Exeter Airport Airspace Change Proposal

Design Principles Report

Document Details

Reference	Description
Document Title	Exeter Airport Airspace Change Proposal
	Design Principles Report
Document Ref	71189 020
Issue	Issue 2
Date	5th November 2019
Client Name	Exeter & Devon Airport Ltd

Approval Level	Authority	Name
Author	Osprey CSL	
Internal Approval	Osprey CSL	
External Approval	Exeter & Devon Airport Ltd	

Issue	Amendment	Date
Issue 1	First Formal Issue	7th October 2019
Issue 1.1	Minor update to 4.2 to address CAA clarification question	16th October 2019
Issue 2	Update to Design Principles matrix to address CAA DEFINE Gateway clarification questions	5th November 2019

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Glossary

Acronym	Meaning
agl	above ground level
ACC	Airport Consultative Committee
ACP	Airspace Change Proposal
AMS	Airspace Modernisation Strategy
ANSP	Air Navigation Service Provider
AONB	Area of Outstanding National Beauty
ATC	Air Traffic Control
ATM	Air Transport Movement
ATZ	Aerodrome Traffic Zone
BGA	British Gliding Association
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAS	Controlled Airspace
CAT	Commercial Air Transport
CCO	Continuous Climb Operations
CDA	Continuous Descent Approach
CDO	Continuous Descent Operations
CTA	Control Area
CTZ	Control Zone
CTR	Control Area
DAAT	Devon Air Ambulance Trust
DAATM	Defence Airspace and Air Traffic Management

Acronym	Meaning
DNPA	Dartmoor National Park Authority
EDAL	Exeter & Devon Airport Ltd
EHO	Environmental Health Officer
FAS	Future Airspace Strategy
FASI-S	Future Airspace Strategy Implementation - South
ft	feet
GA	General Aviation
IFR	Instrument Flight Rules
LPA	Local Planning Authority
MAC	Mid-Air Collision
MOD	Ministry of Defence
NATMAC	National Air Traffic Management Advisory Committee
NATS	formerly National Air Traffic Services
NERL	NATS (En Route) plc
NPAS	National Police Air Service
PBN	Performance Based Navigation
PinS	Point in Space
RMZ	Radio Mandatory Zone
RNAS	Royal Naval Air Station
RT	Radio Telephony
SID	Standard Instrument Departure
SSSI	Site of Special Scientific Interest
STAR	Standard Arrival Route
TMZ	Transponder Mandatory Zone

Acronym	Meaning
USAFE	United States Air Force (Europe)
VFR	Visual Flight Rules

1 Design Principles Development

1.1 Background

The purpose of this document is to explain how Exeter Airport has conducted engagement with stakeholders to develop a proposed suite of Design Principles to support our airspace change proposal (ACP-2018-47). Our Design Principle engagement was conducted in line with Stage 1B of the Civil Aviation Authority (CAA) guidance on the regulatory process for changing the airspace design (known as CAP 1616). The Exeter Airport Airspace Change Proposal (ACP) concerns adapting the existing airspace structure surrounding Exeter Airport to assist Air Traffic Control (ATC) in providing enhanced levels of safety and information to aircraft operating in and out of Exeter Airport and to aircraft operating in the local area.[1]

1.2 Exeter Airport Operations

Exeter Airport previously submitted an airspace change request under CAP 725. This project represents an entirely new submission of an ACP to the CAA to adapt the existing airspace structure at Exeter Airport under CAP 1616. As such, we have begun from the very start of the CAP 1616 process to ensure that our ultimate submission is fully compliant with regulation.

Exeter Airport plays a key part in the regional economy; therefore, it is essential that it continues to develop Exeter Airport to its full potential, while also respecting and supporting the needs of the local and transitory flight operations and aviation communities.

Despite continued economic pressures in Europe, passenger numbers at Exeter Airport have increased by 37% between 2012/13 and 2018/19 and with the introduction of new routes, Exeter Airport anticipates that this will continue to increase in the coming years. Exeter Airport considers that the increased volume of traffic warrants a greater level of protection for flight procedures for now and into the future. The improved protection will facilitate an additional layer of safety and improve the effective and efficient management of local air traffic.

Increased air traffic levels, changes in regulatory guidance, improved aircraft performance and enhanced navigational system accuracy and reliability have all contributed to the emerging need for a re-design of the airspace surrounding Exeter Airport. Although Exeter ATC handles the current operational issues safely and effectively on a tactical basis, the anticipated increase in traffic may result in overload situations as controllers try to accommodate more aircraft in a limited volume of airspace, particularly to the east of the Airport.

The principal area of concern regarding current operations at Exeter is one of limited protection currently afforded to commercial aircraft, including passenger-carrying airliners, operating near the airport. In order to maintain levels of safety and enhance airspace efficiency, whilst causing minimal disruption to all aviation stakeholders, Exeter propose to

[1] See the Statement of Need, published on the CAA Portal

establish new airspace around the existing Exeter Airport Aerodrome Traffic Zone (ATZ) that will:

- Safeguard routinely utilised flights operating under Instrument Flight Rules (IFR) at Exeter Airport.
- Ensure safe separation between the IFR traffic and promote proactive coordination of traffic operating under Visual Flight Rules (VFR) near the Airport.
- Protect aircraft operating within the Visual Circuit at Exeter Airport that routinely need to extend beyond the boundary of the ATZ.
- Enhance efficiency by providing airspace that will reduce the instances of avoiding action.
- Reduce traffic delays on the ground and in the air.

1.3 General Approach to Development of Principles

In order to introduce new procedures Exeter Airport must follow guidance provided by the CAA and successfully complete the first 6 stages of CAP 1616 – Airspace Design. In Stage 1 (Define), the CAA require Exeter Airport to satisfactorily assess the requirement for airspace change by producing a Statement of Need and produce a set of Design Principles that encompass the safety, environmental and operational criteria and policy objectives that the airport aims for in developing its airspace change.

It is important for design principles to be drawn up through discussion between the Change Sponsor and potentially affected stakeholder organisations at the early stages of the airspace change process. The aim of this engagement is to ensure that those stakeholder groups that may be affected have a good level of understanding of the proposed change, and to ascertain what design considerations are important to them.

Our general approach to the development of design principles for this ACP was to ensure a high degree of transparency and two-way engagement with all relevant stakeholders, including local communities, so that the options for new airspace are designed in accordance with the priorities of those stakeholders that are most likely to be affected. Stakeholder analysis identified a wide range of organisations and groups that we invited to help develop the design principles for our ACP, drawn from across the following categories:

- Airlines and the wider aviation industry;
- Councils and public officials;
- Environmental groups.

Two main activities have helped us to determine the list of potential design principles set out in Section 2:

- A design principles development questionnaire; and
- Stakeholder focus groups

Exeter Airport planned two focus groups and sent out Design Principles Questionnaires to aviation and non-aviation stakeholders. Non-aviation stakeholders included the Local Authorities and Local Planning Authorities (LPA), Members of Parliament, members of the airport's consultative committee and national organisations. The aviation stakeholders included local Airlines, the local General Aviation (GA) community, airport operators and

air navigation service providers (ANSP) and members of the National Air Traffic Management Advisory Committee (NATMAC). A full list of those contacted is included in Appendix A1.

Following the focus groups and after the questionnaires were returned, a longlist of design themes was extracted from all responses and discussions as shown at Appendix A3, Table 14. The design themes were assessed and further developed into the longlist of Design Principles shown at Section 2, Table 2.

The longlist was reviewed by stakeholders during a second round of engagement as described at Section 3. The stakeholder responses were analysed, and the prioritised final shortlist of Design Principles was developed and is shown at Section 5, Table 4.

1.4 Design Principles Questionnaire

The Design Principles questionnaire included a summary of the current Exeter Airport operations and gave details of pertinent points stakeholders might wish to consider. This was emailed to selected stakeholders on 29th April 2019, with a requested return date of 31st May 2019. Due to an error in the e-mail address required for responses, stakeholders were contacted on 8th May 2019 to inform them of the correct e-mail address to use for returns. A follow up e-mail were sent to remind consultees of the questionnaire timescales on 24th May 2019.

The specific questions asked in the questionnaire can be seen at Appendix 6.1A3. Additionally, the complete questionnaire document, along with the responses received can be found on the CAA portal alongside this document.

1.5 Focus Groups

Following the guidance of CAP 1616, Exeter Airport elected to undertake focus group meetings to discuss the development of Design Principles with relevant stakeholders. Two focus groups were organised that included a variety of representatives from different stakeholder groups including Airlines, General Aviators and Air Navigation Service Providers, Exeter Airport Consultative Committee, Local Authorities and national environmental organisations, e.g. The National Trust.

The purpose of each focus group was to provide attendees with information regarding the need for airspace change at Exeter Airport, the CAP 1616 process to be followed and the need to gather feedback on the issues that stakeholders considered to be important when jointly developing the Design Principles.

In addition to discussing Design Principles, the focus groups were asked to assess the appropriateness of the CAA's decision to allocate this ACP a Level 1 status; there was unanimous agreement between those attending that Level 1 was the appropriate level for this ACP. Minutes of the focus groups can be found on the CAA portal alongside this document.

The focus groups planned and undertaken are detailed in Table 1 below:

Focus Group (a)	Attendees (b)	Date (c)
Focus Group 1	Airport users, General Aviation, Air Navigation Service Providers	13th June 2019 - am
Focus Group 2	Exeter Airport Consultative Committee and non-aviation stakeholders	13th June 2019 - pm

Table 1 - Focus Group Details

1.6 Design Principle Review

During a second round of engagement, a Design Principle Review document was sent to stakeholders for comment; the review document, along with the responses received, can be found on the CAA portal alongside this document. The longlist of potential design principles that had been developed from the questionnaires and focus group feedback was shared with stakeholders for feedback on the principle statements and how they might be prioritised.

Details of the review document, the responses received and how they affected the development of the final suite of design principles that we propose to adopt is set out in Section 3.

1.7 Supplementary Questionnaire

As a direct result of feedback received during the focus groups, and following advice from CAA, Exeter Airport broadened the scope of the ACP to enable the airport to consider the introduction of Performance Based Navigation (PBN) arrival and departure routes, linking the current PBN approach procedures with the en-route airways entry and exit points. Following CAA advice, a Supplementary Questionnaire was sent to all original stakeholders on 9th August 2019, to ask some additional questions, and to offer them the opportunity to resubmit their original questionnaire or to make a statement on whether their original answers would change as a result of the inclusion of PBN approaches. The change to the scope of the ACP would allow Exeter Airport to consider all possible design options for the airspace change solution but without committing Exeter Airport to implementing PBN procedures as part of the ACP. Stakeholders were given 4-weeks to respond, with a requested return date of 6th September 2019.

