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Via email:

Submission: Auckland Tower Replacement Project

We refer to the Airways Corporation of New Zealand (“Airways”), Auckland ATC Tower Replacement Consultation Document dated November 2024 (“Consultation Document”).

Thank you for affording Auckland International Airport Limited (“Auckland Airport”) the opportunity to provide feedback on the Consultation Document.

We note that Auckland Airport has had the opportunity to work with Airways to provide inputs into some of the requirements for the Auckland Tower Replacement Project and we have appreciated the collaborative approach that has been adopted. Air Traffic Control Services are an integral part of any airport, and working together for a system-based approach means better outcomes for customers.

Auckland Airport responds to the two questions in the Consultation Document below, but first makes two overarching comments:

- There is insufficient information in the Consultation Document to provide considered feedback on several critical areas, including the reasons for discounting a digital option and the fundamental assumptions that underpin the costing estimates. Auckland Airport has set out in its submissions its requests for further information.
- The current Pier A1 design, as worked through with Airways over a period of time and including through simulator sessions, does not impede sight lines when combined with procedural changes. It should not be considered a primary driver for a physical tower.

Airways started to engage with Auckland Airport on the location of its new tower in 2022, following the conclusion of Airways’ original consultation on a replacement tower. Auckland Airport notes that the requirements for the location of a new site have been established by Airways, which has reviewed its sight lines and other operational needs several times since the start of interacting with Auckland Airport in 2022. This has resulted in the identification of a specific, and much smaller, polygon area where a new tower can be situated. When Auckland Airport and Airways began the collaboration in 2022, the initial master planning study identified potential locations within an area significantly larger than the final designated polygon. This area included an extensive landside space further away from the Pier A1 construction zone, with several possible sites presented by Auckland Airport to Airways. As requirements—such as Airways’ preferred maximum tower

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height—were refined, the polygon's boundaries were progressively narrowed. Many of the complexities of the construction of a new tower are driven by its location within this confined polygon and the timing of its construction relative to the construction of Pier A1.

Auckland Airport notes its obligations under Part 139 of the Civil Aviation Rules and has worked with Airways on its operational requirements in respect of the design and construction of Pier A1.

Specifically:

- During the design phase of Pier A1, Auckland Airport worked with Airways to amend the profile of Pier A1's roofline to address identified sight line issues. The result of this was to lower the design of the southern end of the tower to provide physical line of sight. Since the change in the roof line and with the implementation of agreed mitigations, Airways has advised that they are confident that the updated mitigations will prevent any loss in runway capacity and still maintain an acceptable level of safety.
- Auckland Airport has provided Airways with its construction plan and techniques to ensure that it does not impact on Airways' line of sight during construction. A number of workshops have been conducted to guide Airways through the construction stages, utilising 3D images and the Airways simulator to assess the feasibility of the proposed plans. This work and Airways' feedback has led to changes in the construction methodology including how cranes are located and operated during staging. We understand that the revisions made are now acceptable to Airways and are undertaking a final assessment of these in the Airways simulator before the end of December.
- In December 2023, Auckland Airport briefed the CAA on the Pier A1 design and Airways attended this meeting. More recently, Auckland Airport has begun work on the safety case for Pier A1, covering initially the construction phases before starting the operational phase in early 2025. Airways has been identified as one of the main stakeholders requiring consultation through the safety case process. The CAA has received an initial briefing and will receive progressive updates on the safety case programme of work that is required to meet Auckland Airport's obligations under Part 139

Auckland Airport notes that digital options to provide visibility over the Pier A1 original design were not favoured by Airways and an independent consultant was engaged and assisted on the development of options leading to a physical change to the dimensions being agreed as the best alternative and implemented by Auckland Airport. When coupled with procedural changes, this physical change is a permanent solution for the sight line issues. Auckland Airport is supporting the procedural changes by putting in place mitigations such as controllable stop bars, intermediate holding points and fit-for-purpose CCTV. This collaborative work to provide operational and digital solutions is typical for infrastructure projects being undertaken in a working environment.

Auckland Airport also notes that when it engaged with Airways through the start of its planning phase (2018), Airways' strategy was for a digital tower and solutions, and all those early discussions were focussed on digital solutions.

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We respond to the two consultation questions as follows:

Question 1: Do you have any feedback on whether the preferred option described in this paper is the right approach?

