AIRSPACE MODERNISATION AIRSPACE CHANGE PROPOSAL

APPENDIX D – EVOLUTION OF DESIGN PRINCIPLES

Heathrow

Safety (a)	Suggested by (b)	Stakeholder Suggested Principle (c)	Summary of Phase 1 Feedback[1] (d)			Heathrow Rationale & Outcome after Phase 1 (e)	Summary of Phase 2 Feedback & Heathrow analysis (f)	Design Principle (g)[2]
			Community Groups (11)	Local Authorities/ Environmental (15)	Industry (10)			
S1	Workshops 1,8	Future airspace change must be safe for all stakeholders, including those on the ground	• Overall agreement (SA=7, A=4)	• Overall agreement (SA=10, A=5)	• Overall agreement (SA=6, A=2, NAND=1)	Safety standards apply to the safety of all. Safety enhancement will be considered as part for the design process, but all the costs and benefits of design options, including safety enhancement, are required to be articulated and balanced within the Stage 2/3 appraisals. Any safety enhancement would therefore need to be shown to provide a worthwhile overall benefit before it is adopted. Summarised into single design principle: **Must be safe for all stakeholders.**	No specific feedback received on this proposed design principle. Some stakeholders did request a definition of safety and asked if it includes health. Following this feedback Heathrow has included a definition of safety in the Stage 1 Submission document, para 4.7.3. Following internal governance, it was decided to remove the reference 'for all stakeholders' as this is implicit in the design principle.	**Must be safe (1)**
S2	Workshop 2	Airspace design must be safe	• Overall agreement (SA=5, A=4)	• Overall agreement (SA=9, A=6)	• Overall agreement (SA=5, A=2, NAND=1)			
S3	Workshop 8	Avoid overflying dense populations, to minimise risk to those on the ground	• Mixed responses due to densely populated area around Heathrow (SA=1, A=5, NAND=2, D=1, SD=2)	• Mixed views due to difficulty avoiding overflying dense populations around Heathrow (SA=3, A=6, NAND=6)	• Mixed views • No need to specify, anything less safe than today would not progress (SA=1, A=2, NAND=4, D=1)			
S4	Workshops 6, 7, 11	Must be safe, but does not exceed existing safety standards to an extent that it has a detrimental impact on other benefits	• Overall agreement (SA=6, A=4)	• Mixed views • Expected that airports are using the highest safety standards (SA=3, A=8, NAND=3, D=1)	• Overall agreement (SA=2, A=7, NAND=1)			

[1] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree

[2] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

Policy (a)	Suggested by (b)	Stakeholder Suggested Principle (c)	Summary of Phase 1 Feedback[3] (d)			Heathrow Rationale & Outcome after Phase 1 (e)	Summary of Phase 2 Feedback & Heathrow analysis (f)	Design Principle (g)[4]
			Community Groups (11)	Local Authorities/ Environmental (15)	Industry (10)			
P1	CAA	Subject to the overriding design principle of maintaining a high standard of safety, the highest priority principle of this airspace change that cannot be discounted is that it remains in accordance with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it.	• Majority disagreed with this principle • Health impacts should be the highest priority • Feelings that the AMS is too wide-ranging and not clear on priorities (A-1, NAND=3, D=3, SD=2)	• Majority neither agreed nor disagreed • Concerns that other policies are not mentioned • CAP1711 should be flexible and adapt to new policies (A=2, NAND=9, D-2, SD=1	• Overall agreement (SA=7, A=2, NAND=1)	Although some stakeholders disagree with its inclusion this is a mandatory principle from the CAA. **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK Policy, Legislation and Regulatory Standards. This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**	Some stakeholders did request additional polices be highlighted, e.g. ANG17 altitude-based priorities and the Noise Policy Statement for England. Heathrow also received feedback requesting reference be made to AONBs. ANG2017, NPSE, altitude-based priorities and overflight of AONBs are all covered within the statement 'all other UK policy, legislation and regulation standards" and will be assessed as part of the Stage 2 Design Principles Evaluation and subsequent appraisals. However, following this feedback and feedback received from some members of the HCNF, Heathrow added a reference to Air Navigation Guidance.	**Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits (2)**
P2	Workshop 8	Future airspace change should take into account local plans and policies regarding local air quality, the climate emergency [London Plan]	• General agreement • Although concerns that it would give communities with a local plan/policy an advantage (SA=5, A=4, NAND=1, SD=1)	• Overall agreement. • Majority of boroughs & authorities have declared climate emergencies (SA=10, A=5)	• Overall agreement (SA=1, A=5, NAND=3)	Local plans and policies are not necessarily aligned with UK Government policy and therefore are not specifically referenced in the DP. We will engage with local authorities as part of Stage 2 to understand their views on the developing design, and to take account of those view where appropriate. CAP1616 already requires sponsors to take account of local development frameworks and consented developments when performing appraisals. Instead of referencing local plans Heathrow added		

						reference to local air quality requirements to the CAA policy principle as the airport operations as a whole do contribute to air quality in surrounding areas. **This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**		
Noise (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[5] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design principle (g)[6]**
Relating to sharing noise			**Community Groups (11)**	**Local Authorities/Environmental (15)**	**Industry (10)**			
N1	Workshop 1	The design options must not create any more noise for any single community compared to pre-COVID-19 levels	• General agreement • Reference should be to an agreed baseline year • This must not translate into concentration over the same communities (SA=6, A=2, D=2, SD=1)	• General agreement • Ideally noise pollution would decrease not increase • We should commit to build back better, rather than simply back to previous (SA=4, A=4, NAND=6, D=1)	• Mixed views • Cumulative impacts should be considered • Difficult to evaluate effectively (SA=1, A=3, NAND=3, D=1, SD=1)	Overall, there were mixed views on this suggestion. Many stakeholders did not like the reference to 'pre-COVID' levels. It is not possible to modernise airspace and not change the pattern of community impacts. For example, to achieve respite benefits Heathrow would inevitably have to spread flight paths over a wider area, and so to mitigate the effects for some, will mean increasing the effects for others. Heathrow felt that the following design principle captured the majority of the points raised by stakeholders. **Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum**	Some positive feedback on this design principle. Some stakeholders felt that keeping increases to a minimum for those already overflown, not just 'newly overflown' was a step forward'. The additional workshop held with some members the HCNF on 07/01/22 highlighted their concerns with the phrase 'number of people', as it does not comply with ANG17. Through DP (9) and DP (10) Heathrow will consider all communities affected by aircraft noise (up to overflight at 7000ft), not just those within the LOAEL[7]. This means Heathrow will consider the total number of people, rather than	**Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum (9)**

