

Before the Board of Inquiry
Waterview Connection Project

in the matter of: the Resource Management Act 1991

and

in the matter of: a Board of Inquiry appointed under s 149J of the Resource Management Act 1991 to decide notices of requirement and resource consent applications by the NZ Transport Agency for the Waterview Connection Project

Rebuttal evidence of **David Gibbs (Architecture)** on behalf of the
NZ Transport Agency

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REBUTTAL EVIDENCE OF DAVID GIBBS ON BEHALF OF THE NZ TRANSPORT AGENCY

INTRODUCTION

- 1 My full name is Alexander David Gibbs. I refer the Board of Inquiry to the statement of my qualifications and experience set out in my evidence in chief (*EIC*) (dated 12 November 2010).
- 2 I repeat the confirmation given in that statement that I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court.

PURPOSE OF EVIDENCE

- 3 The purpose of this rebuttal evidence is to respond to certain aspects of the evidence lodged by or on behalf of the submitters. Specifically, my evidence will respond to the evidence of:
 - 3.1 Dennis Scott on behalf of Auckland Council (Submitter No 111-8);
 - 3.2 Professor Errol Haarhoff on behalf of Living Communities & North Western Community Association (Submitter No 167 and 185);
 - 3.3 Melean Absolum on behalf of Living Communities (Submitter No 167-1); and
 - 3.4 Other witnesses as identified in my evidence.
- 4 In addition, I will comment on relevant aspects of the section 42A Reports prepared by Environmental Management Services (*EMS*) (dated 7 December and 20 December 2010).
- 5 In order to provide a concise statement of evidence and because several of the witnesses for submitters make the similar points. I have structured my evidence around matters identified in their evidence.

THE NORTH BUILDING IS INDUSTRIAL IN VISUAL CHARACTER

- 6 Several of the submitters¹ state that the revised design option for the Northern Ventilation Building² is industrial in visual character. I do not agree with that claim. The design has three components:

¹ Submitter Nos 111-8 (Scott, para 5.43), 120-1 (Marshall, para 12.1), 167/185-1 (Haarhoff, para 4.4,) 167-1 (Absolum, para 3.19), 175 (Black, para 36(f)), 185-1 (Mckay, para 6.15.2), 200-1 (Taylor/Aldworth, para 6(a)).

² The design is illustrated in Annexure A, Drawings Nos 8-15 in my *EIC*.

- 6.1 Underground facilities housing ventilation equipment, water tanks, and the like, totalling 1,541m²;
- 6.2 Four above-ground buildings totalling 1033m²;
- 6.3 The ventilation stack totalling 43m².
- 7 The underground component, being the largest, exhibits no visual character, industrial or otherwise. The ventilation stack obviously has industrial character. However, I consider that the four buildings do not exhibit typical industrial character, as explained below.
- 8 Industrial buildings are typically characterised by height in the order of 8-10m, large floorplates and simple regular geometry. The design of the four ventilation buildings is very different from that. At 180m², 219m², 230m² and 403m², the buildings are much smaller in area than typical industrial properties³ and, as stated in my evidence in chief (EIC)⁴, they are similar in floor area to several of the surrounding buildings.
- 9 **Annexure A** attached to my rebuttal evidence is a drawing showing the approximate size of buildings on and surrounding the site of the Northern Ventilation Building. It shows that within a 250m radius from the site, there are eight buildings that exceed the average size⁵ of the four ventilation buildings, including three buildings⁶ that exceed the floor area of the largest ventilation building.
- 10 Professor Haarhoff states (at para 4.2 in his evidence) that *"The building is industrial in function, scale and appearance and as the newest and by far largest building in the area will give the formerly residential suburb of Waterview an industrial face"*.⁷ With regard to scale, Professor Haarhoff is only able to make the claim he does by considering that all of the buildings are one. I consider that it is incorrect for him to do so because (as explained in paragraph 64 of my EIC), the four buildings are discrete units linked only by an open but covered corridor. To claim that the four buildings are one is analogous to summing the floor areas of all classrooms of a typical school campus and saying it is one building of the summed area because the classrooms are linked by covered walkways.
- 11 **Annexure B** attached to my rebuttal evidence is a drawing examining the frontage width of the houses in the immediate vicinity of the Northern Ventilation Building in comparison to the frontage widths of the revised design option. This analysis, sometimes referred to a "urban grain", shows that two of the four

³ Statistics NZ website notes building consents for the period December 2009 to November 2010 show average size of factories and industrial buildings in the Auckland Region to be 1116m².

