

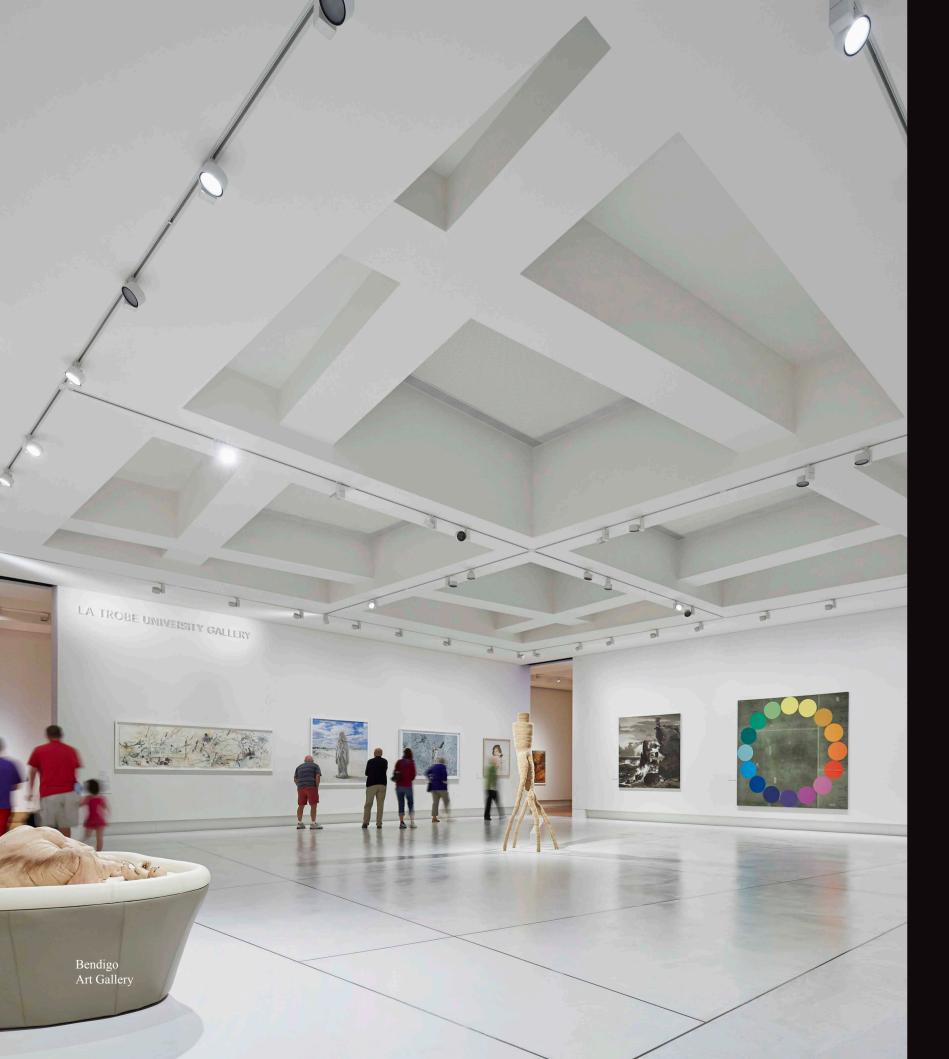


Foreword

Imagine a world without performing or visual arts. Imagine – no opera houses, no theatres or concert halls, no galleries or museums, no dance, music, theatre, collaborative arts or circus – and in an instant we appreciate the essential, colourful, emotive and inspiring place that creative pursuits hold in our daily life.

Creating opportunities for arts to flourish is vital, and this includes realising inspiring venues which are cutting edge, beautiful, functional, sustainable, have the right balance of architecture, acoustics, theatrical and visual functionality and most importantly are magnets for artists and audiences, are enjoyable spaces and places, and allow the shows and exhibitions to go on.

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Federation Square Arts Complex 122 Australia





Elisabeth Murdoch Hall Melbourne Recital Centre

"It's a fantastic sensation to play here," were the words of violinist Jo Beaumont as she stepped off stage at the Elisabeth Murdoch Hall, a venue designed with the intention of becoming Melbourne's home of chamber music. After five years of settling into itself, the hall has found its groove, gaining a reputation for delighting musicians, ensembles, orchestras, solo artists, choral

performers and audiences across a range of musical styles. The crown for Limelight magazine's number one chamber music space in Australia (2011) sits comfortably on the head of this venue, but the crown may need to make way for other regalia as it is now globally renowned for being much more than Australia's best venue for chamber music.



Sydney Opera House

Just like Bennelong – the Aboriginal man whom the Sydney Opera House's location is named after – this glimmering beacon plays a significant role in bringing people together. Where Bennelong mediated between early settlers and Indigenous Australians, the story of Sydney's 40+ year-old cultural icon is one full of acclaimed performers, countless outstanding performances and hoards of thrilled visitors, coming together in the name of performing arts.

It's one of the world's busiest performing arts venues. Each year over 1,900 performances – by a raft of companies from The Australian Ballet, Opera Australia, to Sydney Theatre Company and Sydney Symphony Orchestra – are seen by 1.4 million people, in six indoor theatres, halls and performance spaces and one outdoor forecourt space. Thankfully the ongoing care of SOH is a priority and ensures it continues to play a seminal role in Australia's performing arts story.

Sydney, New South Wales Australia

Image used with permission of Sydney Opera House Trust Arup is a proud partner of the Sydney Opera House





Glasshouse Arts

Conference and Entertainment Centre

From sleepy holiday town to the fastest growing area in New South Wales, Port Macquarie's world-class performing arts centre is helping transform a region. After four years of operation, it has staged over 1,500 shows and events, attracted over one million visitors through the doors and is bringing significant benefits to the regional economy and local communities.

The modern building design stands out in a town where more traditional buildings are the norm, and the superb acoustics and theatre design has attracted a stellar roll out of performers from the Australian Opera, Bell Shakespeare Company and Flautist Jane Rutter, to comedians, singers and the Russian Ballet.

Port Macquarie, New South Wales Australia





Melbourne Theatre Company

Sumner Theatre

In 1953, Samuel Beckett's Waiting for Godot had its first public stage premiere in Paris. Meanwhile, on the far side of the world, Mr. John Sumner founded the Melbourne Theatre Company, which some 56 years later would dedicate their most innovative, intimate and technologically advanced theatre to him. The Sumner Theatre exemplifies everything the late Sumner represented – vision, creativity, diversity, innovation, entertainment, thrill. Just as the company he created became a model for other state theatre companies, the Sumner Theatre too started a new chapter in design.

Its 500-seats, modular stage, variable proscenium opening, Juliet balcony and stage, fly and wing configurations provide flexibility to match the MTC's cutting edge repertoire and make this one of the best drama facilities in the world. Beckett's Godot may have just turned up if he could perform on this stage!