[5] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[6] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7
[7] Lowest Observed Adverse Effect Level (ANG17 Sections 3.5-3.11)

							being restricted to 'adverse effects', as 'adverse effects' only refer the health and quality of life impacts within the LOAEL.	
N2	Workshops 3,4,6,7,9,11, 12	Share the noise	• Strong agreement • Noise should be shared on a fair and equitable basis (SA=10, A=1)	• Mixed views • Airspace design should limit or reduce the adverse impacts of aircraft noise (SA=7, A=2, NAND=5, D=1)	• Mixed views (SA=1, A=3, NAND=4, SD=1)	Heathrow felt that overall, the preference was to spread the impacts of noise, rather than concentrating a single flight path over a given area albeit whilst trying to keep the number of people who experience an increase in noise to a minimum. Heathrow also decided that in this design principle it was important not to use the word 'overflown', due to several comments regarding noise impacts on those who aren't technically considered to be overflown by the CAP1398 definition. **Provide predictable and meaningful respite to those most affected by noise from Heathrow's movements**	In the Phase 2 workshops stakeholders raised concerns about how 'most affected' would be defined and requested the word 'most' was removed. Heathrow amended the proposed design principle to remove 'most'. Stakeholders also asked for further definitions around 'meaningful respite'. For more information, please see the main submission document para 4.7.11.	**Provide predictable and meaningful respite to those affected by noise from Heathrow's movements (6)**
N3	Workshops 3, 6	Future airspace change should result in a larger number of people slightly annoyed, rather than a smaller number significantly annoyed	• Overall agreement • Should aim for managed dispersion and create meaningful respite (SA=7, A=4)	• Mixed views • Not sure sharing the noise and exposing more people is the solution • Should be seeking an overall reduction in noise levels (SA=2, A=5, NAND=6, D=2)	• Overall agreement • Recommend this is specified up to 4000ft (SA=1, A=2, NAND=5)			
N4	Workshops 6,9,11,12	Share the benefits of the airspace change between industry and communities	• Mixed views • Require clarification on what this means • Communities should take priority (SA=4, A=1, NAND=2, D=1, SD=3)	• Mixed views • Main benefits should accrue to communities (SA=3, A=3, NAND=6, D=3)	• Overall agreement (SA=2, A=4, NAND=3)			
Noise (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[8] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[9]**

[8] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[9] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

Relating to aircraft flight profiles			Community Groups (11)	Local Authorities/ Environmental (15)	Industry (10)			
N5	Workshop 3	Departure routes from different runway ends should stay a suitable distance apart to provide valuable respite	• Overall agreement • Requests for a definition of valuable respite (SA= 6, A=4, NAND=1)	• Overall agreement • How respite is defined is crucial (SA=8, A=3, NAND=4)	• Overall agreement • Respite routes may have fuel/carbon impacts (SA=1, A=3, NAND=4)	Providing respite is very important to many Heathrow stakeholders. Heathrow combined this aspect with those raised in N2-N4 for the following design principle. **Provide predictable and meaningful respite to those most affected by noise from Heathrow's movements**	See column (f) alongside N2-N4.	**Provide predictable and meaningful respite to those affected by noise from Heathrow's movements (6)**
N6	Workshops 1, 3 4,6,8,12	There should be steeper climbs for aircraft to get higher quicker and for arrivals to stay as high as possible, for as long as possible	• Overall agreement with a desire from some for Heathrow to mandate NADP1. (SA=8, A=2, NAND=1)	• Overall agreement • Steeper approaches & take-off using NADP1 should be standard (SA=4, A=3, NAND=8)	• General agreement (SA=4, A=4, NAND=1, D=1)	Heathrow developed a general design principle that would allow all practices to be explored at later stages, rather than specifically committing to options at this stage. It is not the place of DPs to specify solutions. The effectiveness of various solutions will be investigated on a location-by-location basis in the Stage 2/3 design process. **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**	In the subsequent letter and workshop held with some members the HCNF on 07/01/22 it was requested Heathrow add specific reference to steeper climbs and departures to this proposed design principle. Heathrow felt that 'noise efficient operational practices' covered a wide range of options that can be explored, without attempting to commit to solutions prior to the design work. Heathrow committed to providing reference to steeper departures and approaches in the main submission document, which can be found in the main document table 15.	**Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise (3)**
Noise (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[10] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[11]**

[10] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[11] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

Relating to respite/dispersal			Community Groups (11)	Local Authorities/ Environmental (15)	Industry (10)			
N7	Workshops 3,9	There should be planned respite within safe operational parameters, that provides meaningful respite	• General agreement • Requests for definitions of terms • Request for respite for those who are not overflown, but subject to noise (SA=7, A=2, NAND=1, SD=1)	• Overall agreement • 'Meaningful' is subjective (SA=8, A=5, NAND=2)	• Overall agreement • Respite routes will impact complexity • Need to be mindful of neighbouring airports routes (A=4, NAND=4)	As with N2-N5 providing respite is very important to many stakeholders. Heathrow developed the following proposed principle without using reference to 'overflown' to include those who are not technically overflown (as per the CAP1398 definition) but who are still subject to noise. Heathrow included the word predictable based on feedback that all stakeholders favoured this aspect in some of the original suggestions. Reference to the frequency was not included as the frequency of respite periods will be determined as part of the design process, considering feedback from stakeholders (who will have a range of views), practical limitations and how different respite regimes interact with achieving other design principles. It is not appropriate for a design principle to pre-determine this work. **Provide predictable and meaningful respite to those most affected by noise from Heathrow's movements**	See column (f) alongside N2-N4.	**Provide predictable and meaningful respite to those affected by noise from Heathrow's movements (6)**
N8	Workshop 4	Share the noise through managed distribution over multiple flight paths	• General agreement (SA=6, A=4, SD=1)	• General agreement • Would need to consider noise sensitive areas (SA=7, A=3, NAND=4, SD=1)	• Overall agreement • Would need to consider the impact on adjacent airports (A=4, NAND=4)			
N9	Workshop 5	Multiple routes for respite to be operated to a schedule	• General agreement • Concerns if this is possible in practice (SA=3, A=4, NAND=2, SD=1)	• General agreement • Needs to offer worthwhile benefits (SA=4, A=4, NAND=5)	• Overall agreement • A predictable schedule would help other airports create their own matching schedule (A=4, NAND=4)			
N10	Workshops 7,8, 9,12	Predictable, meaningful, and equitable respite	• General agreement • Request for definition of terms (SA=5, A=4, NAND=1, SD=1)	• Overall agreement (SA=8, A=5, NAND=1)	• Overall agreement (A=5, NAND=4)			
N11	Workshop 8	Share the noise through predictable respite, with respite being provided frequently [e.g., during	• General agreement • Request for definition of terms	• Overall agreement (SA=4, A=8, NAND=3)	• Impartial views (A=2, NAND=5)			

		each day rather than weekly]	(SA=5, A=4, NAND=1, SD=1)					
N12	Workshop 7	Different flight paths for day/night flights	• Mixed views • Night flights should cease (A=2, NAND=6, SD=2)	• Overall agreement • Night flights should be minimal and over open spaces. • Should be no further use of green spaces and parks (SA=5, A=4, NAND=6)	• Impartial views (SA=1, NAND=6)	Night flight impacts are considered significant to local communities. Whether or not aircraft fly at night is not an airspace design issue but Heathrow developed the following design principle to address the general concern from an airspace design perspective. **Minimise the negative impacts of night flights**	There was no further feedback received from stakeholders on this design principle. During the internal governance process, Heathrow decided to amend the design principle to recognise that airspace design options will only be able to contribute to this aim, as there are factors outside of Airspace Design that would also impact the aim of this principle i.e. the presence of night flights.	**Contribute to minimising the negative impacts of night flights (8)**
N13	Workshop 9	Predictable respite during the day and concentrate 'night flights' over open spaces	• Mixed views • Insufficient open spaces to make this realistic • Night flights should be stopped (SA=2, A=1, NAND=1, D=5, SD=1)	• Mixed views • Opens spaces can be more noise sensitive • Open spaces should be used day and night (SA=2, A=7, NAND=5, D=1)	• Mixed views (A=2, NAND=5, D=1)			
Noise (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[12] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[13]**
Relating to newly overflown			**Community Groups (11)**	**Local Authorities/ Environmental (15)**	**Industry (10)**			
N14	Workshop 8	Avoid overflying places that aren't currently overflown	• Overall disagreement owing to the desire to share the noise although recognition that overflying new areas is problematic • Every community near the airport needs to take its fair share of noise • More flights should be over areas not	• Mixed views • Should aim to minimise number of people newly overflown (SA=1, A=5, NAND=4, D=5)	• Mixed views (A=1, NAND=6, D=2, SD=1)	Heathrow determined that DP (6) addressed community concerns regarding the importance of respite, but that the following design principle would help mitigate downsides of respite spreading noise over a larger area, whilst aiming to achieve benefits for those currently overflown. **Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum**	The additional workshop held with some members the HCNF on 07/01/22 highlighted their concerns with the phrase 'number of people', as it does not comply with ANG17. Through DP (9) and DP (10) Heathrow will consider all communities affected by aircraft noise (up to overflight at 7000ft), not just those within the	**Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum (9)**