⁴ Gibbs EIC, paragraph 78.

⁵ The average size of the four buildings is 258m².

⁶ Two school buildings and the BP service station.

⁷ Mr Scott (para 5.4.3) and Ms Absolum (para 3.19) make similar points.

buildings are in fact of typical width and, whilst the other two are wider than the typical frontage in the area, there are residential buildings in the area that are of similar width.

- 12 With regard to height, the four buildings at their highest are just 6.5m (as stated in paragraph 70.3 of my EIC). This is much lower than a typical industrial building and lower than the maximum height of 8m allowable within this zone. Only the ventilation stack is at a height that can be described as industrial-like.
- 13 I consider that Professor Haarhoff's assertion that the *"The building is industrial in ... appearance.."* can only be applied with any justification to the ventilation stack component. For reasons stated in paragraphs 65 and 66 of my EIC, I consider that the design of the four buildings is significantly elevated from what one encounters with industrial buildings. This does however require that the detailed design of the buildings be carefully considered, because to a large extent the success of this type of design stems from the quality of the detailing. The photograph below shows an example of a simple building, using the same type of concrete wall as is contained within the revised design, which by virtue of careful design achieves a simple beauty.



THE NORTH BUILDING SHOULD BE UNDERGROUND

- 14 Several of the witnesses⁸ state that the Northern Ventilation Building (except for the extract stack) should be underground. It appears from their evidence that some submitters may not understand that the revised design option shows the majority of the facility (measured in terms of floor space) to be underground. As stated earlier, the four buildings account for 1033m², whereas the underground component is 1,541m². In volumetric terms the four aboveground buildings account for 5700m³, whereas the underground component is 7,865m³.⁹
- 15 Should more of the Northern Ventilation Building plant be placed underground, Mr Walter's rebuttal evidence describes the above ground structures that would be necessary to accommodate gantry cranes and stairs. I consider that such structures would severely hamper the ability to develop the sites at the corner of Oakley Ave and Great North Road for housing at the completion of the project.

THE NORTH BUILDING IMPAIRS PEDESTRIAN SAFETY AND SENSE OF SECURITY

- 16 Several of the witnesses¹⁰ state that the Northern Ventilation building diminishes the opportunity for passive surveillance of Great North Road and thereby increases the opportunity for crime to go unnoticed.
- 17 Professor Haarhoff states "*While commendable this fragmentation (of the buildings) must be handled in terms of CPTED principles (Crime Prevention Through Environmental Design) to avoid dark recesses, blind corners and other features that can impair pedestrian safety and sense of security. The Blank walls of this structure may well be dressed up with artworks but the building will remain a barely inhabited windowless industrial structure for the length of the block*" (para 4.5).
- 18 Whilst I agree that the removal of the houses on the site of the Northern Ventilation Buildings does diminish the opportunity for passive surveillance, I consider that the revised design option mitigates this potential problem to a significant degree as follows:
- 18.1 The design avoids dark recesses, blind corners and other features that can impair pedestrian safety and sense of security. I understand that a proposed condition will deal

⁸ Submitter Nos 120-1 (Marshall, para 12.1), 167/185-1 (Haarhoff, para 4.3), 167-1 (Absolum, para 3.2), 167-3 (McKenzie, para 7.3), 178-1 (Sheaver, para 5(c)), 185-1 (McKay, para 8.14), 186-1 (Black, para 12), 200-1 (para 8(a)), 210-1 (para 5(d)), 252-1 (para 25).

⁹ As noted in my EIC (para 70.7), the same functions are accommodated underground as with the lodged plans, but the revised design option requires less space underground.