Southbank, Victoria Australia

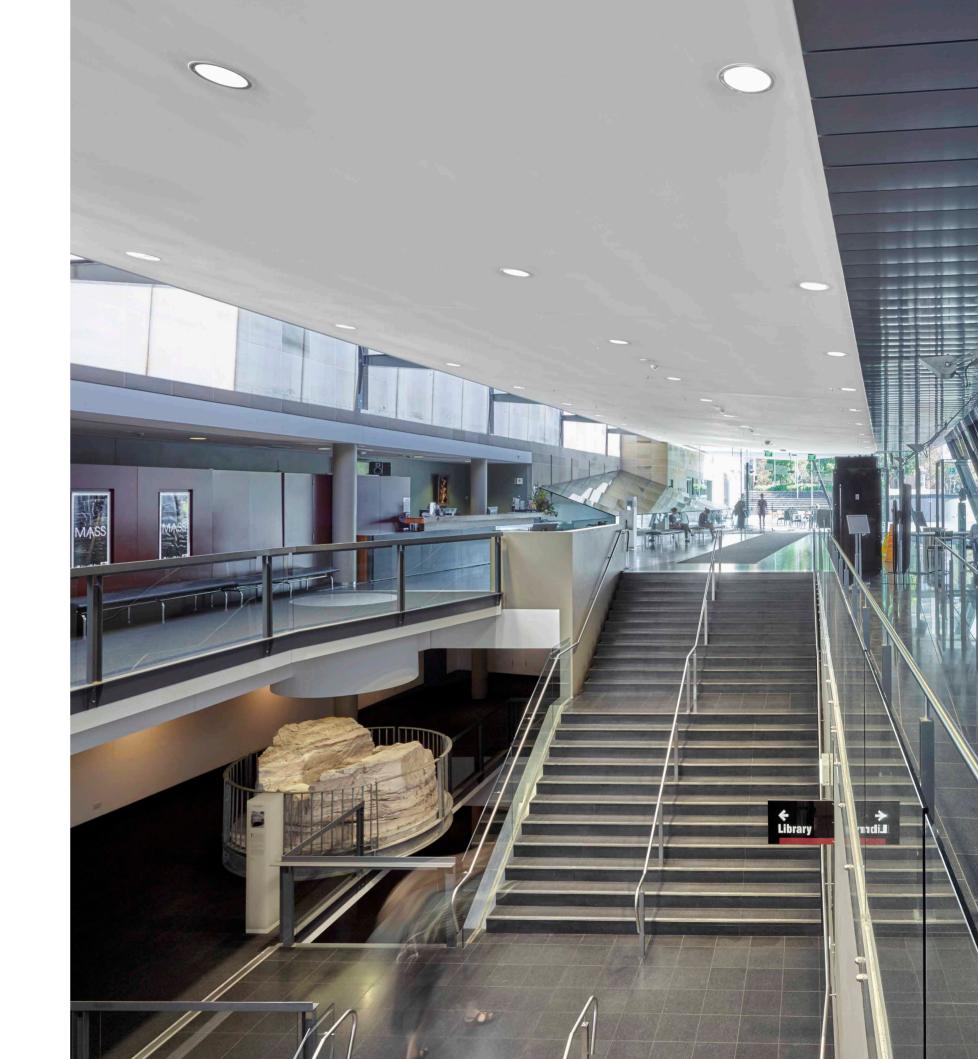


Sydney Conservatorium of Music

The nearby shiny white Opera House sails might get all the postcard glory, but it's the Sydney Conservatorium of Music which gives composers, performers and educators a twinkle in their eyes. From humble beginnings as horse stables in 1815, to its 1915 transformation into a music school, it is one of the grandest old colonial gothic buildings in Sydney. It houses the finest musical talent and teachers in Australia and thanks to a major overhaul in 2001, has the acoustic technology, studios, performance and practice spaces to match.

Over its almost 100 year journey as a music school, its location — in the middle of a bustling city with trains below and freeways close by — has presented challenging difficulties. Musicians need quiet and to give them what they need the building was separated from the sandstone on which it's built. Now the majority of the building rests on rubber pads and each studio and recital area is completely separated from the external structure.

Sydney, New South Wales Australia





Emmaus College

Performing Arts Centre

In a converted school basketball stadium, this facility is attracting some of the best performing arts teachers in the country. While screechy sneakers are at home in an indoor sports hall, Shakespeare and Mozart are not. Like a magician turning a rabbit into a dove, this school's cavernous, loud, tinny sports hall was transformed into a cosy and quiet

place for performance, a best in class acoustically superb 300-seat multipurpose performing arts venue. Students of all ages (and teachers) use the space daily, with its performance area, drama/dance room and gallery and audiences can now watch in comfort, hearing every word and every note – the screeching hall but a distant memory.

Melbourne, Victoria Australia

James Forbes Academy Scotch College

Rev. James Forbes was a farmer's son, who became the father of education in Victoria. He had incredible foresight. He believed in the importance of a wide range of educational experiences, specifically performing arts. It's this ideology that sits behind the blossoming of Melbourne's prestigious Scotch College music and drama school – the James Forbes Academy.

The 500-seat music auditorium (Ian Roach Hall) and drama theatre (Geoffrey McComas Theatre) add to the rich fabric of school life, are a magnet for visiting guest actors and musicians, have hosted symphony orchestras, drama productions and intimate chamber orchestras and continue to help attract and retain the very best Performing Arts teaching staff.



State Theatre Arts Centre Melbourne

Orchestra Pit

As sands pass through the hourglass, our cities grow and needs quickly change. Just 30 years young and the State Theatre needed to adapt to stay ahead of the game. A clever expansion saw the orchestra pit capacity increase from 65 to 110 musicians. The pit can be configured three ways and a new dynamic platform gave the theatre flexibility for multiple performance types from leading dance and Broadway musicals to grand opera productions.

This flexibility and adaptability continues to attract globally renowned large-scale performances and productions, notably the 2014 production of Wagner's Ring Cycle, an event of enormous significance for western culture in Australia.



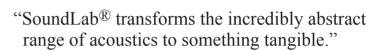
Sidney Myer Music Bowl

Summer in Melbourne equals outdoor event heaven. Since 1959, Sidney Myer Music Bowl has been the city's favourite open-air space, with its embracing green surrounds and city skyline backdrop. Ageing well, at 40 her makeover brought facilities up to international standards with disabled access and new ticketing areas, roof, sound

system and acoustics, secure gates and fencing, plus redeveloped backstage facilities. With fixed seating for 2,030 people under its sprawling canopy and another 10,000 on the amphitheatre lawn, the bowl has changed the face of Melbourne's arts and cultural scene and continues to honour the goal of its namesake who dreamed of building a 'bowl for the people.'







- Cathy Graham, Managing Director of London Sinfonietta

Arup SoundLab®

Welcome to real audio in 3D. Sit down, relax and enjoy the sweet sounds of... anything you desire. Perhaps a symphony in the Odeon of Herodes Atticus? Let's have the symphony play inside an aquarium? What is the sound like at a yet to be built art installation? How does the angle of the walls affect echoes in a space?

It's immersive, jaw dropping and mind blowing. The experiments and possibilities are endless in this mad music professors' dream toy... a lab for 'sound' – SoundLab[®]. Very sound indeed, especially for arts organisations who have used it as a fundraising tool, bringing an auditorium's blueprint to life for potential donors.

Chicago, America
Los Angeles, America
New York, America
San Francisco, America
Melbourne, Australia
Sydney, Australia
Hong Kong, China
Singapore
Glasgow, United Kingdom
London, United Kingdom





Genexis Theatre

Search *#unexpected* on Instagram, you see a snow horse, pink cacti and the Genexis Theatre – a visual feast which continues to dazzle audiences both new and old. If experimental theatre had a physical form, this radical space would be it. Experiment is everywhere in this floating, neon-lit sparkling egg, initially conceived as a brain, suspended in mid-air, six storeys off the ground. It's expressive, symbolic, absurd and immersive. It broke all traditional ideas of theatre design and the result is a transformable work of art which is technically sophisticated and intimate.





Esplanade – Theatres on the Bay

In a city now rich in 'iconic' buildings, this was one of the first on the Singapore skyline. Just like the durian fruit it resembles, locals have learnt to love it, initially critical when it débuted, it's now one of Singapore's favourite places hosting diverse indoor and outdoor music, film and culinary events. Despite stiff competition from newer arts spaces, the Esplanade's diversity and state of the art technology attracts a broad range of artists and performers – international musicals to aspiring musicians – which in turn, brings in the crowds.

Singapore







School of the Arts Singapore

Arts education is a win, win.
This inner city specialist high
school for visual and performing
arts is a living example of how
exceptional facilities are aiding
academic achievement, social
and emotional development,
civic engagement and equitable
opportunity for Singapore's
creatively talented youth.

The learning spaces, world-class teachers, curriculum and facilities, have seen students approached by leading conservatoriums and international schools. Top musicians, such as Yo Yo Ma, are lining up to teach here and if imitation is the highest form of flattery, SOTA will be blushing at the large list of governments and schools around the world keen to adopt their model.

Singapore



Llewellyn Hall Refurbishment

Australian National University

Canberra's hub of cultural activity since the 1970s, the Llewellyn Hall, has had many musical highs over the years. Its low-point came during a hailstorm in 2007 which left the venue severely damaged. But every cloud has a silver lining and with a void of musical venues in Canberra, a necessary speedy revamp saw musicians and audiences back in the hall in just one year, due in great part to the 'mad audio professor's toy' – the SoundLab®.

Hearing how design changes would affect sound in the hall saw educated decisions made quickly. Much to the delight of musicians and audiences, the updated space continues to be a magical treat for an extended range of music and is home to the Canberra Symphony, Canberra Choral Society and Canberra Community Orchestra.

Canberra, Australian Capital Territory Australia



"An absolutely wonderful feeling of coming back home."