The questions asked in the questionnaire, the responses received and how they affected the development of the final suite of design principles that we propose to adopt is set out in Section 4. Additionally, the complete Supplementary Questionnaire document, along with the responses received can be found on the CAA portal alongside this document.

2 Potential Design Principles

2.1 List of Potential Design Principles

After analysing all responses to the stakeholder questionnaires, feedback gathered from the focus groups and responses to the additional questionnaires that were circulated regarding PBN procedures, we developed a comprehensive long list of potential Design Principles. The long list of principles aims to include all the views expressed and acknowledge the comments directly related to this ACP. Table 14 in Appendix A3 shows a breakdown of the responses as well as the source of those points. A broad Design Principle theme is shown in Table 14 and a specific potential Design Principle was developed amalgamating the various themes. Sixteen potential Design Principles were identified and are shown in Table 2 below. The list is ordered according to the number of times each theme was raised by the stakeholders. A broad category was allocated to each Design Principle.

No (a)	Category (b)	Design Principle (c)	Count (d)	Long list Ref[2] (e)
1.	Operational	Any new airspace should not restrict flying operations in or around the airspace	26	Nos 01-26
2.	Environmental	Airspace should be designed to minimise the impact of noise	18	Nos 27-48
3.	Safety	Any new airspace should not create funnelling or choke points for other airspace users	16	Nos 49-64
4.	Safety	Airspace should connect to the airways structure to protect Commercial Air Transport	17	Nos 65-81
5.	Operational	Any new airspace should use the minimum volume necessary	15	Nos 82-96

[2] Derived from Column a in Table 14.

No (a)	Category (b)	Design Principle (c)	Count (d)	Long list Ref[2] (e)
6.	Technical	Any new airspace should facilitate continuous climb and descent profiles	13	Nos 97-109
7.	Operational	Any new airspace should allow equitable access to all airspace users	13	Nos 110-122
8.	Operational	Consider the Flexible Use of Airspace	8	Nos 123-130
9.	Safety	New airspace should protect critical stages of flight	8	Nos 131-138
10.	Safety	Create a known traffic environment	5	Nos 139-144
11.	Environmental	Designs should consider areas of local tranquillity	5	Nos 145-149
12.	Operational	Accommodate traffic with limited/no Radio Capability	4	Nos 150-153
13.	Operational	Accommodate traffic without Transponder Capability	4	Nos 154-157
14.	Operational	Any new Controlled Airspace (CAS) should be proportionate to the requirement	3	Nos 158-160
15.	Operational	Any new airspace should use the minimum categorisation necessary	3	Nos 161-163
16.	Operational	Any new airspace should be as uncomplicated as possible	3	Nos 164-166

Table 2 - Long List of Potential Design Principles

Table 3 below is drawn from Table 2 above and summarises the number of Design Principles that fall into each category.

No (a)	Design Principle Category (b)	Design Principle Count (c)
1.	Safety	4
2.	Environmental	2
3.	Operational	9
4.	Technical	1

Table 3 - Design Principle Categories

A review of the Design Principles indicates that for the 16 potential Design Principles identified, there is no requirement to reject one principle over another and all 16 potential Design Principles could be shared with stakeholders for a further round of engagement.

The next section shows how continued engagement with stakeholders was conducted in order to understand the importance stakeholders attached to the developed potential Design Principles.

3 Design Principle Review

3.1 Introduction

We recognise the importance of engagement and transparency throughout the ACP process. At key stages during the engagement we shared our progress with stakeholders and sought additional feedback. The shortlist of potential design principles that had been developed as described in the previous section was shared with stakeholders and we invited them to share their views through a second round of engagement.

3.2 Review Process

Not only is it important to have a list of Design Principles, but these should also be ranked in priority order. This could be important as Design Options are developed and where a choice presents itself concerning which Design Principle has primacy should conflicts occur.

On 8th July 2019, the Design Principles were sent to all organisations and individuals that had responded to the questionnaires or attended a focus group meeting. Stakeholders were asked to review the Design Principles and offered the opportunity to comment further, specifically requesting their thoughts on how these Design Principles should be prioritised. Following advice from the CAA, on 22nd July 2019, the Design Principles were sent to all stakeholders that had initially been contacted as part of the Stage 1 process, to seek their views on the potential Design Principles.

Specifically, stakeholders were asked to provide the following information regarding each Design Principle:

1. Do you agree this is a Design Principle?
2. Rank the 16 Design Principles in order of priority from 1 (Highest) to 16 (Lowest).
3. If you feel any of the Design Principles are not applicable to you, please mark it as '0'.
4. Please provide comments as to why you agree or disagree with the Design Principle.

In addition, stakeholders were asked to provide additional comments, as follows:

1. If there are any other areas of concern that you feel have not been considered, please provide additional comments.
2. Are there other Design Principles not included in the list that you feel should be considered?

The first additional question had been altered for the document that was subsequently sent to all stakeholders. The original question that was sent to those stakeholders that had responded to the questionnaires or attended a focus group meeting, and to which some replied, was as follows:

1. Do you agree that the list of Design Principles captures the specific areas of concern you have articulated in either a questionnaire or during participation in one of the focus groups?

A review of the feedback received is provided in paras 3.6 to 3.21 below.

3.3 Responses Received

From the emails sent out to organisations and individuals, we received a total of 14 responses to the Design Principles Review document from the following organisations:

- Airlines and Aviation Industry
  - British Gliding Association represented by Baths, Wilts and North Dorset Gliding Club
  - Devon Air Ambulance Trust
  - The Honourable Company of Air Pilots
  - Devon Strut
  - Devon and Somerset Gliding Club
  - Flybe
  - MOD
  - Plymouth Military
  - TUI
  - UK Flight Safety Committee

- Councils and Public Officials
  - Exeter Airport Consultative Committee

- Environmental Protection Groups
  - National Trust
  - National England
  - Dartmoor National Park Authority

As part of the process and alongside other stakeholders, Exeter Airport provided our own recommendations on prioritisation of the potential Design Principles.

3.4 Prioritisation Methodology

In order to produce the prioritised list of Design Principles detailed in Section 4 below, the priority ranking provided by each stakeholder was analysed. Returns that did not include an order of prioritisation were not used to determine the overall priority. Where a stakeholder gave a Design Principle a score of 0, this was discounted when calculating the average as this would skew the score. The average of the scores attributed to each Design Principle was used to determine the final ranking of the Design Principles. The Design Principle with the lowest average was ranked the highest for importance, the Design Principle with the highest average was ranked the least important

3.5 Prioritisation Returns and Assumptions

The return from the MOD Defence Air and Air Traffic Management (DAATM) organisation did not include a numerical prioritisation as they felt that a number of the Design Principles overlapped. In addition as the MOD do not comment on environmental or noise issues, these Design Principles were not included in their return. The MOD only provided a Yes/No statement as to whether they felt the remaining Design Principles were a priority, or not.

Although Exeter Airport has taken into account the comments made by the MOD, no assumptions have been made relating to the numerical priority and as such, has not been considered as part of the priority ranking. Although this does not allow direct comparison between the MOD response and those of other stakeholders, the MODs general perspective on Design Principles will nevertheless be taken into account during subsequent phases.

Dartmoor National Park Authority (DNPA) did not provide a response to the Design Principle Review document, but wrote to Exeter Airport to provide an input to the Design Principles development process. The two areas of concern that were referred to in the letter were that of tranquillity and air quality. DNPA supported the inclusion of tranquillity in the Design Principles. DNPA also requested that Exeter Airport considers the air quality impacts that emissions, and in particular Nitrogen, associated with air travel have. This has been included in the Design Principle ENVIRONMENT, as described below.

Natural England also provided a written response to the Design Principles Review stating that, based on the plans submitted, they considered that the proposed development would not have significant adverse impacts on statutorily protected nature conservation sites or landscapes.

The National Trust did not provide a written response but provided a map showing details of National Trust estates, to be considered as environmentally sensitive areas for the design process.

Areas of environmentally sensitive areas will be considered under the Design Principle ENVIRONMENT, as detailed below, and a list of sensitive areas will be fed into the design options stage.

3.6 Design Principle 1

Any new airspace should not restrict flying operations in or around the airspace – the lateral or vertical (including base heights) extent of any new airspace should not jeopardise the safe operation of all types of aviation traffic.

3.6.1 Summary of Feedback and Priority

There was general support for this Design Principle, although a number of responses commented that the safety and protection of traffic inside any controlled area should be the priority. Two of the respondees did not agree with this Design Principle with similar reasoning, stating that there needs to be some restrictions in place in the new airspace to have better control and management of flying operations.

It was agreed that, other than for ATC operational constraints, other traffic should have access to the airspace on request, and should experience minimal restriction to their flight path. Any new airspace should not degrade the safety of traffic operating outside it.

Stakeholder Priority 2

3.6.2 How has the feedback influenced the Design Principle?

The principal area of concern for this ACP is the limited protection currently afforded to commercial aircraft, including passenger-carrying airliners, operating near the airport. However, Exeter Airport recognises that GA traffic should continue to have access to any new airspace through procedures and ATC clearances to minimise the impact on GA

operations in the local area. This Design Principle will be taken forward to the final shortlist with an amendment to the wording.

3.6.3 Proposed text of Design Principle

ACCESS – Any new airspace should facilitate fair access to all airspace users.

3.7 Design Principle 2

Airspace should be designed to minimise the impact of noise – one of the Government's key environmental objectives is to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise.

3.7.1 Summary of Feedback and Priority

Although the majority of respondees agreed that minimising the impact of noise was important, safety was considered to be a higher priority. The consequential impact of noise arising from newly constrained air traffic patterns outside of any new airspace should also be taken into account.

Stakeholder Priority 15

3.7.2 How has the feedback influenced the Design Principle?

The priority of this Design Principle was low due to the majority of stakeholder responses (and prioritisation scores) coming from aviation stakeholders. However, in line with one of the Government's key environmental objectives to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts of aircraft noise, regardless of the low priority set, this Design Principle will form an important part of the assessment that Exeter Airport undertakes in evaluating the different design options. This Design Principle will be taken forward to the final shortlist with an amendment to the wording to reflect the consequential noise impacts that may arise.

3.7.3 Proposed text of Design Principle

ENVIRONMENT – Airspace should be designed to minimise the adverse impact of aircraft noise and emissions, including any consequential impacts caused by the displacement of other air traffic outside of the Controlled Airspace.

3.8 Design Principle 3

Any new airspace should not create funnelling or choke points for other airspace users – airspace should allow transit aircraft to safely bypass without creating bottlenecks or pinch points over geographical features or high ground that could create a greater environmental impact of noise or increasing the danger of a mid-air collision.