[12] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[13] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

			currently overflown (NAND=3, D=2, SD=5)				LOAEL[14]. This means Heathrow will consider the total number of people, rather than being restricted to 'adverse effects', as 'adverse effects' only refer the health and quality of life impacts within the LOAEL.	
N15	Workshop 8	Overfly new people if it delivers benefits to those currently affected	• Mixed views • Aircraft noise must be shared not concentrated (SA=5, A=1, NAND=2, D=2)	• Mixed views • Not sure spreading the problem is a real solution. • Overflying should be avoided (A=5, NANS=8, D=1, SD=1)	• Agree/ Impartial • Depends on any benefits to neighbouring airports (A=3, NAND=4)	Heathrow interpreted this proposal to mean that respite/multiple routes should be provided in the future airspace design (overflying new communities if required) so long as the solution is beneficial overall. Therefore, the intent of this solution is captured within the following design principle: **Provide predictable and meaningful respite to those most affected by noise from Heathrow's movements**	In the Phase 2 workshops stakeholders raised concerns about how 'most affected' would be defined and requested the word 'most' was removed. Heathrow amended the proposed design principle to remove 'most'. Stakeholders also asked for further definitions around 'meaningful respite'. For more information, please see the main submission document para 4.7.11.	**Provide predictable and meaningful respite to those affected by noise from Heathrow's movements (6)**
Noise (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[15] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[16]**
Relating to noise reductions/mitigations			**Community Groups (11)**	**Local Authorities/ Environmental (15)**	**Industry (10)**			
N16	Workshops 7, 12	Future airspace change should aim to reduce noise before mitigating the impacts of noise	• Overall agreement • Noise should be reduced at the source (SA=8, A=2, NAND=1)	• Overall agreement • Noise reduction should be prioritised (SA=8, A=6, NAND=1)	• Mainly impartial views • New engine technology will reduce noise	A number of these comments highlight the need to address noise for those most significantly affected. The most significantly affected communities are those closest to the airport where the design of flight paths is	See column (f) alongside N6.	**Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise (3)**

[14] Lowest Observed Adverse Effect Level (ANG17 Sections 3.5-3.11)
[15] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[16] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

					(A=2, NAND=6)	constrained by the position of the runways. Heathrow therefore developed a design principle that would allow multiple methods and practices of reducing noise to be explored at later stages. Heathrow included reference to 'adverse impacts' as ANG17 is one of the polices that must be adhered to. In appraising options in Stages 2/3, Heathrow will define adverse impacts according to the relevant Government policies in place at the time. **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**		
N17	Workshops 1,6	Seek to limit or reduce the effects of aircraft noise for individuals/local communities (having regard for WHO guidelines)	• Overall agreement • This is required under ANG17 • Difference between limiting and reducing effects (SA=8, A=2, NAND=1)	• Strong agreement (SA=11, A=4)	• Mixed views (A=4, NAND=4, D=1)			
N18	Workshop 7	Reduce the impacts on those most significantly affected by noise	• Overall agreement • Including those not directly overflown • Difficult for those living closest to the airport (SA=6, A=4, NAND=1)	• Overall agreement • Any reductions need to be meaningful (SA=9, A=6)	• Mainly impartial views (A=3, NAND=5)			
N19	Workshop 7	Provide mitigation for those most adversely affected (those living under final approach/immediate climb out)	• Overall agreement • Reducing noise at the sources should be the priority (SA=7, A=2, NAND=1)	• Overall agreement • Mitigations would need to be meaningful (SA=9, A=6)	• Mainly impartial views (A=3, NAND=5)			
Noise (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[17] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback (f) & Heathrow analysis**	**Design Principle (g)[18]**
Relating to limiting impacts/health impacts			**Community Groups (11)**	**Local Authorities/ Environmental (15)**	**Industry (10)**			
N20	Workshop 1	Don't make it worse for those currently significantly impacted, even if there is an overall net noise reduction	• Overall agreement (SA=7, A=3, NAND=1)	• Overall agreement (SA=7, A=8)	• Mainly impartial views (SA=1, A=1, NAND=6)	Policy (NPSE and ANG2017) already covers this statement by requiring sponsors to limit and, where possible, reduce the total adverse effects on people. However, this suggestion has directly influenced the following principle: **Keep the number of people who experience**	See column (f) alongside N14.	**Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum (9)**

[17] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[18] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

						an *increase* in noise from the future airspace design to a minimum		
N21	Workshop 4	Those who currently experience the most noise should benefit most from the airspace change	• Overall agreement (SA=6, A=4, NAND=1)	• Overall agreement • Unavoidable close to the airport (SA4, A=4, NAND=7)	• Mainly impartial views (A=2, NAND=6)	Optimising a new design is about looking forward and mitigating potential future effects. Implemented directly as stated, this proposal could lead to a design which maximises newly overflown. Heathrow does not support this proposal, nor is it in line with policy. However, those that experience the most noise are generally closer to the airport and therefore the 'Noise efficient operational practices' design principle aims to address this suggestion. **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**	See column (f) alongside N6.	**Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise (3)**
N22	Workshop 4	Minimise the negative impacts on health from night flights	• Strong agreement (SA=10, A=1)	• General agreement (SA=9, A=5, NAND=1)	• General agreement (A=4, NAND=4)	Heathrow took this forward, removing the word 'health' to cover all impacts of night flights, because measurable health effects are likely to be limited to areas closer to the airport, and we know that concerns about night flights can be raised by some living further out **Minimise the negative impacts of night flights**	There was no further feedback received from stakeholders on this design principle. During the internal governance process, Heathrow decided to amend the design principle to recognise that airspace design options will only be able to contribute to this aim, as there are factors outside of Airspace Design that would also impact the aim of this principle i.e. the presence of night flights.	**Contribute to minimising the negative impacts of night flights (8)**
N23	Workshop 4	Minimise the number of people who experience an increase in noise due to this ACP	• Mixed views • Noise should be fairly and equitably shared (SA=4, A=2, NAND=3, SD=2)	• Mixed views • This goes against noise sharing • Priority to reduce not to minimise	• General agreement (SA=1, A-4, NAND=3)	Heathrow developed the following design principle to directly address this suggestion (which also addresses similar suggestions)	See column (f) alongside N14.	**Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum (9)**

				(SA=3, A=5, NAND=3, D=4)		**Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum**		
N24	Workshop 6	Minimise impacts on those affected by noise, not just those considered to be overflown (e.g., those who hear aircraft/airport noise even though not directly overflown, according to the CAP1498 definition)	• Overall agreement (SA=6, A=4, NAND=1)	• General agreement • The impacts of noise must be minimised overall. • Difficult to see how this would be achieved. (SA=3, A=7, NAND=5)	• Mixed views (A=4, NAND=4, D=2)	To address this suggestion, Heathrow excluded reference to overflown from proposed design principles (6), (9) and (10). These design principles will consider those overflown according to the CAA's definition, and those for which noise contours identify adverse effects, even if they are beyond the overflight definition. **Provide predictable and meaningful respite to those affected by noise from Heathrow's movements** **Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum** **Keep the total number of people who experience noise from the future airspace design to a minimum**	Stakeholders also asked for further definitions around 'meaningful respite'. For more information, please see the main submission document para 4.7.11. The additional workshop held with some members the HCNF on 07/01/22 highlighted their concerns with the phrase 'number of people', as it does not comply with ANG17. Through DP (9) and DP (10) Heathrow will consider all communities affected by aircraft noise (up to overflight at 7000ft), not just those within the LOAEL[19]. This means Heathrow will consider the total number of people, rather than being restricted to 'adverse effects', as 'adverse effects' only refer the health and quality of life impacts within the LOAEL.	**Provide predictable and meaningful respite to those affected by noise from Heathrow's movements (6)** **Keep the number of people who experience an *increase* in noise from the future airspace design to a minimum (9)** **Keep the total number of people who experience noise from the future airspace design to a minimum (10)**
Noise (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[20] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[21]**
General			**Community Groups (11)**	**Local Authorities/ Environmental (15)**	**Industry (10)**			