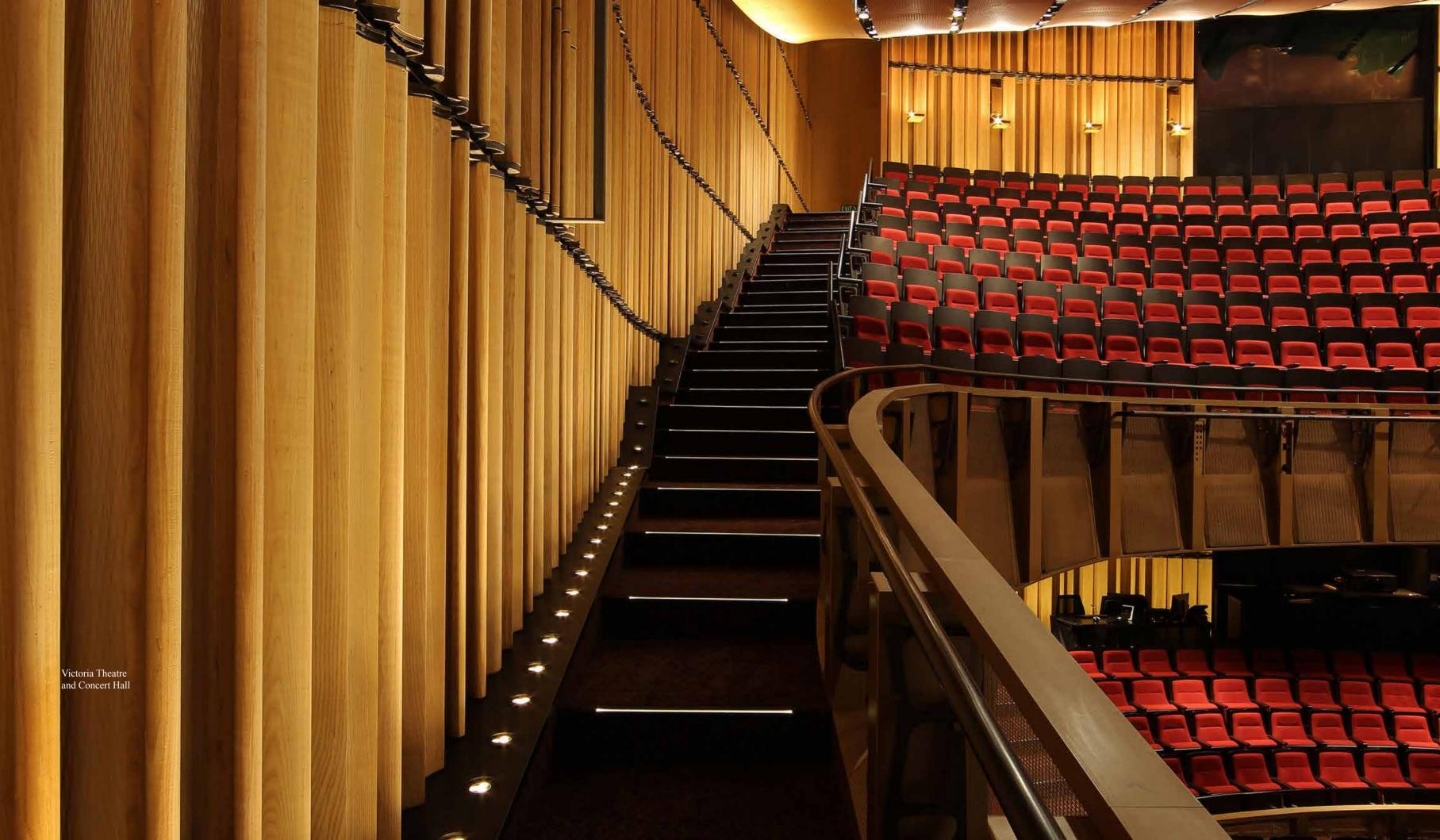
- Singapore Symphony Orchestra co-leader Lynnette Seah

Victoria Theatre and Concert Hall

Everything old is new – and green – again. In a city now bursting with glimmering new modern structures, this 150-year old colonial landmark has the same friendly heritage face, but its heart has completely transformed an obeen touched by the fetuto fairy's magic wand, and the green glitter dust continues to spread with the Hall achieving Green Mark Gold^{Plus} certification under heart has completely transformed to rival the best performing arts facilities in the world.

The auditoria, backstage spaces, rehearsal and audience areas have all been touched by the refurb Singapore's green building rating scheme.





"It has been a fascinating process observing how adjustments to the acoustic settings of the room can enormously change the warmth and reverberance of the sound and also the musicians' ability to hear and blend with each other."

– Matthew Farrell, Director – Orchestra Management, Queensland Symphony Orchestra

South Bank Studio Queensland Symphony Orchestra

One of Brisbane's most exciting spaces for orchestral rehearsal, recording and music performance, the QSO Studio has spent the first year of its life showing off its diversity and flexibility.

Wouldn't you too if you had Australia's best acoustics of any orchestral rehearsal hall and were loved by diverse audiences and musicians from string quartets to full symphony orchestras and small choirs?

The rehearsal studio has also become a focal point for the QSO's open rehearsal program, where audiences get a behind-the-scenes look at how the orchestra add finishing touches to their performances.

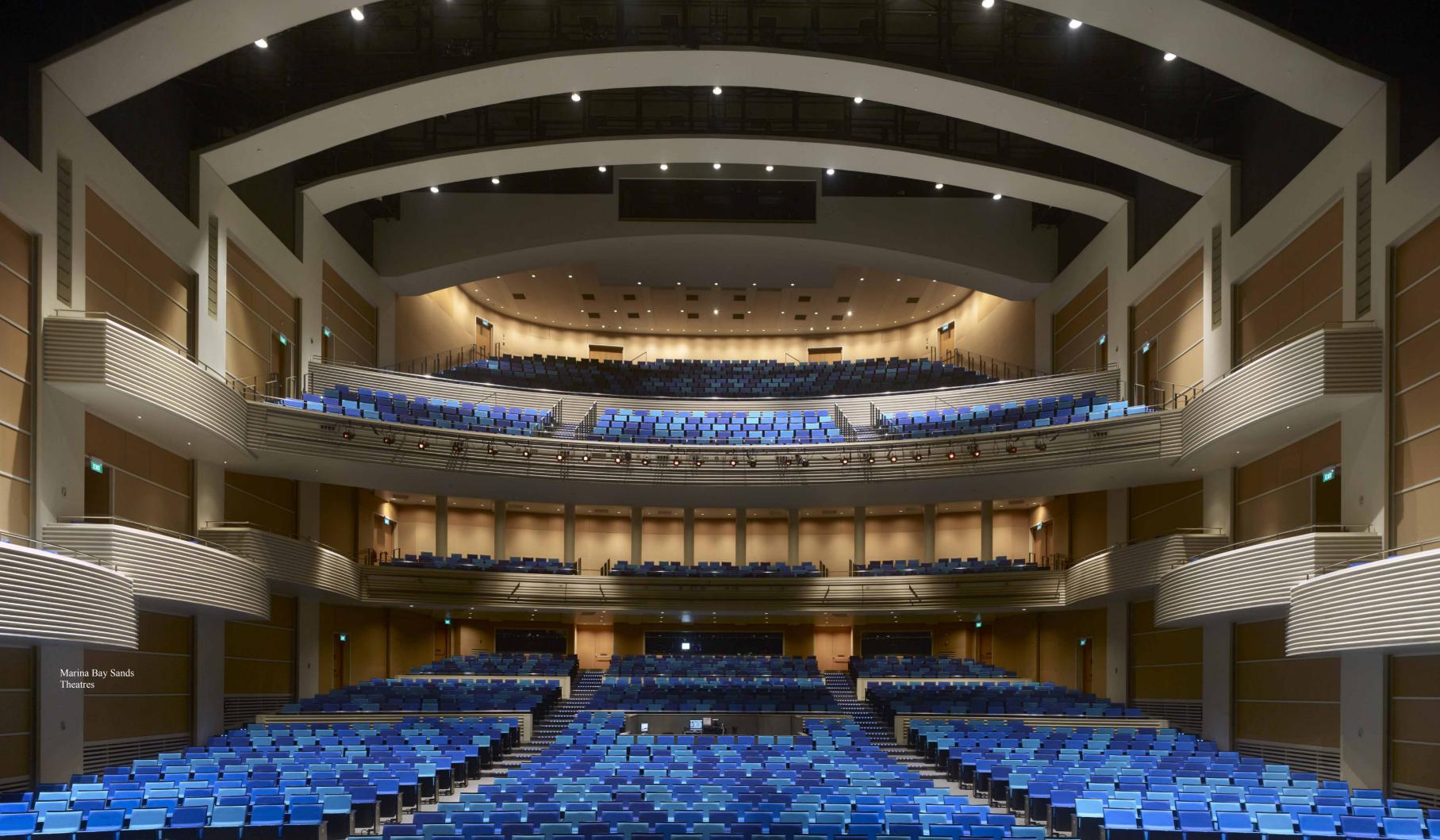
South Brisbane, Queensland Australia





Marina Bay Sands Theatres

Right before our eyes Singapore is transforming into one of the world's leading arts and culture cities. With spectacular arts venues popping up across the city, it's no surprise the gargantuan engineering marvel Marina Bay Sands houses two theatres – Sands and Grand – which are living proof of just how far Singapore's arts scene has come. Once a city starved of extravagant venues, these theatres instantly transport audiences into a world of glitz, glamour and elegance.