3.8.1 Summary of Feedback and Priority

This Design Principle was considered vital for flight safety. Consideration should be given to not creating funnelling or choke points both laterally and vertically around any new airspace.

Stakeholder Priority 3

3.8.2 How has the feedback influenced the Design Principle?

Any new airspace design must be safe, and as such, safety will be the overarching Design principle considered in all design options. This will include, where possible, not creating any funnelling or choke points for GA traffic. The wording of this Design Principle has been amended to reflect a broader consideration of the impact on GA traffic, which will include the safety of traffic operating outside of any new airspace.

3.8.3 Proposed text of Design Principle

MINIMISE IMPACT – Airspace designs should, where possible, minimise the impact on non-Exeter Airport aviation in the local area.

3.9 Design Principle 4

Airspace should connect to the airways structure to protect Commercial Air Transport – Commercial Air Transport should remain inside Controlled Airspace at all times during arrival at and departure from Exeter Airport. This protection will lower the risk to commercial operations, whilst introducing predictability of tracks therefore reducing track miles flown and minimising emissions.

3.9.1 Summary of Feedback and Priority

There was mixed support for this Design Principle from the stakeholders. Although most agreed that this Design Principle would contribute to the safety of commercial air traffic, some felt that there was no requirement to connect to the en-route airways structure, whilst the airline operators were in support of connectivity. Some connectivity would be acceptable as long as there was no undue impact on other aviation stakeholders.

Stakeholder Priority 8

3.9.2 How has the feedback influenced the Design Principle?

This wording of this Design Principle has been amended slightly to reflect the lower priority and will be carried forward to the design options stage.

3.9.3 Proposed text of Design Principle

CONNECTIVITY – Airspace should connect to the airways structure to ensure Commercial Air Transport remain inside Controlled Airspace when arriving or departing from Exeter Airport.

3.10 Design Principle 5

Any new airspace should use the minimum volume necessary – the volume of new airspace should be the minimum volume consistent with safe and efficient air traffic operations and not block the transit of other aviation traffic.

3.10.1 Summary of Feedback and Priority

Any new design should also take into account the needs of other airspace users with access to airspace being maintained, irrespective of the size or classification of airspace. One stakeholder specifically proposed that the transit of non-Exeter Airport GA traffic (including non-radio and non-transponding) should not be impeded by any new controlled airspace.

One stakeholder commented that they understood that retaining the current RNAV approaches would require significantly larger airspace volumes.

Stakeholder Priority 12

3.10.2 How has the feedback influenced the Design Principle?

The Design Principles relating to the size and categorisation of airspace have been amalgamated into a single Design Principle that will be taken forward to the shortlist.

3.10.3 Proposed text of Design Principle

DIMENSIONS – The size and categorisation of any new Controlled Airspace should be proportionate to the requirement.

3.11 Design Principle 6

Any new airspace should facilitate continuous climb and descent profiles – steeper and continuous climbs and descents will introduce environmental as well as flight efficiency benefits. The impact of noise on communities will be reduced and will also allow the execution of an optimal flight profile for aircraft, leading to a benefit in fuel use and emissions. Routes will become more consistent and predictable which could lead to a minimisation of controlled airspace footprint.

3.11.1 Summary of Feedback and Priority

It was recognised that the ability to perform Continuous Climb or Continuous Descent would produce environmental benefits and that incorporating these profiles would be desirable, but not essential. There was concern that introducing Continuous Climb or Continuous Descent profiles would need to be facilitated by the introduction of new flight procedures, which in turn would need a large controlled airspace footprint.

Stakeholder Priority 9

3.11.2 How has the feedback influenced the Design Principle?

Exeter Airport currently has no standardised arrival or departure procedures. Aircraft are vectored by ATC to provide the safest and most expeditious routing. Where the local air environment allows, this routing aims to facilitate continuous climbs or descents for aircraft. Even without these designated Instrument Flight Procedures, Exeter Airport will continue to provide the best routing possible for arriving and departing aircraft, providing environmental noise and emission benefits. The design of any new airspace will, where possible, consider enabling continuous climb and descent profiles to be flown and as such, this Design Principle will be considered under the Design Principle CONNECTIVITY.

3.11.3 Proposed text of Design Principle

CONNECTIVITY – Airspace should connect to the airways structure to ensure Commercial Air Transport remain inside Controlled Airspace when arriving or departing from Exeter Airport.

3.12 Design Principle 7

Any new airspace should allow equitable access to all airspace users – any regulatory change or airspace amendment must continue to facilitate access to the airspace for all aviation users and to implement airspace that will work for everyone.

3.12.1 Summary of Feedback and Priority

This Design Principle was supported by the majority of stakeholders. The stakeholder that did not support this Design Principle stated that, in the interest of aviation safety, it would not be possible to provide access to controlled airspace to aircraft that cannot be tracked by primary or secondary radar. Other stakeholders, whilst supporting the Design Principle, echoed this sentiment that access should be provided to those that request it and that Exeter Airport should ensure adequate resources to control and manage the airspace.

Stakeholder Priority 6

3.12.2 How has the feedback influenced the Design Principle?

The wording of this Design Principle has been amended slightly and will be carried forward to the design options stage.

3.12.3 Proposed text of Design Principle

ACCESS – Any new airspace should facilitate fair access to all airspace users.

3.13 Design Principle 8

Consider the Flexible Use of Airspace – any proposal for a revised airspace structure should be adaptable to minimise the impact on other aviation operators. Only having airspace activated in accordance with requirements is encouraged, providing flexibility for the access of other aviation.

3.13.1 Summary of Feedback and Priority

There was general support for the use of Flexible Airspace as a Design Principle. The use of Flexible Airspace is a way of bringing the needs of all airspace users to the debate, generating equitable and workable solutions. There was concern from some stakeholders that there was scope for some confusion with timings and whether airspace is open or not. One stakeholder suggested that permanent airspace would be preferred as everyone gets used to it.

Stakeholder Priority 11

3.13.2 How has the feedback influenced the Design Principle?

Whilst not discounting the use of Flexible Airspace, Exeter Airport assesses that this could be considered as a potential design option or solution, rather than a Design Principle, and therefore will not take this forward to the shortlist. The use of Flexible Airspace should be considered as a possible solution that could respond to two other Design Principles: ACCESS and MINIMISE IMPACT.

3.14 Design Principle 9

New airspace should protect critical stages of flight – the final approach is the most critical portion of flight, with Commercial Air Transport aircraft being slow and less manoeuvrable.

3.14.1 Summary of Feedback and Priority

This Design Principle received strong support and was considered to be essential for the safety of all aircraft. Protection of the final approach and climb-out paths should be facilitated, using the minimum volume of airspace necessary.

Stakeholder Priority 1

3.14.2 How has the feedback influenced the Design Principle?

This Design Principle was the highest priority for stakeholders and will be taken forward to the design options stage. The wording has been amended to incorporate the requirement to create a known traffic environment (see Design Principle 10 in paragraph 3.15 below)to protect traffic.

3.14.3 Proposed text of Design Principle

PROTECTION – New airspace should create a known traffic environment to protect the final approach and climb-out paths at Exeter Airport.

3.15 Design Principle 10

Create a known traffic environment – there is an increased risk on busy days to Commercial Air Transport due to the large number of aircraft operating outside controlled airspace due to the increased separation requirements against unknown, potentially non-transponding traffic.

3.15.1 Summary of Feedback and Priority

Although there was general support to the principle of creating a known traffic environment, there were opposing views as to where the environment should be. Some stakeholders considered that a known traffic environment protected everyone, whether inside or outside any regulated airspace, whist others felt that it would be difficult to create a known traffic environment without adding to the electronic conspicuity requirements for traffic that is outside the regulated airspace.

Stakeholder Priority 4

3.15.2 How has the feedback influenced the Design Principle?

The requirement to create a known traffic environment outside of any airspace solution would be too restrictive on GA traffic in the local area. However, all aircraft operating within the area should make themselves known to ATC, and be equipped to operate in that airspace. As a safety-related principle, this Design Principle has been incorporated into the Design Principle PROTECTION.

3.15.3 Proposed text of Design Principle

PROTECTION – New airspace should create a known traffic environment to protect the final approach and climb-out paths at Exeter Airport.

3.16 Design Principle 11

Designs should consider areas of local tranquillity – airspace change and management can impact on the natural environment, and on people's experience of the natural environment. Visitors seek these natural and peaceful surroundings to escape the impacts of urbanisation, including increased aviation traffic and resultant noise.

3.16.1 Summary of Feedback and Priority

This Design Principle was considered to be sound and neighbourly, and should be considered where realistically possible, but with the caveat that safety should come first.

Stakeholder Priority 16

3.16.2 How has the feedback influenced the Design Principle?

This Design Principle has been incorporated into the Design Principle ENVIRONMENT.

3.16.3 Proposed text of Design Principle

ENVIRONMENT – Airspace should be designed to minimise the adverse impact of aircraft noise and emissions, including any consequential impacts caused by the displacement of other air traffic outside of the Controlled Airspace.

3.17 Design Principle 12

Accommodate traffic with limited/no Radio Capability – the ability for aircraft to continue to operate in the local area without the necessity to rely on a radio capability should be considered.

3.17.1 Summary of Feedback and Priority

This Design Principle received mixed support with some stakeholders stating that it would be unsafe whilst other stakeholders proposing that this Design Principle should be mandatory. In general, it was felt that aircraft operating within any new airspace should be radio equipped, although procedures could be introduced that allows the occasional non-radio transit to be facilitated.

Stakeholder Priority 14

3.17.2 How has the feedback influenced the Design Principle?

This Design Principle has been incorporated into the Design Principle ACCESS and will be taken forward to the design options stage.

3.17.3 Proposed text of Design Principle

ACCESS – Any new airspace should facilitate fair access to all airspace users.

3.18 Design Principle 13

Accommodate traffic without Transponder Capability – the ability for aircraft to continue to operate in the local area without the necessity to rely on a transponder capability should be considered.

3.18.1 Summary of Feedback and Priority

This Design Principle also received mixed support. Most stakeholders were in favour, although some suggested that it would be acceptable only with other means of identifying the aircraft. One stakeholder stated that the ability for non-Exeter Airport aircraft to continue to operate in the local area without the necessity to rely on a transponder capability should be fundamental to an airspace design change. Some stakeholders stated that alternative procedures could be introduced that would facilitate occasional non-transponder operations in the airspace.

Stakeholder Priority 13

3.18.2 How has the feedback influenced the Design Principle?

This Design Principle has been incorporated into the Design Principle ACCESS and will be taken forward to the design options stage.