[19] Lowest Observed Adverse Effect Level (ANG17 Sections 3.5-3.11)
[20] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[21] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

N25	Workshop 2	Find a balance between the number of procedures for respite and operational complexity and technical capability (there is an issue with the number of procedures that aircraft/airlines can manage)	• Mixed views • Concerns over aircraft computer capacity (SA=1, A=3, NAND=5, D=1, SD=1)	• Mixed views • Respite and operational complexity should not take precedence (SA=1, A=4, NAND=7, D=1)	• Overall agreement (SA=1, A=7, NAND=2)	Heathrow acknowledges that there is a balance between operational complexity, addressing the needs of communities and meeting policy objectives. It agrees that where respite and other noise mitigation measures are to be developed and delivered this needs to be worthwhile (i.e. "meaningful" DP (6)) and done within safe operational parameters. considering the capability of the future fleet operation at the airport. **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to all stakeholders** **Provide predictable and meaningful respite to those affected by noise from Heathrow's movements** **Ensure the efficiency of other airspace users' operations** **Minimise the impact to all stakeholders from future changes**	Stakeholders commented that more clarification would be useful, so additional stakeholders were added to DP (5). One stakeholder felt that consideration for adjacent stakeholders' routes or requirements should be given higher priority and other airspace users should be a separate principle. Heathrow believe principles (11) and (12) cover these points. Heathrow amended the design principle (5) to refer to the airport, airlines, and cargo handlers, passengers and local communities rather than 'all stakeholders.' Heathrow recognised that being able to 'ensure' the efficiency of others would not be possible, so amended DP (11) to 'Enable'	**Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines and cargo handlers, passengers and local communities (5)** **Provide predictable and meaningful respite to those affected by noise from Heathrow's movements (6)** **Enable the efficiency of other airspace users' operations (11)** **Minimise the impact to all stakeholders from future changes (12)**
N26	Workshop 5	Don't make large, complex changes only to achieve small noise benefits	• Mixed views • All noise benefits are valuable • Simplicity is essential for ATC & pilots (SA=4, A=1, NAND=1, D=5)	• Mixed views • Highly likely that even marginal benefits will only be achieved through complex changes (SA=1, A=4, NAND=4, D=5)	• Overall agreement (SA=1, A=5, NAND=4)			
N27	Workshops 3, 6,9,10	Future airspace change should avoid overflying the same communities with multiple routes, and take into account routes and the cumulative impacts of routes to/from other airports, below 7000 feet	• Overall agreement • This is essential (SA=9, A=1, NAND=1)	• Overall agreement • Important to ensure that airspace changes are coordinated. (SA=6, A=6, NAND=6)	• Overall agreement (SA=1, A=6, NAND=2)	Heathrow took this suggestion forward as a design principle with some minor re-wording. **Avoid overflying the same communities with multiple routes including those to/from other airports**	Some feedback wanted Heathrow to ensure that all communities are considered, not just those 'overflown'. Heathrow believes that DPs (6), (9) and (10) already take account of this. During the workshops stakeholders commented positively on this principle.	**Seek to avoid overflying the same communities with multiple routes including those to/from other airports (7)**

							In written feedback NERL commented that it may not be possible to realise the optimal design without overflying areas that are used by other airports. This is one of the 'should' principles, rather than a 'must'. During the internal governance process Heathrow added 'seek to', to recognise that there will be aspects of other airports/ANSPs airspace change proposals which are out of Heathrow's control.	
N28	Workshop 7	Keep as much of the noise within the airport boundaries as possible	• General agreement • Not likely to be possible (SA=7, A=2, NAND=1, D=1)	• Strong agreement (SA=10, A=5)	• Mixed views (A=3, NAND=5, D=2)	Heathrow believes the following design principle addresses this request which was made in relation to aircraft climbing and descending as steeply as possible. **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**	See column (f) alongside N6.	**Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise (3)**
N29	Workshop 9	Make use of open spaces/parks etc.	• Mixed views • Opens spaces/parks are important for mental health/well-being (SA=1, A=3, NAND=4, D=3)	• Mixed views • Green spaces are surrounded by houses • Parks are crucial areas for respite for certain groups (SA=2, A=2, NAND=7, D=3, SD=1)	• Mixed views (A=3, NAND=6, SD=1)	Mixed views from most stakeholders on this subject owing to the acceptance that there are pros and cons of overflying open spaces and indeed to overfly those open spaces will result in overflight of populated spaces. Therefore, no specific reference was given to open spaces or parks in Heathrow's proposed list.		
Environment (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[22] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[23]**

[22] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[23] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

			Community Groups (11)	Local Authorities/ Environmental (15)	Industry (10)			
E1	Workshop 1	Noise should remain the priority below 4000 feet, regardless of any policy changes	• Overall agreement • Noise minimisation must be the top priority (SA=7, A=3, NAND=1)	• Mixed views • Concern that the carbon agenda might diminish this (SA=6, A=4, NAND=4, D=1)	• Mixed views • The balance needs to be judged between policy & stakeholder views (A=1, NAND=4, D=2)	The Government's Air Navigation Guidance 2017 prioritises noise over emissions when designing flight paths below 4000ft, and between 4000ft and 7000ft subject to the impact on emissions not being disproportionate. Stakeholder feedback has shown that there is a significant support for an airspace design that reduces CO_2. Reduction in CO_2 is one of the objectives of the Airspace Modernisation Strategy and a requirement of ANG17. Heathrow have developed a design principle which will seek to deliver an overall CO_2 reduction in addition to providing noise mitigation measures in accordance with Government policy. **Reduce the contribution to climate change from CO_2 emissions, and other greenhouse gases emissions relating to Heathrow's aircraft activities*** * ***Air Navigation Guidance 2017 states that noise is the priority below 7000ft. Providing some types of noise mitigation measures below 7000ft is likely to negatively impact CO_2 emissions of aircraft in flight. However, the airspace design must still enable overall CO_2 reductions for the Heathrow operation*** Heathrow has also included reference to 'local air quality' in the Policy design principle.	Heathrow amended this design principle from 'greenhouse gases' to 'greenhouse gas' In written feedback NERL stated that "The caveat of noise being the priority below 7000ft is not wholly accurate, as the ANG2017 Altitude Based Priorities states that between 4000' and 7000' noise is the priority unless the change disproportionately increases CO_2 emissions." NERL also suggested a rewording: "Reduce the contribution to climate change from CO_2 and other greenhouse gas emissions taking account both of aircraft operating from Heathrow and of the cumulative impact Heathrow designs may have on routes serving other airports*" As part of the feedback in the additional HCNF workshop held on 7/01/22, It was suggested that the Asterix section of this proposed principle was confusing and not required. It was also requested that 'as far as possible' be added. Following internal governance, Heathrow made a minor change to the wording changing 'relating to' to 'arising from' and decided that the asterixed section	**Reduce the contribution to climate change from CO_2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities** **(4)**
E2	Workshop 1	Minimise fuel burn, CO_2, greenhouse gases and all other contributors to climate change	• Mixed views • Noise reduction should be the priority (A=4, NAND=4, SD=3)	• Overall agreement • Need to balance noise/environmental considerations (SA=3, A=9, NAND=3)	• Overall agreement (SA=1, A=4, NAND=2)			
E3	Workshop 2	Operate flights in the most CO_2 efficient/friendly way	• Mixed views • Depends on what impact this has on noise (SA=2, A=3, NAND=2, D=1, SD=3)	• Overall agreement (SA=5, A=6, NAND=4)	• Overall agreement (SA=1, A=5, NAND=2)			
E4	Workshop 3	Must not degrade air quality	• Overall agreement (SA=6, A=5)	• Strong agreement (SA=9, A=6)	• Overall agreement (A=5, NAND=2)			
E5	Workshop 4	Noise should be the priority below 7000 feet regardless of CO_2 impacts	• Overall agreement. • Many representatives currently overflown feel that CO_2 impacts from Heathrow's airspace design are miniscule compared to an airline's overall footprint and that CO_2 benefits will be delivered through technological	• Mixed views • Impact on CO_2 emissions is as important as noise pollution (SA=3, A=2, NAND=5, D=4, SD=1)	• Mixed views • Priorities should be in line with national policy (A=3, NAND=2, D=1, SD=1)			