Federation Concert Hall Their music weaves us through the fabric of daily life, taking us on often tumultuous, exhilarating and emotional journeys. It's only fitting the home of a symphony orchestra provides balance, a calmness to their often rollercoaster ride of musical emotion.

The 1,100-seat Federation Concert Hall has been home to the Tasmanian Symphony Orchestra for over ten years and earned itself a reputation for world-class acoustics. Internally, the hall is a simple shoebox, with a bright, live acoustic designed to be perfectly compatible with the repertoire of the orchestra.

Hobart, Tasmania Australia

Performing





Chatswood Civic Place

Now known as The Concourse, it was one of the largest arts undertakings on Sydney's North Shore. From first impressions, to the 'hidden' fire safety design solution, its 'out of the box' personality is now a welcome friend. In its third year of life, the 1,000-seat concert hall and 500-seat theatre continues the local council's century old

tradition of performing arts, community celebrations and civic ceremonies. As the local community grew, so too did their needs and thanks to a Council which listened, Sydneysiders now have a new meeting place where they can read at the library, eat in the café's, play in the outdoor spaces and watch a dynamic range of live arts and entertainment.

Sydney, New South Wales Australia

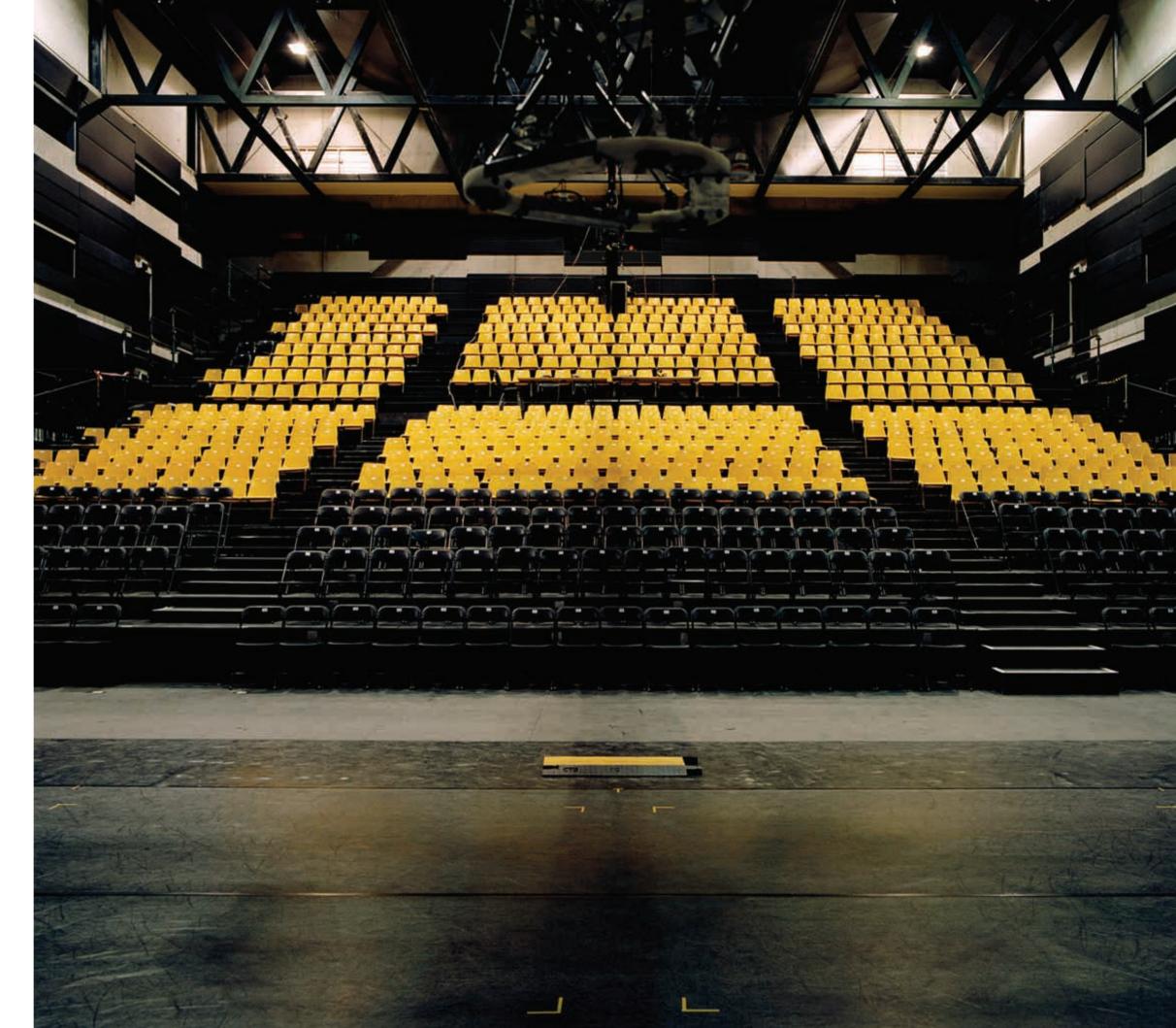


Carriageworks

Much of New South Wales' industrial and labour history is linked to the Eveleigh rail yards, parts of which have in recent years been preserved and reinvented to become large, flexible theatre and gallery spaces. In the late 1800s these industrial buildings were bustling with blacksmiths building new carriages for Sydney's expanding rail network. It was here Australia's first steam locomotives were manufactured, wartime munitions were created and unions won the fight for a six-day working week.

This tradition of ambition, risk taking and unrelenting dedication continues today, but instead of the hammers and forges, it's exemplified through a diverse, eclectic performing arts program which takes place in these spaces. If only the walls could talk.

Sydney, New South Wales Australia







Greening the Arts Portfolio

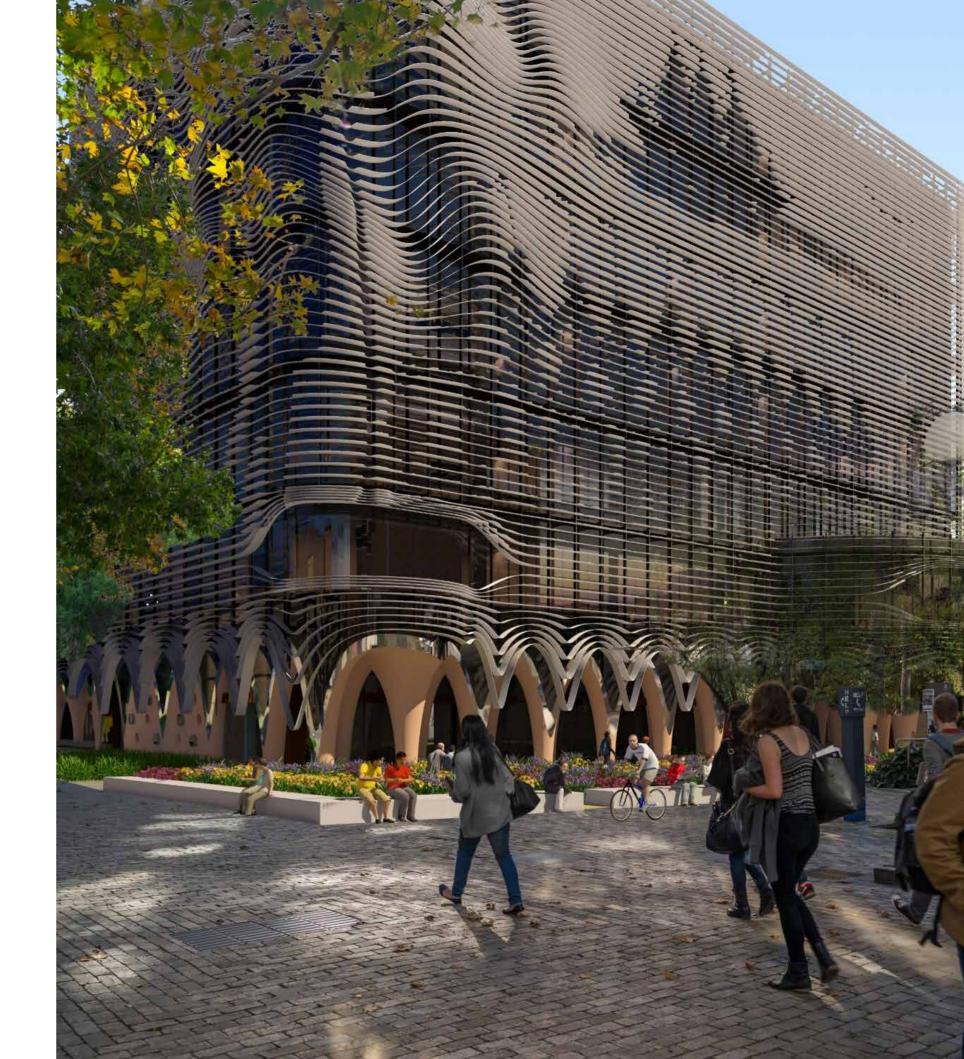
Across the world we are seeing record numbers of cities and governments roll out 'greener building programs' in an effort to reduce impacts on the environment and operating costs. When the Victorian government did so, some clever people from the arts, building and engineering world joined forces to assess the energy and water performance of over 25 arts facilities in the state.

