1 July 2015

Wellington City Council
PO Box 2199
Wellington 6140
New Zealand

Attn: Lisa Hayes

Via email: Lisa.Hayes@wcc.govt.nz

Dear Lisa

RE: Response to matters requiring clarification and revision to car parking and landscaping details for the resource consent application for New Wellington Control Tower (SR No. 325662)

Further to your email on 23 April 2015 and our subsequent phone conversation and meeting held on 24 June 2015, we understand you seek clarification on the wind effects, and elements of the design including building façade materials and the landscape plan for the proposed new Wellington control tower. This letter responds to the points raised in the email. In addition, Airways proposes a reconfiguration and design of the car parking area and landscaping in response to submissions as set out below. The information in this letter and attachments should be read in conjunction with the Assessment of Environmental Effects (AEE) submitted with the resource consent application.

Façade Materials
In your email, you noted that “because this is such a prominent building, materiality as well as form (particularly the ‘rock’ face) should be addressed. A material sample/colour board would be helpful to indicate intended approach”.

Section 9 of the Design Statement in Appendix 3 of the AEE provides an overall description of the details of the building façades, including materials, noting the exact material will be subject to detailed design.

In our meeting held on 24 June 2015 we indicated that the preliminary design is currently being undertaken to determine structural engineering, durability requirements and buildability of the building facades while also reflecting the architectural concept (i.e. angular and textured finish). Based on these requirements, the materials for the east/west façade (‘rock’ face) have been narrowed down to two primary options; (1) glass reinforced concrete or (2) a matte pre-finished sheet aluminium. A material and colour sample of matte finished aluminium was presented at the meeting. Airways is confident that these options achieve the aesthetic requirements set out in the Design Statement, and would be comfortable with a condition of resource consent as follows (or similar):
That the east/west façades ('rock' faces) of the building are constructed of:

1. Glass reinforced concrete; or
2. Matte pre-finished aluminium; or
3. Another building material achieving the outcomes described in Section 9 of the Design Statement which is approved by Wellington City Council's urban designer.

Earlier concerns expressed by Council's urban designer, Mr MacIndoe, were that the building should not appear to be an "office-like" building with a high number of windows on the east/west facades. During ongoing preliminary design, four windows have been removed and replaced with the façade material. This change would improve the appearance of the 'rock' face east/west facades. This is explained in the addendum to the Design Statement (contained in Attachment 1) and shown in the revised drawings (Attachment 2).

Landscape Plan

In your email, you sought clarification regarding the treatment of the base of the tower and landscaping. You noted that the landscaping information provided in the resource consent application is very conceptual, and although the concept might be acceptable, additional information may assist your assessment.

We also note that the NZ Airline Pilots Association of New Zealand (NZALPA) made a submission on the resource consent application, particularly on the lack of adequate physical provision in the Landscape Plan to ensure the safety and security of the building, staff and associated car parking. NZALPA consider that the chosen site is exposed to elevated security risk because of its locational context within the Airport Retail Park and exposure to public access. NZALPA consider that "security is paramount for this essential facility and should not be compromised by "urban design" considerations”.

In response to NZALPA’s concerns and to ensure the safety and security of Airways staff, Airways is now proposing to provide five on-site car parks within the security fence. Five on-site car parks is the minimum number of car parks required for staff during shift changeovers.

The revised Landscape Plan (SK-535 Rev A) in Attachment 2 to this letter provides this amount of car parks for staff within the secure area. We understand that this revised car parking and landscaping arrangement is acceptable to NZALPA.

An implication of providing additional secure car parking spaces is that refinements to the landscape and open space treatment are proposed, in a manner which maintains the key elements of the original design intent. A blend of soft, hard and structured landscape elements have been proposed to mediate between the functional/security requirements of the tower site and the adjacent public realm. The proposed revisions are considered to achieve a high quality outcome as they achieve an effective balance between the overall landscape and design concept and the security and functional requirements for safe air traffic control.

The Design Statement submitted in Appendix 3 of the AEE states that proposed planting species are chosen from Greater Wellington Regional Council’s suggested species list for the immediate coastal area. The detailed planting plan is contained in Attachment 2 to this letter. The proposed planting species have been selected due to their appropriateness for windy coastal conditions and this local environment. Further details on the appropriateness of the
planting species to achieve the overall design concept is contained in the Design Statement Addendum (Attachment 1).

