

Presented at hearing 2 July 2019 by W Reeve. (3)

**BEFORE THE HEARING  
COMMISSIONERS  
AT CROMWELL**

**IN THE MATTER**

of the Resource Management  
Act 1991 ("RMA")

**AND**

**IN THE MATTER**

of the Central Otago District Plan:  
  
Hearing PC13

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**SUMMARY STATEMENT  
BY WILLIAM PETER REEVE  
FOR HORTICULTURE NEW ZEALAND**

**2 July 2019**

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1. Good Morning. I am William Reeve, a Senior Acoustic Engineer with Acoustic Engineering Services. My role in this hearing is as the acoustic expert for HortNZ.
2. I contributed to the Joint Witness Statement (JWS) of acoustic experts dated the 29<sup>th</sup> of May 2019, although I did not comment on noise issues related to motorsport activity in any detail (as this is not of relevance to HortNZ).
3. I have summarised key points from the JWS as they relate to my position on horticultural noise, as follows.
4. As outlined in the JWS, the expected noise levels generated by the horticultural (and motorsport) activity in the vicinity of the PC13 site is generally agreed by the acoustic experts.
5. The effectiveness of a no-complaints covenant was one point of disagreement.
6. As outlined in the JWS, I agree, along with Mr Staples and Dr Chiles that while a no-complaints covenant could provide a degree of forewarning, it cannot adequately convey the degree and nature of adverse noise effects that residents would be exposed to.
7. I remain of the opinion that the issue of whether this is a useful and enforceable mechanism is best addressed by planning, or legal submissions.
8. Along with the other noise experts, I agree that noise associated with motorsport, gas guns, firearms and helicopters has characteristics that are more annoying subjectively than other typical environmental noise.

#### **Outdoor noise effects from horticultural activity**

9. With regard to outdoor noise during the day, I also agree with the other experts that the use of bird scarers and helicopters will impact

significantly on outdoor amenity for residential dwellings built on the portions of the site close to the orchard to the west.

10. Bird scaring methods used on nearby orchard sites include the use of quadbikes, horns, shotguns and gas guns. These operate throughout the summer months, including around sunrise and sunset.
11. As outlined in the evidence of Mr Staples, the use of a gas gun on the orchard to the west would result in a noise level of greater than 100 dB  $L_{AFmax}$  (88 dB ASEL), on the PC13 site. This would reduce slightly due to the proposed acoustic barrier, although still would be at a level which may startle people in outdoor areas of new dwellings on the PC13 site.
12. As outlined in the JWS, I agree that if a single dwelling was to be built on the rural portion of the site under the current zoning, and it was close to the boundary, that this may require nearby orchards to increase the setback for percussive bird scaring devices - in the order of 850 metres for the gas guns used on the Suncrest Orchard. I note that this setback is based on the device firing directly toward the dwelling.
13. However, higher density residential development close to all boundaries of the PC13 site, will in effect create a larger sacrificial informal buffer for bird scaring devices with nearby orchards – over and above what may be expected if a single dwelling were constructed on the rural portion of this site.
14. I also note that the existing District Plan limits have no control on the number of events from percussive bird scarers. In my opinion this is also an important factor in people's response to this type of noise – particularly when exposed to multiple orchards using bird scaring devices.
15. Within this in mind, I consider that noise associated with percussive bird scarers, which complies with the most restrictive District Plan limits at the notional boundary of existing dwellings, is likely to annoy

and potentially startle people using outdoor areas associated with the proposed new dwellings.

### **Indoor noise effects from horticultural activity**

16. With regard to indoor noise, I consider that if new dwellings are constructed to achieve an appropriate outdoor to indoor sound reduction, in combination with a ventilation system so that windows can remain closed, noise effects could be mitigated.
17. However, I disagree with Mr Styles about the appropriate level of acoustic insulation in this case, in particular with regard to horticultural noise at night.
18. Mr Styles considers that sound insulation requirements should be based on achieving an internal noise level of 35 dB  $L_{Aeq}$  given the seasonal and intermittent nature of this noise.
19. However, when considering that this is a new development, and referring to the World Health Organisation (WHO) guidelines, which state that to avoid negative effects on sleep, the equivalent sound pressure level indoors shall not exceed 30 dB  $L_{Aeq}$ , I consider that a higher standard is required.
20. For sources with low frequency components, disturbances can occur even below this level. Noise associated with frost fans in particular would fall into this category.
21. The current proposal to achieve an internal noise level of 35 dB  $L_{Aeq}$ , will therefore introduce a significant number of dwellings into an area where the night time WHO 30 dB  $L_{Aeq}$  guideline may be exceeded, leading to the potential for disturbed sleep among the new residents.
22. I disagree with Mr Styles that it is rare to seek to achieve an internal level of 30 dB  $L_{Aeq}$  in this country. To illustrate, an external noise limit of 40 dB  $L_{Aeq}$ , or 45 dB  $L_{Aeq}$  is the most common District Plan limit at the boundary of residential sites, or at the notional boundary of rural dwellings. With windows ajar for ventilation, this would result in an internal noise level of 30 dB  $L_{Aeq}$  or less in bedrooms at night.

23. I am happy to answer any questions.