfranchised. During the process the Applicant made it clear that it believed the policy of "sharing the benefit" no longer applied and the JLAs welcome the fact that the Applicant now appears to accept that the policy does still form part of overall UK aviation policy. The Applicant sets out their steps for demonstrating how noise benefits are shared but then does not provide any evidence of working regarding how the percentage benefits are shared. The Applicant limits their response by only looking at 2038, where there is a clear demonstration of shared benefits between the airport and local communities, but omits any analysis of other assessment years. The Applicant's method for sharing the benefits is flawed, as it allows for a substantial increase in noise contour area in the 2032 daytime period over the 2019 baseline. It is hard to understand how it can be justified that any benefits have been shared with the local community in this case. Adopting noise contour limits based on the Central Case would be the JLAs preference. The slow transition case is based on the forecast that, by 2029, the fleet would be made up of 40% next generation aircraft (Table 3.1 of Appendix 14.9.5 **[APP-175]**). This assumption can be compared with proposed London Luton Airport Expansion, which forecast the fleet would be made up of 67% next generation aircraft by 2027. This forecast makes GALs forecast of 59% next generation aircraft by 2029 Table 3.1 of Appendix 14.9.5 [APP-175]) look too conservative. As such, there appears to be no reason that the central case could not be

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		In the Theme 2 meetings, metrics to set limits were discussed, and so too were where the limits should be set in view of the policy objective to share the benefits of future technology with the community. The Applicant noted there is no policy guidance on how to assess benefits sharing, and options were presented. GACC presented an analysis of sharing the benefits using the proposed Noise Envelope limits for 2032 and 2038. See **ES Appendix 14.9.9 Report on Engagement on the Noise Envelope** [AS-023] pages 245 to 249. GAL responded to this and also produced its own analysis of sharing the benefits, see **ES Appendix 14.9.9 Report on Engagement on the Noise Envelope** [AS-023] pages 165 to 175. The Applicant's analysis used the methodology included in the Bristol Airport Planning Appeal Decision, Appeal Ref: APP/D0121/W/20/3259234, 2 February 2022 Inspectors' Report. The Bristol method can be summarised in three steps, as follows: Step 1: The "total available benefit" to be shared with the community can be expressed as the area of L_{Aeq} noise baseline contours in a future year with no improvement in fleet noise performance, less the contour area in the same future baseline year where fleet improvement occurred. Step 2: The part of the total available benefit that goes to the community is then calculated as the area of the future "no improvement with fleet" baseline less the area of the L_{Aeq} contour with the Project. Step 3: The benefits shared between community and industry can be expressed as relative percentages of the	adopted for noise contour area limits. In light of the next generation forecasts for the proposed London Luton Airport Expansion the Local Authorities would urge the Examining Authority to request that the Applicant reviews their fleet forecasts in terms of current market trends.

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		total available benefit. The analysis summarised in the Inspector's report showed that, in terms of population within the daytime LOAEL, 77% of the benefit would be consumed by the expansion plans, leaving 33% to the community. The Inspector noted in paragraph 271 of the report: *271. The concept of sharing the benefits is set down by the APF, but it gives no guidance on how it should be calculated or assessed. The figures cited above demonstrate, along with the raw data from the 'with' and 'without development' scenarios against the baseline, that all benefits are not fully taken up by the proposed expansion and thus there would be some sharing. However, the benefits are weighted more in favour towards expansion, rather than towards the community.* Following the same methodology, the Applicant's analysis showed that in 2038 when the Noise Envelope limits reduce, compared to the future 2038 baseline the degree of sharing the benefits would be 50% to the industry (as growth) and 50% to the community (as noise reduction) when measured in terms of the area of the day LOAEL with the Slower Transition Fleet. For night-time the degree of sharing the benefits would be 34% to the industry (as growth) and 66% to the community (as noise reduction). It was noted that in the early years after opening noise increases and there is a smaller benefit to the community, and that the Central Case fleet had not been assessed. There is nothing in the guidance on Noise Envelopes indicating that noise levels cannot increase.	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
NV.1.10	IPs N/A	**Noise Envelopes** Recognising that concerns have been expressed by some IPs about noise envelopes, what would other IPs propose for the initial (2029) areas of the 51 dB $L_{Aeq, 16hr}$ contour and the 45 dB $L_{Aeq, 8hr}$ contour and any other noise envelopes, including the use of other metrics? What is the basis for the proposed values with reference to policy and guidance?	
		N/A	JLA concerns are noted separately.
NV.1.11	The Applicant	**Other Controls** Paragraph 5.62 of the ANPS states that "*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….*" At ISH2 the Applicant explained [REP1-057] about the quota for night flights (a control on inputs) imposed by Government, as the airport is a designated airport, a) How would this work in relation to any controls proposed as DCO requirements? b) Can the Applicant commit to a ban on night flights for six and a half hours between 2300 and 0700? If not, can the Applicant provide an explanation as to why this is not reasonable?	