			enhancements such as biofuels, not through airspace design. (SA=7, A=4)				could be removed. However, no caveat of 'as far as possible' would be added as this would introduce a degree of ambiguity to the design principle. More information can be found in Heathrow letter to the CNGs in Appendix B, pages 330-339.	
E6	Workshop 7	The airspace design should deliver a net CO_2 benefit across Heathrow's operation whilst delivering noise benefits below 7000 feet	• Mixed views • Noise benefits must be the only consideration (SA=2, A=5, NAND=3, D=1)	• Strong agreement • Considerations need to be balanced (SA=8, A=7)	• Mixed views (SA=1, A=3, NAND=4)			
E7	Workshop 9	Noise is the priority below 7000 feet, but the project as a whole should still deliver net carbon reduction for Heathrow's operation	• Mixed views (SA=2, A=6, D=1, SD=2)	• Overall agreement • Agreement with the reference to net carbon, but not the noise priority under 7000ft (SA=3, A=10, NAND=2)	• Mixed views • Changes should help the industry aim of reaching net zero emissions (A=3, NAND=3, D=1)			
E8	Workshop 8	The airspace change should deliver an overall CO_2 reduction for Heathrow's operation. If noise benefits negatively impact CO_2 below 7000 feet, that needs to be offset by CO_2 benefits elsewhere (e.g., in the upper airspace or reduced airborne/stack delays)	• Mixed views • Concerns over the trade-off of increasing noise with possible carbon reductions, want to see both (SA=3, A=5, NAND=1, D=1, SD=1)	• Overall agreement • Negative impacts of CO_2 emissions below 7000ft need to be avoided (SA=4, A=10, NAND=1)	• Mixed views • Airports should seek efficiency in the lower airspace (A=3, NAND=3, D=1)			
E9	Workshop 12	Prioritise noise over carbon	• Mixed views (SA=6, A=2, NAND=1, D=2)	• Mixed views. • Acknowledged that most of their complaints associated with aviation are due to noise, not CO_2 because noise is more immediate. (SA=1, NAND=9, D=3, SD=2)	• Mixed views • Should be in line with national policy (A=2, NAND=3, D=2)			

E10	Workshop 12	Noise and CO_2 are equally important and there should be a balance	• Mixed views • Noise minimisation is the priority and mandatory below 4000ft. Carbon can only be balanced against noise between 4-7000ft (A=4, NAND=1, D=3, SD=3)	• Mixed views • Depends on where the balance is set (SA=2, A=6, NAND=6, SD=1)	• Overall agreement • Both should be considered (SA=1, A=3, NAND=4)			
Technology (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[24] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[25]**
			Community Groups (11)	**Local Authorities/ Environmental (15)**	**Industry (10)**			
T1	Workshop 1	Future airspace change should use modern technology	• Mixed views • Should be used to reduce dis-benefits of overflight (SA=2, A=5, NAND=3, D=1)	• Overall agreement • If it provides benefits (SA=4, A=9, NAND=2)	• Overall agreement (SA=4, A=4)	The use of modern technology, e.g. PBN is the core objective of the Airspace Modernisation Strategy. As Heathrow must comply with that document, no design principle specifically referencing existing or future technology was put forward to Phase 2 however Heathrow believes these are adequately captured by DP (5), DP(11) and DP(12)	See column (f) alongside N25-26.	**Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines and cargo handler's passengers, and local communities (5)** **Enable the efficiency of other airspace users' operations (11)** **Minimise the impact to all stakeholders from future changes (12)**
T2	Workshop 2, 5	Design with latest technological specification possible, that is widely available	• Mixed views (A=5, NAND=6)	• Overall agreement (SA=6, A=8, NAND=1)	• Overall agreement (SA=5, A=3)			
T3	Workshops 4, 12	Future proof airspace design to be able to benefit from future technological developments	• Overall agreement • Only if this doesn't hinder reductions in noise now (A=7, NAND=4)	• Overall agreement (SA=5, A=10)	• Overall agreement (SA=3, A=4, NAND=2)			
T4	Workshop 12	Use the latest technology that enables the greatest benefit to mitigate societal impacts	• Overall agreement (SA=5, A=3, NAND=1)	• Overall agreement (SA=8, A=7)	• General agreement (SA=3, NAND=5)			
T5	Workshop 12	Minimise the impact of future change	• General agreement • Needs further clarification	• Mixed views • Positive impact of future change should	• General agreement • Future changes would likely impact	The ACP process is time consuming for both airports and stakeholders. We will seek to reduce the need for subsequent ACPs by considering potential future	NERL feedback highlighted the value flexibility in the design but noted that there would be practical limitations of the	**Minimise the impact to all stakeholders from future changes (12)**

[24] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[25] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

			(SA=1, A=4, NAND=4)	be the objectives (SA=3, A=6, NAND=3, SD=3)	adjacent airports (SA=2, A=1, NAND=5)	needs, should they arise during the development of this ACP. **Minimise the impact to all stakeholders from future changes.**	process and wider impacts. In recognition of the above practical limitations, this is a 'should' not a must design principle.	
Operational Performance (a)	**Suggested by (b)**	**Stakeholder Suggested Principle (c)**	**Summary of Phase 1 Feedback[26] (d)**			**Heathrow Rationale & Outcome after Phase 1 (e)**	**Summary of Phase 2 Feedback & Heathrow analysis (f)**	**Design Principle (g)[27]**
			Community Groups (11)	**Local Authorities/ Environmental (15)**	**Industry (10)**			
OP1	Workshop 1	Future airspace change should enable Heathrow to make the most efficient use of its runways, subject to environmental commitments	• Mixed views • Not if this means an increase in ATMs (A=4, NAND=2, D=2, SD=3)	• Mixed views • Heathrow's efficiency should be secondary to environmental and community impacts (SA=1, A=6, NAND=6, D=1, SD=1)	• Overall agreement • Need to consider the impact on adjacent airports (SA=3, A=6, NAND=1)	An operationally efficient airspace design will: - enhance safety; -provide capacity and resilience; and -reduce delays and late runners. This will benefit airlines, passengers, overflown communities and deliver wider societal benefit. **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to all stakeholders**	Stakeholders commented that more clarification would be useful, so additional stakeholders were added to DP (5).	**Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines and cargo handler's passengers, and local communities (5)**
OP2	Workshop 2	Offer flexibility in the route structure that allows variation, to avoid extensive ground delays	• Mixed views • This would go against predictability (A=4, NAND=4, D=1, SD=2)	• Mixed views (A=3, NAND=6, D=5, SD=1)	• Mixed views • Network considerations need to be taken into account (SA=1, A=4, NAND=3, D=1)			
OP3	Workshops 3, 7	Airlines need to conform to the design to ensure benefits are delivered (e.g., through Heathrow monitoring & KPIs)	• Overall agreement (SA=6, A=4, NAND=1)	• Overall agreement (SA=9, A=4, NAND=2)	• Mixed views • This is based on other parties' actions (SA=1, A=4, NAND=2, D=1)	The design will be developed to fit within the parameters of what airlines can reasonably be expected to achieve. Airline conformance with the design is not an issue that can be addressed by the design itself, and therefore no DP has been taken forward with respect to this suggestion. **Not taken forward.**		

