Significant Modern Theatres:

Arts Centre Melbourne

TD&T discusses Melbourne, Australia's Arts Centre in this issue as part of its multi-year research collaboration with *Bühnentechnische Rundschau*, the journal of the Deutsche Theatertechnische Gesellschaft (Germany's Theatre Technical Society) and *Sightline*, the journal of the Association of British Theatre Technicians. Under the auspices of this project, noted specialists in theatrical architecture are producing an ongoing series of articles celebrating and re-examining some of the most significant theatres that opened between 1950 and 2010. The project is led by David Staples, theatre consultant. The research informed the International Theatre Engineering and Architecture Conference (ITEAC) held in London in 2018. The articles will be published in a book entitled *Modern Theatres 1950 to 2020*.

The riverfront terrace outside Arts Centre Melbourne's Hamer Hall connects the facility with the Yarra River. Photo by John Gollings. All images courtesy of Arts Centre Melbourne.

Plagued by complicated construction challenges, the Arts Centre offers a lesson in perseverance. Now, post renovation, the facility is arguably Australia's finest.

BY TIM BRINKMAN

Australia was barely 30 years old when prominent voices came to the fore demanding some form of arts center in Melbourne to extend the established museum and gallery provision. It is typical of Australia that the vision was bold and ambitious.

Melbourne's Arts Centre was spearheaded by newspaper magnate, Sir Keith Murdoch and the composer Margaret Sutherland. Murdoch had served on the National Gallery and Museum of Victoria Board of Trustees since 1933. Inspired by the trend in the United States for the arts to have an extended role in museums by incorporating lecture theatres for educational talks and small recital halls for concerts, Murdoch encouraged the National Gallery to experiment. The Gallery agreed to "combine pictorial and musical arts" by holding chamber concerts. By 1944, Murdoch had gathered sufficient political interest for a new arts gallery to be built on a riverside circus site, which would include a small recital studio and a theatre for "high-class drama and other cultural activities."

Meanwhile, Margaret Sutherland had more ambitious plans. She lobbied for a building that would be "grouped around a courtyard to avoid any institutional character and to create a friendly place for instruction and enjoyment." Her vision would include a 1,000-seat theatre, a lecture hall for 200, small recital studios, an arts library, and a restaurant.

Murdoch's vision for a new art gallery and Sutherland's dream of a combined arts center came together in 1946 with the passage of the Melbourne South Land Act, which set aside the circus site for a National Art Gallery and a Cultural Centre. It took 14 years to persuade one of the Victoria State premiers to take on the risk of supporting a venture. Observing the difficulties encountered by the Sydney Opera House Building Committee, most Victorian politicians viewed the project with suspicion. Finally in 1960, with the liberal government's support, Roy Grounds was contracted to design the Gallery and Cultural Centre. Grounds produced a master plan with drawings of the interior spaces and views of the exterior from Prince's Bridge. He wanted the National Gallery and the Cultural Centre to contain a rectangle, a triangle, and a circle.

Construction Challenges

The rectangular National Gallery of Victoria was completed first in 1967. The design and construction of its next-door neighbor, the Cultural Centre was another story. The triangular design was created by a tall copper spire. A music auditorium, lecture theatre, flying tower, and small experimental theatre would lie beneath the spire, underground and grouped around a central foyer. However, by the time Grounds had completed the National Gallery, he was astonished to discover that in the 9 years since he produced his master plan, "the arts in this country had grown prodigiously" and government subsidy of the arts had been established. The plans and budgets changed several times to find a compromise between the needs of the newly formed Victorian opera and ballet companies and those wanting a major concert hall (echoing the conflict taking place at the same time in Sydney). Finally, it was agreed that there was to be a 1,500-seat opera and ballet theatre with orchestra pit; a 750-seat drama theatre; a 2,500-seat concert hall, which could also be used for lectures; and a 400-seat experimental theatre. The 5,000 audience members would all be up to 40 meters underground, beneath the spire, and the plan was that they were to be in the venue

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Interior of Arts Centre Melbourne's State Theatre. Photo by John Gollings.

by March 1977.

From the beginning, the design and the needs of the Arts Centre were in conflict. Grounds was determined to have a sweeping view across an open piazza all the way to the river. From the city, the perspective would take the eye past a soaring copper spire to a great rectangular bluestone National Gallery beyond. Nothing would distract the eye along the way, certainly not the uncompromising bulk of a theatre's fly tower.