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		a) The night flight movement limit and quota count restrictions on Gatwick Airport by virtue of the requirements of the Secretary of State and the Airport's designated status will continue to operate, and they will do alongside the DCO Requirements which are not in conflict with them. As those are secured by a separate legislative regime, they do not also require to be secured in the DCO. Moreover, the Secretary of State reviews those over time, and as such it would not be appropriate to fetter that exercise in the DCO. b) Paragraph 5.57 of the ANPS makes clear that the following paragraphs are stated in relation to the Heathrow Northwest Runway scheme. There is nothing in the ANPS which requires a ban on night flights from Gatwick Airport in connection with any expansion project, much in the same way as there is not anything which require a runway alternation scheme that provides communities affected with predictable periods of respite (see para 5.61 of ANPS). Nonetheless, the Applicant has committed to not use the Northern Runway hours of 23:00 – 06:00 unless the southern runway (being the airport's current main runway) is not available for use for any reason. As such, the night flight restrictions on movements and quota limits will continue to apply, and the southern runway will continue to be the Airport's primary runway for night flights. The ANPS refers to Heathrow Airport and the then night ban policy, that was never implemented. In forming that policy government may have felt was	a) By virtue of the fact that the DCO is reliant on night flight movement limit and quota count restrictions, it is important that they should, in some way, be linked to the DCO. As stated in our response at NV.1.3, the JLAs believe the concept of designated airports to be outdated and the DCO provides an opportunity for all noise control measures to be contained in a single framework. The ongoing DFT consultation on night flight controls suggests that DFT shares the JLAs' view that noise controls are best set locally through the planning system. We highlight that the power of the SoS is a discretionary one and, as such, if there is an alternative control it is reasonable to exercise discretion to disapply it. It in no way fetters the discretion of the SoS and perhaps would allow them the opportunity to complete revision of the Aviation Strategy and formulate new primary legislation to improve noise control at UK airports and conduct further research into the impacts of the noise. b) Whilst the JLAs agree with the Applicant's response on a night flight ban, the JLAs would like to see a more progressive approach through a commitment to the continual reduction in movements during the night and the night quota period as Gatwick has the highest summer night movements and the DCO seeks to increase that. The effects, and the worsening directly as a result of the new runway, are cited in the County based Local Impacts Reports and contained within the District's sections. A curfew would assist but it is the full 8-hour night that requires optimal protection.

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		appropriate for an airport whose night LOAEL covered 1.1 million people (in 2017) and was planning to increase this substantially, whereas at Gatwick the night LOAEL is forecast to cover 28,000 people and the Project would increase it by only 3,100.	
NV.1.12	The Applicant	What evidence does the Applicant rely upon to show that significant effects caused by aircraft noise are avoided through the installation of a noise insulation scheme, in relation to occupants of any form of permanent residential accommodation? What does the Applicant consider to be the limitations of a noise insulation scheme (NIS)?	
		Paragraphs 14.2.55 and 14.2.56 of **ES Chapter 14: Noise and Vibration** [APP-039] quote the findings of the Inspector in the Cranford Agreement Secretary of State's Decision, February 2017 (DCLG, 2017): 14.2.55 In the Cranford case, the inspector noted *'the parties do not differ about the SOAEL for aircraft noise: it is 63 dB $L_{Aeq,\ 16\ hour}$ (or its equivalent if other metrics are considered). Noise impacts at that level require to be avoided.'* 14.2.56 In the Cranford case the Inspector also noted: *'the Examining Authority's Report and the Secretaries of States' decision on the Thames Tideway Tunnel (TTT)*	The Applicant does not address the point that has been consistently raised by the JLAs of overheating. The summer period is when the most aircraft activity occurs and also when the highest temperatures occur. It follows that there are overheating risks if property occupants need to keep their windows closed to provide good internal noise conditions. The Applicant offers ventilators as part of the insulation package, which are not sufficient to mitigate overheating. The JLA request that the Applicant also offer the option of overheating mitigation as part of their noise insulation scheme. The JLAs in their LIRs have also drawn on the exposure response functions contained in the SoNA work and that of awakenings to demonstrate how the noise insulation scheme (even as existing) is of insufficient extent to prevent or avoid