3.18.3 Proposed text of Design Principle

ACCESS – Any new airspace should facilitate fair access to all airspace users.

3.19 Design Principle 14

Any new CAS should be proportionate to the requirement – Any new controlled airspace should be no bigger than required to ensure safety is not compromised for all airspace users.

3.19.1 Summary of Feedback and Priority

This Design Principle was broadly supported, stating that any new airspace design should not unduly reduce the amenity and access currently available to non-Exeter Airport traffic not wishing to use Controlled Airspace.

Stakeholder Priority 7

3.19.2 How has the feedback influenced the Design Principle?

A number of the potential Design Principles relating to the size of any new airspace have been incorporated into a single DIMENSIONS Design Principle, which will be taken forward to the design options stage.

3.19.3 Proposed text of Design Principle

DIMENSIONS – The size and categorisation of any new Controlled Airspace should be proportionate to the requirement.

3.20 Design Principle 15

Any new airspace should use the minimum categorisation necessary – all categories of airspace should be considered so that the least restrictive categorisation of airspace necessary to ensure safety is not compromised for all airspace users.

3.20.1 Summary of Feedback and Priority

This Design Principle received the support of the majority of the stakeholders, apart from one who felt that Class D should be the minimum requirement to provide adequate separation from non-transponding VFR traffic. Other stakeholders, whilst supporting the Design Principle suggested that Class D airspace would be necessary to protect the airport's operations. Some stakeholders requested that any new airspace design should be more compatible with the needs of other aviation users.

Stakeholder Priority 10

3.20.2 How has the feedback influenced the Design Principle?

A number of the potential Design Principles relating to the size of any new airspace have been incorporated into a single DIMENSIONS Design Principle, which will be taken forward to the design options stage.

3.20.3 Proposed text of Design Principle

DIMENSIONS – The size and categorisation of any new Controlled Airspace should be proportionate to the requirement.

3.21 Design Principle 16

Any new airspace should be as uncomplicated as possible – The design of any new airspace should not be so complex that it will lead to more infractions from other airspace users.

3.21.1 Summary of Feedback and Priority

This Design Principle was broadly supported with a number of stakeholders commenting that any new airspace design should be kept simple so it does not create problems to those operating outside the airspace and increasing the likelihood of infringements.

Stakeholder Priority 5

3.21.2 How has the feedback influenced the Design Principle?

A number of the potential Design Principles relating to the size of any new airspace have been incorporated into a single DIMENSIONS Design Principle, which will be taken forward to the design options stage.

3.21.3 Proposed text of Design Principle

DIMENSIONS – The size and categorisation of any new Controlled Airspace should be proportionate to the requirement.

3.22 Additional Comments

3.22.1 Do you agree that the list of Design Principles captures the specific areas of concern you have articulated in either a questionnaire or during participation in one of the focus groups?

The following comments were received from stakeholders in response to this question:

- Yes, although some have overlaps. But content that areas of concern in focus group have been captured – Plymouth Military
- As modified above, yes, but not as written in the version submitted to consultees herewith or at issue 2 – British Gliding Association
- Yes – Devon Air Ambulance Trust
- Yes, provided our comments are read in conjunction with these Design Principles and the Rationale – Devon and Somerset Gliding Club

The modifications to the Design Principles as suggested by the British Gliding Association have been considered by Exeter Airport and changes have been made to the proposed Design Principles to take into account the views of all stakeholders.

3.22.2 If there are any other areas of concern that you feel have not been considered, please provide additional comments below.

TUI asked if any consideration had been made to raising the existing Missed Approach altitude to reduce cockpit workload at a very busy and although anticipated, unplanned stage of flight. This could also reduce the impact of noise due to the increased altitude.

Exeter Airport will review existing procedures during the options development stage in order to assess if improvements can be made.

3.22.3 Are there other Design Principles not included in the list that you feel should be considered as candidates for the final shortlist? If so, please provide your comments.

Both the British Gliding Association (BGA) and Devon and Somerset Gliding Club referred to the BGA set of principles that inform its responses to ACPs. Exeter Airport has considered these principles, many of which are included in the proposed shortlist of Design Principles, and will continue to consider them as airspace options are developed.

The Honourable Company of Air Pilots suggested that any revised airspace should also support procedures that are simple and predictable from the flight deck and ATC perspective, such as (where it is possible) fewer routes with fewer interactions rather than too many options that attempt to 'spread out' the noise footprint.

The Ministry of Defence suggested 'There is minimised negative impact to MOD operations' as a separate Design Principle, since any changes to the classification of airspace may have an impact on Air Traffic Services provision at MOD ANSP units. This consideration will be included as part of the Design Principle MINIMISE IMPACT.

4 Supplementary Questionnaire

4.1 Background

During the engagement activities described in the sections above, at least two stakeholder organisations raised questions about why Exeter Airport was not considering changes to arrival and departure routes at the airport. The guidance in CAP 1616 requires the Change Sponsor to consider all possible options for the airspace change, including those identified or proposed by stakeholders and including any radical options identified during the project. As a result, and following advice from the CAA, Exeter Airport broadened the scope of the ACP to enable the airport to consider the introduction of Performance Based Navigation (PBN) arrival and departure routes, linking the current PBN approach procedures with the en-route airways entry and exit points. These routes would improve the predictability of aircraft tracks which may increase safety for all airspace users. The change to the ACP scope does not commit Exeter Airport to implementing PBN procedures as part of the ACP, only that they will be considered and assessed as part of the CAP 1616 options development process.

4.2 Supplementary Questionnaire

Given the change in scope of this project, Exeter Airport re-engaged with its local stakeholders to see if their views had changed by sending out a Supplementary Questionnaire. The initial list of potential Design Principles was included in the document and, although some will be pertinent to airspace designs that include flight procedures, stakeholders were asked if they would like to provide different answers or views to their original questionnaire returns. Stakeholders were asked to assist in the development of the Design Principles in the following way:

- Provide any updated responses to the original Design Principles questionnaire that was distributed in late-April, based on the inclusion of PBN arrival and departure routes. The original Design Principles Questionnaire was not included but copies were available on request.

- Provide answers to the additional questions included in the document.

- Suggest any new Design Principles that they think would be relevant to the change in scope of this Airspace Change Proposal and should be considered by Exeter Airport and also state any areas of concern that they felt had not been considered during this process.

This was emailed to all stakeholders on 9th August 2019, with a requested return date of 6th September 2019.

The specific questions asked in the questionnaire are included in the Summary of Responses below. Additionally, the complete questionnaire document, along with the responses received can be found on the CAA portal alongside this document.

4.3 Stakeholder Responses

4.3.1 Question 1 – Please tell us if the dispersal of noise impacts across a greater number of households is preferable than the concentration of noise impacts on a smaller number of households

The general view was that dispersal would be the preferred solution, with one stakeholder stating that keeping the noise dispersal as it currently is, and avoiding built up areas, would be preferable.

- **Our response** – Exeter Airport notes the preference for dispersal of noise and this will be considered under the Design Principle ENVIRONMENT.

4.3.2 Question 2 – Please tell us if there are there any aircraft operational constraints that Exeter Airport should consider when planning its new inbound and outbound procedures? (restrictive speeds, distances, climb rates, rates of descent, etc.) Please provide details and reasons

Both the British Helicopter Association and the Devon Air Ambulance Trust suggested that a Point in Space (PinS) approach be included which would allow helicopters to execute an approach/cloud break that would not interact with CAT IFR traffic.

- **Our response** – Should Exeter Airport decide to introduce new procedures, the feasibility of including a PinS approach to the airport would be explored. An approach to the Royal Devon and Exeter Hospital would be out of the scope of this ACP.

Flybe requested continuous climb and descent profiles, a minimum speed for initial turns for aircraft configuration and most direct routings to reduce track miles.

- **Our response** – The principle to include continuous climb and descent profiles has been included as a consideration already in the Design Principles. Design options will consider the track miles flown and the speed restriction will be included in the technical consideration for any procedure design.

The BGA repeated their previously stated concerns should new procedures need to contained within some form of controlled airspace, it should be minimum possible and that its location should give the least intrusion to GA in general and gliding in particular. They also recommended that Exeter Airport should consider methods that minimise the need for controlled airspace and of working with the local GA community for mutual benefit.

- **Our response** – Consideration of the dimensions of any new airspace has already been included as a Design Principle: DIMENSION.

4.3.3 Question 3 – Do existing noise abatement procedures meet current and future local government and community requirements?

Flybe supported the use of noise abatement procedures in order to reduce noise to local communities. Bishops Clyst Parish Council stated that any significant increase in noise would not be acceptable.

- **Our response** – There is no requirement currently to change the existing noise abatement procedures. Consideration of the impact of noise has already been included as a Design Principle: ENVIRONMENT.

4.3.4 Question 4 – Are there any other local issues or constraints you feel should be considered by Exeter Airport that will guide the development of options for the geographical location of arrival and departure procedures at Exeter Airport?

The main focus of responses to this question were related to the impact of noise in urban locations and areas of natural beauty.

- **Our response** – Consideration of the impact of noise has already been included as a Design Principle: ENVIRONMENT.

4.3.5 Are there other Design Principles that you feel should be considered?

Flybe fully supports the implementation of PBN routing from airway to initial approach fix and departure via an instrument flight procedure to the airway. This will improve accuracy, reduce track miles and allow more efficient arrivals and departures.

- **Our response** – Exeter Airport notes Flybe's comments and will consider them as part of the decision-making process.

The BGA expressed concern that Exeter Airport might be operating in isolation and could produce a less than optimal design which could have unnecessary consequences for GA. They suggested that full co-ordination with other local airports under FASI-S should be incorporated as a design principle.

- **Our response** – Exeter Airport is subject to the CAA's Airspace Modernisation Strategy and will be required to consider this, and any associated plans with it, as part of this ACP. A Design Principle has been added in the following section that considers other airspace projects and the UK Airspace Modernisation Strategy – see HARMONISATION in paragraph 5.1.

One respondee suggested that the airport should avoid any night flying.

- **Our response** – This ACP will not change the way that Exeter Airport operates. However, the impact of noise, particularly at night, will be considered under the Design Principle: ENVIRONMENT

4.3.6 If there are any other areas of concern that you feel have not been considered, please provide additional comments below

Bishops Clyst Parish Council reiterated that the impact of noise was important, in particular near local schools. The British Helicopter Association again requested that a PinS approach be considered to allow GA and helicopter traffic to carry out a cloud break to proceed under VFR.