¹⁰ Submitter Nos 167/185-1 (Haarhoff, para 4.5), 167-3 (McKenzie, para 7.2), 185-1 (McKay, para 6.15.3).

specifically with the provision of lighting integrated with the building to assist with personal security; and

- 18.2 Contrary to Professor Haarhoff's assertion, the design does not constitute an "*industrial structure for the length of the block*". As stated in my EIC (paragraph 69), the revised design would reduce the length of the buildings so that three property titles at the corner of Oakley Ave and Great North Road are no longer required, leaving these sites able to be redeveloped in residential use after the Project is completed. This would assist in meeting CPTED objectives.

THE SOUTHERN VENTILATION BUILDING SHOULD BE UNDERGROUND

- 19 Several of the witnesses¹¹ state that the Southern Ventilation Building (except for the extract stack) should be underground.
- 20 As stated in my EIC (paragraph 88), if all of the facilities other than the extract shaft were to be placed underground, there would be a requirement for very large ramps to allow heavy trucks to deliver and maintain the ventilation equipment. In my evidence I noted; "*The ramp itself would be a very significant intervention in the landscape. (At a minimum, there would be a 5m wide by 35m long opening in the ground before sufficient headroom was gained over the ramp).*" This, in fact, understates the opening required. As noted above, Mr Walter's EIC refers to the ramp itself being between 500m and 750m which would require an opening in the ground of approximately 219m in length. I consider that would be a bad architectural outcome.

IF SOUTHERN BUILDING NOT UNDERGROUND IT SHOULD BE FRAGMENTED (AS PER NORTHERN VENTILATION BUILDING)

- 21 Professor Haarhoff's evidence (paragraph 5.4) states that in the event that a full undergrounding is not possible, then serious consideration needs to be given to fragmenting the building along the lines of the Northern building.¹²
- 22 As set out in Mr Walter's rebuttal evidence, for the Northern Ventilation Building the ventilation equipment was able to be placed underground, leaving the electrical transformers, switch rooms and mechanical controls to be housed above ground. These items of equipment are able to be housed in discrete buildings, whereas the ventilation equipment needs to be continuous.

¹¹ Submitter Nos 120-1 (Marshall, para 12.1), (Chase, para 40), 167/185-1 (Haarhoff, para 5.3), 167-1 (Absolum, para 4.1), 167-3 (McKenzie, para 13.7), 178-1 (Sheaver, para 5(c)), 185-1 (McKay, para 8.12), 186-1 (Black, p 16 Item 5), 210-1 (para 5(d)), 234-1 (para 2), 252-1 (Watson, para 26.1).

¹² This issue is also raised in the Addendum Section 42A report (at paragraph 3.4.8). While noting that "*there are also significant improvements in the impact of the southern building,*" it comments that "*it remains a large and long footprint structure which has not been broken up into components*".

- 23 My understanding is that the geological conditions at the site of the Northern Ventilation Building allow feasible partial undergrounding of that building, whereas at the site of the Southern Ventilation Building, rock is located very close to the surface, making undergrounding of any portion of the building very expensive to construct.¹³
- 24 Professor Haarhoff's evidence (paragraph 5.4) continues: "*The current design concept of a long continuous ramping building is at odds with good urban design and CPTED principles as previously discussed*". I do not agree with that statement. Dealing firstly with the statement "at odds with good urban design", I refer to my EIC (paragraphs 39 and 40) which make clear the urban design rationale for the configuration of the building.
- 25 I consider that Professor Haarhoff's assertion that the design is at odds with CPTED principles reflects a theoretical position, as opposed to the actual situation on site. My reasons for this are:
- 25.1 I consider that the combination of distance¹⁴ from the site to houses on Hendon Avenue and the Avondale Motorcamp and existing vegetation means that currently there is a very poor level of passive surveillance of that area. Accordingly, I do not believe that it is relevant to claim that the shape of the building has any particular harmful effect on passive surveillance.
- 25.2 Professor Haarhoff does not acknowledge that the Control Building will have a beneficial effect on passive surveillance of the area surrounding the Northern Ventilation Building. It is intended that this building operate 24 hours per day and personnel using the building will be in a good position to observe activities.

SOUTHERN BUILDING: NO PUBLIC BENEFIT IN GREEN ROOF

- 26 Ms Absolum states in her evidence (paragraph 4.19); "*Although Mr Gibbs describes the potential benefits of having public access to the roof of the proposed southern portal buildings, I note that Mr Little thinks any public access would be strictly controlled. If this is the case, then I see no public benefit in having a green roof*". Ms Absolum acknowledges that "*there may however, be environmental or economic benefits*" (footnote 18).