A: Digital Solution Preferred Option

At a high level, Auckland Airport has the same feedback that it provided in the original consultation on the Auckland Tower Replacement Project. We see merit in moving directly to a digital solution as we believe that this will ultimately be the future of air traffic control services. We are supportive of Airways constructing a digital tower, including future-proofing the end of Pier A1 to accommodate a digital mast. A design has been developed jointly with Airways to ensure that this can be installed to Airways' requirements when needed.

The Consultation Document states that a digital solution is not able to be implemented within the timeframes. Auckland Airport has been working with Airways to agree an extension term to its current lease and have confirmed that Airways could remain in the current location until circa 2035. We believe that this could potentially allow Airways to fully develop a digital solution. While a new physical tower is preferred by Airways, this may not be necessary if the barriers to a fully digital solution could be overcome within the next 10 years. We acknowledge Airways' comment that there are no comparable digital air navigation service examples in the region. There is, however, insufficient information in the Consultation Document for Auckland Airport to be able to make an assessment in respect of the reasons behind Airways' conclusions in respect of the feasibility of a digital solution.

From a cost comparison perspective, Airways has undertaken a comparison of the cost of a digital solution to the traditional or hybrid tower options. However, the Consultation Document does not provide the detail behind the breakdown of the costing of the options. Auckland Airport is of the view that the costs of the traditional tower outlined in the Consultation Document will come under significant pressure based on the known challenging construction environment it will be built in. Any such cost increase would result in a larger delta between a traditional tower and the implementation of a digital solution. Please refer to section B below for more detail around Auckland Airport's view of the challenges around constructing a tower in the timeframes and location for the Traditional Tower (Preferred Option).

B: Comments on Airways' Traditional Tower (Preferred Option)

Alignment with operational requirements

Auckland Airport understands that the Traditional Tower (Preferred Option) addresses current and future operational requirements, including flexibility for integrating future technologies like digital systems. Based on Airways' expertise and the ongoing discussions between Auckland Airport and Airways, Auckland Airport understands that the 45-metre tower height will be sufficient to provide sight lines that will avoid the need for further mitigations once operational. This height will also address risks associated with aging infrastructure and support future growth effectively.

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Pier A1 does not impede sight lines when combined with procedural changes

Auckland Airport wants to reinforce that the current design of Pier A1 does not impede sight lines when combined with procedural changes. Auckland Airport worked with Airways to amend the profile of Pier A1's roofline to address sight line issues. On this basis, Auckland Airport's position is that the location and updated design of Pier A1 should not be considered the primary driver for building a new traditional tower. There is no information in the Consultation Document to support the statement that the dimensions of Pier A1 will limit future growth and we request further information from Airways to substantiate this statement.

Timeframe for construction, constructability review and cost

Auckland Airport is not able to provide substantive comments on the cost estimation for the Traditional Tower (Preferred Option) as the detail is not provided in the Consultation Document. However, as foreshadowed above, Auckland Airport considers that the current challenging construction environment will impact the estimated cost for the construction of the new tower as well as the proposed timing outlined in the Consultation Document. A key driver of the tower ultimately being located where it is, is the reduced area that has been identified by Airways within which the tower can be located. Auckland Airport is also not aware of any progress on the tower design, which remains at early stages. Consequently, there is a risk that the total cost provided by Airways may not accurately reflect actual cost of construction. Additionally, Auckland Airport has not seen any constructability review that addresses how the challenges of building a tower in a confined space, adjacent to an active construction site and within a fully operational environment. This includes consideration for site access without disrupting the transport and airfield network.

Airways has been working closely with Auckland Airport on the construction methodology for Pier A1, providing valuable feedback. A similar exercise will need to be undertaken for any tower replacement. With the two interfacing sites, and operational environment, there will be timing and sequencing constraints, on top of stand capacity requirements. In terms of visibility to all stakeholders and customers, these complexities should be considered in the costing for the new tower, potentially through a higher contingency amount to reflect the uncertainty of the stage of design and planning of the tower. As noted in the Consultation Document, Auckland Airport has developed experience around the costs and risks associated with construction in this environment and offers to provide support into any costing exercise. Auckland Airport is committed to working closely with Airways to undertake any such exercise and to support costing work but considers it important that this is factored into the option assessment. These are known issues that should be accounted for, with agreed priorities given to the safe operation of the airport and the maintenance of capacity. An updated costing exercise may result in reconsideration of the relative merits of the options and timing, including the merit of extending the life of the existing tower.