**Water Tank**
A recent change in building regulations (fire safety) requires all Importance Level 4 buildings over 25 metres in height to contain a Class A water supply on-site. A 30,000L tank will be provided on-site, as shown on the revised landscape plan. The water tank will be integrated into the design concept and landscape using structured hard landscaping and additional screening.

**Wind Effects**
Your email noted that Wellington City Council’s wind advisor, Mr Donn has indicated that “more than a simple wind assessment is required, because the proposal is for a new 32.5 metre high building in a very exposed area of the city, which is anticipated to increase wind speeds at street level by 20% to 30%”. In subsequent discussions Mr Donn expressed concern about pedestrian safety from increased wind speeds at Tirangi Road and George Bolt Street, and sought clarification on the existing wind speeds on site, anticipated increase in wind speeds on site, and mitigation measures to reduce potential adverse effects on pedestrian safety.

Mr Jamieson has responded to these matters and provided the additional information in the attached letter (Attachment 3). In response to Mr Donn’s comments and to further protect pedestrians from potential wind effects on Tirangi Road and George Bolt Street, Airways considered reducing the porosity of the palisade fence surrounding the site, and/or to add additional fencing or planting adjacent to George Bolt Street. However, these design changes were not supported by Wellington International Airport, the property owner of the site, who Airways requires approval from for any ground works on the site.

The attached letter also reviews the effectiveness of the revised landscape plan in mitigating wind effects, and concludes that the proposed hard landscaping elements (including the palisade fence) and the existing and proposed planting around the site would keep the public away from the windier areas close to the corners of the building, and mitigate most of the wind effects of the building on the publically accessible areas further away on George Bolt Street and Tirangi Road.

Stuart Dun, a Landscape Architect at Studio Pacific Architecture has confirmed that the selected planting species (notably the Coprosma, Muehlenbeckia, and Coastal Flax) are particularly hardy and will be focussed around areas of the site subject to higher winds. Also, a wind resistant mulch (such as the Gro-Rich Hurricane Mulch) will be specified to exposed areas of the site to assist plant establishment and minimise maintenance issues associated with high winds.

**Concluding Comment**
Taking into account the revised resource consent drawings and additional clarification on the above matters, the conclusion reached in the AEE still applies; that the proposed control tower is appropriate in the surrounding environment, and the actual and potential adverse visual amenity effects that may result from the proposal are mitigated through the distinct building design which achieves a ‘landmark’ feature for Wellington City. Overall, the proposed
control tower is anticipated to make a positive contribution to the Airport Precinct and the winder locality.

We trust this information clarifies these matters for you.

Please do not hesitate to contact me if you require further clarification on any of the above matters.

Yours sincerely
BOFFA MISKELL LTD

Jaimee Semmens
Planner

Attachments:
Attachment 1: Addendum to Design Statement.
Attachment 2: Revised Resource Consent Drawings
  • RC-04 (Proposed Site Plan) Revision 0C
  • RC-05 (Proposed Landscape Planting Plan) Revision 0B
  • RC-20 (Elevations North & East) Revision 0B
  • RC-21 (Elevations South & West) Revision 0B

cc: Peter.Rivers@airways.co.nz
Attachment 1: Addendum to Design Statement
30 June 2015
1990.62

Jaimee Semmens
Boffa Miskell
PO Box 11340
Wellington 6142

Dear Jaimee

Airways Wellington Control Tower – Addendum to
Architectural Drawings and Design Statement

Please find the following addendum to the March 2015 Architectural Design Statement submitted as part of the Resource Consent application for the Airways Wellington Control Tower (SR No. 325662).

Section 8: Open Space and Landscaping

Revised Drawings
The following revised drawings supersede the drawings previously submitted. These drawings are attached and form part of this addendum:

- RC-04 (Proposed Site Plan) Revision 0C
- RC-05 (Proposed Landscape Planting Plan) Revision 0B

Deleted Design Statement Sections
The following sections of the March 2015 Design Statement are deleted:

- Section 8.1: Open Space Treatment
- Section 8.2: Access
- Section 8.3: Planting

New Design Statement Sections
The following sections are to be read in lieu of the deleted Design Statement sections noted above:

