

**BEFORE A COMMISSIONER APPOINTED BY THE CHRISTCHURCH
CITY COUNCIL**

IN THE MATTER OF

the Resource Management Act 1991

AND

IN THE MATTER OF

RMA/2022/517 – Proposed Digital
Screen Campus, 129 Waimairi Road,
Ilam

**STATEMENT OF EVIDENCE OF JON FARREN
(NOISE)**

Dated: 8 August 2022

GREENWOOD ROCHE
LAWYERS
CHRISTCHURCH
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1 INTRODUCTION

- 1.1 My name is Jon Farren. I am the Manager and Principal of the Christchurch office of Marshall Day Acoustics.
- 1.2 I hold a Bachelor of Engineering with Honours in Electroacoustics from the University of Salford in the United Kingdom. I hold full Membership of the Institute of Acoustics (UK), a requirement of membership being that I am active in the field of professional acoustics and satisfy the Institute's requirements with regard to level of qualifications and experience.
- 1.3 I have been employed as an Acoustic Consultant for 29 years, approximately 20 of which have been with Marshall Day Acoustics (MDA). I have considerable experience in the areas of planning with regard to noise, the assessment of noise and vibration, and mitigation in relation to both environmental noise and building acoustics.
- 1.4 Of specific relevance to this proposal, I have either designed or assessed noise effects of approximately 20 film and production studio sites in New Zealand, Australia and Europe.

My Involvement in the Proposal

- 1.5 I am responsible for the calculations of noise emissions from the proposal and for the preparation of the *Noise Assessment* (dated 24 February 2022) that accompanied the application for resource consent.
- 1.6 In preparing my evidence I have reviewed the following documents:
- (a) The resource consent application and AEE;
 - (b) The relevant submissions on the applications which relate to noise;
 - (c) The s42a report prepared by Mr Klomp, including the noise advice prepared by Ms van der Erf, Environmental Health Officer at Christchurch City Council; and

- (d) The relevant evidence of the other witnesses for the Applicant being that of Dr Andrew Phelps, Max Herriot, Dave Brady and Andrew Metherell.

1.7 Whilst this is a Council hearing, I acknowledge that I have read and agree to comply with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court Practice Note 2014. My qualifications as an expert are set out above. Other than where I state that I am relying on the advice of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

2 **SCOPE OF EVIDENCE**

2.1 My statement of evidence will address:

- (a) The existing ambient noise environment;
- (b) The key noise sources;
- (c) Relevant noise standards applying to the proposal;
- (d) Potential noise effects;
- (e) My recommendations in relation to management of noise;
- (f) Submissions on the proposal in relation to noise; and
- (g) Acoustic-related matters raised in the s42a report and consent conditions.

3 **EXISTING NOISE ENVIRONMENT**

3.1 The *Noise Assessment* describes the measurements which MDA has undertaken of the existing noise environment at dwellings adjacent the site, including the closest dwellings to the proposed Waimairi Road vehicle access.

3.2 The existing daytime noise environment is dominated by traffic on Waimairi Road and, to a lesser extent, on Dovedale Avenue. Measured noise levels at dwellings are in the order of low 50's dB L_{Aeq} .

- 3.3 The measurements confirm that the daytime noise environment is marginally above the District Plan permitted activity noise limit of 50 dB L_{Aeq} for a residential zone. At night, I consider that the permitted activity noise limit of 40 dB L_{Aeq} is appropriate for maintaining residential amenity.

4 **NOISE SOURCES**

- 4.1 The proposal itself is described primarily in the evidence of Dr Andrew Phelps. The key noise sources of the proposal are outlined in detail in the *Noise Assessment* which was attached as Appendix 8 to the Application and are summarised briefly below.

- 4.2 Noise generation can be broadly split into two categories:

- (a) **Internal production noise** including filming, set construction, administration, sound post-production etc.

Many of these activities are themselves sensitive to noise and occur in buildings with high levels of sound insulation. As a result, any noise they generate is mitigated to a high degree before reaching other buildings on campus.

Of these activities, I consider set construction within the Mill building to have the greatest potential for noise generation and I discuss the potential effects of this further in Paragraph 8.2.

- (b) **External noise** including fixed mechanical plant, vehicle movements and "backlot" activities, including outdoor filming and truck-mounted power generation.