4.4 Supplementary Questionnaire Conclusion

Exeter Airport has considered all the responses received from the Supplementary Questionnaire and has concluded that there is no requirement for any additional Design

Principles to be included in the final shortlist. The comments received will be considered as part of the final shortlist of Design Principles as detailed above and as shown in Table 15 in Appendix A4. The intention of Exeter Airport is to explore the implementation of PBN arrival and departure routes as part of the design options development process at Stage 2A.

5 Final Shortlist of Design Principles

5.1 Exeter Airport Core Principles

Safety of operations is paramount for all Airspace Change Proposals and is the main driver for change for Exeter Airport. As such, the overriding and mandatory Design Principle for this ACP will be:

- SAFETY – Airspace design must at least maintain, and ideally enhance, aviation safety for all airspace users in the local area

In December 2018, the CAA published its Airspace Modernisation Strategy which describes what airspace modernisation must deliver, including the need to increase aviation capacity in the south east of England. The CAA and the Department for Transport commissioned NATS (En Route) plc (NERL) to create a single, coordinated implementation plan (the masterplan) for airspace changes involving 16 regional airports. Although Exeter Airport is not currently one of these airports, the airport is subject to the Airspace Modernisation Strategy. As such, it is important that Exeter Airport does not work in isolation and that our ACP is aligned with changes planned under the FASI-S project to form a safe and efficient network. As such, after safety, the highest priority and mandatory Design Principle for this ACP will be:

- HARMONISATION – Airspace design must accord with the CAA's published Airspace Modernisation Strategy (AMS) and any future plans associated with it

5.2 Design Principle Review

In light of the feedback received from stakeholders during the review described above in Section 3, the prioritised shortlist of Design Principles is shown in Table 4 below. Where Design Principles from the long list have been amalgamated to form the final shortlist Design Principle, the prioritisation has been determined using the highest priority long list Design Principle. Table 15 in Appendix A4 shows how the final shortlist of Design Principles has evolved from the list of potential Design Principles that were reviewed by the stakeholders.

Prioritised Design Principle (a)	Design Principle (b)	Category (c)
1	SAFETY – Airspace design must at least maintain, and ideally enhance, aviation safety for all airspace users in the local area	Safety
2	HARMONISATION – Airspace design must accord with the CAA's published Airspace Modernisation Strategy and any future plans associated with it	Operational

Prioritised Design Principle (a)	Design Principle (b)	Category (c)
3	PROTECTION – New airspace should create a known traffic environment to protect the final approach and climb-out paths at Exeter Airport	Safety
4	ACCESS – Any new airspace should facilitate fair access to all airspace users	Operational
5	MINIMISE IMPACT – Airspace designs should, where possible, minimise the impact on non-Exeter Airport aviation in the local area	Operational
6	DIMENSIONS – The size and categorisation of any new controlled airspace should be proportionate to the requirement	Operational
7	CONNECTIVITY – Airspace should connect to the airways structure to ensure Commercial Air Transport remain inside Controlled Airspace when arriving or departing from Exeter Airport	Safety
8	ENVIRONMENT – Airspace should be designed to minimise the adverse impact of aircraft noise and emissions, including any consequential impacts caused by the displacement of other air traffic outside of the Controlled Airspace	Environmental

Table 4 - Prioritised Design Principles

6 CAP 1616 - Next Steps

6.1 Next Steps

This document will be submitted to the CAA as evidence to support Step 1B of the CAP 1616 airspace change process ahead of the Stage 1 Define Gateway.

Following successful completion of the Stage 1 DEFINE gateway and subsequent publication, further stakeholder engagement meetings will be organised to discuss the design options once they are developed. The Design Principles will be used as the framework against which Design Options are developed and assessed to address the Statement of Need.

Currently, Exeter Airport's estimated timeline for subsequent stages of this process is shown in Table 5 below:

CAP 1616 Stage (a)	Estimated Completion Date (b)
Stage 1 Define	25th October 2019
Stage 2 Develop and Assess	31st January 2020
Stage 3 Consult	29th May 2020
Stage 4 Update and Submit ACP	29th January 2021
Stage 5 Decide	7th September 2021
Stage 6 Implement	February 2022

Table 5 - Exeter Airport ACP Timeline

A1 Stakeholders Contacted - Step 1B

A1.1 Aviation Stakeholder Matrix

The following tables represents the key aviation stakeholders identified by Exeter Airport as potentially being affected by the proposal. We engaged with all of these Stakeholders during the development of the Design Principles that will inform the airspace design process.

A1.1.1 Exeter Airport Consultative Committee

The following will be contacted through the Exeter Airport Consultative Committee:

Consultee	Organisation
Richard Bartlett (Chairman)	Woodbury Parish Council
Angela Fletcher (Vice Chairman)	Farringdon Parish Council
Hannah Foster	Flybe
Councillor Phil Skinner	East Devon District Council
Councillor Eleanor Rylance	East Devon District Council
Councillor Jeremy Wollen	Rockbeare Parish Council
Matt Roach	Exeter Airport
Councillor Ian Holmes	Ottery St Mary Town Council
Councillor Chris Daly	Aylesbeare Parish Council
Councillor Christopher Hall	West Hill Parish Council
Councillor Phil Twiss	Devon County Council
Andy Wood	Exeter and East Devon Growth Point
Chris Lane	East Devon District Council
Dave Montgomery	Clyst Honiton Community Association
Ian Payne	DAAT
Les Bayliss	Cranbrook Town Council
Janet Wallace	East Devon District Council EHO

Consultee	Organisation
Councillor A P Bartlett	Ottery St Mary Town Council
Councillor Henry Gent	Broadclyst Parish Council
Andy Carmichael	East Devon District Council Planning
Councillor Chris Scanes	Bishops Clyst Parish Council
Angie Hurren	Broadclyst Parish Council
Victoria Hatfield/Rosie Bates	Exeter City Council
	Chamber of Commerce and Industry
	Passenger Representative
ASPI@dft.gov.uk	Department for Transport

Table 6 - Consultative Committee Members

A1.1.2 Airport Operators

We are consulting with all our tenants and users of the airport, including passenger and freight airlines.

Airport Operators	
Air Ambulance	Aviation Southwest
Capital Aviation	FlyBe
Iscavia	NPAS
Robin Flying Group / Exavia	Ryanair
Skybus	West Atlantic
TUI	

Table 7 - Airport Operators

A1.1.3 Local Aerodrome and Aviation Organisations

We are consulting with the following local airports and airfields including, but not limited to:

Local Aerodromes	
Bristol Airport	Cardiff Airport
RNAS Yeovilton	Branscombe Airfield
Dunkeswell Aerodrome: SkyDive Buzz Ltd	Dunkeswell Aerodrome: Devon and Somerset Flight Training
Devon and Somerset Gliding Club: North Hill Airfield	Farway Common Airstrip
Watchford Farm Airstrip	Devon and Somerset Microlight Club

Table 8 - Local Aerodrome and Aviation Organisations

A1.1.4 Air Navigation Service Providers

We are consulting with the following ANSPs:

ANSP	
NATS Bristol	NATS Cardiff
NATS (En-Route) plc (NERL)	Plymouth Military
ATC RNAS Yeovilton	Swanwick Military

Table 9 - Air Navigation Service Providers

A1.1.5 National Aviation Organisations

We are consulting with the following National Aviation Organisations through members of the National Air Traffic Management Advisory Committee (NATMAC):

National Aviation Organisations	
Airlines UK	Airport Operators Association
Airfield Operators Group	Aircraft Owners and Pilots Association
Association of Remotely Piloted Aircraft Systems	British Airways
BAE Systems	British Airline Pilots' Association

National Aviation Organisations	
British Balloon and Airship Club	British Business & General Aviation Association
British Gliding Association	British Helicopter Association
British Hang Gliding and Paragliding Association	British Micro-light Aircraft Association
British Model Flying Association	British Parachute Association
Future Airspace Strategy VFR Implementation Group	General Aviation Alliance
General Aviation Safety Council	Guild of Air Traffic Control Officers
Honourable Company of Air Pilots	Helicopter Club of Great Britain
Heavy Airlines	Isle of Man
Light Aircraft Association	Low Fares Airlines
Military Aviation Authority	MoD Defence Airspace & Air Traffic Management
National Air Traffic Services	Navy Command HQ
PPL/IR	UK Airprox Board
UK Flight Safety Committee	USAFE (3rd AF DOF)

Table 10 - National Air Traffic Management Committee

A1.2 Non-Aviation Stakeholder Matrix

The following tables represents the key non-aviation stakeholders identified by Exeter Airport to engage with during the development of the Design Principles that will inform the airspace design process.

A1.2.1 Elected Local Representatives

We are consulting with the following Members of Parliament:

Member of Parliament	Constituency
Ian Liddell-Grainger	Bridgwater and West Somerset
Rt Hon Mel Stride	Central Devon

Member of Parliament	Constituency
Rt Hon Sir Hugo Swire	East Devon
Rt Hon Ben Bradshaw	Exeter
Anne Marie Morris	Newton Abbot
Peter Heaton-Jones	North Devon
Sir Gary Streeter	South West Devon
Rebecca Pow	Taunton Deane
Neil Parish	Tiverton and Honiton
Kevin Foster	Torbay
Rt Hon Geoffrey Cox QC	Torridge and West Devon
Dr Sarah Wollaston	Totnes

Table 11 - Members of Parliament

A1.2.2 Local Authorities

We are consulting with the following Local Authorities:

Local Authorities	
Devon County Council	Dorset County Council
Somerset County Council	North Devon Council
West Somerset Council	East Devon District Council
Mid Devon District Council	South Hams District Council
Teignbridge District Council	Torridge District Council
Taunton Deane Borough Council	West Devon Borough Council
Exeter City Council	Torbay Council

Table 12 - Local Authorities

A1.2.3 National Bodies

We are consulting with the following National Organisations:

National Bodies	
Campaign to Protect Rural England	Friends of the Earth
Natural England	National Trust
UK Association of National Park Authorities	

Table 13 - National Bodies

A2 Stakeholder Questionnaire

Q1 - Please list any altitude constraints, together with your reasons, that you feel Exeter Airport could consider when designing its new airspace structure?

Q2 - Please inform us of the latest proposed timescales for any neighbouring airspace/procedure re-design projects?

Q3 - Please advise us of any future requirements for improved coordination (particularly adjacent/contiguous routes) between Exeter Airport and adjacent ATC units that should be considered during the development of the new Exeter Airport airspace structure?

Q4 - Are there any current Air Transport Movement coordination arrangements with Exeter Airport that you would like to see remain or change as a result of Exeter Airport's new airspace design? Please provide a brief description.

Q5 - Are there any aspects of the Future Airspace Strategy (FAS) (e.g. airway entry/exit points, existing planned or new handover points) that Exeter Airport should take into account in the design of the new airspace? Please provide details.