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		Development Consent Order application confirms that the aims of the NPSE are satisfied by the provision of acoustic insulation at the level of SOAEL (whatever that is determined to be in the particular case), and by other mitigation measures below that level.' The NPSE requires that significant effects on health and quality of life should be avoided. The Secretary of State, in the Thames Tideway Tunnel decision and the Cranford Agreement decisions confirmed that acoustic insulation meets this policy requirement. Noise insulation is widely used around UK airports. The Applicant carried out a review of its Noise Insulation Scheme in 2018, as required under the Airport's Noise Action Plan. The review involved consultation with the scheme provider and local authorities, a review of other schemes within Europe, consideration of ventilation options, a postal survey of homes who had taken up the scheme, and an assessment of the overall effectiveness of the scheme and recommendations for improvement. A short questionnaire was designed to ask householders what benefit they gained from Gatwick Airport's Noise Insulation Scheme (NIS) and how it could be improved. In early July 2019 the questionnaire was sent to over 1,000 households who have taken up the scheme, and 158 householders returned the completed questionnaire. Of the 158 completed questionnaires: • 68% found the scheme had improved aircraft noise within their home;	exposure. In addition the JLAs consider that the noise contours should provide guidance on the extent of schemes but that, practically speaking, other factors should be included For example, where a contour bisects a community, then the whole community should qualify for the upper level of insulation. As the Examining Authority has already highlighted the noise level does not suddenly step down at the notional line on a map and at distance from the airport. Furthermore, the JLAs have made clear that the noise insulation scheme needs to be based on the single mode contours for Easterly and Westerly operations as on any day this is how people will experience the noise. Gatwick have repeatedly refused to produce these. In contrast Heathrow has produced such information. In terms of the point about the satisfaction with the noise insulation, perhaps the Examining Authority can ask the airport what data they have from those people who have not received the scheme on whether they consider if they would benefit from it? In relation to the ventilators the JLAs have highlighted their concerns about reliance on these and do not consider the overall scheme to be satisfactory at this time. The noise insulation scheme also needs to take into consideration the average of one additional noise induced

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		• 50% said the scheme had reduced sleep disturbance; • 80% said aircraft noise would disturb them less if the house could be adequately ventilated without opening the windows; and • 74% would consider an alternative form of ventilation such as a wall mounted acoustic ventilators. So, whilst not all residents with noise insulation felt it had eliminated noise, a majority felt it had reduced noise and its disturbance. The main recommendations of the review were to increase the funds available (at that time £3,000 plus VAT, now £4,300 plus VAT) and for any new scheme to offer ventilation. The fact that 80% of those with the noise insulation scheme felt that aircraft noise would disturb them less if the house could be adequately ventilated without opening windows suggests that the addition of ventilators as proposed in the Northern Runway NIS will greatly improve the effectiveness of the scheme. **ES Appendix 14.9.10 Noise Insultation Scheme** [APP-180] notes: *Residential properties within this zone would be offered acoustic ventilators to noise sensitive rooms. This would allow windows to remain closed more easily in summer, which, with modern double-glazed windows, would increase the sound attenuation of the window by approximately 15 to 20dB. For properties with older single*	awakening per night over the 92 day summer period which it does not at present.

