

COMMENTS ON ACOUSTIC REPORTS ON THE FITTERS' WORKSHOP

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My credentials in regard to the acoustics of the Fitters' Workshop are as follows:

- I have conducted a wide range of instrumental, vocal and combined performances from 2009-2011 in the Fitters' Workshop. Many of these performances were sold out. Many also received standing ovations and critical praise. In other words, I have extensive, diverse and high quality practical experience of performing in this space.
- I am Artistic Director of the Song Company, which is one of Australia's outstanding and innovative a cappella ensembles. We have performed in numerous venues around Australia and internationally, for example, the Perth Concert Hall (which was voted number 1 concert hall in last year's *Limelight* survey), Melbourne Recital Centre (the very best in Australia in my view) Beijing Concert Hall, the best of the many new concert halls in China, Talinn Concert Hall in Estonia (a gem treasured by a very musical nation), Musikverein, and in Vienna etc etc.
- As a musician, I have received numerous awards, prizes and commendations, for example, the NSW Award for "the most outstanding contribution to Australian Music by an individual" and "musician of the year" by the Sydney Morning Herald's music critic in 2006.
- I have directed an extensive range of music from Bach to Gershwin, Monteverdi to Mahler, early, classical and contemporary music.
- I have worked with most orchestras in Australia as well as specialist ensembles such as Sydney Alpha, Libra and Ictus (Belgium-Germany) and Australia's leading new music group Ensemble Offspring.

In the table below, I have identified what I believe are the key issues raised by the two acoustic reports, summarised what I understand are their main conclusions and, in the third column, provided my own comments.

Issues	Key Points in the Acoustic Reports	My Comments
1. Effect of audience being present/ absent	1. Both acoustic reports were (necessarily) done when the building was empty. 2. Both reports used technical modelling to determine the effect of an audience. 3. Both reports note considerable differences between these 2 conditions. 4. The reports agree that, when empty, the building's uses are extremely limited. 5. The reports differ in their assessment of the building's utility with an audience present – see Issue 6 below.	Although technical modelling of the effect of an audience should not be dismissed, it cannot substitute for authentic, real live experience. I have conducted and attended many performances in the FW. The space needs an audience to come to life, not only because of the crucial aspect of length of reverb, but because of the quality of the sound that is revealed. FW gives a warmth, beauty and shine to the sound that is quite rare and may be hard to measure through technical modelling. It accounts for the closeness and the connection the audience feels. In this hall, we can be enveloped by the sound – normally a rare occurrence but a recurring one in FW.

	6. The KVDL report states that the FW “is acoustically highly sensitive to what is put into it” (p. 7).	I note a recent letter to the Canberra Times (15/2/2012) that describes the reaction to one concert in FW: “After a moment of stunned silence, the legendarily Canberra audience simply erupted. They were in a body standing, yelling, waving their arms. This was eventually replaced by the intense buzz of excited conversation from an audience that does not leave – that is the true gauge of an exceptional event.” This reaction was repeated in many of the concerts I’ve performed in and attended.
2. Uniqueness of the FW	Both reports agree that the FW is unique or almost unique in Canberra. 1. In accord with the report’s brief, this assessment of uniqueness is based solely on the acoustic properties of the building as these derive from its construction (volume, hard surfaces) and hence reverberation times (see below). 2. The SLR report concludes that this uniqueness is highly limiting, and strongly implies that it is not worth preserving. 3. In contrast, the KVDL report states that whether or not the building is retained for musical performances, “the current ‘blank slate’ condition of the space should be preserved lest we destroy the unique acoustic we are trying to preserve” and that “any alterations should be made and assessed carefully” (p. 9).	1. Given that the FW is heritage-listed, I agree with the KVDL report that (along with its other heritage values) the building’s unique acoustic properties should be respected and enhanced, rather than trying to find ways to destroy them. 2. The reports do not take into account the non-acoustic qualities of the building that combine with the acoustics overall to make it an outstanding and rare performance space (nor were they asked to do this), viz.: • its simple, proportioned elegance, • the extraordinarily beautiful windows (with the panes of glass carefully proportioned) that during the day let light in and give the audience a clear view out to the sky, and at night provide gorgeous reflections back into the audience • the airy, spacious feel of the building • its flexibility as a ‘blank slate’ making it adaptable for a range of performance types and genres. • Its value as a historic industrial precinct finding new value and relevance as a place where people