Q6 - Are you aware of anything in the CAA Airspace Modernisation Strategy that presents a risk or opportunity to Exeter Airport airspace development? Please provide details.

Q7 - Do you have an existing Letter of Agreement or Memorandum of Understanding or other agreement with Exeter Airport? If so, do you see this as:

(a) An agreement you would like to see remain, preferably in its current form.
(b) An opportunity to alter or extend this agreement – and how?
(c) An agreement that is unfit for purpose (or may come to be as a result of the change).

Q8 - Please let us know if there are any day time or night time constraints that you consider Exeter Airport could take into account when updating its airspace structure? Please provide details and reasons.

Q9 - Please tell us if there are there any other operational constraints that Exeter Airport will need to consider when planning its new airspace?

Q10 - Please inform us of who you consider to be the other key local aviation stakeholders that you believe Exeter Airport should engage with during the process of designing its new airspace? Please provide details and reasons.

Q11 - Please provide details of any constraints imposed by restricted operations in the area encompassed by Exeter Airport flight operations (e.g. military operations, danger areas, restricted areas, route crossings, transit corridors, training areas etc.)?

Q12 - Please indicate if you feel there is a requirement for improved coordination between Exeter Airport and adjacent Air Navigation Service Providers (ATC) units that should be considered during the development of the Design Principles, Design Options and when implementing the new Exeter Airport airspace structure?

Q13 - Please provide details of any issues or constraints due to local helicopter operations that you believe may have an impact on Exeter Airport's new airspace design project?

Q14 - Please provide details of any issues or constraints due to local General Aviation operations, that you believe may have an impact on Exeter Airport's new airspace structure.

Q15 - Please provide details of any constraints that may be occasioned by local gliding activities on the Exeter Airport's new airspace structure?

Q16 - Please provide details of any impacts on General Aviation flying that you feel may be occasioned by any new airspace proposed by Exeter Airport.

Q17 - When Exeter Airport designs new airspace, please list the facilities in your local area that you believe could be prioritised when considering aircraft noise (eg hospitals, schools, parks, hospices etc)?

Q18 - Please tell us if multiple routes that disperse noise across a greater number of households are more of a priority for you than a single route that concentrates noise along a track above a smaller number of households.

Q19 - Please identify any other areas, in adjacent council/borough areas, that in your opinion may be sensitive to either direct overflight or exposure to aircraft noise, including during the night-time period?

Q20 - Do you believe aircraft conducting continuous climbs or descents to/from altitude (where this is safe to do so) may improve (lessen) exposure to noise in your local area?

Q21 - Please tell us the locations of any particularly sensitive wildlife habitats, not already notified (linked to Areas of Outstanding Natural Beauty (AONB), Sites of Special Scientific Interest (SSSI) etc), that you feel aircraft could avoid?

Q22 - Please state what principles you believe Exeter Airport may adopt to mitigate (in full or in part) any concerns you may have regarding the impact of airliner exhaust fumes or pollution?

Q23 - Please bring to our attention any recent or ongoing local environmental studies, you feel should be considered by Exeter Airport when designing the new airspace structure?

Q24 - Are there any other local development projects, perhaps currently at the planning stage, that Exeter Airport should be aware of and consider when planning its new airspace structure?

Q25 - Please list any other relevant local or national organisations that you believe Exeter Airport should ensure are involved in its formal consultation.

Q26 - Please provide the location of any future planned facilities you are aware of in your local area that could be considered sensitive to the impact of aircraft noise; please state why you feel this is necessary?

Q27 - Are there any areas that you feel will suffer more due to the impact of aircraft noise if the displacement of other aviation traffic were to occur due to the Exeter Airport airspace design project?

Q28 - If you were flying as a passenger from Exeter Airport, we would be grateful for any views you may wish to express about how Exeter Airport should consider the needs of the local community?

Q29 - Please advise us of any other issues or constraints you feel Exeter Airport could consider when designing its new airspace structure? Please provide details.

A3 Longlist of Themes and Design Principles

A3.1 Development of the Potential Design Principles

Table 14 below shows the long list of responses (column b) derived from the Focus Group and Questionnaire responses. The long list has been organised by theme as reflected in column d. The themes have been amalgamated into the 16 Design Principles as shown in column f and earlier in Table 2.

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
1.	Any new airspace does not constrain us to any corridors but maintains our ability to depart direct to the area of operation	Questionnaire	No restrictions on VFR routing	1	Any new airspace should not restrict flying operations in or around the airspace
2.	Bases of any future controlled airspace should not jeopardise the safe operation and access to/from local GA airfields	Questionnaire	No restrictions on operations at local airfields	1	
3.	Any controlled airspace should not inhibit the safe passage of GA traffic	Questionnaire	No restrictions on VFR routing	1	
4.	Local airfields be able to continue unrestricted up to 3,000 ft above ground level	Questionnaire	No restrictions on operations at local airfields	1	
5.	Traffic circuits and manoeuvring areas at local airfield should not be jeopardised by any new airspace	Questionnaire	No restrictions on operations at local airfields	1	

[3] As depicted in Table 2.

