

**Anton, what is the history behind your Studio's engagement on this unique project?**

Anton: *Adelaide, being the nucleus of the arts in Australia, is very proud of its intimate city status. It's this very close-knit community that fosters and enhances the creation of the arts in South Australia. I was introduced to Ulrike Klein by a mutual friend, an environmental sculptor and landscape designer, Evette Sunset. Ulrike invited us to come and look at the existing concert facilities at Ngeringa Farm. Together we walked, talked, and absorbed the surroundings. As is so often the case, these humble buildings (in a beautiful country setting) are the birthplace of wonderful music and now the renowned Ngeringa Arts Concert Series. After 10 years of concerts at Ngeringa Farm, it has become a recognised centre for chamber music. Ulrike was now ready to take on her vision and establish a permanent venue for music excellence. Drawing on my past experience of designing music venues, community buildings and working for many years as a stage set designer for drama theatre we explored the qualities and needs of such an arts centre. After many sketches, site analysis, a close study of the existing buildings and much soul searching it became clear that new purpose designed buildings were the only way forward to achieve Ulrike's ultimate goal. And of course fundamental to this goal was the need for an acoustic specialist.*

**Acoustics specialists Arup were then engaged, how did this come about?**

Andrew: *Ulrike Klein had attended a performance at the Melbourne Recital Centre and was incredibly impressed with the acoustics of the space. Our global reputation and portfolio of world-class performance venues also aligned with Ngeringa Arts' aim of creating opportunities for musicians to perform, in addition to having access to some of the world's rarest instruments. Ulrike and I met up and talked about acoustics, her vision for the project, rare instruments and rare music venues, her passion for quality and we simply clicked and knew then that we should work together to help realise her dream and truly make it a reality, acoustically.*

**How important was the collaborative relationship between client, architect and acoustician?**

Cameron: *This was critical - working closely with Ulrike and Anton, in order to realise her aspirations for this unique boutique performance space and in achieving exemplary acoustics for the music which will be performed, while preserving the intimate scale and aesthetic character of the architectural scheme.*

**What influenced the resulting design, and how did the design evolve?**

Anton: *Ulrike had a very clear brief. This was to be a venue for the arts centred on chamber music. The new venue must be intimate and embrace its country surroundings. The design evolved around these two qualities and it is these that make this new building for music so special. Sustainable natural materials are used in the building which embodies passive solar design principles and water and solar harvesting to be energy and water self sufficient.*

*The intimacy of the audience coming to a daytime concert in the country was central in the evolution of the design. Seating only 200 patrons I designed the space to continue that close knit feel of community that is so central to Ngeringa. This is not a dispersed and divergent audience. Many of the concert goers buy season tickets and a close bond has developed amongst them. This intimacy called for a “gathering of people around the musicians” rather than a hall with row upon row of seats. Coupled with this is the rural setting of the site at the foot of Mount Barker Summit, the Ngeringa vineyards and the historical herb and flower garden of Jurlique. To embrace this setting I have designed the building to have a vast glass wall facing the mountain view which is seen over the gardens. To the south, blade walls of rammed earth frame views of the vines. The materials have been selected for their sustainable natural qualities and rural character. Rammed earth walls are exposed both inside and outside the building, sustainable plantation timber is used extensively and the building is clad externally with rural corrugated iron.*

Cameron: *Taking Anton’s strong architecture, we brought the design into our Arup SoundLab in Melbourne, which we use to demonstrate how a space will ‘sound’ before it is realised. It’s an innovative virtual listening environment which allows clients and designers to hear the sound of existing spaces, and to test the sound of designs. Designing a concert hall using the SoundLab involves critical listening by Arup acousticians, clients and musicians. The process involves use of the techniques of sensory analysis – trying to relate subjective preferences for how the hall sounds to objective measurements – almost like an acoustic equivalent of a wine tasting! This enables the designs to be tested and verified in advance of construction.*

*For the Ngeringa Concert Hall, it allowed us to run an acoustic critique of the design, with the client, architect and acousticians all in the room, where we progressively modelled improvements and stepped Ulrike and Anton through the evolution of these progressive adjustments. Following this, the core principles of the original architecture for the Concert Hall remained but the SoundLab enabled us to manipulate the design for architectural and acoustic beauty - eventually producing a refreshed design.*

## **What challenges did the design team overcome?**

Cameron: *The hexagonal and near circular room shape and domed roof provided significant acoustic challenges, as well as the glazed walls behind the performers.*

*Critical to the design has been providing the same aural experience as a traditional rectangular hall, including rich lateral sound reflections, spaciousness of sound with great clarity combined with the visual intimacy of a circular hall: matching acoustics to visual quality.*

## **The new Concert Room includes many unique features; could you describe some of these and how they ultimately enhance the musician and audience member experience?**

Cameron: *The Concert Hall has been carefully designed to have a very spacious and enveloping sound – which is extremely rare in a non-rectangular hall.*

*The hexagonal and near-circular shape of the Hall and the almost-domed roof would normally result in a very uneven sound due to focussing from the concave room surfaces. The Hall has been shaped and incorporates acoustic treatments so that the sound is evenly distributed throughout the audience area, resulting in a very consistent sound for the audience members.*

*The architect's brief was also not to conceal the natural beauty of the rammed earth walls behind an "acoustic shroud" of applied panelling, so Arup designed the shape of the wall to be a sound-scattering 'wavy wall' so that the exposed structure itself is inherently 'acoustic'.*

*The resulting wall scatters the sound and helps to evenly distribute sound across the audience.*

Andrew: *The choice of materials for the Concert Hall was made to produce a space that is as visually stunning as it is acoustically beautiful. The glazed wall behind the performers provides views towards Mount Barker and is an important part of the design aesthetic to provide a space that celebrates the natural light and beauty of the Adelaide Hills.*

*The glazing at Ngeringa incorporates specially-designed expressed glazing frames which provide acoustic diffusion and 'sweeten' the sound reflection from the glazed wall and eliminate acoustical glare or harshness, allowing the glazed wall to be used behind the musicians without detracting from the acoustic quality of the space.*

*Often, attending a musical experience is not just about the program itself. Similar to Glyndebourne Opera House in the UK, one of many “gem projects” completed by Arup, the setting and environment for Ngeringa will be about the whole-concert experience.*