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		glazed windows, double glazed windows would be offered to noise sensitive rooms in addition to ventilators to ensure equivalent levels of protection. A 15 to 20dB reduction in noise from closing a window would provide a considerable drop in internal noise levels, sufficient in many cases to considerably reduce noise disturbance including awakening when asleep. Thus, the provision of acoustic ventilators is expected greatly improve the effectiveness of the noise insulation scheme to be rolled out with the Northern Runway Project.	
NV.1.13	The Applicant	Why has the Applicant only set a nighttime aviation noise threshold (55 dB) for the NIS inner zone?	
		For the inner zone the policy requirement is to provide mitigation to avoid noise levels above SOAEL that is defined in terms of daytime and nighttime noise levels. In December 2018, Aviation 2050 consulted on measures to improve aviation noise management giving proposals on noise insulation in paragraph 3.122 as follows: 3.122 Such schemes, while imposing costs on the industry, are an important element in giving impacted communities a fair deal. The government therefore proposes the following noise insulation measures: to extend the noise insulation policy threshold beyond the current 63dB $L_{Aeq\ 16hr}$ contour to 60dB $L_{Aeq\ 16hr}$ to require all airports to review the effectiveness of	Some of the JLAs referred to the exposure response function in the SoNA work referred to in ISH5 and in their LIRs. The JLAs highlight that aviation policy is somewhat fragmented, is overdue a full revision and considerably lagging the ever-increasing scientific evidence of the effects of aircraft noise. The Applicant can exercise their discretion and go beyond policy. This would be consistent with Regulation 598/2014 on the ICAO Balanced Approach, that, as retained EU law, is precedent over policy. In CAP 2161, Survey of Noise Attitudes 2014: Aircraft Noise and Sleep Disturbance, (further analysis) the same percentage as were affected at 55 dB LAeq 8h were found to be affected at 48 dB LAeq 8h. It has been argued by at least one local authority in the LIRs

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		existing schemes. This should include how effective the insulation is and whether other factors (such as ventilation) need to be considered, and also whether levels of contributions are affecting take-up the government or ICCAN to issue new guidance to airports on best practice for noise insulation schemes, to improve consistency for airspace changes which lead to significantly increased overflight, to set a new minimum threshold of an increase of 3dB L_{Aeq}, which leaves a household in the 54dB $L_{Aeq\ 16hr}$ contour or above as a new eligibility criterion for assistance with noise insulation. The latest policy guidance for consultation suggests noise insulation should be set for daytime $L_{Aeq\ 16\ hr}$ noise levels, not night-time. When developing the proposals for the Outer Zone, noting there is no policy requirement to fully mitigate noise to avoid effects below SOAEL, the Applicant took this consultation proposal and set the boundary of the Outer Zone to contribute to noise insulation at noise levels above the $L_{Aeq\ 16\ hr}$ 54 dB level in Aviation 2050, albeit that significant increases in overflight and increases in 3dB are not expected in the vast majority of the zone. Comparing ES Figures 14.9.1 and 14.9.9 (or viewing day and night L_{Aeq} contours in the Air Noise Viewer[11]) shows that the $L_{Aeq\ 16\ hr}$ 54 dB contour that forms the Outer Zone follows	that, as a result, the night inner zone should be set at the lower threshold. Further the extent of the additional noise induced awakenings produced by Gatwick indicates that the existing scheme, rather than being generous, affords inadequate protection to the population at night based on the one additional aircraft noise induced awakening. Therefore, the inner zone night scheme should be extended to the extent of one additional aircraft noise induced awakening per night (as an average across the 92 summer night). The scheme for the 54 dB LAeq 18h day is a package of a maximum of £3500 for insulation only. The scheme for night inner zone 55 dB LAeq 8h is a maximum package of £20,000 to include insulation, ventilators, upgraded ceilings and replacement doors. The sleep disturbance impacts at 48 LAeq 8h arguably cross the SOAEL threshold, in light of SoNA and as set out above. Therefore the mitigation suggested by the use of the outer zone scheme is inadequate in the view of the JLAs.