¹³ In making this statement regarding the geological conditions of the two sites, I am reliant on borehole information provided by Tonkin and Taylor and Aurecon contained within the AEE, Technical Reports G.28 and G.29.

¹⁴ Varies between 43m and 64m (EIC of David Gibbs, paragraph 21).

- 27 Contrary to Ms Absolum's assertion, I have not made any description of the potential benefits of having public access to the roof. My EIC (paragraph 42) says *"irrespective of the whether access is available, I consider that the green roof will be an effective visual continuation of the greenery of Alan Wood reserve"*; I stand by that statement. I also note that the Living Roofs organization website¹⁵ lists many benefits deriving from the use of green roofs under the headings Economic, Environmental and Social, most of which are clearly public in nature.

SOUTHERN BUILDING: SECURITY FENCING

- 28 Ms Absolum states in her evidence (paragraph 4.19); *"Mr Little points out that security fencing may also be necessary around the building"*. Mr Little's evidence reflected the understanding of the Project team at the time his evidence in chief was prepared (November 2010).
- 29 Since then the NZTA has commissioned Aurecon NZ Ltd to prepare a security assessment of the revised option for the Southern Ventilation Building. Aurecon's report¹⁶ states that *"Access by the general public around the NZTA facilities can provide benefits as a result of the greater amount of human traffic around the area acting as a deterrent and thereby assisting in the reduction of crime and vandalism through greater public participation in the area"* (section 4.4).
- 30 The report recommends that fencing be limited to a secure carpark for employees working in the Control Building. This will likely take the form of a small fenced compound attached to the Control Building. I consider that this will:
- 30.1 Not in any way hamper access around the Southern Ventilation building; and will
- 30.2 Not have any significant detrimental visual effect.
- 31 The primary recommendations of the report are that security should be handled utilizing CPTED principles and, in the instance of NZTA property for which there is no reason for access by the public, use of *"territorial reinforcement"*.¹⁷ I consider that the report's recommendations are very unlikely to impact negatively on the enjoyment of the spaces by the general public.

¹⁵ www.livingroofs.org.nz.

¹⁶ Security Assessment: Waterview Connection NZTA, dated 30 January 2011 by Aurecon NZ Ltd.

¹⁷ Territorial reinforcement refers to the use of design of buildings and landscaping elements to create a perceived border between private and public property. This may not necessarily prevent anyone from physically entering, but is intended to reinforce a sense of ownership and thereby reduce any ambiguity about inappropriate access. Territorial enforcement sends a message to potential offenders that the property belongs to someone and they should stay out.

COMMENT OF SECTION 42A REPORT(S)**Potential for further mounding of earth against the Southern Ventilation Building**

- 32 The Addendum Section 42A report (paragraph 3.4.8) states "*there appears to be potential for mounding of earth against the building particularly on the southern side which has not be pursued despite the design principle above*" (referring to the principles noted in paragraph 3.4.4).
- 33 I refer to the Concept drawings and Visualisations accompanying my EIC (see **Annexure A**, in particular Cross-Section S01 on Drawing No. 7), which shows that there is a steep bank to the south of the Southern Ventilation building. As a result, to mound earth against the building on this side would steepen the contour further and make it much more difficult to establish and maintain planting. I would suggest that any potential for mounding be a matter better left for consideration during detailed design.



David Gibbs
February 2011

ANNEXURE A – ESTIMATED BUILDING AREAS



Building area (estimated*)

- 0 - 249m²
- 250m² +

Annexure A: Building areas
Scale 1:1500@A3

* Source: Google aerial photograph

ANNEXURE B – BUILDING WIDTH AT STREET FRONTAGE



Oakley Esplanade

Waterview Primary School

PROPOSED BUILDING

EXISTING STREET

- LEGEND**
- Building width (estimated*)
- < 10m wide
 - 10-15m wide
 - 15-20m wide
 - 20-30m wide

Annexure B: Building width at street frontage
Scale 1:1500@A3

* Source: Google aerial photograph