Whilst static mechanical plant noise can be readily mitigated with proprietary noise control devices and can be easily quantified, noise generated by backlot activities will change on a day-to-day basis depending on the requirements of a particular production.

I consider that noise in the backlot has the greatest potential for adverse noise effects. Whilst my assessment has addressed the impact of the noisiest likely backlot noise source (i.e. portable generators), in my opinion a Noise Management Plan is required

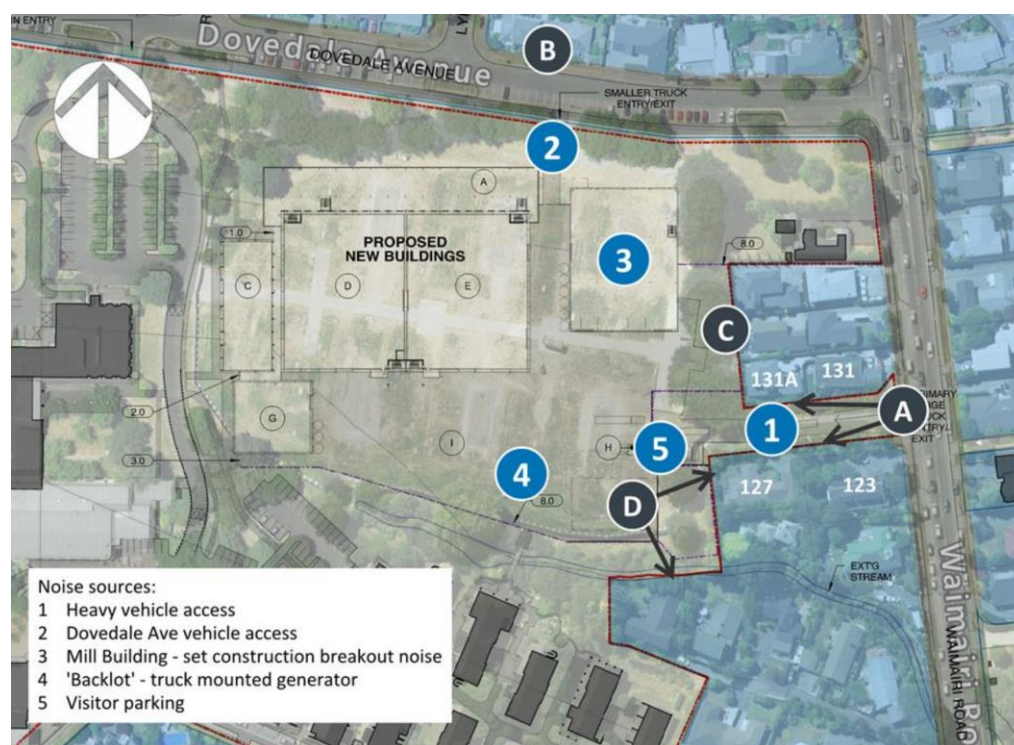
to control noise from the wide range of backlot activities that could occur.

4.3 In the *Noise Assessment*, I have predicted noise level generation for what I consider to be the principal noise sources on site. These are listed below and indicated in Figure 1:

1. Heavy vehicle access at Waimairi Road;
2. Vehicles using Dovedale Avenue site access;
3. Set construction breakout noise (Mill building);
4. Auxiliary Power Generator in the backlot; and
5. Visitor car parking.

4.4 The nearest residential receiver locations are identified as positions A to D in Figure 1.

Figure 1 – Site plan showing noise source location and noise sensitive receivers



4.5 Although traffic noise outside the site is not controlled by the District Plan noise standards, in Paragraph 8.3 I address traffic noise generation in response to submitter's concerns.

5 RELEVANT NOISE STANDARDS APPLYING TO THE PROPOSAL

5.1 The applicable Christchurch District Plan noise standards for residential zones are outlined in detail in Section 4.0 of the *Noise Assessment*. In summary, these are:

0700 to 2200 hrs	50 dB LAeq
2200 to 0700 hrs	40 dB LAeq
	65 dB LAmax

6 ASSESSMENT OF NOISE EFFECTS

6.1 In Section 6.0 of the *Noise Assessment*, I have predicted noise levels associated with each of the principal noise sources at the nearest sensitive receivers: A to D identified in Figure 1. Below I have replicated Table 4 from the *Noise Assessment* summarising the predicted noise levels.