[11] NRP - Public Aircraft Noise Viewer

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		approximately the $L_{Aeq\ 8\ hr}$ 48dB contour, both of which are 3dB above the respective day and night LOAELs, indicating a broadly equivalent level of protection for noise effect during the day and night. As such, whilst the Application could have also included he LAeq 8 hr 48dB contour, there would have been no practical difference in terms of the area which is covered and which will benefit from the Outer Zone scheme.	
NV.1.14	The Applicant	With regard to the new NIS, can the Applicant explain why this could not be open for applications immediately after the making of the DCO to allow any eligible dwellings to benefit as soon as practicable from it?	
		It is not appropriate or necessary for the scheme to open until a final decision has been taken to deliver the expansion that the DCO would permit, and in respect of which the new NIS is required to mitigate impacts. Until that decision is taken and the expansion scheme is being delivered, there will be no additional impacts that will need to be mitigated. The Applicant is confident that it can deliver the noise insulation measures to all properties within the Inner Zone within 4 years, and so before the northern runway is operable and the significant effects which are required to be avoided arise. With regard to the Outer Zone, it will take longer to deliver those measures, but it is also the case that there are not significant adverse impacts on health and quality of life which need to be avoided for the Outer Zone. The Applicant	The Applicant states it is confident it can deliver the NIS within 4 years but provides no evidence to back up this assertion. The JLAs would request that the Applicant undertakes a market feasibility study to identify how long it would take for properties in the Inner Zone and the Outer Zone to be insulated. The JLAs consider the success of the installation of mitigation at properties to be a factor for the release of capacity on the new runway.

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		is applying the noise insulation scheme to this zone so as to mitigate and minimise adverse impacts on health and quality of life from noise experienced by those properties, but it is not the case that should those impacts arise before the scheme measures have been delivered significant adverse impacts on health and quality of life will arise that policy would require are avoided.	
NV.1.15	The Applicant	Can the Applicant explain why it cannot identify dwellings eligible as a result of total aviation noise, that is to say air and ground noise combined, based on calculations, rather than wait until measurement of ground noise have been made after the Proposed Development becomes operational?	
		Appendix B - Ground Noise Slower Transition Fleet Assessment of Supporting Noise and Vibration Technical Notes to Statements of Common Ground (Doc Ref. 10.13) provides an update to the extent of noise insulation to be required for ground noise based on predicted noise levels. It also explains the approach taken to insulation for air and ground noise including the following. Ground noise at Gatwick Airport is mitigated through operating procedures and a sizeable noise bund running around the northern perimeter of the airport, up to 12m high in places, and the serpentine wall noise barrier that can be seen around the eastern apron area. There is no apron or taxing routes along the south side of the airfield. The main housing area is to the north, well screened by the noise bund and beyond Povey Cross Road. To the immediate east and west under the flight paths there is no housing. To the south there is mainly airport and commercial property with	The JLAs have consistently provided criticism of the ground noise assessment, which has yet to be addressed by the Applicant – see NV.1.5. The JLAs are of the opinion that the ground noise assessment is not fit for purpose and would urge the Applicant to provide an assessment that models all sources of ground noise for a reasonable worst-case day and provides suitable assessment criteria for identifying likely significant effects.

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		scattered housing on the far side of the Charlwood Road. To the northwest there is a single property and scattered properties before the village of Charlwood 700m from the nearest taxiway. Consequently, ground noise has not been a major concern to the local community in recent years. In the 10 years from the beginning of 2010 to the end of 2019, there was a total of 16 recorded noise complaints linked with ground noise. In contrast complaints from aircraft in flight, i.e. from aircraft in the air, peaked at 25,593 complaints in the 2019 year. The numbers of properties affected by ground noise is very small compared to Air Noise for which there are about 400 properties above SOAEL. It is for this reason that the Inner Zone Noise Insulation Scheme has been developed primarily for Air Noise. The few properties that are predicted to be significantly affected by ground noise and lie outside the Air Noise Inner Zone are listed in Section 5 of that report, and will be added to the NIS to ensure that significant effects on health and quality of life due to ground noise are avoided. The NIS will still provide for measurements if needed to further add properties to the scheme as a back up to the modelling to address the inevitable uncertainty with modelling, and in particular with additive ground and air noise levels.	
NV.1.16	The Applicant	In terms of the initiation of the NIS for eligible dwellings can the Applicant explain why it is not proposing to identify all eligible dwellings and engage with occupiers and owners of those dwellings to promote the take up of the NIS?	

