Appendix 4: Urban Design Assessment
26 March 2015

Urban Design Assessment
of the proposed
Wellington Control Tower
at
Tirangi Road, Rongotai

Introduction
This report provides an assessment of the potential urban design outcomes arising from the proposal to construct a new air traffic control tower at Wellington International Airport along the east side of Tirangi Road, Rongotai. The project aims to maintain air safety and meet the needs of Wellington International Airport’s future over the medium to long term. The proposed control tower would replace the current control tower, currently located at 34-36 Tirangi Road, to the north of the site in a residential area. Additional background to the project can be found in the resource consent application prepared by Boffa Miskell Ltd and the Design Statement prepared by Studio of Pacific Architecture Ltd.

This assessment describes the characteristics of the setting and the proposed building before proceeding to assess the outcomes in relation to District Plan clause 11.4.2 Assessment Criteria for Resource Consent. The criterion that the design of buildings “accords with good urban design principles” is broad and invites discussion around the principles of good urban design that should guide assessment of this proposal. To that end, a meeting was held with Wellington City Council officers and advisors to agree an assessment framework. The headings under which this report
assesses the details of the proposal were agreed to at that meeting. Discussion under each heading traverses the relevant principles.

The report concludes with a summary of the outcomes, which are overall considered to be positive.

**Site and Context**

The wider context for the development is the valley extending between Melrose and Mt Victoria in the west to the Miramar Peninsula in the east. This valley extends out into Evans Bay in the north and into Cook Strait in the south. This outline of the wider context foreshadows that the proposed development will be seen from, and in relation to, a broad and diverse area. The key features and landmarks in this wider setting are the green, bush clad hills that form the valley, the distant Orongorongo Range, the edge between the land and sea and the expansive area of built fabric between this outline. Other discernible features in the area include Wellington International Airport, distinguished by its runway and taxiways, and the ASB Sports Centre.

Views from elevated locations around the periphery of the valley are expansive and these enable the physical geography of the setting to be understood. The built environment is most dense along the floor of the valley and assumes a lower density on the hillsides. The layout of buildings on the hillsides help suggest the variable topography; dwellings are positioned along topographical levels with the bush clad areas between perceived as steep and unsuitable for development. In this setting the ridgelines of the hills at each side of the valley and the shorelines are strong and compelling edges. Although dense in areas, when one rises above it onto the hills, the built environment is understood to perch upon a powerful and at times (considering the weather) dynamic natural setting.

The immediate context of the site on the valley floor incorporates the Airport, Lyall Bay, and the buildings and spaces surrounding Tirangi Road. These are the areas from which the proposed control tower will be most readily visible and with which the project will form the closest relationships. Tirangi Road terminates at its southern end in a large roundabout at Lyall Bay Parade. The Lyall Bay beach is immediately south of this. This corridor enables views out to the sea from the site and will enable direct views from the beach to the proposed tower.

Although within easy reach of a natural setting, the area around the site has a strongly built up feel about it. The buildings around the site are large format and used for light industrial activities along the western side of Tirangi Road and for retail purposes to the east and south. These buildings are utilitarian in appearance, the retail centre is in part housed in reused warehousing buildings. While those on the western side are modest in scale, the buildings of the retail centre are large, belaying the single level of occupancy.

The site itself is currently used for car parking purposes in conjunction with the retail centre activities. Around this site are areas of native planting, modest in height and scale. The conditions are harsh and much of the available land has been paved. Two small structures are located to the south of the site in the landscaped verge. The Design Statement prepared by StudioPacific Architecture provides additional information on the site and surrounding setting.
The Proposal

The form of the control tower adopts a number of important characteristics and dimensions that respond to the practical requirements of this building typology. Those that affect the overall form and location of the project include the height of the control “cab”, the form of the cab, the plan dimension of the tower, its location relative to the runways and the site development around the base of the tower. The Design Statement discusses the approach StudioPacific Architecture have taken to the challenge to incorporate these ‘must haves’ into a design that responds to the immediate setting and to its wider context.