[26] SA = Strongly Agree, A= Agree, NAND= Neither agree nor disagree, D= Disagree, SD= Strongly Disagree
[27] Numbers in column (g) do not indicate the design principle priority order but are for ease of reference in this table. Information on priorities is in the main submission document paras 2.2.5-2.2.7

OP4	Workshops 4,8	Make efficient use of runways during the day to lessen the impact on the night schedule	• Mixed views • Mixed mode should be avoided (SA=4, A=3, NAND=2, D=1)	• Overall Agreement (SA=6, A=9)	• General agreement (SA=1, A=4, NAND=3)	As stated in OP1 and OP2, feedback requested that efficiency benefits should be to 'all stakeholders' not just the airport, airlines and passengers. **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to all stakeholders** **Minimise the negative impacts of night flights**	See column (f) alongside OP1-2 for comments regarding DP (5). See Column (f) alongside N22 for comments regarding DP (8).	**Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines and cargo handler's passengers, and local communities (5)** **Contribute to minimising the negative impacts of night flights (8)**
OP5	Workshop 5	The airspace design needs to retain operational flexibility in order to handle non-standard situations (e.g., weather)	• Mixed views • This should be standard practice (A=5, NAND=3, D=1, SD=2)	• Overall agreement • Maintain some spare capacity in the day schedule. (SA=2, A=8, NAND=4)	• Overall Agreement (SA=2, A=6)			
OP6	Workshop 7	Meet performance targets within acceptable environmental/noise constraints	• Mixed views • Operation aspiration, rather than airspace design principle (SA=2, A=2, NAND=6, D=1)	• Mixed views (SA=4, A=6, NAND=4, SD=1)	• Overall agreement • Not a design principle (A=5, NAND=3)	This is not a design principle, since it does not help to guide design choices. **Not taken forward.**		
OP7	Workshop 10	Minimise the requirement for future change to adjacent airport operations	• Mixed views (A=5, NAND=5, SD=1)	• Largely impartial • Needs to be balanced and co-ordinated. (SA=1, A=3, NAND=10, SD=1)	• Overall agreement • Minimising impacts is important. (SA=6, A=2, NAND=1)	Heathrow is mindful of other airspace users who share the airspace around Heathrow. The following design principles were developed in relation to all other airspace users. **Ensure the efficiency of other airspace users' operations** **Minimise the impact to all stakeholders from future changes**	NERL commented in their written feedback that 'efficiency' needs more clarity. Heathrow recognised that being able to 'ensure the efficiency' of other user operations is outside of their design options and changed the DP to 'Enable'. Heathrow believes that this change also helps clarify what is meant by efficiency.	**Enable the efficiency of other airspace users' operations (11)** **Minimise the impact to all stakeholders from future changes (12)**
OP8	Workshop 10	Minimise impacts on other airspace users	• Mixed views (A=5, NAND=5, SD=1)	• Mixed views (SA=1, A=6, NAND=7, D=1)	• General agreement (SA=7, NAND=2)			
OP9	Workshop 12	Designs should enable a reduction in stack holding	• Overall agreement (SA=3, A=5, NAND=1)	• Mixed views • Stack base heights could be raised	• General agreement	The design of the network of flight paths above 7000ft, including the areas of stack holding, is the responsibility of NATS and are beyond the	See column (f) alongside OP1-2.	**Enable Heathrow to make the most operationally efficient**

				(SA=3, A=8, NAND=4)	(SA=2, A=5, NAND=1)	scope of this ACP. However, having the most operationally efficient and resilient runway will enable Heathrow to deliver the schedule with minimal holding. This is addressed through: **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to all stakeholders**		**and resilient use of its existing two runways, to maximise benefits to the airport, airlines and cargo handler's passengers, and local communities (5)**

ADDITIONAL SUGGESTIONS FROM STAKEHOLDERS

Engagement Phase	Suggested by	Suggested design principle	Heathrow Analysis & Outcome
Phase 1	Biggin Hill Airport	Heathrow should consider the effect of any changes in its flight routes on the behaviour of other airspace users making the use of the airspace around Heathrow, including adjacent airfields and their route requirements	This is covered by DP(11) **Enable the efficiency of other airspace users' operations**
Phase 1	British Airways (BA)	Climb gradients imposed purely for noise mitigation must be an average climb gradient not a 'never dip below' gradient. This allows for optimum acceleration altitudes to be flown, which is a CO_2 saving (i.e. climb gradients reduce during the acceleration phase)	**Not a design principle**. However, the intent of this proposal is captured within DP(3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	BA	Noise and CO_2 should be considered together with equal weighting	This would not be in line with Air Navigation Guidance. However, there will need to be a balance above 4000ft.
Phase 1	British Helicopter Association (BHA)	Safety for other users in the surrounding airspace	This is covered by DP(1), **Must be safe**
Phase 1	BHA	Avoid parks where people go for leisure	There was no consensus from stakeholders with regards to overflying parks and open spaces or not. General views were that the tranquillity such places should be preserved although there was an acceptance that reducing the numbers of people affected by noise is important. There were discussions over positioning routes over parks and gardens at night (people are not visiting at that time) but it was also acknowledged that in order to position routes over parks and open spaces, it would involve overflying other communities to get there. Heathrow therefore decided not to have a specific DP relating to this but the debate was used to inform DP (8) **Contribute to minimising the negative impacts of night flights**
Phase 1	Denham Airfield	Reduce the overall footprint of controlled airspace	This is covered by DP(11) **Enable the efficiency of other airspace users' operations**
Phase 1	Denham Airfield	Allow equitable access to all volumes of CAS to other airspace users	This is covered by DP(11) **Enable the efficiency of other airspace users' operations**
Phase 1	Heathrow Strategic Planning Group (HSPG)	Safety should never be compromised	This is covered by DP(1), **Must be safe**
Phase 1	HSPG	Below 4000ft all decisions will support reducing the number of people significantly impacted by noise, then other local pollution impacts, and then mitigating those impacts	These suggestions draw from various policy documents and therefore the intent is captured under DP(2) to meet policy requirements; **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**
Phase 1	HSPG	Between 4000-7000ft decisions will support noise reducing the number of people significantly impacted by noise, then other local pollution impacts, and then mitigating those impacts. Then carbon reduction	
Phase 1	HSPG	Above 7000ft decisions will support carbon and other relevant emission reduction, with regard to mitigating noise impacts	
Phase 1	HSPG & London Borough of Ealing	Must be safe but should minimise detrimental impact on other objectives as directed by the Balancing Principles	This is covered by DP(1), **Must be safe**
Phase 1	HSPG	There should be a commitment to have regard to local plans and policies and it should be clear how doing this has had a tangible impact on ACP design, particularly the impact on health and QoL and climate emergency	This is covered by DP(2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to**