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		As referred to in our response to NV.1.14 above, we have taken account of further views on the NIS and **ES Appendix 14.9.10 Noise Insulation Scheme Update Note** [REP2-031] provides further details of the scheme. These include the commitment to contact all owners/occupiers of eligible properties including following up where any household requires assistance in understanding what is on offer.	The JLAs have provided a separate response to **ES Appendix 14.9.10 Noise Insulation Scheme Update Note** [REP2-031]
NV.1.17	The Applicant	Can the Applicant set out any procedures that would be put in place as part of the NIS [APP-180] to ensure the required acoustic performance is maintained?	
		ES Appendix 14.9.10 Noise Insulation Scheme Update Note [REP2-031] states the acoustic specification of the glazing and acoustic ventilators. Tenderers will be required to demonstrate compliance with these acoustic performances for both new and in-service products that will also be provided to the home owner with suitable guarantees. The Applicant will audit the installation of the acoustic products as a sample of first home to receive the scheme. This commitment will be added to an update of the **Noise Insulation Scheme** [APP-180] to be submitted to the ExA.	The JLAs have provided a separate response to **ES Appendix 14.9.10 Noise Insulation Scheme Update Note** [REP2-031]
NV.1.18	The Applicant	In relation to the schools NIS, can the Applicant confirm the process for a school to raise a concern and the timeframes involved. Can the Applicant also clarify how significant improvement of teaching conditions would be assessed to determine the eligibility of the school?	
		The process for schools to apply for consideration for the noise insulation scheme would open upon commencement of routine operations on the Northern Runway as part of dual	Can the Applicant identify where this process is secured in the DCO?

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
		runway operations, because it may not be possible to carry out the noise surveys to establish if acoustic treatments should be offered until the Northern Runway is in routine use. The Applicant will write to all qualifying schools. A description of the process will be added to the Noise Insulation Scheme confirming that the scheme would open upon commencement of routine operations on the Northern Runway as part of dual runway operations, with the aim of carrying out surveys within 1 year and any remedial works within 2 years. For any school applying for noise insulation, the Applicant will arrange an acoustic study to determine if remedial works are necessary and appropriate. The first stage will involve establishing if teaching areas are currently compromised by noise intrusion. This would involve surveys to compare internal noise levels with the standards set out in Building Bulletin 93, Acoustic design of schools: performance standards, 2015, such as the recommendation for aircraft or train noise to be no louder than 60 dB $L_{A1,\ 30\ minutes}$ or internal ambient noise levels to be no higher than 40 dB $L_{Aeq\ 30\ minutes}$. Schools meeting the standards would not require improvement. The second stage would involve analysing the internal noise levels to establish whether aircraft noise was contributing to the exceedance of the preferred standards. Where aircraft noise was at least as loud as other external noise sources, the need for remedial measures to be considered would be established. In these cases, measures to improve the internal noise environment would be identified where practicable. In many cases this is likely to involve improving ventilation to allow windows to remain closed in warmer weather, or it could include upgrading the acoustic performance of glazing.	

ExQ1	Question to:	Question and Applicant's Answer	MVDC Response (Written in Partnership)
NV.1.19	The Applicant	Can the Applicant set out the justification for not applying the schools NIS to nurseries or pre-schools?	
		The Applicant acknowledges that some Nurseries and Pre-Schools do have teaching rooms that require low ambient noise conditions, as referred to in *Building Bulletin 93, Acoustic design of schools: performance standards, 2015*. The **Noise Insulation Scheme** [APP-180] will be adjusted so as to include Nurseries and Pre-Schools.	The JLAs welcome this update and will reserve further comment until they have seen and considered the revised Noise Insulation Scheme.
NV.1.20	The Applicant	**Construction Noise and Vibration** The CoCP [REP1-021] includes various topic-based Annexes [APP-083 to APP-087]. The Applicant is asked to consider including a noise and vibration management plan as an Annex.	
		As explained in the noise and vibration section of the **CoCP** [APP-082], the Section 61 applications to be made by the contractor once the final methods of working are available, to be agreed with the local planning authority, will in effect become site specific noise management plans at that time. Accordingly, it is not considered that a further noise and vibration management plan to re-explain the information in that section of the CoCP is required.	The JLAs are concerned that measures relied upon to avoid significant construction noise and vibration effects are not secured in the DCO. S61 is not appropriate means of securing mitigation as it is a process that allows for significant effects to occur. The JLAs support the Examining Authority's request for a noise and vibration management plan that would be secured through the CoCP **[APP-082]** and contain details of specific construction noise and vibration mitigation required to avoid significant effects.