An outline of the key features of the project that have been referenced in this assessment of the urban design effects is as follows. The control tower adopts a unique profile, suggesting that the form has endured a diagonal shift, pushing the top edge toward the north. A narrow ‘shelf’ at the top of the tower, just under the cab, remains in the ‘original’ location of the top of the tower, helping viewers to register the extent of the shift. The cab at the top of the tower is another of the unique features of the design. It is twelve sided and conical in shape. The conical shape splay out toward the top. The interface between the cab and the rectangular plan shape of the tower is made across an elongated, dodecagon (12-sided) “sub-cab” containing stairs and equipment.

The design of the cladding on the east and west facades serves to reinforce the shift of the tower. This cladding has discernible three dimensional depth and mediates between the shifted, diagonal grid and the vertical line from which the tower has been displaced. The visual depth and texture of the cladding is driven in part by one of the design metaphors employed by the architects. This metaphor, which suggests that the form has been ‘polished’ on its north and south facing facades, is supported by the use of a proprietary glazed curtainwall system. The glazing on these two sloping surfaces is proposed to be a combination of clear, fritted and opaque glass. The glazing is to be flush glazed into the support system which decreases in ‘density’ over the height of the building. This is another technique that will impart a sense of movement into the design.

Access to the building will be from the north. The entry is highlighted by steps and a ramp. Other doors to ancillary spaces on the ground level can be seen in the plans accompanying the resource consent application.

The site is to be landscaped using plants common to coastal areas including grasses, shrubs and flax. The planted areas of the site are specified to integrate with the existing planting along the footpath edge. Also integrated with the site development are two parallel hard landscape features to the east and west of the tower. These landscape features (short walls) are made of panels designed to echo the textured areas of façade treatment on the tower. Within these panellised walls a perimeter palisade fence is to be established. Gates are detailed into the palisade fence to enable pedestrians and motorcars to pass to and from the site.

A proposal to light the tower has been developed. Firstly, the points of the compass are referenced by four red lights on the balustrade at sub-cab level. Secondly, the rough textured east and west facades of the tower are to be lit using LED lights. This lighting array will wash these two faces and vary according to wind direction and intensity. It is anticipated that in this way, the tower, aided by the lighting, will reference the well-known collection of kinetic sculptures in Cobham Drive.
Assessment of urban design outcomes

As noted, the headings, if not the principles, under which the urban design outcomes of the proposed development are to be assessed have been discussed and agreed with Council officers due to the absence of specific urban design criteria in the District Plan for the Airport Precinct. The headings are as follows.

1) Relationship to context
   a) Wider setting (townscape)
   b) Street context
2) Design integrity
3) Street edge relationship
4) Materials and details

It can be noted that these headings reference the key issues outlined in the Central Area Urban Design Guide as well as other design guides in the Wellington City District Plan.

Relationship to context

A key consideration is how the proposed development will fit with the setting. Relationships between the proposed control tower and the surrounding environment will be formed at a range of scales, largely dependent on the vantage point from which the project is being viewed. In and around Tirangi Road the relationship will be immediate. In close views, the building and site development will be compared to those around it, principally in scale and in form. In more distant views toward the building it will again be compared to the environmental features and development around it. For the purposes of understanding the urban design outcomes it is considered appropriate to analyse contextual relationships at these two scales, the wider townscape setting and the closer streetscape setting.

Wider setting (townscape)

Several factors influence how the proposed control tower will be perceived in views taken from around the valley in which Wellington International Airport is situated. Firstly, the building will be recognisable as an air traffic control tower, a form that is closely associated with airports. While the tower form itself is unique and responsive to this particular site, the cab atop the tower is widely recognisable as a control tower. A factor complementary to the wide recognition that the cab will enjoy is that Wellington International Airport also enjoys wide recognition throughout the area. The location of the airport is widely understood by people, residents and visitors alike. The runways, aeroplanes and terminal facilities are seen in views from elevated positions throughout the valley. These are viewing points from which the proposed control tower would also be seen. People expect to see a control tower in or around an airport and this will affect people’s perceptions of the building proposed in this application. People are primed for a building such as this and they will as a consequence be more receptive to it, irrespective of its design.

