BEFORE THE ENVIRONMENT COURT

AT WELLINGTON

IN THE MATTER of a direct referral of applications for resource consents and notices of requirement under sections 87G and 198E of the Resource Management Act 1991 for the 02NL project

By the New Zealand Transport Agency Waka Kotahi

STATEMENT OF EVIDENCE OF KAREN PROUSE

S 274 PARTY

12th SEPTEMBER 2023

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Introduction

1. My name is Karen Prouse. I am a teacher in Levin.

2. I reside at 1024 Queen Street East, Levin with my husband Stephen Prouse. I am authorised to give evidence on his behalf and for the Prouse Property Partnership.

3. The property at 1024 Queen Street (the Prouse Property) is a total of 12.8945 hectares with a common boundary of 585.4 metres with the eastern boundary of the 02NL expressway NOR

4. The property includes an archaeological site incorporating the homestead, built in 1891and its outbuildings and curtilage. It was originally the homestead of a substantial farm. The property has been occupied continuously by the Prouse family for the past 132 years.

5. The homestead is 110 metres from the presently planned O2NL road edge.

6. The Property is entirely included in the Tara Ika Zone recently created by Plan Change 4 to the Horowhenua District Plan.

7. We are not opposed to the O2NL expressway development and acknowledge that it is in the best interests of the Levin community and for people from further afield needing the benefits of an efficient and safe highway network.

Consultation

8. We have been engaging with Waka Kotahi since June 2017.

9. We have been involved in community consultation meetings and individual discussions.

10. We have made submissions and given feedback at every stage of the process.

11. We have had numerous on- site meetings with Waka Kotahi at home and at their offices in Levin.

12. We have attended the recent mediation meetings and have had ongoing communications since.

13. This journey has been ongoing for six years and it is frustrating that we have not yet reached agreement on the remaining issues.

Issues we understand to be agreed in principle

14. In relation to potential flooding effects on the Prouse Property and the access to the Prouse property, it has been agreed that two additional culverts to be placed under the expressway generally shown as dark blue lines in **Appendix 1** will improve the situation.

15. We remain concerned about the potential flooding effects in light of the effects of Cyclone Gabrielle.

16. In relation to visual and landscape effects, Waka Kotahi have agreed that:

    (i) if the arborist report that has been sought by Waka Kotahi recommends the macrocarpas / pines along the designation / Prouse Property boundary be removed, they will meet the reasonable costs of removal and the roots stump-ground and trees replaced them with new plantings (species and location of replacement plants to be agreed); and

    (ii) a solid timber-fence 2 m high above finished ground level, to be installed along the final (post-construction) designation / Prouse Property boundary (585 metres). We believe that this fence should be well-constructed to optimise its acoustic value without any gaps along its length. All timber used should be well-seasoned to avoid shrinkage over time; and

    (iii) hedge planting will be undertaken on the eastern side of the 2m high solid timber fence in consultation with us; and

    (iv) carry out and extend the planting described as the tall screen planting and trees shown on the Planting Concept Plan Sheet 5 submitted with the application documents in the vicinity of the

eastern boundary of the designation parallel to and for the full 585 metres length of the Prouse Property boundary; and

(v) Beyond an initial 5-year maintenance period, maintenance of the planting within the Prouse property (described in clauses (i) and (iii)) will be our responsibility.

17. In relation to access to the Prouse Property, there is agreement that through the NOR Waka Kotahi:

(i) will provide access generally in accordance with **Appendix 2** so that the Prouse Property retains its three existing access points or equivalent, and with the existing access off Queen Street East to the Ashleigh homestead unaltered, is provided for; and

(ii) will retain sufficient land to ensure that a right turn bay on Queen Street East can be accommodated should one be required ; and

(iii) The outcome of consultation with the owners of the Prouse Property shall be taken into account in the determination of the final detailed design for the access points referred to in (i) and (ii) above; and

(iv) The Project will not include public car parking within the designation between the property at 1024 Queen Street East and Queen Street East, as realigned; and that this could be captured by a condition of the NOR such as by amendment to DGA6.[1]

18. In relation to construction noise and vibration effects we support the following provisions in the draft conditions:

[1] Email from Greg Lee 22/07/23 to Ian Gordon and others

(i) DNV4: a. iii Construction activities are being undertaken within 100 metres of the boundary of …B.1024 Queen Street East…"; and

(ii) Schedule 2 as to the preparation of the Construction, Noise and Vibration Management Plan to "include methods to monitor and respond to any effects of construction vibration at the dwelling, known as 'Ashleigh', located at 1024 Queen Street East where the design and implementation of this monitoring is undertaken in conjunction with a suitably qualified and experienced conservation architect."