The result? A solid plan to improve the energy and water efficiency of existing buildings in the Arts Victoria portfolio, using an Energy Performance Contracting model. To have a multi-year strategy for project proposals and targeted funding was music to the ears of the Victorian government and arts lovers across Australia's cultural capital.

Arts West Redevelopment University of Melbourne Arts Faculty

"Class rooms which were large enough when students were counted in half-dozens, were miserably inadequate when the larger classes contained hundreds", observed University of Melbourne Professor of History Ernest Scott, appointed to the role in 1913. He spoke of the University's arts facilities at the end of World War I. Their inadequacy to meet growing demands of students saw a massive post war expansion.

50+ years later, it's time for a new makeover, with these facilities receiving a middle of life upgrade (5,000m² of refurbishment). The 'Arts West Redevelopment' will also see a new signature building (with 5 Star Green Star rating) and stunning outdoor spaces (3,400m² of new build), which will reaffirm the reputation of the Arts Faculty for its quality of academic programs and provide places for arts students and staff to continue their famous political and philosophical debates. The redevelopment began in 2012 and will be completed by mid-2016.

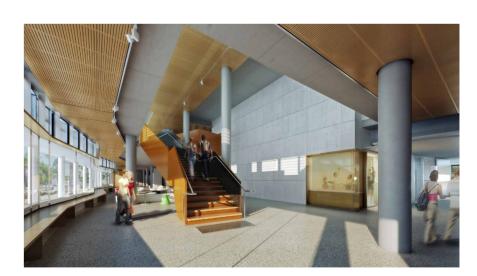


Queensland University of Technology Creative Industries Precinct 2

Creative industries are evolving as a major force in our global economy and the competition among universities – for students and economic growth – is stronger than ever. QUT has stepped up to the plate and hit a home-run with this education and industry hub, combining teaching, research, cultural and commercial spaces. Students are kept motivated, engaged and connected with

forward-looking facilities, high-tech lecture theatres, production workshops, design and computing studios, post-production facilities and newsrooms. With such a cutting-edge approach, QUT continues to attract students, help grow Queensland's creative economy and remain national and international leaders.

Brisbane, Queensland Australia







MediaCorp Campus

Singapore's largest media corporation pioneered development of the country's broadcast industry with the launch of radio in 1936 and television in 1963. Today this tradition continues with their ground-breaking 1,550-seat theatre, which is the choice venue in the region for a range of programs for recording, live broadcast and entertainment. Touring musicals, award shows, dance and drama, multi-cultural variety galas, charity shows and many other festive events fill the theatre's production calendar every year. Meanwhile, right next door in the broadcast centre, MediaCorp's expansive range of operations continue without skipping a beat in two main broadcast studios, five studios, a full range of radio, recording and editing suites and corporate offices.

Singapore

Yale-NUS College

A new generation of net savvy students now have a university experience that reflects the real time, connected and flexible nature of the web. This landmark partnership between Yale University and the National University of Singapore deserves nothing less than a landmark campus facility, which will attract enrolments, retain staff, and achieve environmental 'cred' – saving on energy (>33%) and cooling (>18%) costs in the muggy tropical climate.

Students may not notice the clever passive design elements – like sun and rain screened colonnades, five-foot shaded walkways, breezeways and an eco-pond to catch storm water – but without them, and the campus wide AV systems and A-grade performance facilities, these students would lack an engaging environment to learn, share ideas, debate differences and develop friendships and memories to last a lifetime.

Singapore



"I want to do two things with this project – pay artists well and give the community concerts at affordable prices."

– Ulrike Klein

Ngeringa Concert Hall

A long-time passion for the arts inspired one woman to build a concert hall for chamber music on her vineyard in Australia's Adelaide Hills. Once head of Jurlique, Ulrike Klein swapped skin care for philanthropy and focused her attention on creating opportunities for musicians and visual artists to achieve artistic excellence through performance, exhibition and access to the world's finest instruments. The latest chapter in this best seller is this intimate 150-seat venue which provides high-quality concert sound.

Mount Barker, South Australia Australia



Creative Industries and Performing Arts Development (CIPAD)

University of Tasmania

Composer Peter Sculthorpe is probably Tasmania's most well known musician, but the apple isle is preparing itself for a creative and economic explosion as it embarks upon one of the most ambitious arts projects in the State's history. The University of Tasmania's best in class arts Academy is set to skyrocket the

university and the State onto the world stage, connecting creative industries and cultures internationally and boost the local arts sector. It will link to Hobart's Theatre Royal (Australia's oldest theatre), will attract over 3,000 new students over seven years and will be the new home for the Conservatorium of Music.

Hobart, Tasmania Australia



"Perhaps the greatest happiness in the world comes from realizing one's purpose in life."

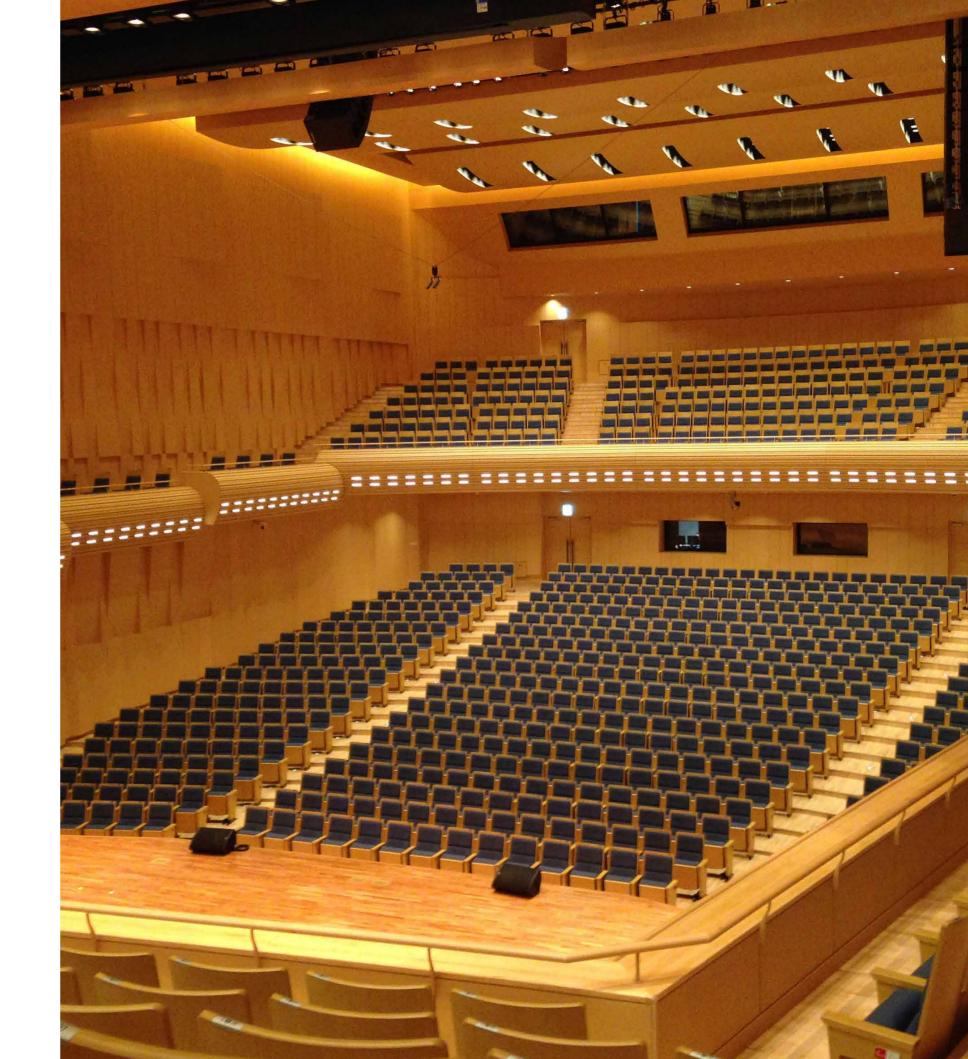
– Byung-Chull Lee

Samsung Electronics Concert Hall

From fish to modern day chips... 'three stars' (or Samsung) has taken the world in imaginative new directions since its founder started the business selling and transporting dried fish, vegetables and fruit to Manchuria and Beijing in 1938.