Secondly, the visual impact of the proposed control tower will be reduced through distance and elevation when seen from many vantage points. Elevation tends to compress relative heights of objects and distance serves to diminish relative differences of scale and height. Nevertheless, the visual simulations [drawings RC-30 to RC-39 inclusive] confirm that the proposed control tower will stand taller than the buildings around the site and that it adopts a unique form, which could conflict with its neighbours. There are three circumstances in which the proposed control tower will be
perceived in mid-range and longer views; where the viewer is elevated, where the viewer is on the valley floor and the building is seen against the hills or other backdrop and where the viewer is on the valley floor and the tower is seen in silhouette.

The viewer is elevated

In such views, represented by visual simulations from viewpoint sites 1 (Mt Victoria), 2 (Hornsey Road, Melrose) and 9 (Tannadyce Street, Strathmore), the two factors outlined above come into play. When seen from elevated positions east or west of the site the airport will also be in the views, either as a foreground or background to the site. Viewing from more acute angles, as represented in the visual simulation from viewpoint site 1 (Mt Victoria), the runway and buildings of the airport sit alongside the proposed building. The more distant views see the proposed building meld with the buildings around it. In these views the differences in height are minimised and the proposed tower will read as a part of the fabric to the west of the airport runway. This same effect will be experienced in views taken from the east (refer viewpoint site 9 (Tannadyce Street, Strathmore) visual simulation). The built fabric to the west of the airport is more consistently dense and the tower would be read against this. The proposed building will tend to blend with this background. From the west the tower will stand out to a greater extent as in many cases it will be seen in part against the open space of the runways. The viewing distance is also shorter. I am of the view that the proposed building will be perceived positively in these views as it is interesting in form, piquing the curiosities of the viewer. Although much larger in scale, the effect of a unique form in this environment can already be seen in the ASB Sports Centre to the north. This building invites engagement because of its shape, enhancing people’s aesthetic experiences. On the other hand, the building is not seen to offend and since its construction has become a recognisable and accepted part of the built environment. Without wishing to draw comparisons around scale impact – the effect of the proposed control tower will be much less in this regard – the ASB Sports Centre provides a relevant example of how a unique form might be experienced in this setting from a distance. In my opinion, the proposed control tower will have a positive impact on the townscape in mid to long range views from elevated positions.

Viewing the tower from the valley floor against a backdrop

Views from viewpoint sites 3 (Queens Drive Lookout), 7 (Calabar Road Lookout) and 8 (Wellington Airport Terminal) suggest mid-range views in which the proposed control tower would be seen against a backdrop comprised of hills covered in buildings and vegetation. The viewing distances are closer and the airport may not be visible. Fenestration patterns, surface details and the nature of the cab element atop the building would become more relevant in such views. In these views the proposed building assumes much more significant scale relationships with the viewer and its setting. However, the hills against which the building would be seen serve to moderate perceptions of scale in the other direction, this proposed building and all other parts of the built environment appear less significant in relation to these landscape features. In these circumstances the vegetation and landform retain prominence.

The mid-tone colouring and surface textures of the proposed building will enable it to not stand out when it is viewed against the darker coloured backdrop of the hills. A lighter coloured building would have stood out in similar circumstances. An example of this can be seen in the visual simulation from viewpoint site 7 (Calabar Road Lookout - RC-37). The two lighter coloured hangars stand out more prominently than the proposed tower and a key reason for this is their light colouring and lack
of surface variegation. The scale of the building is also moderated by the backdrop of the eastern and western hills in mid-range views from the valley floor.

The form of the building is different to others around it as its form reflects its function. This is considered a positive attribute. There is the opportunity for a control tower building to be special and in this sense, the design rises to the challenge to punctuate views from moderate distances. Through effective design it will not be foregrounded and will instead invite the curious viewer to engage with its form. From these mid-range viewing distances the building can be seen as a part of the general fabric of structures around the airport and also as something special.