19. In relation to noise, there is a draft condition in relation to internal noise levels of PPFs, which should include the 132-year-old dwelling at 1024 Queen Street East, which could result in building modifications, to achieve internal levels of 40dB LAeq(24hr). If this includes our homestead this could resolve the issue for us.

20. The difficulty for our 132-year-old homestead is that it does not provide the acoustic insultation of a modern dwelling which would typically reduce external noise by 17dB. We have had this verified by an acoustic engineer whose brief report is attached in **Appendix 3**.

21. We understand that the above agreements in principle will result in changes to the conditions which Anna Carter in her statement speaks to.

Unresolved issues

A. Operational road traffic noise

22. The effect on the outdoor amenity of residential land at our homestead is not the subject of any mitigation other than the proposed road surface, despite the Noise Technical Report findings finding, 'that road traffic noise is likely expected to be either intrusive

or disruptive to people using the outdoor spaces".[2] In relation to that effect, the Report describes some mitigation options that would reduce noise in the outdoor area of the homestead and ground floor façade by 2-4dB.[3]

23. The same report acknowledges: "Noise levels inside the dwelling are likely to be intrusive at times".[4]

24. We maintain that careful attention needs to be given to our PPF, the homestead at 1024 Queen Street East, where operational noise is expected to be intrusive.

25. We have been advised that the 132-year-old construction of our homestead will not achieve the 17dB reduction to 40 dB inside for the habitable rooms on the 1st floor, where the outside noise at the upstairs façade is 57dB.[5]

26. In the event of building modifications being required to achieve 40dB inside for habitable rooms with windows closed, ventilation to the appropriate standards should also be provided.

27. I note that at Michael Smith's Technical Assessment B Noise and Vibration[6] that "…the only property that would meaningfully benefit from noise walls is the Prouse homestead." He refers to 3 and 5m high walls but in the final analysis, he does not recommend these, which is disappointing.

28. In the hope of achieving improved outcomes for the Prouse homestead, we note that the draft conditions include the installation of a 1.1m high concrete safety barriers at the road edge in five

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2 02NL Technical Assessment B Noise and Vibration, page 113, paragraph 356

3 Supra at Appendix E, Collated Evaluations for Workshop N4, NZS6806 assessment matrix, G1 – G1. Effectiveness of options.

4 02NL Technical Assessment B Noise and Vibration, page 113

5 Jepsen, Neil (2023). Appendix 3

6 Smith, Michael (2023). Technical Assessment B. Pg 80, Para 262.

separate locations where PPFs are within a similar distance to the road edge[7]. I do not know whether Mr Smith's technical assessment includes modelling of the proposed road surface with a 1.1m high concrete safety barrier in the vicinity of our property, but I assume he concluded that there would be positive benefits for the other locations referred to in DRN2, Table DRN-2-Noise Barriers.

B. Potential Flooding

29. The issue of flooding is unresolved, we remain very concerned that the effects will be more than minor. We note the impact of recent floods in Hawkes Bay and this reinforces our concern.

30. I have read everything that has been written to date by Peter Kinley Regional Council's flood expert including his Section 87F Report.

31. Mr Kinley refers directly to our 274 Party submission at point 85. Pg22-23 of his report. In reference to our concerns about flooding at 1024 Queen Street East he considers "that the works will create a significant adverse effect at this location" pg23.

32. It is also unclear when he deals with his summary of the flooding that is inside and outside the designation at our location, whether he understands that land currently shown as inside the designation is being leased by Waka Kotahi and will return to us once the construction of O2NL is complete. Therefore, will result in more significant negative flooding impacts to our property than currently appears.

33. With O2NL directly alongside the Prouse Property and the Queen Street East overbridge directly in front of the property, this will create infrastructure barriers that intersect the traditional overland water patterns that flow from the Tararua Ranges, and across Tara Ika, and this has the modelled effect of accumulating (ponding) at places on

[7] NOR proposed condition DRN2 Table, DRN-2-Noise Barriers

the Prouse Property. Waka Kotahi has not yet demonstrated with sufficient certainty to us that the effects have been addressed.