			emissions from Heathrow's aircraft movements, to remain within local authorities' limits
Phase 1	HSPG & London Borough of Ealing	Do not design to minimise the extent of change but design to what is needed for the future	The ACP process does not limit the extent of change. It requires Heathrow as the change sponsor to investigate a range of options. As this is captured by the process requirements a **DP is not required.**
Phase 1	Kingston Council	Future airspace change **must** take into account local plans and policies regarding local air quality, the climate emergency [London Plan]	This is covered by DP(2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**
Phase 1	Kingston Council	Noise is the priority below 7000 feet, but the airspace change must deliver an overall CO_2 reduction for Heathrow's operation. If noise benefits negatively impact CO_2 below 7000 feet, it needs to be offset by CO_2 benefits elsewhere (e.g. in the upper airspace or reduced by airborne/stack delays)	This is covered in DP(4) **Reduce the contribution to climate change from CO_2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities**
Phase 1	MRA & Elmbridge Council	Resilience of the 'sat Nav' PBN systems should be guaranteed	**Not a design principle.**
Phase 1	MRA & Elmbridge Council	Use of NADP1 continuous climb for take-offs to reduce noise (possible raising of base stack heights if needed to make this easier)	**Not a design principle**. However, the intent of this proposal is captured within DP(3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	MRA & Elmbridge Council	Ensure that take-offs and landing are not forced to a 50:50 split regardless of prevailing winds nor safety	**Not a design principle**.
Phase 1	Surrey County Council	Must achieve a fair balance between the benefits for the industry and the people it impacts	**Not a design principle.** The ACP process requires Heathrow to develop a design that best meets policy requirements and represents the interest of all stakeholders. Finding a balance is part of the process.
Phase 1	Englefield Green Action Group (EGAG)	Use of NADP1 departure procedures	**Not a design principle**. This is a design solution, not a design principle, however, the intent of this proposal is captured within DP (3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	EGAG	Night flights should be stopped altogether.	**Not a design principle.** This is an operational decision, which is outside the scope of the ACP. However, this is covered as far as possible in airspace design terms by DP(8) **Contribute to minimising the negative impacts of night flights** but also within DP(5) **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines, and cargo handlers, passengers and local communities** as a more efficient and resilient operation should result in fewer late running night flights.
Phase 1	EGAG	If there are more flights these should be sent over areas that are not currently overflown	It is not possible to design routes to be used by just 'more flights'. Heathrow's movements are limited to 480K. Heathrow interprets this proposal to mean the same as "The design options must not create any more noise for any single community compared to pre-COVID-19 levels" (suggested stakeholder principle). This is reflected in DPs 6-10, however it's not possible to guarantee no increase to noise for anyone at this stage, as this would mean not moving any routes at all.
Phase 1	EGAG	Minimise the number of flights	**Not a design principle**. This is an operational decision and outside the scope of the ACP.
Phase 1	EGAG	Noise is the top priority up to 4000' and should be up to 7000'	This would not be in line with Air Navigation Guidance.
Phase 1	Ealing Aircraft Noise Action Group (EANAG)	No community affected by departure on easterly operation should be affected by arrival on westerly operation, or vice versa	This is covered by DP(7) **Seek to avoid overflying the same communities with multiple routes including those to/from other airports.**

Phase 1	EANAG	Night flights should cease	**Not a design principle.** This is an operational decision and outside the scope of the ACP. However, this is covered as far as possible in airspace design terms by DP(8) **Contribute to minimising the negative impacts of night flights** but also within DP (5) **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines, and cargo handlers, passengers and local communities** as a more efficient and resilient operation should result in fewer late running night flights.
Phase 1	Forest Hill Society	Reference to pre-Covid levels should probably instead refer to an agreed baseline year, such as 2018	**Noted**. Baseline years will be specified in later stages of the process.
Phase 1	Forest Hill Society	ACPs must minimise noise pollution	Various noise mitigations are captured in DPs 3 and 6-10.
Phase 1	Forest Hill Society	Must improve for those currently significantly impacted, even if there is an overall net noise reduction	Optimising a new design is about looking forward and mitigating potential future effects.
Phase 1	Forest Hill Society	Must use steep take-offs and landing and use CDA on all inbound flights	**Not a design principle**. However, the intent of this proposal is captured within DP(3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	Forest Hill Society	Noise is the priority below 7000ft, but the project as a whole should still deliver net carbon emissions at zero for Heathrow's operation	This is covered in DP(4) **Reduce the contribution to climate change from CO_2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities**
Phase 1	Forest Hill Society	Airlines need to conform to the design to ensure benefits are delivered (e.g. through Heathrow monitoring and KPIs and the use of published and transparent metrics and periodic publication of reports)	**Not a design principle.**
Phase 1	HACAN	Future airspace change should incorporate local plans and policies regarding air pollution and the climate emergency	Local plans and policies are not necessarily aligned with UK Government policy and therefore are not specifically referenced in the design principles. Heathrow will engage with local authorities as part of Stage 2 to understand their views on the developing design, and to take account of those views where appropriate. CAP1616 already requires sponsors to take account of local development frameworks and consented developments when performing appraisals. Instead of referencing local plans Heathrow added reference to DP (2) regarding local air quality requirements to the CAA policy principle as the airport operations as a whole does contribute to air quality in surrounding areas. **This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**
Phase 1	HACAN	Reduce the level of aircraft noise for overflown communities	Optimising a new design is about looking forward and mitigating potential future effects.
Phase 1	HACAN	Reducing noise at source should be the priority	**Not a design principle**. However, the intent of this proposal is captured within DP(3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	HACAN	A tailored approach pertaining to aircraft size or type may be appropriate. For example, a full power departure of a small aircraft may reduce noise for a lot of people and have little or no impact elsewhere. This may not be the case for the larger aircraft which cannot climb as quickly	**Not a design principle**. However, the intent of this proposal is captured within DP(3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	Iver Parish Council	Design principles should consider all those impacted by noise not just those overflown	To address this suggestion Heathrow excluded reference to overflown from proposed design principles 6, 9 and 10. These design principles will consider those