Almost 80 years on, this 1,200-seat venue embodies Samsung's long time dedication to arts and culture with a showcase international-standard concert hall housed within their new electronics, research, education and manufacturing complex.

Seoul, South Korea

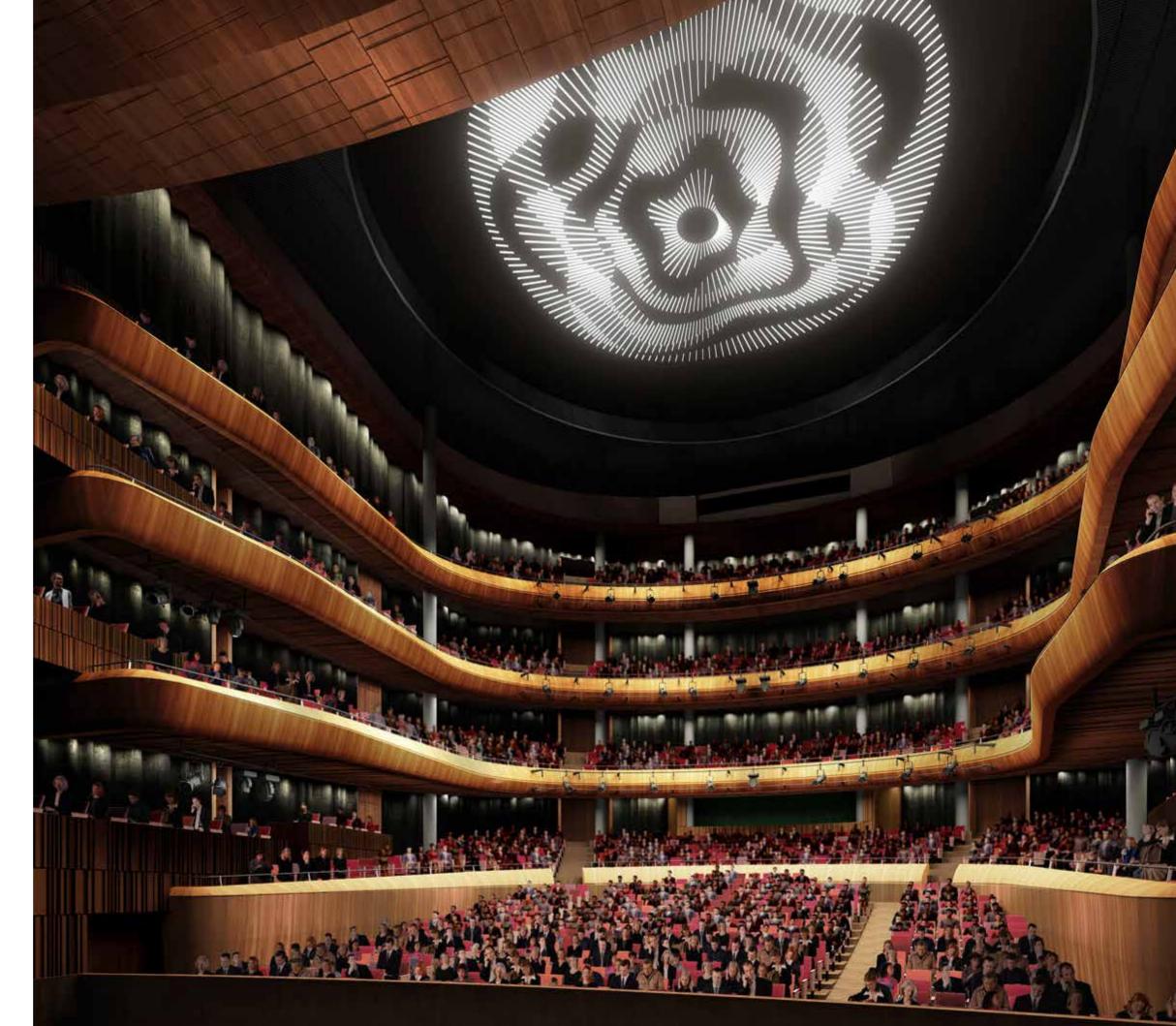




Han Gang Art Island

Water is the stream of life and Seoul's Han River has not waivered from that role in centuries, giving people water for farming, drinking, transport, leisure and fuelling rapid industrial and economic growth. While parts of the river boomed, others were forgotten, and this

new performing arts building is set to rejuvenate the neglected Nodule Island. With its 2,250-seat concert hall, 1,750-seat opera theatre and outdoor entertainment areas, the floating arts centre will be a place for people to come together and start a new chapter in the history of the Han.



The Star Performing Arts Centre

Major event promoters are lining up for a piece of the action at this performing arts venue.* It feels extraordinarily intimate yet has 5,000-seats, a unique combination which opens up doors to popular music concerts, religious gatherings, touring productions, large scale musicals, family entertainment, dance performances, conferences, corporate, community and national events. With a 400-seat outdoor amphitheatre for movies, music and more, plus a shopping mall, this is winner when it comes to box office revenue potential.

Singapore

* Project completed as Artec, acquired by Arup in 2013



Performing

Performing Arts

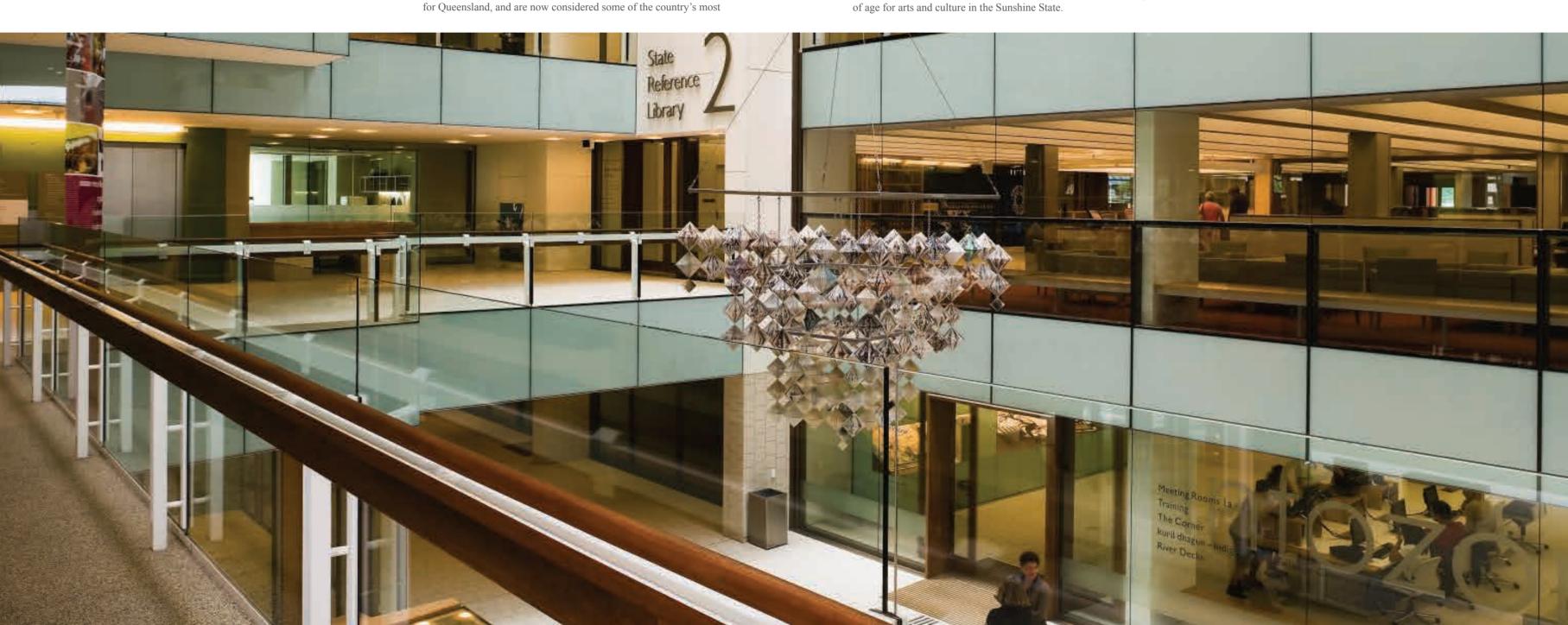
> Millennium Arts Project

Beautiful one day, perfect and creative the next. Brisbane's \$250M Millennium Arts project opened to great public and professional acclaim in 2006 and has since accelerated Queensland's transformation from the land of sun and sand to a destination with some serious cultural 'street cred'. The redeveloped Queensland State Library, the new Gallery of Modern Art and the new entry to the Queensland Art Gallery were part of a new strategic direction