Auckland Airport stresses the importance of conducting a thorough constructability assessment to evaluate construction methods for the new ATC tower. Auckland Airport anticipates that a likely result of the constructability review is that there will need to be a significant level of off-site prefabrication required, which would inevitably drive-up construction costs.

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Auckland Airport notes that:

- The construction of Pier A1 has already commenced, with the piling work underway. Construction of Pier A1 is due to complete in late 2029.
- Access and operation to the honey pot and transitional waste facilities must be maintained at all times, with airside access preserved.
- The design of the proposed tower is at its early stages with limited detail with the necessary underground services to support the building and connection to the wider network still to be identified.

The area the Traditional Tower (Preferred Option) is being built in is complex and a significant amount of work is required to assess constructability. We recognise that Airways is balancing multiple considerations and appreciate the importance of advancing the options. Auckland Airport is committed to working closely with Airways to support this process.

Future proofing

While the new tower design appears sufficient for the current runway operations, Auckland Airport recommends exploring measures to future-proof the structure. This includes ensuring compatibility with advanced digital technologies and accommodating potential growth, such as the eventual development of the northern runway.

C: Digital Contingency Tower

Auckland Airport is unique in that there is currently a physical Apron Tower which can be made available as a contingency facility for Airways. We have shared that this is not a long-term contingency solution and have been working closely with Airways to identify a new location for their mobile contingency tower. A number of sites are currently being assessed and Auckland Airport is working with Airways to understand the detailed requirements for the contingency tower location.

It's important to note that the proposed locations for the contingency tower are not part of this consultation and should not be viewed as factors influencing the decision for a new tower.

In terms of longer-term contingency, Airways is working on the basis of this being a digital solution which we have future-proofed for based on Airways' requirements (mast at the end of Pier A1). We are supportive of this approach.

D: Digital Apron Operations

Auckland Airport is looking to introduce a remote Digital Apron Management (DAM) Solution that provides enhanced situational awareness and flexibility without relying on a direct line of sight functionality. This solution will meet our current need and will be scaled as we continue to grow and perform apron management functions over more areas of our apron. The implementation of the DAM demonstrates Auckland Airport's commitment to implementing proven technologies and

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digital solutions successfully implemented in other contexts, and we acknowledge the support provided by Airways in this regard. While we recognise that a digital solution for a control tower differs from that of an apron management facility, we believe that the future in this area is in adopting innovative digital approaches.

Question 2: Based on the information provided, do you have any other feedback for the replacement of the tower?

At a high level, the following additional information is required to provide feedback on the options presented in the Consultation Document:

- There is no information in the Consultation Document to support the statement that the dimensions of Pier A1 will limit future growth and we request further information from Airways to substantiate this statement.
- Digital solution:
 - Auckland Airport seeks to better understand why a 10-year timeframe is insufficient to transition to a digital solution.
 - Auckland Airport requests details of any reports prepared in respect of the assessment of the feasibility of a digital solution.
- Detailed cost breakdown and constructability review for physical tower construction, to enable Auckland Airport to respond to the Consultation Document, including:
 - The constructability assessment and feasibility study on how the new ATC tower could be built before 2029.
 - The assumptions that underpin the costing, including around the risks associated with the operational environment that the tower will be constructed in.
 - The assumptions around prefabrication of the tower.
 - The detail of how the delay of construction was costed.
 - The details of the timing and cost of the extension of life of the existing tower.
- During the 2022 consultation, Airways Auckland Tower staff expressed a strong preference around a conventional tower replacement, as it was considered the lowest impacting option from a risk perspective. Auckland Airport would like to understand what steps Airways is currently taking to manage these concerns with a medium-term outlook.

Conclusion

If there are any questions in relation to Auckland Airport's submissions in response to the Consultation Document, Auckland Airport would appreciate the opportunity to address these with Airways. Given the significant amount of further information that is required by Auckland Airport to be able to provide more detailed responses to some critical areas covered by the Consultation Document, Auckland Airport requests that Airways provide that information and allow time in its consultation process to consider any response. Accordingly, we request that Airways also review its consultation process timing.

Auckland Airport will continue to work with Airways to ensure the best solution for the aviation system is identified.

Yours sincerely

Mary-Liz Tuck
Chief Strategic Planning Officer

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