- Section 8.1: Functional Landscape Requirements
Airways has a number of functional requirements to achieve within the approximately 888m² leased site area. This includes requirements for secure and non-secure car parking for Airways staff, building access to a raised ground floor for people and equipment, and access through the site for a re-fuelling truck to replenish the generator’s fuel tank.
A number of functional and security requirements have been introduced to the design of the site since the submission of the resource consent application. These include:

Secure Parking for Night Time Shift Changes
The Air Line Pilots Association (ALPA) have raised concerns in their submission around the security of staff members during night shift changes. In response, it is proposed to increase the number of car parks contained within the site's secure fence line. Airways have calculated that the number of car parks required to accommodate night shift changes is five.
Parking within the secure fence line has been redesigned and five car parks are provided in the following ways:
• One park (number 3) has been integrated into the entry stair and ramp design immediately to the north of the tower;
• Four 30 degree angle car parks (numbers 4 through 7) and a manoeuvre space have been provided to the east of the tower.

Secondary Sprinkler System Water Supply
Recent changes to the New Zealand sprinkler standard have required that a secondary water supply be introduced to the tower site. This had not yet been identified as a requirement at the time of the original resource consent application. The purpose of the secondary water supply is to provide for a supply of water on site in the event that the tower is severed from the town water supply (such as following a large earthquake).
The tank is required to have a capacity of around 30,000L. An area is required next to the tank for a pump to charge the water supply. In response to this new requirement, a tank and pump are proposed to be located directly to the south of the tower, in line with the west external wall.

Section 8.2: Landscape and Open Space Treatment
The overall landscaping and open space treatment has been reviewed in light of the security concerns raised in the ALPA submissions and the addition of a secondary water supply, as noted above. In response, some refinements to the landscape and open space treatment are proposed to respond to these requirements in a manner that maintains key elements of the original design intent.
A blend of soft, hard and structured landscape elements have been employed to mediate between the functional/security requirements of the tower site and the adjacent public realm. Landscape treatment has also been used to acknowledge a relationship between the form of the tower itself and the ground plane.
A focus has been placed on layering soft and hard landscape elements between the tower and the Tirangi Road edge and George Bolt Street corner, due to the enduring role of these streets as public spaces. Conversely, due to the spatial constraints associated with the secure parking requirements noted above, the landscape presents a functional face back in towards the retail park (albeit moderated by some soft landscaping).
The proposed site and landscaping plan is illustrated on drawing RC-04 (Proposed Site Plan) Revision 0C.

Treatment of the Street Edge
Hard and soft elements form a landscape 'ripple' along the Tirangi Road edge to acknowledge the relationship between the form and mass of the tower and the ground plane. This also serves to dress the street facing extent of foundation rattle space associated with the base isolated foundation structure.
Structured landscape bunding elements (approximating the northern and southern corners of the building foundation below ground) provide form to the
landscape by retaining the landscape to create a change in level (the height of these elements varies, up to one metre). The exact material and detailing is subject to detailed design, however it is envisaged that these could be formed either through faceted concrete or through folded black steel plate. Between these two elements the change in level is moderated by a landscape batter at an approximately 1:4 slope.

Facets of soft landscaping, running in the north-south direction along the site, provide a degree of visual structure to the ground plane that references the dune landscape to the south of the site, as well as echoing the faceted composition of the tower façade.

A street entry for pedestrians between the tower site and Tirangi Road has also been introduced as both a functional and urban device to strengthen the relationship between the tower site and Tirangi Road. This creates a pedestrian street entry for tower users and visitors, as well as creating an ‘address’ for the site at Tirangi Road. The entry is integrated into the surrounding hard and soft landscaping.

Fence Design
Security and visual design drivers generate the design of the secure fence. The fence is required to be non-climbable, as well as being as visually permeable as possible. The exact material and detailing is subject to detailed design, however it is envisaged that the fence is formed from a series of tubular poles of varying heights, cast into a concrete footing (refer figure 37 of the March 2015 Design Statement). The poles forming the fence would be spaced no more than 100mm apart.

To soften the visual impact of the top of the fence line, the height of each pole in the palisade will vary in a pattern, and vary between 1.8m and 2.2m in height.

Treatment of Secondary Water Supply Tank and Pump
The secondary water supply tank and pump is seen as an opportunity to create an object in the landscape that is visually anchored to the tower. For this reason the tank and pump will be dressed to create a single object that echoes the tower. While the exact material and detailing is subject to detailed design, it is envisaged that the tank and pump are clad in a manner that echoes the faceted façade of the adjacent tower. At its base, the tank and pump key into structured landscape bunding described above.