popular and exciting cultural venues. Perched on the edge of the Brisbane River, these landmark buildings showcase cutting edge, award-winning* engineering design – from the new State Library with its spectacular atrium and its auditorium which floats above the new pedestrian plaza, to the innovative river heat rejection system and the underground tunnel for secure delivery of valuable artworks to GoMA. The Millennium Arts Project marked a coming of age for arts and culture in the Sunshine State.

Brisbane, Queensland Australia

*Arup and its project partners received the Engineers Australia Queensland award for engineering excellence, and the prestigious RW Hawken Award in 2007





Gold Coast Cultural Precinct

In the 1980s when champion iron man Grant Kenny epitomized the 'youthful' Gold Coast's culture of surf and sand, a seed of an idea – to expand the city's cultural offering – was being planted by the minds who governed the city. The playful, inclusive and mature Gold Coast Cultural Precinct is the realization of more than 30 years of plans and now – as the 'grown up' city prepares to reveal itself to the world during the 2018 Commonwealth Games – it will have this new 'champion' to show off.*

Celebrating the existing culture of the Gold Coast, a vast array of activities come together in one place – ballet, bungee jumping, theatre and music. With a new Arts Tower, 1,200-seat theatre, and amphitheatre set within a high-quality public realm, it is a core city-shaping initiative which will attract residents and visitors alike and enrich the cultural life and economy of the city.

Gold Coast, Queensland Australia

*Stage 1 is set to open early 2018

The entire project is expected to take between 10 and 15 years to complete





Musicians, Artists,

Sculptors and Festivals

A seed of inspiration can take our imaginations anywhere and to keep a creative vision inside the mind deprives mankind of telling its stories.

From cave paintings, to modern sculptures and three dimensional sound installations using hi-tech toys, bringing an artist's vision to a physical reality is vital for our creative heart to beat and for our community places and spaces to thrive.

Sometimes ideas are small and can be realised solo. But often ideas are large or complex and the driver of the creative bus needs to pick up passengers along the journey to help keep their dream alive. Here follows the stories of some of those artists, musicians, sculptors and festivals.

Whether it's a giant angel by the sea, being inside the head of a metal music rock god, or experiencing a scarily real audiobook, the artists who shared their seeds of inspiration – and the inventive engineers who helped make their complex ambitions tangible – remind us why art in its many forms has existed in our lives since time began.



The passengers who help keep the dream alive

Ideas can be fantastic – as in wonderful. They can also be fantastic – as in sheer scale. To those immersed in the end result of what was once an inspirational seed, the intricate complexities of how it came to be go unnoticed – as they should.

When the artist picks up their passengers to help keep their dream alive, they look for people who want to push boundaries, know their stuff, know their spaces and places, latest materials, sight and sound technologies, are practical and understand their vision.

This selection tells the stories of those artists who challenged some of the world's most inventive designers and the results are 'fantastic'

Serpentine Gallery **Summer Pavilion**

London, United Kingdom

'Stand the idea of what architecture can be on its head' was the original brief for the Summer Pavilion, where a leading architect is invited to design a structure on the Serpentine's lawn. Every year since 2000, the Serpentine commission has become a site for international experimentation and has seen pavilions by some of the world's greatest architects, including Frank Gehry, Zaha Hadid and Rem Koolhaas. Each pavilion stands for three months, with the preceding six months spent engineering the concept into reality.

Nick Cave – The Death of Bunny Munro

New York, America

Audiobook fans will have noticed the difference with this recording. Spoken word, music, and sounds originally created by Nick Cave and Warren Ellis, were developed by Arup and the artists Iain Forsythe and Jane Pollard, into a new soundscape concept. The unabridged audio book uses a groundbreaking 3D audio spatial mix, specifically designed for listening on headphones, to construct an immersive and transporting experience for the listener. The result is scarily real, just like the book's main protagonist.

Lou Reed – Metal Machine Trio

Lou Reed was a trailblazer in

New York, America

more ways than one. When first released in 1975, Metal Machine Music was dubbed "unlistenable" and "ear-wrecking electronic sludge". It was also hailed as a landmark album. one that made industrial music, noise rock, and modern sound art possible. Since the 70's Reed had been experimenting with 3D recording, attempting to replicate his experience on stage and give audiences the chance to listen to his music from his perspective - from inside his ears. After a journey spanning more than four decades, Reed teamed up with a team of our acousticians, and using Arup designed technology and techniques together created a recording and installation that is true to his experience on-stage as a performer. If you could be Lou Reed up on stage, performing, this is what it would be like. The recordings were transformed into a physical installation which exhibited at the Cali-fornia State University in 2012, Cranbrook Academy of Art in Detroit, 2015, and will tour internationally

Ai Weiwei – 'Sunflower Anish Kapoor – Seeds 3D Audio'

London, United Kingdom

Ai Wewei – 'Vito Acconci and Ai Weiwei Sound Installation'

Hong Kong Ai Weiwei has become China's most famous living artist. His artwork challenges our first impressions and his 2010 Tate Modern installation ultimately challenged him back. Ai teamed up with our world-leading acousticians to conceive documenting the installation in 3D sound and video. The concept was intended to be Ai performing choreographed movement pieces on the installation. The first visitors romped deliriously on a gritty beach of over 100million ceramic sunflower seeds, but within 48 hours the installation was roped off, the ceramic dust cited as a health concern. Soon after Ai was placed under house arrest and was unable to document the project with us directly.

To complete the projects, Ai and Arup's team corresponded and developed a series of dance sketch-es, including movement and speeds. These were performed and recorded for archive and posterity by the Arup team.

In Hong Kong, Ai Weiwei collaborated with American artist Vito Acconci bringing fresh dialogues between East and West Their spoken word interactions were developed with Arup into a twelve-channel sound installation that engaged the architecture and users by playfully swirling their combined voices in a call-andresponse narrative dance.

Marsyas Sculpture

London, United Kingdom

Anish Kapoor is one of the most influential sculptors of his generation. His Marsvas sculpture reflects what he is most famous for – adventures in form and feats of engineering. Spanning 136m of the Tate Modern's Turbine Hall, the flowing, translucent blood-red fabric of Marsyas pushed boundaries, challenged audiences and stretched minds. It was a technically accomplished sculpture – with the longest single-span fabric membrane structures ever created – which redefined the boundaries between architecture. art and engineering.

The Travellers

Melbourne, Australia

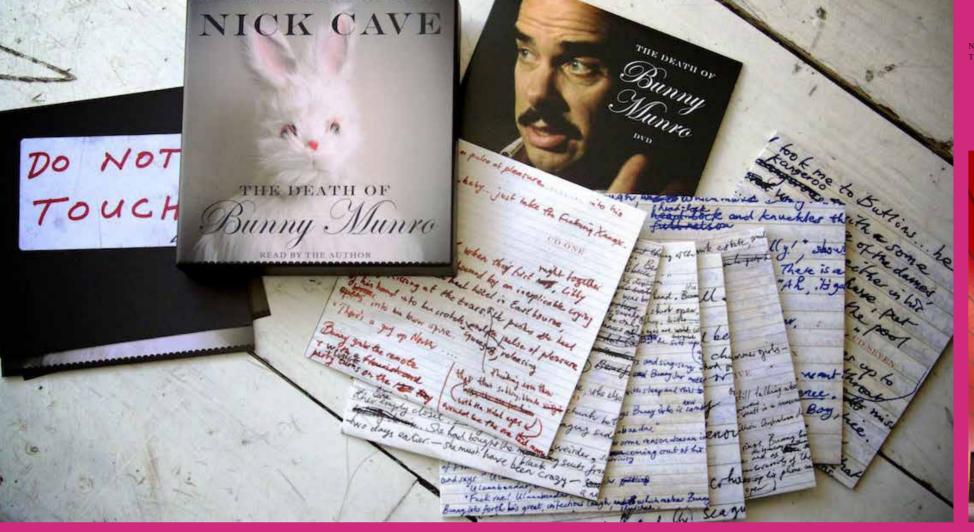
"The Travellers" robust form. gleaming steel and fine crafting suggest worldly associations from jungle gyms to Mies's Barcelona chair, Alessi teapots to mobile dockvard cranes. The theme of the archaic procession. the migration narrative – the whole messy conceptual cartload – has been transformed into a pearl."