		come together and share special experiences. Indeed some of the performances that have taken place in FW still resonate in people's minds. Peter Sculthorpe's comments (Exhibit 3 B) capture some of these qualities: "I was thinking I don't know of a performance space equal to this in the whole of Australia. I mean does anybody know of a place to listen to sublime music with sun pouring in, and to have such a special feeling and to feel so uplifted?"
3. Comparison with other venues	1. The SLR report compared the FW with a school gym of similar proportions (p. 5). They also compared their measurements with a "comprehensive" research text (Beranek). These comparisons are the basis of their conclusions regarding the rarity of the FW acoustic (see above). 2. The KVDL report compared the FW with six other Canberra venues that the consultants judged to be "well known reference points" for music similar to that performed in the FW (3 churches, the Albert Hall, Llewellyn Hall and the Larry Sitsky Room in the ANU School of Music). The consultants also compared these spaces from different positions within the space, and took into account ambient noise (p. 7). These comparisons were the basis of their conclusion that the FW was "definitely unique among this group of spaces" (p. 7). However, they also concluded that it was not useful to compare the FW to these other spaces because it is "empty and untreated" (p. 7) – but see section 1 above.	1. The relevance of the SLR comparison with a school gym is unclear. The reference to Beranek seems more soundly based. As noted above, neither comparison draws from the consultants' expertise or practical experience as performers or audience in the FW or, it would seem, in other music venues. 2. The KVDL report compared the FW to a range of other music venues. Their comparisons provide useful reference points. The consultants would appear, from their description of their work, to be experienced in dealing with music (p. 1). - However, the other places considered in the KVDL report should also be compared in relation to other key criteria for music venues (which go beyond the brief of the commissioned reports), for example, hiring expense, seating capacity, parking, restrictions on use, and ambience in relation to different types of music. The FW is rare in Canberra in being ideal for mid-size audiences (100-400 people) and is 'a blank slate' in regard to ambience (unlike, for example, a church or the

		Albert Hall). In its present state, the cost and difficulties in hiring it are prohibitive but these issues will need to be addressed no matter the use to which it is put. 4. As both performer and audience member in a number of Canberra music venues, my experience of the FW in comparison to other music venues in Canberra is that there is a marked difference: better of sound quality than any of the other venues, better size than some of the small decent venues, better size than Llewellyn Hall which is only suitable for orchestral performances. Nationally and internationally, FW has the warmth and quality of sound on a par with some of the greatest established venues. Overall, it compares with Radial in Berlin, another industrial heritage venue that has found new life through performance and music.
4. Special acoustic qualities: (i) <u>distribution and range of sound through the space</u>	Both reports agree that the distribution and range of sound through the space is good. The SLR report states that (on 2 measures) the spread is “desirable” (p. 7) and “there is a good spread across the frequency range” (p. 9). The KVDL report states that the internal dimensions of the building result “in very evenly distributed room modes, meaning low notes are not cloudy or muddled by an uneven distribution of room resonances” (p. 2); that the FW “has many echoes which mostly blend together to create a homogeneous effect” (p. 4); that the FW “scores well with how the performer on stage hears their own sound as well as what comes back from the room” (p.4).	This quality has been consistently reported by audiences. It accounts for the real emotional engagement with the sound experiences during many performances.
5. Special acoustic qualities:	1. Both reports agree that the high reverberation times are rare, if not unique. In summary, the SLR report	1. The key issue in this respect is whether or not the high

(ii) <u>reverberation</u>	records the reverberation time as “well in excess of the range of reverberation times” in Beranek’s study of concert venues (p. 4). The KVDL report found “its reverberation time is two to three times as great as all other venues” in their study (p. 7). - Neither report comments explicitly on the currently proposed use of the building as offices and a print workshop (nor were they commissioned to do this). - The SLR report states that partitions and soft furnishings would ‘decrease the liveliness’ (p. 9). - The KVDL report explores the effects of “a proposed basic fit out” that would “preserve the current acoustics” but enhance the building’s uses to make it “viable year round” and “accommodate a wider range of purposes” (p. 7). They conclude that “with simple alterations, the Fitters’ Workshop can retain all the acoustic qualities known and experienced already by audiences, but also be put to other uses” such as “exhibitions, large scale art installations and as a creative development or workshop space” (p. 9).	reverberation makes the FW suitable for music – see Issue 6 below. However, it would seem from these reports that the use of this building as a print workshop will be acoustically problematic, even if the space is roughly halved (as currently shown in the plans), and that these problems have not been sufficiently addressed in the current plans. In other words, the very properties that have garnered the praise of musicians and audiences are those that will have to be comprehensively destroyed if the building is to be suitable for its proposed use.
6. Suitability of FW for music from an acoustic perspective	- The two reports differ in the extent to which they see the building’s acoustic properties making it suitable for music, and hence the implications re preserving it for music. The SLR report notes (rightly) that “there are few assessment criteria applicable to this situation, since we are dealing with the aesthetic nature of the sound rather than questions of noise level” (p. 6). However, it concludes that the building’s use for music is quite restricted. It states that “the technical data suggest that the hall would be best suited to works which rely on a rich sustained sound, where the different notes blend together” (p. 9). In reaching this conclusion, research by Beranek is their main (only?) source of information. The ideal range for a concert hall, according to Beranek, is 1.5 to 2.1 seconds, while 5-10	This is the most controversial aspect of the building’s acoustic. Clearly, some musicians are not as enamoured of the reverberation as others, and it appears that some actively dislike it (although it’s hard to tell how many of the critics have actually attended concerts there). The SLR report appears to be based on a theoretical, literature-based approach to music, rather than any practical appreciation or experience. The successful and growing use of the FW between 2009-2011 as a venue for the CIMF contradicts the conclusion drawn from Beranek. In any case, as the CIMF experience illustrates quite clearly,