Silhouetted form seen from the valley floor

The most significant visual perceptions of the proposed control tower will see it silhouetted against the sky. In midrange views, such as is represented in the visual simulation from viewpoint site 4 (Lyall Bay beach - drawing RC-34), the profile of the tower assumes a higher level of significance. Under such scrutiny I am of the opinion that the design is successful and that the building will be positively perceived. It is in these midrange views that the airport is still a part of the experience, if not directly then by an awareness of Wellington’s geography and by the sounds that are associated with it. Viewers will be reminded of this co-location by the profile and shape of the cab element.

In these views, the top 1/3 height of the tower becomes most relevant and the overall height of the tower is moderated by other buildings in the foreground. This is a circumstance of the site, which is situated in a built up area. As the visual simulation demonstrates, the overall height of the building does not lead to negative streetscape effects. Although the tower profile will punctuate the horizon, it will occupy a very small length of it.

Where views seek out and focus on the profile of the tower I consider that the design is of such a quality that it will be perceived positively. Again, it is a dynamic and interesting shape that invites further investigation. The profile will add interest in an otherwise indistinguishable pattern of buildings around the site. As will be discussed below, the design of the project is coherent and as such, it will improve the visual quality of the surrounding area. The height and scale of the building are not such that it will be seen to dominate in mid-range views. It will not conflict with views toward the hills or the shoreline. It will not detract from the quality of midrange views and will instead improve these.

Street context

This evaluation turns now to consider the quality of relationships that will be formed between the proposed building and the street context. The nature of these relationships will influence the way the building and site development are ultimately perceived. Scrutiny of the design is closer when considering these relationships, largely because the potential impacts will be so much greater. The quality of the relationships at this level will turn on relationships of height and scale. They will be affected by the architectural form of the building and by where it is sited relative to other buildings and the public space network. The effects of these relationships may best be conceived through asking the question “how will the completion of this project affect the experience of walking along Tirangi Road?”

Rising to some 32.5 metres above the street, there can be little doubt that the proposed building is tall. Many of the surrounding buildings are also tall, but no more than 12 metres. As necessitated by the function of the building as an air traffic control tower it stands well above others around it.
Despite this, I am of the view that the height is acceptable in this setting. In part this view is informed by the building typology, which one expects to rise above others in the vicinity, and in part by the height and typology of the buildings around the site. This is not a residential area.

Perceptions, even at the close scale of the street, will be affected by the obvious function of the building. One expects air traffic control towers to be tall to enable the activity. Viewers will be able to appreciate this aspect of the design and readily accept it. Nevertheless, the height will also be perceived positively, in my opinion. Although I cannot classify the building as elegant – that is not the test here – it is certainly attractive. It has a slender form with vertical proportions and assumes a dynamic profile. These are all architectural success factors. To be successful the design needs height, which people will understand and, which in turn, will make its height acceptable in their eyes.

The small plan area of the tower will reduce perceptions of bulk. The proposed building will be perceived as less bulky than those around it and this will certainly help it to be seen positively in the street setting.

The substantial area of open space that will continue to flow around the control tower will also help mitigate against any potentially negative effects arising from the building height. There will continue to be a substantial area of car parking between the tower and the retail buildings to the north and east. George Bolt Street is situated between the site and the buildings to the south. Tirangi Road provides an open space buffer between the control tower and the buildings to the west. While the quality of these spaces vary, they create useful buffering between the proposed building and those around it. First and foremost, this will enhance the potential for the building to read as a tower. Secondly, the space provides for moderation of differences in height and bulk. Both are important factors that help ensure aesthetic success of the control tower.

The proposal is to establish the building on an area of privately held land adjacent to Tirangi Road, a public street. The location of the proposed development does not cause the public space network to be interrupted or negatively influenced in any way. Indeed, as will be discussed below, the project will serve to reinforce what is currently a poorly defined edge along the eastern side of Tirangi Road.