34. The following was proposed by Waka Kotahi in relation to potential flooding effects on the Prouse Property:

(i) Install 2 new culverts as generally shown as dark blue lines in **Appendix 1**; and

(ii) anticipate further possible improvements at the northwest corner of the Prouse Property by modifying approaches to culverts and their inlet and outlet structures.[8]

35. Regardless of any such modifications referred to in (i) and (ii) above, we support the approach by Mr Kinley for the Regional Council that the increase in flood levels should be designed not to exceed 50mm on our land or the access to it and that that this outcome can be achieved by the kind of condition described by him in the Joint Witness Statement[9].

Conclusion

36. The current SH57 is 280 metres from our homestead and 170 metres from our boundary. It has a traffic present count of 8,900 m/d

37. The newly constructed O2NL will be 110 metres for our homestead and only 25 metres from our boundary (once leased land in the designation is returned to us). It will have more than double the existing traffic, and there will be a 7m high overbridge directly to the North of the Prouse Property.

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[8] Email from Greg Lee to Ian Gordon and others on 18/08/2023: noting that the modelling remains of a concept level design and is subject to further design stages.

[9] Joint Statement Hydrology and Flooding Experts (9 August 2023)

38. Regardless of the conditions presently proposed, we feel that there will be enduring adverse effects on our sense of place, potential generational succession at this site, and connections with the land.

39. It will create enduring cumulative adverse effects for the land which our family has cared for and occupied for 132 years, and which have not been sufficiently addressed.

40. These cumulative effects are felt at a family level. Our concern is that the foreseeable needs of future generations to provide for their social, economic, and cultural well-being will be unreasonably impacted unless conditions which address adverse effects are imposed.