Table 4: Predicted noise levels at residential receivers A to D

Receiver location	Predicted noise level, dB LAeq	Applicable DP noise limit, dB LAeq	Comment
HEAVY VEHICLE MOVEMENT (Source 1)			
A (ground floor)	50	50	Includes fence noise reduction
A (first floor)	56	50	At upper floor window
CUMULATIVE NOISE (Sources 2 to 5 operating simultaneously)			
B	43	50	
C (ground floor)	43	50	Includes fence noise reduction
C (first floor)	48	50	At upper floor windows
D	40	50	Includes fence noise reduction

6.2 My predicted noise levels indicate the proposal can comply with the District Plan daytime noise limit of 50 dB LAeq except at the first floor of 131A Waimairi Road as a result of heavy vehicles using the Waimairi Road access.

6.3 I consider my predicted noise level of 56 dB LAeq at the first floor of 131A Waimairi Road to be a technical non-compliance as there are no adverse effects as a result. From architectural plans of the dwelling

that are available online, I understand that the first-floor window overlooking the proposed site access leads to a stairwell, which has low noise sensitivity. None of the other first-floor rooms, and no bedrooms, have windows that directly overlook the proposed accessway.

- 6.4 In terms of heavy truck noise, I have modelled the numbers of heavy truck movements used in the Stantec Transport assessment and consider that truck noise effects arising from the low numbers of heavy trucks using the Waimairi Road access will be acceptable.

7 **RECOMMENDATIONS**

- 7.1 Overall, I consider that the proposal can operate and generally comply with the District Plan permitted activity noise limits. However, I recommend an effective Noise Management Plan (NMP) is adopted to ensure that noise effects will be consistent with the residential amenity anticipated by the District Plan permitted activity noise levels. If consent is granted, I recommend that an NMP is required as a condition of consent and I have listed its key components in Section 8.0 of the *Noise Assessment*.
- 7.2 In addition, I recommend a condition requiring the construction phase of the proposal be managed and assessed in accordance with New Zealand Standard NZS 6803: 1999 Acoustics - Construction Noise. To be clear, however, set construction activities that occur in the Mill building as part of the day-to-day operation of the site would be assessed against the more stringent District Plan residential zone permitted activity limits – not NZS6803.

8 **ISSUES RAISED BY SUBMITTERS CONCERNING NOISE**

- 8.1 I have reviewed a summary of submissions received and note three raise specific concerns regarding noise, which I will address below.
- 8.2 Larry and Carol Miles identify construction noise generated within the Mill building as a concern. As I stated in Paragraph 4.2 of my evidence, I agree that set construction activity has the greatest potential for noise generation at the nearest residences. However, my assessment indicates that construction noise within the Mill building can occur and

comply with the applicable daytime noise limit at the closest site boundaries. I expect that construction noise from within the Mill building would not be discernible at the submitters' address of 5 Dovedale Avenue, particularly due to the acoustic treatment likely to be applied to the Mill building to prevent set construction activities being intrusive in the studios. As noted above, I recommend that set construction is specifically addressed in a Noise Management Plan to ensure its potential noise effects are appropriately controlled.

- 8.3 Teresa Smith has submitted that a potential increase in road noise is a concern for her. Vehicle noise on public roads is exempt from compliance with the District Plan noise limits and I did not address it in my *Noise Assessment*. However, I understand from the Stantec Integrated Transport assessment¹ that Waimairi Road, which is closest to the submitter's dwelling, carries approximately 23,000 vehicles per day. With the proposal, I understand from Paragraph 7.4 of Mr Metherell's evidence that vehicle generation is forecast to increase by approximately 186 vehicle movements per day during peak production, distributed across the local road network. With respect to noise, even if all 186 vehicle movements were to occur on Waimairi Road, there would be a negligible increase in traffic noise (i.e. less than 1 dB) which would not be perceptible.
- 8.4 A submitter living adjacent to the proposed Waimairi Road access is concerned with truck noise associated with use of this access and also noise during the construction phase. As I discuss in Paragraphs 6.2 to 6.4, there will be a very small number of heavy vehicles using this site access and noise will comply with the District Plan permitted activity noise limits at the ground floor of the immediately adjacent residences. In my opinion there will be minimal noise effects. I address noise during the construction phase in paragraph 7.2 of my evidence.