It is important that new development on the western side of the airport does not impede views of the airport, a requirement the District Plan also articulates. Views are currently available along George Bolt Street and through gaps between buildings to the north of the retail park. The location of the proposed building on the site would not affect these views at all.

**Design integrity**

As a building that will, by its nature and by its location, be prominently seen it is important that the proposed control tower is also aesthetically well designed. There are a number of well understood and accepted principles that can guide the design and assessment of buildings in this respect. The principles can be grouped under the headings of order, visual interest and proportional relationships.

I am of the opinion that the building is coherently designed and so will make a positive, attractive addition to the setting. Separation distances to adjoining buildings and the typology enable the design to be self-referential and not be bound to mimic or otherwise reference characteristics of the buildings around it. There is little architectural merit in any of the buildings and structures around the site. Instead the design references its setting and the environmental forces acting upon it in abstract terms. The architect’s design statement explains these references and how they have influenced the design.
As a building, the design embodies substantial visual interest that can be observed at several scales. The dynamic ‘lean’ introduces substantial interest, which in my view is the characteristic that will make this building memorable in the Wellington landscape. The shelf along the top of the rectilinear section of the building helps the viewer register the extent of the lean, which I understand to be in the order of 12.5 degrees. At a more immediate scale two different cladding types work together to generate interest. The east and west elevations of the building are to be clad in a system of panels, formed from a three-dimensionally textured, prefinished material. The texture is generated through manipulation of the surfaces around lines that are vertical and that follow the inclined shape of the tower. The other two sides are to be clad using a glazed curtainwall system. Through the use of different glass opacities and backdrops and a variable setout of glazing bars, these leaning surfaces will change with the natural lighting conditions throughout the day and night. There can be no doubt that the cab also helps generate visual interest, firstly by its shape and then through the way people then associate this with the air traffic control activity.

The site development will be perceived as three related but also distinct parts; the cab, the tower and the site development, particularly the hard landscape feature elements. These three elements must work together compositionally in order for the project overall to be perceived positively. At this level of consideration, the design outcome is largely dependent on the designer’s ability to ‘sculpt’ a beautiful object. It is appropriate to consider the project as sculpture as it will by its location relative to other structures and overall proportions read as an object in the landscape. The location of the cab relative to the leaning tower helps centre the composition, allowing the dynamic part of the composition to act freely. The cladding east and west façade cladding helps generate order through rhythm at a different scale of consideration. I am of the opinion that the project is well composed and as a consequence will enhance people’s experience of this part of the city.

The proportional and compositional relationships between the cab, the tower and the site development are appropriate. The form is dynamic and yet it observes other principles of good design such as harmony and balance. The height to width to depth proportions of the tower are pleasant. The visually pleasant proportions create additional visual interest compared with the potential proportions of a shorter building.

**Street edge relationship**

Of particular interest to the urban design outcomes is the way in which the building and site development will relate to the street edge. The interface between the project and public space at the footpath immediately in front of the site provides members of the public with the closest experience of the building. In addition to how building size will be perceived at this close range the relevant issues to consider are the extent to which the development helps define the public street space, which is currently weak, and the visual quality of the landscaping and site development generally.

The form and scale of the building have been discussed above. It is noted that the proposed building is very tall and will be unique in the area, if only for this reason. The relative slenderness of the building arising from the relatively small floor plate helps limit potentially negative effects, such as sensations of overwhelming and of shading the street, that could result. Owing to the plan dimensions however, negative outcomes will be very limited and will be more than offset by other, positive outcomes.
One of the positive outcomes is an enhanced edge definition along Tirangi Road. The large car parking area currently defines this edge poorly and street space dissipates out across the site. The space currently feels vast when walking along the footpath. The planting along the street is of insufficient scale to contain the space in three dimensions. While the proposed building will occupy only a small length of this frontage it will enhance the street edge definition in conjunction with the buildings to the north and south and with the site development. This is a positive outcome of the project.