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Karen Prouse

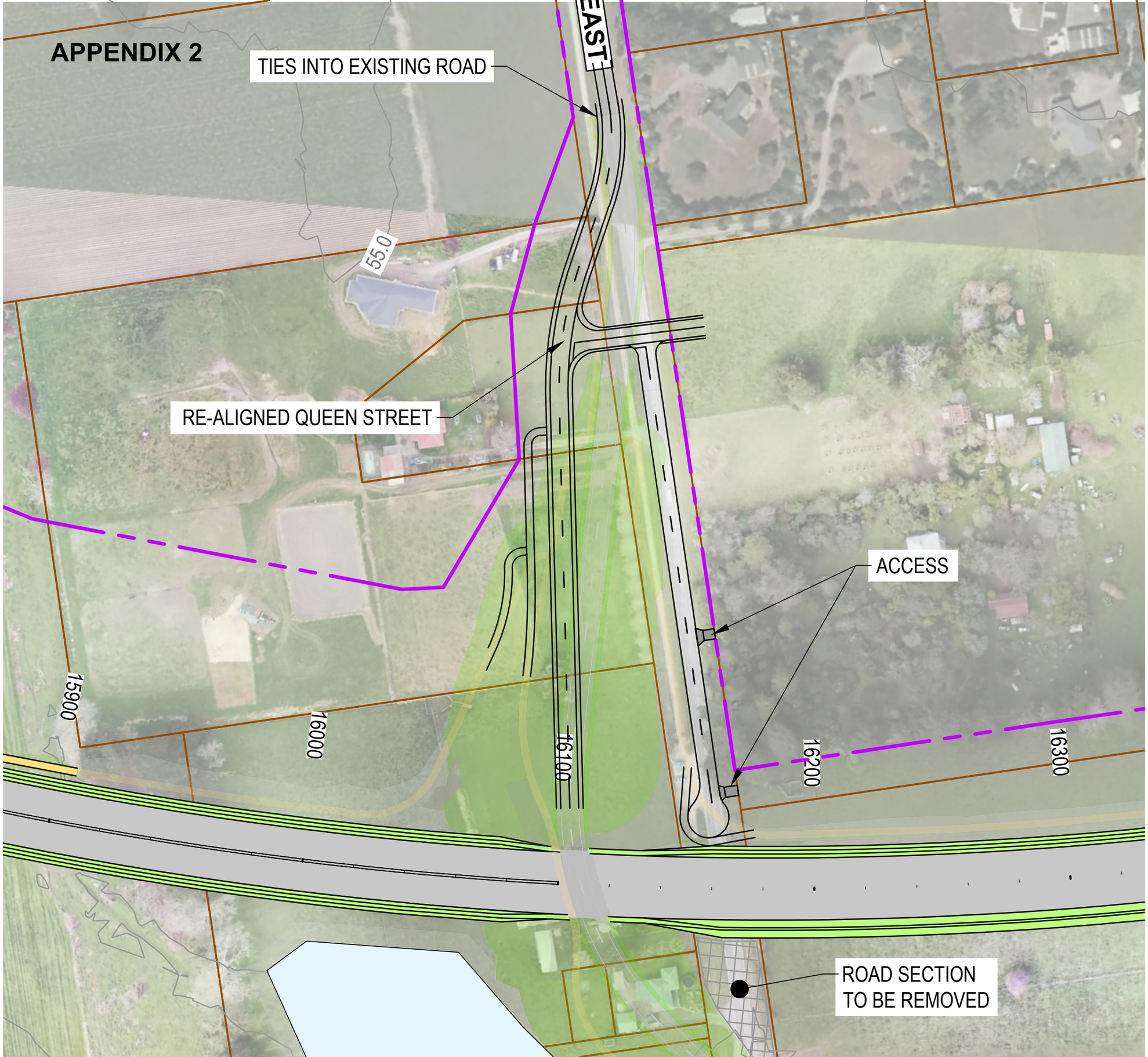
12th September 2023

APPENDIX 1:

FLOOD DEPTHS DIFFERENCE WITH PROJECT

SHOWING TWO ADDITIONAL CULVERTS

APPENDIX 2


TIES INTO EXISTING ROAD
EAST
55.0
RE-ALIGNED QUEEN STREET
ACCESS
15900
16000
16100
16200
16300
ROAD SECTION
TO BE REMOVED

APPENDIX 3

JEPSEN ELECTRONICS LTD

22 Domain Street.
Palmerston North.4410
Phone 06 357 7539.
Mobile 0274 428 094
Email: njepsen@gmail.com

September 1 2023

Anna Carter
Principal Planner
Land Matters
20 Addington Road RD1
Otaki 5581

RE: 1024 Queen Street East. Levin
Measurement of Bedroom Sound Insulation.

1.0 Disclosure

Jepsen Electronics Ltd has been engaged by Anna Carter on behalf of Mr and Mrs Karen and Stephen Prouse to carry out a field measurement of airborne sound insulation of façade elements in two bedrooms located at a dwelling located at 1024 Queen Street East Levin.

Measurements were carried out on the two north facing upstairs bedrooms, known as the 'master bedroom' and the 'guest room'. The bedrooms were fully furnished and each room was carpeted and contained a double bed, and various soft furnishings. Each room measured approximately 3m x 3m x 2.7m.

The master bedroom has a single casement window facing north glazed with laminated glass and has a small window with louvres in the east facing wall. The outer cladding is weatherboard with no cavity insulation.

The guest bedroom has a single casement window facing north over a small balcony that is glazed with laminated glass, and a small window with glass louvres in the west facing wall. The guest room has cavity insulation in the west wall only.

The nearest façade of the dwelling is 280m from Arapaepae Road.

2.0 Weather Conditions, Equipment and Method.

The assessment was carried out on Tuesday August 29 2023. The weather during the measurement period was fine and sunny with nil wind and nil precipitation. There was high 8/8 cloud cover. The temperature was 9deg C.

Measurements were carried out in general agreement with ISO 140-5 using the "global" variation with traffic noise as the source in accordance with section 6.6 of the standard.

The source noise level $L1,_{eq,2m}$ was measured with a microphone placed near the centre of the bedroom façade at a distance of 2m from the outside wall; two microphone positions were used. A Norsonic Nor 118 Class 1 SLM was used to record the traffic source noise level.

A second Norsonic Nor140 Class 1 SLM was used to measure the room interior level $L_{eq,2}$. The microphone was supported with a Velbon tripod and 5 microphone positions were used for each 15 minute measurement in general agreement with section 5.5.2 of the ISO140-5 standard.

The two sound level meters were calibrated before and after the measurement series using a Norsonic 1256 portable calibrator at 114.0 dB 1000Hz. No change in calibration was observed after the measurements.

The two sound level meters/ microphone chains were previously checked for equality by measurement of a wide band sound for two 15 minutes periods and both meters were within 0.1 dB LAeq of each other.