Engineering consultant John Connell assessed the riverside site for the theatres and declared, "Below ground at this particular location is beyond belief!" The National Gallery was built on Silurian mudstone, a material solid enough to build on. Just by the river was a basalt outcrop and between the two, along the course of an ancient river and at precisely the place intended for the underground theatres, was 40 meters of "custard like" Coode Island silt. The brief for the massive job of constructing the Cultural Centre's foundations required that builders use a new technique to freeze the silt down to the bedrock 40 meters below, then carve it out in chunks "like cheese." The offers were on the Premier's desk for approval in October 1970 when a 367-foot span of the West Gate Bridge being constructed over the River Yarra collapsed, killing 30 workers. Consequently, Premier Henry Bolte would not consent to a building project with such complicated engineering and the "deep hole" plan was abandoned. It was agreed that only the three theatres would be built partly underground, the fly tower would be above ground beneath the spire, and the concert hall would be a separate building next to the river. This was the first of three major compromises forced upon Grounds during the construction of the Arts Centre.

In 1974, 329 compression piles were sunk to bedrock to support a 3-meter-thick concrete foundation slab, and perimeter walls were built to form the open spaces for the three theatre auditoria. Known as "the bath tub," it had a strong propensity to float up and out of the ground. A number of tension piles

Audiences gathering in the Stalls Foyer of Hamer Hall at Arts Centre Melbourne. Photo by Mark Gambino.

were needed to hold the building down and prevent it from floating away. Another pile used, affectionately known as "the confused pile," began life as a tension (holding down) pile and then transformed itself, as the weight of the superstructure took over into a compression (holding up) pile. In addition to these engineering problems, it was discovered during construction that the aquifer and the ground water lying 8 meters below was highly corrosive to concrete steel. This meant that construction of the foundations had to be reassessed and new techniques developed to protect the steel and concrete. Working with BHP, the engineers developed solid billets of specialized steel low in energy and tension that would corrode less rapidly. Anchors were driven into bedrock and protected by a precast concrete sleeve until the building was completed. A corrosion protection system was then put in place to provide a continuous electrical current passing through thousands of sets of high energy, zinc anodes "like strings of sausages" attached to the steel piles, defusing the corrosive properties of the water and protecting the piles. The building has two sources of back-up power to protect these piles. The anodes, which have a built-in safety factor of 300 percent, are closely monitored for signs of trouble.

An Egg in the Mud

The concert hall for the newly named Victorian Arts Centre was now to be built next to the theatre's spire on the basalt rock foundation. Knowing there was a precedent in Toronto's Roy Thomson Hall, Grounds was determined to complete his geometric concept and have a circular building, partly underground.

His design concept for the building used the analogy of an egg. The auditorium was the yolk, the foyer the white, and the dressing rooms and services protecting the egg from environmental intrusion were the shell.

Grounds decided against the usual procedure where "acoustic consultants have to advise on how to redesign the architect's schematic or preliminary plans to inhibit the best acoustical design" and invited acoustic consultants Bolt, Beranak, and Newman (BBN) to design the yolk, after which the architectural team would take over and produce the design for the egg white and shell. Neither Grounds nor Connell knew how to design the "egg," so they consulted specialist concrete engineer Professor Pier Luigi Nervi. Meanwhile there was strong political pressure to get started on the concert hall as the theatre's building construction was dogged with construction problems,

delays, and union strife. The design and a budget of $10 million was approved in 1974 and excavations started in 1976. The proposed theatre building opening date of 1977 slipped by in the mud.

By 1979, financial restraints were being imposed on the building committee by the state government, which was not happy with the blow-out in the cost of a state-of-the-art flying system for the state theatre. With the external structures nearly completed, budget cuts could only be made to the interior finishes. Grounds' design was therefore modest and sober, containing wooden paneling, pebble-mix flooring, bush-hammered concrete walls hung with tapestries, and glass panels etched with images of Australian flora and fauna.

The building committee members were aghast; they had wanted a "classy building, not a government building" so they turned to Academy Award winning film and theatre designer John Truscott to design interiors with a "sense of occasion." Truscott set up a large design studio, laboratory, and model-building workshop on site and got to work. He planned every-

Arts Centre Melbourne's iconic Spire at night. Photo by Mark Gambino.

thing from auditorium walls to the toilets, carpets, rubbish bins, coffee tables, and waiters' uniforms, laying samples out on the architects' plans and elevations like set designs. Knowing that people would want to forget that they were many meters below ground, he created mirrored surfaces to reflect outside light down to the stalls' foyer. Using suffused lighting behind opaque glass produced an impression of windows and twinkling lights to reflect on the brass railings all the way up the stairs and escalators. His concert hall design included a Michael Santry sculpture of acrylic, mirror, brass, and stainless steel to cascade down through the foyer levels to "act as a shimmering guide to the descent underground."