9 **SECTION 42A REPORT AND CONSENT CONDITIONS**

- 9.1 I have reviewed the s42A report prepared by Mr Matthew Klomp and the supporting report of Ms Agnes van der Erf, Environmental Health Officer at the City Council.

¹ Appendix 9 of the Application – Stantec PCE Digital Campus, Integrated Transport Assessment, February 2022

- 9.2 I agree with Mr Klomp's assessment that the adverse noise effects of the proposal are less than minor and acceptable. Ms van der Erf notes that she agrees with the conclusions reached in my *Noise Assessment* report.
- 9.3 However, while I agree with the broad intent of Ms van der Erf's proposed conditions 32 to 34, I disagree with the wording that has been suggested for two of those conditions. As I discuss in the following paragraphs, in my opinion Ms Van der Erf's conditions 33 and 34 should be deleted.

Proposed Condition 33

- 9.4 Proposed Condition 33 in the s42a report states:

No earthwork activity or construction work, other than maintenance of dust and erosion and sediment control measures, shall be undertaken on Sundays, Public Holidays or outside the hours of 7.30am to 6.00pm Monday to Saturday, without the Council's prior consent

- 9.5 The NZ construction noise standard NZS 6803 inherently ensures construction noise effects are controlled at night by applying stringent noise limits that are in keeping with World Health Organisation noise limits for the protection of sleep, thereby ensuring residential noise amenity is protected. Therefore I do not consider it to be appropriate or necessary to prevent all construction activity between the hours of 6pm and 7.30am.
- 9.6 On a practical level, there may be construction activities such as water pumps that may be required to operate on a 24 hour basis, or early morning concrete pours that will need to occur outside the proposed timeframes. NZS 6803 permits these activities to occur outside normal daytime hours, provided that appropriate construction management is in place.
- 9.7 In my opinion, proposed condition 33 is not required and should be deleted. Appropriate construction noise effects can be achieved through reference to proposed condition 32.

9.8 I understand proposed condition 33 will unintentionally also restrict the hours during which construction work could occur within the existing buildings on the Dovedale campus. In my view it is quite possible for refurbishment work to occur within existing buildings on campus at night with negligible noise effects at adjacent residences.

Proposed Condition 34

9.9 Proposed Condition 34 in the s42a report states:

All external mechanical plant and equipment shall be designed, installed and operated in order to ensure that the noise levels received at the boundary of any adjacent property do not exceed 40 dB L_{Aeq}.

9.10 I understand that the intent of this condition is to ensure that mechanical plant such as air conditioning, compressors and the like, can operate without exceeding the night-time permitted activity standard of 40 dB L_{Aeq}.

9.11 In my opinion it would be unnecessarily restrictive to apply this condition during the day when the District Plan permitted activity noise limit is 10 dB higher at 50 dB L_{Aeq}. My noise monitoring shows that the ambient noise levels in the area are already above 50 dB L_{Aeq}.

9.12 I therefore recommend that proposed condition 34 is deleted. In my opinion the District Plan permitted activity daytime and night-time noise limits of 50 and 40 dB L_{Aeq} will apply to "mechanical plant and equipment" operating on site and these are appropriate for the protection of residential amenity.

9.13 The District Plan residential zone noise limits will inherently apply to the proposed activity and, as such, I have not recommended their inclusion as consent conditions in Section 8.0 of the *Noise Assessment*. However, I am comfortable if the applicable limits are included as a condition of consent, if this is considered necessary.

9.14 Proposed condition 35 in the s42a report is the same as my recommended condition requiring a Noise Management Plan and I consider this should be retained.

10 **CONCLUSION**

10.1 I have assessed the noise effects from the operation of the proposed Digital Screen Campus, taking into account the range of activities that could occur.

10.2 My predictions indicate that the site can comply with the District Plan permitted activity noise standards except for a technical non-compliance at the first floor of 131A Waimairi Road. Noise effects will be acceptable at all adjacent dwellings and existing residential amenity will be maintained.

10.3 I recommend that a Noise Management Plan is developed for the site and that construction phase noise is managed in accordance with the New Zealand construction noise standard, NZS 6803. My recommendations in relation to NZS6803 are reflected in my suggested amendments to the conditions of consent included in the s42A report prepared by Mr Klomp.

Jon Farren

August 2022