For technical reasons, the secondary water supply tank and pump are partially submerged into the ground. This means that the overall height of the tank is approximately 2m above ground level.

- Section 8.3: Planting
  Refer to the Proposed Landscape Planting Plan (RC-05 Revision 0C) for the arrangement of planting in and around the site.
  Proposed new planting species are chosen from the Greater Wellington Regional Council (GWRC) suggested species list for the immediate coastal area. New planting is structured to strengthen the landscape treatment described above.
  A series of existing cabbage trees and flax at the southern edge of the site (around the existing pump station) are well established. The trees vary in height from between three and six meters. These trees and flax are to be retained and tided as they provide a degree of verticality that visually anchors the soft landscaping to the corner of Tirangi Road and George Bolt Street, as well as providing a degree of shielding from northerly winds.

Section 9: Materials and Detailing
Revised Drawings
The following revised drawings supersede the drawings previously submitted. These
drawings are attached and form part of this addendum:
• RC-20 (Elevations North & East) Revision 0B
• RC-21 (Elevations South & West) Revision 0B

Revised Design Statement Sections
The following text is to be read in addition to the text of the Design Statement sections
noted:

• Section 9.2: Elevational Treatment
Design development of the elevational treatment since the resource consent
application was submitted has been undertaken in a manner that strengthens
the compositional coherence of the tower outlined in section 9 of the Design
Statement. Key design developments include:

East & West Elevations
Reduction of the number of window openings in the east and west elevations
has increased the solidity and texture of the facades. In the east elevation this
has reduced from 12 to 6, and for the west elevation this has reduced from 11 to
7.

Further work into the technical detailing of the façade has narrowed down the
material choices of the cladding to either of the following:
• Glass reinforced concrete with a clear coat impregnation, moulded to form
faceted panels;
• Pre-finished sheet aluminium, finished in either PVDF coating, powder
coating or pre-anodised.

Further technical design investigation is being undertaken into the specification
of finish and the manner in which the facets are created. The final formation of
the folds within the façade panels is subject to further technical design
investigation and may vary slightly depending on the material chosen.

North & South Elevations
To support the coherency of the north and south elevations as 'polished'
elements, design development of these elements has focussed on simplifying
and rationalising the façade.

The revised façade design is based on regular vertical alignments, which
graduate in width from thin to wide panels across each elevation. This allows the
north and south elevations to form a rhythmic relationship with the cladding
panels on the east/west elevations. The revised arrangement has the added
technical advantage of mapping the wind pressures applied to the façade, and
avoids a potential durability issue associated with glass staining of staggered
glass panels observed with other raked curtain walls in use in Wellington.

Additionally, simplifying the arrangement of the main building entry has refined
the north elevation. Use of an entry canopy combined with an entry alcove
carved into the ground floor of the building allows strengthens the sense of entry
within the façade. Additionally it allows for service access doors to be removed
from the north façade and located within the alcove.

Note that for all facades, the exact arrangement of external mechanical louvres
may need to vary to a degree to suit technical requirements.
The proposed revisions to the landscape design noted above achieve a balance between the overall landscape concept and the security and functional requirements for safe air traffic control that have been described above.

Additionally, the design development of the façade undertaken since the resource consent application has been undertaken in a manner that supports and strengthens the original design intent.

Yours sincerely

[Signature]

Evzen Novak
Studio of Pacific Architecture Ltd

Encl.

RC-04 (Proposed Site Plan) Revision 0C
RC-05 (Proposed Landscape Planting Plan) Revision 0B
RC-20 (Elevations North & East) Revision 0B
RC-21 (Elevations South & West) Revision 0B
Attachment 2: Revised Resource Consent Drawings
Attachment 3: Response to wind effects
29 June 2015

Mr Peter Rivers  
Airways New Zealand  
P.O Box 14131  
Christchurch

529F31.00

Dear Peter

Wellington Airport Control Tower – Additional Information (Wind)

This letter is in response to comments made by Wellington City Council’s Wind Consultant, Mr Michael Donn, in review of our wind assessment report on the proposed new control tower at Wellington Airport (Opus Research Report 15-529F31.00, dated 19th February 2015), and in our recent teleconference discussions. Essentially, Mr Donn believes that (1) “more than a simple wind assessment is required”, (2) that the proposed building is likely to increase wind speeds by 20% to 30%”, and (3) that more specific information was required regarding existing wind conditions, the expected wind effects of the building, and mitigation options. I would make the following comments in response.