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
6.	GA flying must not be jeopardised	Questionnaire	No restrictions on VFR routing	1	Any new airspace should not restrict flying operations in or around the airspace
7.	Not jeopardise the existing safe operation of local GA airfields	Questionnaire	No restrictions on operations at local airfields	1	
8.	The sizes and bases of any future controlled airspace should not jeopardise the safe operation and access to/from local GA airfields	Questionnaire	No restrictions on operations at local airfields	1	
9.	Controlled airspace should not inhibit the safe passage of GA traffic	Questionnaire	No restrictions on VFR routing	1	
10.	Any new airspace design should ensure it is possible for aircraft to contact Exeter ATC from below and outside controlled airspace to avoid RT dead areas	Questionnaire	Does not compromise non-Exeter aviation operations	1	
11.	Traffic circuits and manoeuvring areas at local airfield should not be jeopardised by any new airspace	Questionnaire	No restrictions on operations at local airfields	1	
12.	Not jeopardise the existing safe operation of local GA airfields	Questionnaire	No restrictions on operations at local airfields	1	
13.	Any constraint on altitude also imposes consequent limitations on gliding range	Questionnaire	Does not compromise non-Exeter aviation operations	1	
14.	Constraints on altitude mean reduced distance capability and a greater risk of a forced landing	Questionnaire	Does not compromise non-Exeter aviation operations	1	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
15.	Allow both GA and commercial operations to occur harmoniously	Questionnaire	Does not compromise non-Exeter aviation operations	1	Any new airspace should not restrict flying operations in or around the airspace
16.	Any airspace should leave plenty of Class G airspace around Dunkeswell, and allow easy uncontrolled access	Questionnaire	No restrictions on operations at local airfields	1	
17.	Ensure the free transit ability of GA in the area without an Air Traffic clearance	Questionnaire	No restrictions on VFR routing	1	
18.	If the lateral dimensions of the proposed airspace encompass MOD sites the MOD would need to understand how access is maintained	Questionnaire	No restrictions on operations at military airfields or training areas	1	
19.	Access to essential MOD training areas should be unhindered by any proposed design	Questionnaire	No restrictions on operations at military airfields or training areas	1	
20.	Take account of the role and function that Cardiff ATC perform in relation to airway N864 & surrounding airspace	Questionnaire	Does not compromise non-Exeter aviation operations	1	
21.	Local fields be able to continue unrestricted up to 1,500 ft above ground level (agl)	Questionnaire	No restrictions on operations at local airfields	1	
22.	Needs must be balanced equitably against the needs of its long-term neighbours	Additional Response	Does not compromise non-Exeter aviation operations	1	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
23.	GA is entitled to continued safe use of airspace and that commercial aviation does not have a right to limit airspace access	Additional Response	Does not compromise non-Exeter aviation operations	1	Any new airspace should not restrict flying operations in or around the airspace
24.	Any designs must not be restrictive to GA operating around it	Aviation Focus Group	Does not compromise non-Exeter aviation operations	1	
25.	Needs to be a common ground so that everyone can enjoy the airspace	Aviation Focus Group	Does not compromise non-Exeter aviation operations	1	
26.	Shouldn't take away any freedoms to do things that other users do now	Aviation Focus Group	Does not compromise non-Exeter aviation operations	1	
27.	Noise exposure should be limited by the number of people affected	Questionnaire	Minimise the number of people affected by noise	2	Airspace should be designed to minimise the impact of noise
28.	Aircraft noise is dispersed	Questionnaire	Minimise the impact of noise	2	
29.	Visitors seeking to retreat to natural and peaceful surroundings, away from urban environments	Questionnaire	Minimise the impact of noise	2	
30.	These estates should be protected from the impacts of urbanisation, including increased aviation traffic and resultant noise	Questionnaire	Minimise the impact of noise	2	
31.	Aircraft should avoid airspace above these priority habitat areas, as noise disturbance associated with the aircraft would not be consistent with National Trust objectives	Questionnaire	Minimise the impact of noise	2	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
32.	Adversely impacted by aircraft noise, if the displacement of other aviation traffic were to occur due to the Exeter Airport airspace design	Questionnaire	Minimise the number of people affected by noise	2	Airspace should be designed to minimise the impact of noise
33.	Considerable risk of concentration of traffic/noise by aircraft avoiding restrictive airspace	Questionnaire	Minimise the number of people affected by noise	2	
34.	Should have some respite at night and therefore minimal noise through the main part of the night	Questionnaire	Minimise the impact of noise during the night-time period	2	
35.	Under the approach flight path and ought to be given some respite through the middle of the night	Questionnaire	Minimise the impact of noise during the night-time period	2	
36.	Airspace change and management can impact on the natural environment, and on people's experience of the natural environment	Additional Response	Minimise the impact of noise	2	
37.	Momentum will build for environmental concerns	Aviation Focus Group	Minimise the impact of noise	2	
38.	Positioning airspace in one place could increase noise or environmental issues in other places due to displaced traffic	Aviation Focus Group	Minimise the impact of noise	2	
39.	The airport would look to reduce the impact of noise on the local community as much as possible	Aviation Focus Group	Minimise the number of people affected by noise	2	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
40.	There may be more aircraft around the edge of the CAS trying to avoid it	Non-Aviation Focus Group	Minimise the number of people affected by noise	2	Airspace should be designed to minimise the impact of noise
41.	Aircraft would fly around the airspace, rather than through it, so there would be a possibility that traffic would become concentrated in a particular area, and therefore produce an increase in noise	Non-Aviation Focus Group	Minimise the number of people affected by noise	2	
42.	If the planned airspace extended so that it covered the whole of Exeter city, small aircraft would be more likely to fly outside the area and would therefore be less likely to create a noise problem on the periphery of the city	Non-Aviation Focus Group	Minimise the number of people affected by noise	2	
43.	Airport should look at both current and future plans	Non-Aviation Focus Group	Minimise the number of people affected by noise	2	
44.	If there are any areas that are more vulnerable than others, the airspace could be designed to either include the area within the airspace, which could reduce the number of aircraft flying in that area, or not put the boundary of the airspace close to the sensitive area, to avoid pinch points and overflight by aircraft just avoiding the CAS	Non-Aviation Focus Group	Minimise the number of people affected by noise	2	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
45.	Areas that people go to enjoy the tranquillity and that this needs to be an important consideration	Non-Aviation Focus Group	Minimise the impact of noise	2	Airspace should be designed to minimise the impact of noise
46.	Important asset bringing economic value and diversity to the region but reiterated the importance of noise and pollution	Non-Aviation Focus Group	Minimise the impact of noise	2	
47.	Two main issues that the airport faces, that of noise and night flying	Non-Aviation Focus Group	Minimise the impact of noise during the night-time period	2	
48.	Even if the airport were to expand by 50%, the only issue is likely to be night flying	Non-Aviation Focus Group	Minimise the impact of noise during the night-time period	2	
49.	Make full provision for the passage of GA and avoid the creation of choke points for VFR traffic	Questionnaire	Does not create choke points for GA	3	Any new airspace should not create funnelling or choke points for other airspace users
50.	Allow transit traffic to safely bypass the CAS without creating bottlenecks or choke points	Questionnaire	Does not create choke points for GA	3	
51.	GA will be concentrated into tight corridors	Questionnaire	Does not create funnelling of GA	3	
52.	Avoid the creation of GA pinch points and funnelling over geographical features and high ground	Questionnaire	Does not create funnelling or choke points for GA	3	
53.	New airspace should avoid the creation of funnelling and pinch points for the routing of GA traffic	Questionnaire	Does not create funnelling or choke points for GA	3	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
54.	Avoid the creation of GA pinch points and funnelling over geographical features and high ground	Questionnaire	Does not create funnelling or choke points for GA	3	Any new airspace should not create funnelling or choke points for other airspace users
55.	Many GA pilots prefer to avoid CAS, and this may cause funnelling and pinch points	Questionnaire	Does not create funnelling or choke points for GA	3	
56.	Funnelling of GA traffic, both horizontally and vertically, into potential pinch-points on the periphery of proposed CAS needs to be considered	Questionnaire	Does not create choke points for GA	3	
57.	Potential for funnelling of traffic within Class G airspace may have an impact on RNAS Yeovilton's IFR operations	Questionnaire	Does not create funnelling of GA	3	
58.	GA will be concentrated into tight corridors	Questionnaire	Does not create funnelling of GA	3	
59.	A possible increase of GA along a coastal corridor	Questionnaire	Does not create funnelling of GA	3	
60.	A possible increase in military training traffic in specific corridors	Questionnaire	Does not create funnelling of GA	3	
61.	The base of any CTA should be sufficiently high to allow aircraft beneath it to pass over high terrain in the area without causing "bottlenecks"	Questionnaire	Does not create choke points for GA	3	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
62.	Could create choke points and a funnelling effect that would create more noise from GA traffic	Aviation Focus Group	Does not create funnelling or choke points for GA	3	
63.	Creating CAS, elements of GA would be funnelled so increasing the environmental impact of noise and increasing the danger of a MAC	Aviation Focus Group	Does not create funnelling of GA	3	
64.	As the planned changes took this into account and didn't create 'pinch-points' for GA traffic	Non-Aviation Focus Group	Does not create choke points for GA	3	
65.	Interaction between N864 and the ATZ/CTZ to allow continuous climb	Questionnaire	Connects to the en-route structure to protect CAT	4	Airspace should connect to the airways structure to protect Commercial Air Transport
66.	Predictable routing	Questionnaire	Predictable and consistent routing	4	
67.	Airways connectivity into CTA	Questionnaire	Connects to the en-route structure to protect CAT	4	
68.	Remaining inside controlled airspace at all times in the arrival and departure	Questionnaire	Connects to the en-route structure to protect CAT	4	
69.	Would not expect to see any increase in normal track miles flown on approach or departure in order to remain in controlled airspace	Questionnaire	Predictable and consistent routing	4	
70.	Consistent routes with minimum track miles	Questionnaire	Predictable and consistent routing	4	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
71.	Shortest track miles possible to minimise fuel burn	Questionnaire	Predictable and consistent routing	4	Airspace should connect to the airways structure to protect Commercial Air Transport
72.	Increase predictability	Questionnaire	Predictable and consistent routing	4	
73.	Lower the risk of its commercial operation based on the high frequency of our flights outside controlled airspace	Questionnaire	Connects to the en-route structure to protect CAT	4	
74.	Assumed top level will coincide with N864	Questionnaire	Connects to the en-route structure to protect CAT	4	
75.	Flying under Instrument Flight Rules (IFR) in Class G airspace is 'bonkers' so some sort of protection is required	Aviation Focus Group	Connects to the en-route structure to protect CAT	4	
76.	Commercial Air Transport (CAT) would like protection	Aviation Focus Group	Connects to the en-route structure to protect CAT	4	
77.	Agreed with the concept of linking the airport to the en-route structure	Aviation Focus Group	Connects to the en-route structure to protect CAT	4	
78.	Prefer any airspace to meet up with the base of the N864 airway	Aviation Focus Group	Connects to the en-route structure to protect CAT	4	
79.	The aim is to look at the principles of protecting routes that get aircraft to and from the runway	Aviation Focus Group	Connects to the en-route structure to protect CAT	4	
80.	The final approach was the most important part to protect. It would be great to have connectivity	Aviation Focus Group	Connects to the en-route structure to protect CAT	4	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
81.	The airport must have CAS for protection	Non-Aviation Focus Group	Connects to the en-route structure to protect CAT	4	
82.	Any CAS at surface level (ATZ and CTZ) should be of the minimum possible dimensions	Questionnaire	Minimum size necessary	5	Any new airspace should use the minimum volume necessary
83.	Any new CAS should be kept to a minimum in vertical and horizontal extent	Questionnaire	Minimum size necessary	5	
84.	The volume of new airspace should be the minimum volume consistent with safe and efficient air traffic operations	Questionnaire	Minimum volume necessary	5	
85.	Be of minimum volume consistent with safe and efficient air traffic operations	Questionnaire	Minimum volume necessary	5	
86.	The volume of new airspace should be the minimum volume consistent with safe and efficient air traffic operations	Questionnaire	Minimum volume necessary	5	
87.	Minimum volume consistent with safe and efficient air traffic operations	Questionnaire	Minimum volume necessary	5	
88.	Smallest possible volume	Questionnaire	Minimum volume necessary	5	
89.	Airspace should be as small as possible	Questionnaire	Minimum size necessary	5	
90.	Your airspace should be the minimum for everyday normal use, and not try to encompass large areas only rarely used	Questionnaire	Minimum size necessary	5	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
91.	Minimise impact by having the smallest zone of Class E as possible, extending along your approaches, but not to the north and south, which would block transit routes	Questionnaire	Minimum size necessary	5	
92.	Minimum size of controlled airspace	Additional Response	Minimum size necessary	5	
93.	An asymmetrical airspace design might be acceptable	Aviation Focus Group	Minimum size necessary	5	
94.	If there was room underneath then deconfliction would not be necessary	Aviation Focus Group	Minimum size necessary	5	
95.	Any new airspace be as uncomplicated as possible and the minimum volume necessary	Aviation Focus Group	Minimum volume necessary	5	
96.	All CAS should be the minimum possible in terms of both size and categorisation	Aviation Focus Group	Minimum size necessary	5	
97.	CFDA are the most environmentally friendly arrivals	Questionnaire	Enable continuous descent approaches	6	
98.	CAT arrivals and departures from Exeter should adopt continuous climb and descent profiles	Questionnaire	Enable continuous climb and descent operations	6	
99.	Consistent and predictable continuous climbs & descents	Questionnaire	Enable continuous climb and descent operations	6	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
100.	CAT arrivals and departures from Exeter should adopt continuous climb and descent profiles	Questionnaire	Enable continuous climb and descent operations	6	Any new airspace should facilitate continuous climb and descent profiles
101.	Consistent and predictable continuous climbs & descents	Questionnaire	Enable continuous climb and descent operations	6	
102.	Interaction between N864 and the ATZ/CTZ to allow continuous climb	Questionnaire	Enable continuous climb operations	6	
103.	Continuous climb in all directions	Questionnaire	Enable continuous climb operations	6	
104.	CDO/CDA from top of descent in all operations	Questionnaire	Enable continuous descent approaches	6	
105.	Airspace design to allow CDO/CDA operations	Questionnaire	Enable continuous climb and descent operations	6	
106.	Environmental and flight efficiency benefits of CCO/CDO	Questionnaire	Enable continuous climb and descent operations	6	
107.	Steeper and continuous climbs and descents for cost and environmental benefits as well as minimisation of CAS footprint	Additional Response	Enable continuous climb and descent operations	6	
108.	CAT want Continuous Descent Approaches (CDA)	Aviation Focus Group	Enable continuous descent approaches	6	
109.	The aim should be to keep CAT as high as possible until as close as possible	Aviation Focus Group	Enable continuous descent approaches	6	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
110.	Any regulatory change or airspace amendment must continue to facilitate these operations, ie within the CTZ / CTR but outside airfield opening times	Questionnaire	No restrictions on operations	7	Any new airspace should allow equitable access to all airspace users
111.	Airspace design should be relevant to all airspace users	Questionnaire	Access allowed for all airspace users	7	
112.	Access to new airspace should be provided for GA	Questionnaire	Access allowed for all airspace users	7	
113.	The new airspace design should take into account helicopter operations	Questionnaire	No restrictions on operations	7	
114.	Access to any new airspace should be facilitated	Questionnaire	Access allowed for all airspace users	7	
115.	Flexibility to provide access for GA	Questionnaire	Access allowed for all airspace users	7	
116.	Airspace design should be relevant to all airspace users	Questionnaire	Access allowed for all airspace users	7	
117.	Access to new airspace should be provided for GA	Questionnaire	Access allowed for all airspace users	7	
118.	The new airspace design should take into account helicopter operations	Questionnaire	No restrictions on operations	7	
119.	Access to any new airspace should be facilitated	Questionnaire	Access allowed for all airspace users	7	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
120.	Access to any CTR/CTZ via a crossing service will have to be guaranteed	Questionnaire	Access allowed for all airspace users	7	
121.	Any airspace structure needs to be useable on both sides and that creating predictability is what it is all about	Aviation Focus Group	Access allowed for all airspace users	7	
122.	The requirement should be to implement airspace that will work for everyone	Aviation Focus Group	No restrictions on operations	7	
123.	Flexibility to provide access for GA	Questionnaire	Flexibility to provide access	8	Consider the Flexible Use of Airspace
124.	Any proposal for a revised airspace structure which goes beyond the critical stages of flight should and can be adapted to minimise the impact upon North Hill and the other airfields north of the Exeter airport during the hours 1000 to 1800	Questionnaire	Adaptable to minimise impact on other airspace users	8	
125.	Likely times of ATMs so as not to 'block' airspace at other times	Questionnaire	Adaptable to minimise impact on other airspace users	8	
126.	Thoroughly explore the potential for flexible use of airspace	Questionnaire	Flexibility to provide access	8	
127.	Only having airspace activated in accordance with requirements is encouraged	Questionnaire	Adaptable to minimise impact on other airspace users	8	
128.	Flexible use of airspace	Additional Response	Flexibility to provide access	8	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
129.	Consider the Flexible Use of Airspace	Aviation Focus Group	Flexibility to provide access	8	
130.	PBN is more accurate so could help with the flexible use of airspace	Aviation Focus Group	Flexibility to provide access	8	
131.	The design should apply only to critical areas of flight	Questionnaire	Protect CAT in critical stages of flight	9	New airspace should protect critical stages of flight
132.	Design should apply only to critical areas of flight	Questionnaire	Protect CAT in critical stages of flight	9	
133.	If the case for CAS beyond the critical stages of flight is clearly demonstrated	Questionnaire	Protect CAT in critical stages of flight	9	
134.	If controlled airspace is proved necessary beyond the critical stages of flight	Questionnaire	Protect CAT in critical stages of flight	9	
135.	Transit routes away from your extended runway centrelines do not need to be contained in controlled airspace	Questionnaire	Protect CAT in critical stages of flight	9	
136.	Any CAS should be limited to the critical stages of flight	Aviation Focus Group	Protect CAT in critical stages of flight	9	
137.	The final approach was the most important part to protect. It would be great to have connectivity	Aviation Focus Group	Protect CAT in critical stages of flight	9	
138.	The airport must have CAS for protection	Non-Aviation Focus Group	Protect CAT in critical stages of flight	9	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
139.	Develop the 'known environment'	Questionnaire	Create a known traffic environment	10	Create a known traffic environment
140.	Develop the 'known environment'	Questionnaire	Create a known traffic environment	10	
141.	High risk on busy days with multiple aircraft operating outside controlled airspace, due to the increased separation requirements against unknown, potentially non-transponding traffic	Questionnaire	Create a known traffic environment	10	
142.	Create a known traffic environment	Aviation Focus Group	Create a known traffic environment	10	
143.	Good to implement SIDs and STARs as part of the process	Aviation Focus Group	Predictable routes to create a known traffic environment	10	
144.	Creating a known traffic environment	Non-Aviation Focus Group	Create a known traffic environment	10	
145.	Visitors seeking to retreat to natural and peaceful surroundings, away from urban environments	Questionnaire	Minimise impact on noise on tranquil areas	11	Designs should consider areas of local tranquillity
146.	These estates should be protected from the impacts of urbanisation, including increased aviation traffic and resultant noise	Questionnaire	Minimise impact on noise on tranquil areas	11	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
147.	Aircraft should avoid airspace above these priority habitat areas, as noise disturbance associated with the aircraft would not be consistent with National Trust objectives	Questionnaire	Minimise impact on noise on tranquil areas	11	
148.	Airspace change and management can impact on the natural environment, and on people's experience of the natural environment	Additional Response	Minimise impact on noise on tranquil areas	11	
149.	Areas that people go to enjoy the tranquillity and that this needs to be an important consideration	Non-Aviation Focus Group	Minimise impact on noise on tranquil areas	11	
150.	Non radio and or non-transponder aircraft will be prevented from flying from or to local Devon fields or along the Devon coast	Questionnaire	Consideration of non-radio aircraft	12	Accommodate traffic with limited/no Radio Capability
151.	Non radio and or non-transponder aircraft will be prevented from flying from or to these local Devon fields	Questionnaire	Consideration of non-radio aircraft	12	
152.	Accommodate traffic with limited/no Radio Capability	Aviation Focus Group	Consideration of non-radio aircraft	12	
153.	Could not believe that aircraft could fly around without a radio or a transponder	Non-Aviation Focus Group	Consideration of non-radio aircraft	11	
154.	Non radio and or non-transponder aircraft will be prevented from flying from or to local Devon fields or along the Devon coast	Questionnaire	Consideration of non-transponder aircraft	13	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
155.	Non radio and or non-transponder aircraft will be prevented from flying from or to these local Devon fields	Questionnaire	Consideration of non-transponder aircraft	13	Accommodate traffic without Transponder Capability
156.	Accommodate traffic without Transponder Capability	Aviation Focus Group	Consideration of non-transponder aircraft	13	
157.	Could not believe that aircraft could fly around without a radio or a transponder	Non-Aviation Focus Group	Consideration of non-transponder aircraft	13	
158.	Not design controlled airspace any higher than is reasonably needed	Questionnaire	Size of airspace only to meet the needs of the airport	14	Any new CAS should be proportionate to the requirement
159.	Controlled Airspace should be no bigger than required to ensure safety is not compromised for all airspace users	Questionnaire	Size of airspace only to meet the needs of the airport	14	
160.	Any new CAS should be proportionate	Aviation Focus Group	Size of airspace only to meet the needs of the airport	14	
161.	Consider the least restrictive categorisation of airspace necessary	Questionnaire	Least categorisation necessary	15	Any new airspace should use the minimum categorisation necessary
162.	Class E airspace/RMZ/TMZ for some/all elements of any CTZ is fully considered	Questionnaire	Consider all airspace types	15	
163.	All CAS should be the minimum possible in terms of both size and categorisation	Aviation Focus Group	Least categorisation necessary	15	
164.	Proposals will become too complex and thus lead to more infractions	Questionnaire	Simple airspace construct	16	

