

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

Second supplementary evidence by Siiri Wilkening on behalf of the **NZ Transport Agency** in response to Board's request

Dated: 7 March 2011

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SECOND SUPPLEMENTARY EVIDENCE BY SIIRI WILKENING ON BEHALF OF THE NZ TRANSPORT AGENCY IN RESPONSE TO BOARD'S REQUEST

INTRODUCTION

- 1 My full name is Siiri Wilkening. I refer the Board of Inquiry to the statement of my qualifications and experience set out in my evidence in chief (*EIC*) (dated 10 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 SUPPLEMENTARY EVIDENCE

- 3 This evidence responds to the written request made by Board of Inquiry (Board) on 3 March 2011.
- 4 The Board's request reads as follows:

After the conclusion of the hearing on 2 March, the Board considered a small article on page B8 of the *NZ Herald* of that day, concerning some mitigation measures on NZTA's current Victoria Tunnel project. The article described a large "tent" that was in the process of being dismantled, having (so the article said) served purposes of mitigation of dust, noise, and odour effects from the construction of an underground carpark between the Victory Church and the new road. (The Board did not recall any mention of that or similar mitigation in evidence and materials for the Waterview project).

The Board members walked past that site, but it appeared that the tent had by that time been dismantled. In the process, the Board was able to look in on the cut and cover tunnel site. Members also viewed the Victoria Park Markets heritage brick chimney stack which had been mentioned briefly during a passage of questioning.

NZTA is requested to arrange for some brief supplementary evidence about the use of such a tent as mitigation of such effects, particularly noise. The Board imagines that the witnesses who will be returning to the hearing next week in any event, Ms Lindsey and Ms Wilkening, might be able to assist. In particular, might such a temporary structure assist on the Waterview project with such construction aspects as cuts outside portals, ramps, piling, etc. If not, why not?

- 5 A copy of the *NZ Herald* article is **attached** for ease of reference.

RESPONSE TO BOARD REQUEST

- 6 In response, I shall address two primary issues:
- 6.1 What was the purpose of and background to the tent at Victory Christian Church?
- 6.2 Could such a tent (or similar) be used on the Waterview Project to mitigate the effects during construction (noise in particular), and if so where? Could it for instance be used at the ramps, the portals or during piling? If not, why not?

Background and purpose of tent

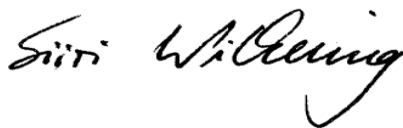
- 7 It is my understanding that the tent at the Victory Christian Church was installed above the excavation works for a new car park building. The construction of the car park (while being progressed in response to the Vic Park Tunnel project to provide for additional car parking lost through road construction) is not part of the Vic Park Tunnel project. It is being undertaken by a different contractor and overseen by a different project manager.
- 8 The excavation at the Church site resulted in adverse odour and dust effects on neighbouring residents in Beaumont Quarter immediately adjacent to the construction site. I am advised that the odours arose because of contamination associated with the historic use of the site as a gasworks and that this contamination was also the reason that the dust was a particular concern. These effects were mitigated by providing lightweight shielding (i.e. with the tent), without gaps towards the residents.
- 9 The tent was made from a heavy PVC material stretched over a steel frame. Such material has a weight of no more than 5 kg/m², well short of the weight required of material used for noise mitigation.
- 10 The tent was fully closed towards the residents at Beaumont Quarter and towards SH1, and had large openings towards Fanshawe Street for access.
- 11 The tent was not intended for, nor would it have resulted in, noise mitigation, either of the Victory Christian Church works, or of the unrelated Vic Park Tunnel works. The *Herald* article is incorrect when it suggests otherwise.

Possible use of such tent for the Waterview Project

- 12 In my opinion it would not be suitable or effective to use a shelter such as the Victory Christian Church tent for the Waterview Project for the purposes of construction noise reduction.

- 13 The material of such tents is too lightweight to achieve any meaningful noise level reduction, as noted above. In my rebuttal evidence¹ in response to Ms McBride, I explain the minimum requirements for noise barriers, noting that in order to achieve reduction of noise to an insignificant level, the barrier material needs to be of sufficient weight (generally 10 to 12 kg/m²).
- 14 I do not consider that tents are a suitable noise mitigation measure for any of the construction sites associated with the Waterview Project as they would not provide any meaningful noise reduction. For instance, the ramp construction will be elevated above the ground and would require a very high tent structure which would be difficult to support. During the installation of the ramp footings, which occurs at a low height, activities will be shielded by construction noise barriers² which do not require a full enclosure or roof.
- 15 Any kind of tent would need to have a very substantial footprint to cover the extent of the cut and cover excavations (significantly in excess of the Victory Church tent), thus making it impracticably large. The excavations required to form the cut and cover tunnel will however be undertaken such that initial excavation will be shielded by construction noise barriers.³ As soon as the "lid" can be used to cover the excavation, this will be done and further excavation will be undertaken fully shielded below the lid, thus fully mitigating the noise effects.
- 16 Piling, both bored and driven, commences at a considerable height. This would make the use of a tent impractical and ineffective. Once the piles have entered the ground, the height of the noise source reduces until the operation would be shielded by normal construction noise barriers.
- 17 I am advised that a tent is also not required for dust or odour mitigation for this Project, as enclosure or covering of dust generating stockpiles is proposed in the suite of mitigation for the air quality management plan⁴.

Dated: 7 March 2011



Siiri Wilkening

¹ Rebuttal evidence (Construction Noise), dated 2 February 2011, paragraph 82.

² Technical Report G.5, Section 8.5.6 discusses noise mitigation for ramp construction.

³ Technical Report G.5, Sections 8.7.4 and 8.7.5 discusses noise mitigation for the cut and cover construction in Sector 7.

⁴ Air Quality Effects Assessment Report G.1 – Appendix M CAQMP – refer to sections 4.1 and 4.2 for management of dust and odours (if any).

Wednesday, March 2, 2011 ★

B8

Tent near Victoria Park tunnel to come down

The huge temporary tent near the Victoria Park Tunnel in St Marys Bay is being dismantled.

Mainzeal Property and Construction has the ground works contract for a new multi-level carparking building with amenities for the Victory Christian Church, after the church lost its flat carparking area to the motorway.

The tent has been on that site for months, mitigating dust as Mainzeal dug down for the new block.

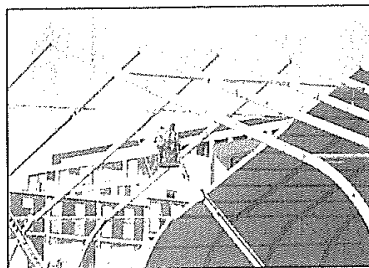
Excavations have now reached the point where workers are removing the tent skin, showing the skeletal structure and dismantling the frame.

Kerry Newell, a director of Davis Langdon which is project manager on the site, said the 14m-tall tent was 40m by 65m, and would be returned to the Australian company from which it was hired.

It was erected to control noise, dust, nuisance and smells during excavation and piling on the former gas works site.

The church land is needed for the tunnel job.

A Victoria Park spokeswoman said



DISMANTLED: The huge tent was erected to control dust and noise from the site. PICTURE / PAUL ESTCOURT

the tent was not really part of the motorway work. "The tent is there to control odours and things from the ground work," she said.

Mainzeal said stage one of the project involved excavation and that was expected to be finished by September.

Church parishioners are being provided with off-site car parking, accessed from Gaunt St. A free shuttle van is run for meetings.

— Anne Gibson