Existing Wind Conditions

(1) As described in my wind assessment report, existing wind conditions in the area around the site will vary depending on the degree of shelter provided by the buildings in the area, and the degree of direct exposure to the horizontal wind flows that predominate in this area. Wind speeds are expected to be slightly higher for southerly winds than northerly winds because of the proximity to Lyall Bay.

(2) In the immediate area around the proposed control tower site, existing gust wind speeds are expected to range mostly from “moderate to moderately high”, with a localised area of “high” speeds around the corner of the adjacent retail centre. In our assessment report “moderate to moderately high” gust speeds range from 15m/s to 20m/s, and “high” gust speeds range from 21-23m/s. The threshold for safety specified in the Wellington City District Plan is 20m/s.

Effects of the Proposed Control Tower

(3) In the wind assessment report I indicated that, because of the relatively slender aspect of the new control tower, the vertical wind flows usually expected from a building of this height would not be fully realised at ground level, with a significant proportion of these vertical wind flows spilling around the sides of the tower before reaching the ground. However, I acknowledged that some vertical wind flows will still reach ground level, and combine with existing horizontal wind flows which will be deflected around the tower.

(4) The main effects of the building will be highest around the windward corners in both northerly and southerly winds. In these localised areas wind speeds could be expected to increase by around 25% if the new control tower was considered on its own. However, public access to these areas will be prevented by the palisade fence, the hard landscaping elements and planting.
(5) I have reviewed the revised landscape plan (ref SK536) which has been amended to include more secure car parks to improve the safety and security of the control tower site. I consider that the revised landscape plan, including the palisade fence, hard landscaping elements along Tirangi Road/George Bolt Street and planting will provide some mitigation of wind conditions.

(6) The effects of the tower also will decrease significantly with distance, and both the hard landscaping elements and planting will provide some mitigation of the effects. Figure 1 shows a photo of the existing planting on the north side of George Bolt Street, between the control tower site and the retail centre to the south. Figure 2 shows the existing planting between the control tower site and Tirangi Road. This shows that planting of reasonable height and density can be established in the areas adjacent to the control tower under existing wind conditions. Accordingly, I would expect that there may be some limited deterioration in wind conditions extending downwind from the tower block in northerly and southerly winds. However, I do not believe that this would be as high as the 20% to 30% indicated by Mr Donn in the publically accessible pedestrian areas of Tirangi Road and George Bolt Street, and I would suggest that the effects would be of a level that is unlikely to be noticed by pedestrians.

Figure 1: View of existing planting – looking north across George Bolt Street
Figure 2: View of existing planting from Airport Retail Park – looking south across Tirangi Road

(7) I stated in the assessment report that the benefits of the palisade screen could be improved by reducing its porosity, either by reducing the spacing of the elements, or by incorporating additional elements into the screen. Airways New Zealand considered including such changes. However, this option was not approved by Wellington International Airport Ltd, the property owner of the site, who Airways New Zealand require approval from for any ground works on the site.

(8) Without a wind tunnel study to determine the exact magnitude and extent of the effects of the new control tower on wind conditions, and acknowledging that the new tower would cause some limited deterioration in wind conditions, additional mitigation was discussed to address Mr Donn's concerns. Vertical screens adjacent to George Bolt Street, and/or additional planting south and west of the existing substation were considered as viable potential options that Airways New Zealand were prepared to include in the design. Again, these changes were presented to Wellington International Airport, and were not approved for the same reasons as above.

Concluding Comment

(9) I believe that the revised landscape plan, including the palisade fence and hard landscaping elements, combined with the existing planting, and the proposed additional planting, have the potential to (a) keep the public away from the windy areas close to the corners of the building, and (b) help to mitigate most of the effects of the building in the publically accessible areas further away on George Bolt Street and Tirangi Road.

If there is anything you wish to discuss regarding this additional information, please do not hesitate to call me (021 243 9386).

Regards

[Signature]

Neil Jamieson
Research Leader - Aerodynamics