			overflown according to the CAA's definition, and those for which noise contours identify adverse effects, even if they are beyond the overflight definition.
Phase 1	Plane Hell	There should be no night flights	**Not a design principle.** However, this is covered as far as possible in airspace design terms by DP(8) **Contribute to minimising the negative impacts of night flights** but also within DP(5) **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines, and cargo handlers, passengers and local communities** as a more efficient and resilient operation should result in fewer late running night flights.
Phase 1	Plane Hell	Aircraft noise must be shared not concentrated – anywhere or any time	PBN is a requirement of the AMS and will involve aircraft flying route more accurately. DPs 3, 6, 8 and 9 all lead to the development of options that seek to mitigate the effects of noise as a result of the move to PBN and of the proposal in general.
Phase 1	Plane Hell	Open spaces and parks are necessary for beneficial to health and wellbeing. Do not make a point of overflying this except in upper airspace	There was no consensus from stakeholders with regards to overflying parks and open spaces or not. General views were that the tranquillity such places should be preserved although there was an acceptance that reducing the numbers of people affected by noise is important. There were discussions over positioning routes over parks and gardens at night (people are not visiting at that time) but it was also acknowledged that in order to position routes over parks and open spaces, it would involve overflying other communities to get there. Heathrow therefore decided not to have a specific DP relating to this but the debate was used to inform DP(8) **Contribute to minimising the negative impacts of night flights**
Phase 1	Plane Hell	Noise reduction is the priority	We have a range of design principles that will lead to the development of various methods of noise mitigation. However, prioritising noise above all else, in all situations is **not in line with policy.**
Phase 1	Plane Hell	Noise benefits/reductions must take priority over CO_2 impacts	We have a range of design principles that will lead to the development of various methods of noise mitigation. However, prioritising noise above all else, in all situations is **not in line with policy.**
Phase 1	Richmond Heathrow Campaign (RHC)	Where there is a reduction in overall noise the benefit be applied to those already most affected and where there is an increase in overall noise the dis-benefit be applied to those already least affected	Optimising a new design is about looking forward and mitigating potential future effects.
Phase 1	RHC	Communities should not be exposed to both departures and arrivals	This is covered by DP(7) **Seek to avoid overflying the same communities with multiple routes including those to/from other airports.**
Phase 1	RHC	Changes to legacy airspace structure should be kept to the minimum	This is not possible to take forward as this could result in no change to any flightpaths. Government policy defines the metric for levels of noise. However, some of the intent for this proposal is captured within DP (9) **Keep the number of people who experience an increase in noise from the future airspace design to a minimum**
Phase 1	RHC	Dispersion is sought for the additional flight paths from the NWR expansion	This ACP does not cover Expansion.
Phase 1	RHC	Noise from existing flight paths is not re-distributed	This is not possible to take forward as this could result in no change to any flightpaths. Government policy defines the metric for levels of noise. However, some of the intent for this proposal is captured within DP (9) **Keep the number of people who experience an increase in noise from the future airspace design to a minimum**
Phase 1	RHC	There is no increase in noise impact for those already affected by the two-runway airport	This is covered by DP(9) **Keep the number of people who experience an increase in noise from the future airspace design to a minimum**

Phase 1	RHC	Aim should be to minimise noise and its harm to health and well-being. This may or may not lead to different flight paths for day/night	Minimising adverse health effects is covered in policy and therefore by DP(2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits** Night flights are captured in DP(8), **Contribute to minimising the negative impacts of night flights** which will lead to consideration of different designs for day/night
Phase 1	RHC	Local residents should not be exposed to excessive noise from within the airport	This is covered by DP (6) **Provide predictable and meaningful respite to those affected by noise from Heathrow's movements**
Phase 1	Teddington Action Group (TAG)	Noise should be shared on a fair and equitable basis	Fairness is a subjective concept. Those overflown today consider it fair to share with neighbours who are not overflown, whereas those not overflown tend to cite that they have chosen to live away from noise and that it is unfair to change the status quo. We have design principle that will explore a range of noise mitigation, including those that spread the noise over a wider area, but in all cases we must meet policy requirements DP(2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**
Phase 1	TAG	All areas under departure and arrival flight paths should be offered a minimum of 8 hours per day respite when subject to overflight due to operational mode	**Not a design principle.** Changes to runway alternation patterns are an operational matter and not within scope of the ACP.
Phase 1	TAG	Night flights should not be permitted after 2024	**Not a design principle.** However, this is covered as far as possible in airspace design terms by DP(8) **Contribute to minimising the negative impacts of night flights** but also within DP(5) **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines, and cargo handlers, passengers and local communities** as a more efficient and resilient operation should result in fewer late running night flights.
Phase 1	TAG	The noise burden needs to be shared subject to not causing significant adverse impacts (i.e. ANG must be applied)	Covered by DP(2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**
Phase 1	TAG	The first step should always be to reduce noise at source	**Not a design principle**. However, the intent of this proposal is captured within DP(3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	TAG	It is essential that communities are not overflown by multiple routes and in particular by both departures and arrivals	This is covered by DP(7) **Seek to avoid overflying the same communities with multiple routes including those to/from other airports.**
Phase 1	TAG	Airborne noise should be minimised by mandating both departures and arrivals to fly higher	**Not a design principle**. However, the intent of this proposal is captured within DP(3) **Use noise efficient operational practices to limit and, where possible, reduce adverse impacts from aircraft noise**
Phase 1	TAG	Noise minimisation must be the top priority, not negotiable up to 4000ft and balanced only against CO_2 considerations up to 7000ft	Covered by DP(2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example,**

			Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits
Phase 1	TAG	Noise is the priority at low altitudes – all aviation emission contributions to global warming should be minimised	Covered by DP(4) **Reduce the contribution to climate change from CO_2 emissions and other greenhouse gas emissions arising from Heathrow's aircraft activities** This means we will investigate solutions that reduce carbon alongside those that prioritise noise, and alongside those that present a balance. All options will be fed through our appraisals in Stage 2/3 where they will be assessed against all policy requirements. A design will have a balance of impacts, but by having a must principle to meeting noise policy and committing to a DP that reduces CO_2 we are ultimately seeking a design that achieves both.
Phase 1	Windlesham Society	Dispersion is the only and fairest way particularly for communities further away from the airport where it is more easily viable	**Not a Design Principle.** However, it is fair to say that distances between routes can increase the further they are from the runway but 'further from the airport' is subjective as to where this is. Respite/dispersion is a mechanism to mitigate adverse effects of noise concentration although the point at which adverse effects begin to be seen on a community basis is within the LOAEL (ANG2017). The intent of this suggestion (sharing/disperse) is captured within DP2 (ANG2017 requires sponsor to consider use of multiple routes), DP(3) and DP(6).
Phase 1	Windlesham Society	Noise should be the priority below 7000ft	This would not be in line with Air Navigation Guidance which also makes reference to CO2 below 7,000ft
Phase 1	Windlesham Society	Future airspace change should enable Heathrow to make the most efficient use of its runways, subject to environmental commitments and noise impact for communities	Covered by DP(5) **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines, and local communities** and DP (2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**
Phase 1	Windlesham Society	Night flights should cease/ be banned	**Not a design principle.** However, this is covered as far as possible in airspace design terms by DP(8) **Contribute to minimising the negative impacts of night flights** but also within DP(5) **Enable Heathrow to make the most operationally efficient and resilient use of its existing two runways, to maximise benefits to the airport, airlines, and cargo handlers, passengers and local communities** as a more efficient and resilient operation should result in fewer late running night flights.
Phase 1	Windlesham Society	SMART objectives should be agreed on all principles, avoiding the use of vague terms should as "minimise" etc.	**Not a design principle.** Our design principle evaluation will define the methodology for how we assess 'Minimise'. DPs are not hard objectives; they need to remain flexible to allow Heathrow to develop multiple options and then appraise those options in against Policy.
Phase 1	Windlesham Society	The level of noise increase experienced by any community due to this ACP should not exceed [% to be discussed with communities]	This is not possible to take forward as this could result in no change to any flightpaths. However, some of the intent for this proposal is captured within DP(9) **Keep the number of people who experience an increase in noise from the future airspace design to a minimum**
Phase 2	Biggin Hill Airport	[Must] give due consideration for providing harmonised routes which not only have due consideration for adjacent stakeholder's routes or requirements and other airspace users	This is covered by DP(11) **Enable the efficiency of other airspace users' operations**
Phase 2	NATS NERL	Reduce the contribution to climate change from CO2 and other greenhouse gas emissions taking account both of aircraft	The ACP process requires us to design collaborative solution with our neighbours. Our DPs will be applied in this collaborative design and ultimately collaborative designs will have to the same policy requirements.

		operating from Heathrow and of the cumulative impact Heathrow designs may have on routes serving other airports	
Phase 2	Chiltern Society	Should minimise impacts on Areas of Outstanding Natural Beauty and other tranquil areas	Covered by DP(2) **Remain in accordance with the CAA's published Airspace Modernisation Strategy and any current or future plans associated with it and all other relevant UK policy, legislation and regulatory standards (for example, Air Navigation Guidance). This includes preventing any worsening of local air quality due to emissions from Heathrow's aircraft movements, to remain within local authorities' limits**