No (a)	Focus Group/Questionnaire Responses (b)	Source (c)	Broad Design Principle Themes (d)	DP No (e)	Specific Shortlisted Design Principle[3] (f)
165.	Too complex and therefore lead to more infractions	Questionnaire	Simple airspace construct	16	Any new airspace should be as uncomplicated as possible
166.	Any new airspace be as uncomplicated as possible and the minimum volume necessary	Aviation Focus Group	Simple airspace construct	16	

Table 14 - Long List of Themes Deriving Design Principles

A4 Formulation of the Final Shortlist of Design Principles

A4.1 Final Shortlist of Design Principles

Table 15 below illustrates how the suggested list of Design Principles that stakeholders were asked to review have been amended and combined to form the final shortlist of proposed Design Principles. The table also includes the feedback from the Design Principles Supplementary Questionnaire and how this has aligned to the final shortlist of Design Principles.

DP No[4].	Suggested Shortlist Design Principle	Stakeholder Priority	Supplementary Questionnaire Responses	DP No.	Proposed Design Principle	
				1	SAFETY	Airspace design must at least maintain, and ideally enhance, aviation safety for all airspace users in the local area
			Full coordination with other local airports should be incorporated	2	HARMONISATION	Airspace design must accord with the CAA's published Airspace Modernisation Strategy and any future plans associated with it

[4] Section 2 Table 2 –Shortlist of Potential Design Principles

DP No[4].	Suggested Shortlist Design Principle	Stakeholder Priority	Supplementary Questionnaire Responses	DP No.	Proposed Design Principle	
9	New airspace should protect critical stages of flight	1		3	PROTECTION	New airspace should create a known traffic environment to protect the final approach and climb-out paths at Exeter Airport
10	Create a known traffic environment	4				
1	Any new airspace should not restrict flying operations in or around the airspace	2	Operations of Devon and Somerset Gliding Club should be protected	4	ACCESS	Any new airspace should facilitate fair access to all airspace users
			Routes flown historically by gliding cross-country pilots should not become part of controlled airspace, nor should PBN routes be routed through them			
7	Any new airspace should allow equitable access to all airspace users	6				
13	Accommodate traffic without Transponder Capability	13				
12	Accommodate traffic with limited/no Radio Capability	14				

DP No[4].	Suggested Shortlist Design Principle	Stakeholder Priority	Supplementary Questionnaire Responses	DP No.	Proposed Design Principle	
3	Any new airspace should not create funnelling or choke points for other airspace users	3	Location [of controlled airspace] should be in areas giving the least intrusion into the activities of GA and gliding	5	MINIMISE IMPACT	Airspace designs should, where possible, minimise the impact on non-Exeter Airport aviation in the local area
16	Any new airspace should be as uncomplicated as possible	5		6	DIMENSIONS	The size and categorisation of any new controlled airspace should be proportionate to the requirement
14	Any new CAS should be proportionate to the requirement	7				
15	Any new airspace should use the minimum categorisation necessary	10				
5	Any new airspace should use the minimum volume necessary	12	If PBN routes need to be contained, the volume of controlled airspace should be the minimum possible			

DP No[4].	Suggested Shortlist Design Principle	Stakeholder Priority	Supplementary Questionnaire Responses	DP No.	Proposed Design Principle	
4	Airspace should connect to the airways structure to protect Commercial Air Transport	8	Implementation of PBN routing from airway to Initial Approach Fix and departure via an instrument flight procedure to the airway	7	CONNECTIVITY	Airspace should connect to the airways structure to ensure Commercial Air Transport remain inside Controlled Airspace when arriving or departing from Exeter Airport
6	Any new airspace should facilitate continuous climb and descent profiles	9	Continuous Climb/Descent			
2	Airspace should be designed to minimise the impact of noise	15	Preferable to keep noise dispersal as it is, thus avoiding built up areas	8	ENVIRONMENT	Airspace should be designed to minimise the adverse impact of aircraft noise and emissions, including any consequential impacts caused by the displacement of other air traffic outside of the Controlled Airspace
			Any significant increase in noise would not be acceptable			
			Dispersal is the preferred option			
			Dispersal would be the preferred solution			

DP No[4].	Suggested Shortlist Design Principle	Stakeholder Priority	Supplementary Questionnaire Responses	DP No.	Proposed Design Principle	
			Design any initial turns in order to allow minimum flap departures thus reducing noise			
11	Designs should consider areas of local tranquillity	16	Avoid the urban area of Exeter and areas of outstanding natural beauty			
			Would like to see the Exe estuary protected as an area of natural beauty			
			Most direct routings with minimal track miles			
8	Consider the Flexible Use of Airspace	11		–		Not taken forward to the final shortlist of Design Principles

Table 15 - Design Principle Evolution