Several successive 15 minute measurements of each of the two upper floor bedrooms were carried out with the windows and doors closed, and, with one external window ajar as representative of normal room use by the occupants and owners use for fresh air ventilation.

Outdoor measurements were made in accordance with section 6.6.3 of ISO140-5

Deviations from ISO-140-5

i) Because of the location of the dwelling in relation to the traffic, the requirements of 6.5.2 were not met.
ii) Two (not three) outside microphone positions were used, (section 6.5.4) due to upper floor constraints.
iii) Correction background noise IAW section 5.5.3 was deemed not necessary because of absence of extraneous sound.
iv) RT was not measured (section 6.6.4) as standardized level difference D2m,nT is not being measured in this study.

3.0 Measurement Results

Master Bedroom				
Start Time	Windows/doors	Inside Level Leq,2	Outside Level L1,eq,2m	Level difference.
12.13	Casement window 200mm ajar. BR door to hall open	35.5 File 230829.0004	Leq= 47.7 L99 =40.6 File 230829.0003	12.2 dB
12.28	Casement window 200mm ajar. BR door to hall open	33.9 file 230829.0005	Leq=47.2 L99 = 40.4 File 230929.0004	13.3 dB
12.46	Window closed. Door open to hall.	34.0 file 230829.0007	Leq=49.1 L99 = 33.5 File 230829.0005	15.1 dB

Guest Bedroom				
Start Time	Windows/doors	Inside Level Leq,2	Outside Level L1,eq,2m	Level difference
13.01	Window ajar 100mm. Door to hall closed	36.0 file 230829.0008	Leq=47.1 L99= 39.4 File 230829.0007	11.1 dB
13.23	Window closed. Door closed	30.9 file 230829.0010	Leq=46.3 L99=38.6 File 230829.0010	15.4 dB

4.0 Test Result – Normalized Level Difference

The normalized level difference, $D_{2m,n}$ is the level difference corresponding to the reference absorption in the receiving room. Both bedrooms measured 3.6.x3.6 x 2.7m, with an average wall absorption A = 9.7, based on the measured room RT_A =0.58s . Equation 7 gives the following normalized level difference.

$D_{tr,2m,nT'} = D_{2m}$-10log(A/A0)dB where $A_0 = 10m^{\wedge 2}$

A = 0.16V/RT

	Windows open	Windows closed
$D_{tr,2m,nT'}$	12.2 dB	15.2 dB

5.0 Level Difference

The level differences in the table below are the uncorrected difference between the (logarithmic) average inside traffic noise level and the (logarithmic) average outside traffic noise level, uncorrected for reverberation or room absorption.

	Windows open	Windows closed
$D_{tr,2m\ note\ 1}$	12.3 dB	15.3 dB

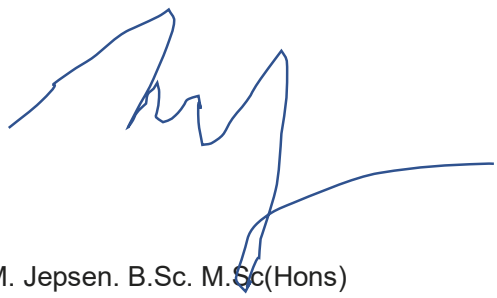
Note 1.
Calculated from ISO140-5 equation 12

$D_{tr,2m}$ = -10Log(1/n$\sum \frac{10^{(\frac{-di}{10})}}{1}$) dB

6.0 Discussion

Interior noise levels of two upstairs bedrooms were measured in general accordance with ISO 140-5 11 Acoustics – Measurement of sound insulation in buildings and building elements- Part 5 Field measurements of airborne sound and insulation of façade elements and facades. Traffic noise from Arapaepae Road and Queen Street East was used as the external noise source.
The measured 46 – 50 dBA LAeq traffic noise level was a 2-hour snapshot on a Tuesday afternoon, which should not be given substance as typical or characteristic of the locality.
The 12 dB (windows open) and 15 dB (windows closed) measured level differences are not unexpected for a dwelling of this period with aged and acoustically leaky exterior cladding and windows, without acoustic glazing or cavity insulation. The dwelling is not a typical PPF and the level difference is unlikely to compare with that of a modern home.

Signed for Jepsen Electronics Ltd.



Neil M. Jepsen. B.Sc. M.Sc(Hons)