The building is aligned to the airport runway for functional reasons, which causes it to not be aligned to Tirangi Road. In this circumstance the misalignment is not only acceptable, it is considered to be a positive attribute of the plan. The landscape Plan (pg. 32 of the Design Statement) reveals the extent of the difference of alignment between the building and the street. This characteristic leads to several positive outcomes. Firstly, it distinguishes the new building from the others in close proximity, which are aligned to the street. Secondly, the tower is aligned to the car parking area and this is in effect the ‘carpet’ on which it sits. The relationship with the edges of the car park are a closer reference point for the tower on the ground. Finally, the alignment allows for a dynamic space between the tower and street edge. This space will be landscaped. Overall, the angled space between the tower and the street edge is considered to be a positive attribute of the development.

The base of the building will be comprehensively developed with hard, architectural elements and soft landscaping. Along with helping soften the appearance of the building around the base, the landscaping will provide visual amenity, additional edge definition and a metaphoric connection of this site to the Lyall Bay foreshore nearby.

**Materials & detail**

An important factor in the appearance of the building and therefore the urban design outcomes tied to environmental aesthetics, is the quality of materials and of detailing. Clearly these characteristics also affect the design outcomes at a more basic level. The proposed materials and detailing should therefore be evaluated to help ensure that the materials and details will support the anticipated outcomes over an extended period, if not the entire life of the building.

Materials and the ways they are put together can help generate visual interest in close and mid-range views. The colour of the proposed claddings and the visual interest they will generate have been discussed above. It is important that these outcomes are achieved. Cladding to the east and west facades is to be created from a pre-finished material, formed into cassettes or rain screen panels. A mid-tone colour and the texture of the three-dimensionally modelled panel surfaces will help the building achieve the relevant design objects at all scales of consideration. In mid-range and distant views the colour will recede, in mid-range and close views the cladding will generate visual interest, particularly as the sun plays across the surfaces.

In conjunction with the panels, the end walls of the tower element are glazed to generate contrast. The motivations behind this design detail are discussed in the architect’s design statement. These glazed curtainwalls will appear polished in contrast to the textured side walls. The materials and details work together to support an important design outcome. The materials to be used to construct the cab element atop the tower are more or less prescribed to meet the practical requirements for observation. A vision section extends around the full perimeter of the cab and, as a twelve sided form, it will appear almost circular. This helps the element to be integrated as a feature on top of the
rectilinear tower. The materials and detail, which will result in a sheer exterior surface with no visible glazing bars, are fundamental to achieving this crystalline form.

The materials used in this project must be robust. It is, without doubt, one of the harshest environments in the country. Final selection of the cladding materials will be made during design development, well before building consent is sought. The materials finally selected should achieve expected design outcomes as well as cope with the environmental conditions for the expected life of the building. To that end I understand that the curtainwall system will be specified to ensure that the supply and installation falls under the control of a single contractor. This will help ensure its durability. The applicant’s investment in a base isolated structural solution indicates their interest in ensuring the longevity of the facility. I expect the same level of commitment will be applied to the detailed specification of the building fabric. In this way the materials and details will support the overall design objectives and enhance outcomes over the life of the project.

Conclusion

The applicant proposes to construct a new air traffic control tower at Wellington International Airport. The proposed control tower would replace the existing control tower, currently located in a residential area. The new building will be situated on a site currently used for car parking in association with the Wellington Airport Retail Park. The characteristics of the proposed building have been described above and in the Design Statement prepared by the architects.

Addressing District Plan clause 11.4.2 Assessment Criteria for Resource Consent, I have assessed the proposal according to “good urban design principles” under a set of headings as to what constitutes “good urban design”, as agreed with Council officers. This assessment has determined that that potential urban design outcomes will be positive. The location of the project, design of the building and site development are all well considered. The design of the building has followed metaphors that have imbued the design with visual interest and connection, on several levels to the site and wider setting. In my view the project will become a valued asset to the owner and to the setting and the urban design outcomes will be positive.

Morten Gjerde FNZIA