Truscott entirely revised Grounds' lighting design, even though much of it had been installed, and brought in young Hollywood lighting designer Dan Flannery to introduce lights that were unknown to Australia at that time: down lights, up lights, glow lights, and warm wall washes. For the concert hall, a new paint was used on the bush-hammered concrete to achieve a striated, mineral rock effect, and 3,230 leather hides were procured to create curved upholstered leather panels and furniture. Vast new paintings were donated and acquired at little cost due to Truscott's great powers of persuasion. Although many were irritated by Truscott's time-consuming insistence on everything being designed from scratch and custom made, blowing the budget, the result was a perfectly proportioned, spectacular design. The concert hall opened as Melbourne Concert Hall on November 6, 2012, two years before the troubled theatre's building and despite commencing construction two years after it.

Grounds was determined to have a sweeping view across an open piazza all the way to the river.

Upgrades Embrace the Past

In 2010, as the author prepared to fly to Melbourne to oversee the Art Centre's programs, the concert hall, now named Hamer Hall (in honor of Victorian Premier Sir Rupert Hamer), was closed for renovation. The ravages of time compounded the faults with the original building, and there were many. The acoustics were not ideal; only one person had a good word to say about them and he was the original acoustician. The sole small services elevator couldn't cope with modern demands; musicians and instruments were kept waiting whilst rubbish was collected. Movement around the "egg" design was scrambled. Retail spaces were not ideal. The striking interiors by John Truscott were flaking around the edges and the 1970s-designed state-of-the-art building no longer cut it in the new millennium.

The two-year major upgrade cost

$135.8 million and was the single-biggest project to take place at Arts Centre Melbourne since it opened. The upgrade aimed to connect the building with the river, simplify front-of-house circulation, upgrade every aspect of the facility from new seats to repainted walls, provide state-of-the-art technical facilities and, most importantly, transform the auditorium acoustic to one that could be appreciated by all.

To improve the acoustic envelopment and sound clarity, the width of the stalls was reduced. The balcony wings were eliminated, creating a seamless transition from the auditorium's side walls to the stage surround. This improved the flow of sound around the room. New timber chairs with vibrant brushed velvet orange fabric replaced the old. They were chosen for their acoustic qualities as much as for comfort and style. A bit of magic was performed here with modern materials, allowing the seats to be wider with no reduction in leg room. Above, stalactite lighting can vary color to augment any mood.

Waagner Biro brought more magic to the party with newly designed theatre technology, incorporating acoustic intelligence. A new technical zone was suspended above the platform, housing rigging, lighting, and sound equipment. A new system of acoustic reflectors was suspended within folds like the wings of a butterfly to improve the acoustic conditions for a performance and to conceal the technical zone. Replacing the timber paneling surrounding the stage, an elegant bronze stage surround bounces a clearer sound to the audience.

With a view to financial sustainability, more restaurant options were added, including at the river level where for the first time patrons can easily take in the cityscape. An open scenic promenade has been installed along the front of Hamer Hall's completely new face from Princes Bridge to Southbank. The new team kept faith with the original vision, retaining the cavern theme and using the original paint team from 30 years before the repaint the subterranean effects on the new auditorium walls. Eagle-eyed architectural historians will appreciate the new team's snake-like design to the water frontage, which aligns with Ground's proposed indigenous themes that included serpent-like shapes through the interiors.

It's often said that Australia has the best Arts Centre in the world; however, the exterior is in Sydney and the interiors are in Melbourne. It's worth a trip to Arts Centre Melbourne to check out if that is true.

Tim Brinkman, from Manchester, England, is the founding director of touring Pilot Theatre Company. He has served as assistant drama director of the Arts Council of Great Britain and oversaw the rebuilding of the Haymarket Theatre, Basingstoke. In 2000 he became the Director of Hall for Cornwall in Truro in the UK's far South West. Brinkman spent three years with Arts Centre Melbourne in charge of all its arts activities, including the record-breaking presentation of War Horse and a ground-breaking season of work by Philip Glass. He currently runs his own consultancy advising on new venue start-ups and providing support for performing arts projects.