	seconds are “similar in performance to a medieval cathedral” (p. 8). Based on these numbers, the SLR report concludes that the FW “is not suited to classical music due to the long reverberation times” (p. 9). 3. The KVDL report notes that subjective and objective criteria are different (p. 1) and accordingly report on both from an acoustic perspective. The consultants’ subjective experience was of a “bright, open and airy” space, in which reading aloud was “easy and enjoyable” but casual talk at any distance was difficult (p. 2). Subjectively, their initial judgement in the empty space was that “the room would be good for slower forms of music – Gregorian chant or Enya for example. ... Music of any complexity, speed or detail would simply be lost in the long reverb tail, thereby defeating the point of the music” (p. 2.) In contrast to the SLR report, and based on listening to a CD of music recorded (but unenhanced) performed before audiences in the FW, they state that “in our opinion as recording engineers, the perceived quality of the room is excellent and nothing like what we measured when the room was empty” (p. 7). The acoustic modelling (based on including chairs and an audience) gave results “similar to the CD recording we heard ... It is still a unique live and airy space, and without the liability of excessive reverberation. It could be termed ‘luxurious’ instead of ‘out of control’”. There is a broader range of music that would sound very good in the altered Fitters’ Workshop” (p. 8). Other modelling against various measures led the consultants to state that “the predicted C80 clarity measure is fine for slower classical music like Brahms or Wagner but not appropriate for faster passages in Mozart or Haydn for instance ... it is highly suited to slower ambient music and sparsely instrumented forms of music ... for these genres it can be superior to local churches and other venues ... If retained in its	“classical music” is hugely varied and should not be considered as simply one genre. A much more nuanced approach is needed. Thus: 3. Re Vocal Music – there seems to be widespread agreement among professional & amateur performers, together with audiences, that the building is excellent for voice: soloists, small groups and large choirs. 4. Smaller instrumental ensembles – there also seems to be widespread agreement that the space is excellent for smaller instrumental performances, ranging from soloists and duos (e.g. the Finnish tango concert with Pekka Kuussisto, violin, and Liro Rantala, piano, who were so pleased with this performance that they are seeking to exploit the recording commercially) to trios and quartets (the New Zealand String Quartet commented that they had never heard themselves sound so good) to various small ensembles of, say, up to 12 or so instruments. 5. Folk & Jazz Music – based on this experience, it would appear that the space would be highly appreciated by non-classical musicians of various kinds, for example, folk musicians and jazz artists. 6. Larger instrumental ensembles – the main disagreement is in regard to larger instrumental ensembles. Criticisms are that it is difficult for instrumentalists to hear each other and that the sound is overwhelming.
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	current form, it could become a functional and complementary extension to the range and variety of venues in Canberra.” (p. 9). 4. Importantly, the KVDL report also concludes that “we need to learn from real world experience” (p. 9)	However, I conducted an orchestra of approximately 20 instrumentalists in the Mahler 1st Symphony in the FW on 18 May 2011. There was excellent rapport and hearing between musicians. I also conducted Steve Reich’s <i>Desert Music</i> (20 May, 2011), which consists of very large amplified ensemble of voices, extensive percussion and keyboards as well as string orchestra. The performance received a huge standing ovation from the audience. The piece requires razor-sharp rhythmic control of the entire ensemble, something that we achieved quite effortlessly in comparison to the Llewellyn Hall, where the first rehearsal took place. 7. Amplified music – there is even greater disagreement over whether the FW is suitable for amplified music. Clearly, at least some performers and audiences do not find the space problematic for this type of music. <i>For my own views, see above re Desert Music.</i>
7. My Conclusion	8. Overall, in my considered view, the different properties reported in the acoustic reports must be considered in relation to each other and to other non-acoustic factors. Those performers and audience members, including myself, who report outstanding experiences would appear to be responding to the way in which the high quality distribution and range of sound mitigates the long reverberation to deliver detail, warmth and richness. Another key factor that contributes to this experience is the simple architectural beauty of this open, airy light-filled space. The building also has an optimal seating capacity and ambience for concerts in a wide range of genres – both hard to find in Canberra. Without the building’s acoustic properties, these other features would be irrelevant in regard to music. Combined, these features make the Fitters’ Workshop a performance space that needs minimal alterations. My experiences in the FW indicate that, no matter what the disagreements over its suitability, and despite some limitations, the space is sufficiently versatile to be a viable and valued space for a wide range of music performances. Indeed, I believe that the positive qualities of the space make it superior in many respects. Potentially, it is a local and national treasure.	