Architecture Review



















James Turrell – Twilight Epiphany Skyspace Rice University

Houston, Texas

"Turrell is sometimes likened to Santa Clause because of his fluffy white beard, yet his ability to bring the imagination to life reminds us a bit more of Willy Wonka," wrote the Huffington Post after Turrell's 73rd 'Skyspace' was revealed in 2012.

The site-specific installation and performance piece, where the sky acts as the performer in sunrise and sunset shows, was the first of Turrell's Skyspaces to be engineered for acoustics, broadening its purpose from an artwork to be also enjoyed for musical performances and as a laboratory for music composition and performance by Rice University students.

The pavilion is acoustically complex and optimizes the shape and form of the abstract pyramidal structure. Its invisible sound system is a marvel, and has been cleverly designed to withstand constant exposure to the intense Texas weather, with loud speakers embedded into the concrete and plastered over to create a 3D immersive sound.



MPavilion 2015

Melbourne, Victoria Australia

There's no need to travel to the Daintree, when the forest canopy can come to you. It's Melbourne's dreamy 2015 MPavilion.

A temporary event hub which for five months breathes new life into this well-known corner of Parkland rooted in Melbourne's Arts and Culture precinct.

Using materials typically found in aerospace and aeronautical industries, the pavilion's large seemingly fragile, wafer-thin translucent petals are supported by impossibly slender columns which sway with the breeze. With lighting and audio systems hidden inside the 95 carbon fibre columns, this meeting place, temporary landmark and spontaneous detour is inventive, hi-tech, risk taking and experimental. It brings people and activity into the heart of the city, and is a living example of the importance of design in the every day.



Eureka Flag

Victoria, Australia

Depending on which version of history you read, the Eureka Stockade in Ballarat was an expression of democracy in a fairly authoritarian time, or it was a group of gold miners who didn't want to pay taxes. 160 years on and the event is symbolised through a powerful flag, and history now sees the flag as a silent witness to the making of Australian democracy. Its five bold stars and white cross represent unity. defiance, justice, democracy and nationalism. Such a momentous moment in history demands a fitting monument, with the flag taking pride of place. At 12m wide hanging from a 10 tonne, 50m high mast this is one flag that shall 'triumphantly wave' and educate generations to come.

Museum of Modern Art – Cellophane House

New York, America

Kieren Timberlake's occupiable model building demonstrates contemporary issues and future possibilities of residential living and lighting. The translucent five-storey house was powered by integrated photovoltaic panels.

Tate Modern

London, United Kingdom

It might be in a derelict power station on the south side of the Thames, but this home for twentieth and twenty first century art, draws about five million visitors a year, making it the world's most heavily attended modern-art museum.

Bill Fontana – 'Harmonic Bridge'

London, United Kingdom

The bridge is alive! A sound sculpture exploring the musicality of sounds hidden within the structure of London's Millennium Foot Bridge.

David Byrne – 'Playing the Building' Installation

London, United Kingdom

Buildings transformed into giant musical instruments.
Wind, vibration and striking are used to resonate and oscillate a building's metal beams, pillars, heating and water pipes to create unique sounds.

Chanel Mobile Art Travelling Pavilion

London, United Kingdom

Pack your Chanel bags and don't forget your passport.

Designed by Zaha Hadid, to travel the world, this 'portable pavilion' has been installed and packed up with ease in Hong Kong, Tokyo, New York, London, Moscow and Paris.

William Kentridge - "I am not me, the horse is not mine."

America and Germany

Part lecture, part theatrical monologue, part video installation, this absurdist inspired story combines narration, video projection, and a vocal and instrumental soundtrack.

Australian Pavilion, Venice Australian Council for the Arts

Venice, Italy

It's been dubbed the most important architectural show on earth and Australia is here for good. As bicentenary fireworks exploded back on home soil in 1988, in Venice that year a temporary Australian pavilion rose from the Giardini ground. In 2015, Australia becomes one of just 29 countries with a permanent presence at the event, with this Denton Corker Marshall designed national arts face to the world.

"Australia speaks to the world with a louder voice."

Federal Arts Minister, Tony Burke

Antony Gormley – Drift Sculpture – Marina Bay Sands Integrated Resort Hotel

Singapore

Hovering cloud-like in mid air, 'Drift' has gained a reputation as one of the most impressive pieces of art in Singapore's Marina Bay. Suspended over the atrium of a hotel, the immense three-dimensional geometry piece engages visitors as soon as they step into the lobby. At 40m long, 23m high and 15m wide, the sculpture exemplifies how art and architecture can work together against the backdrop of this megalith development.

Chanel Mobile Art Travelling







Museum of Modern Art -Cellophane House

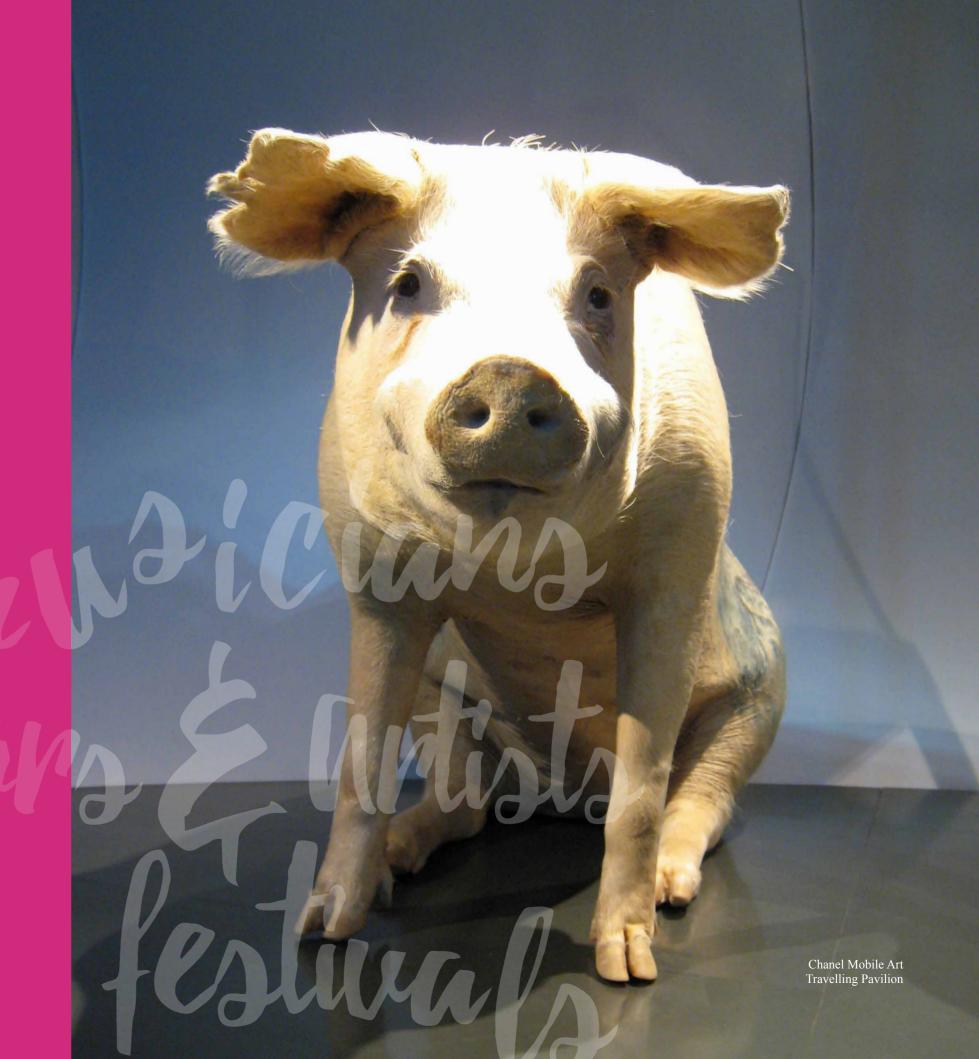


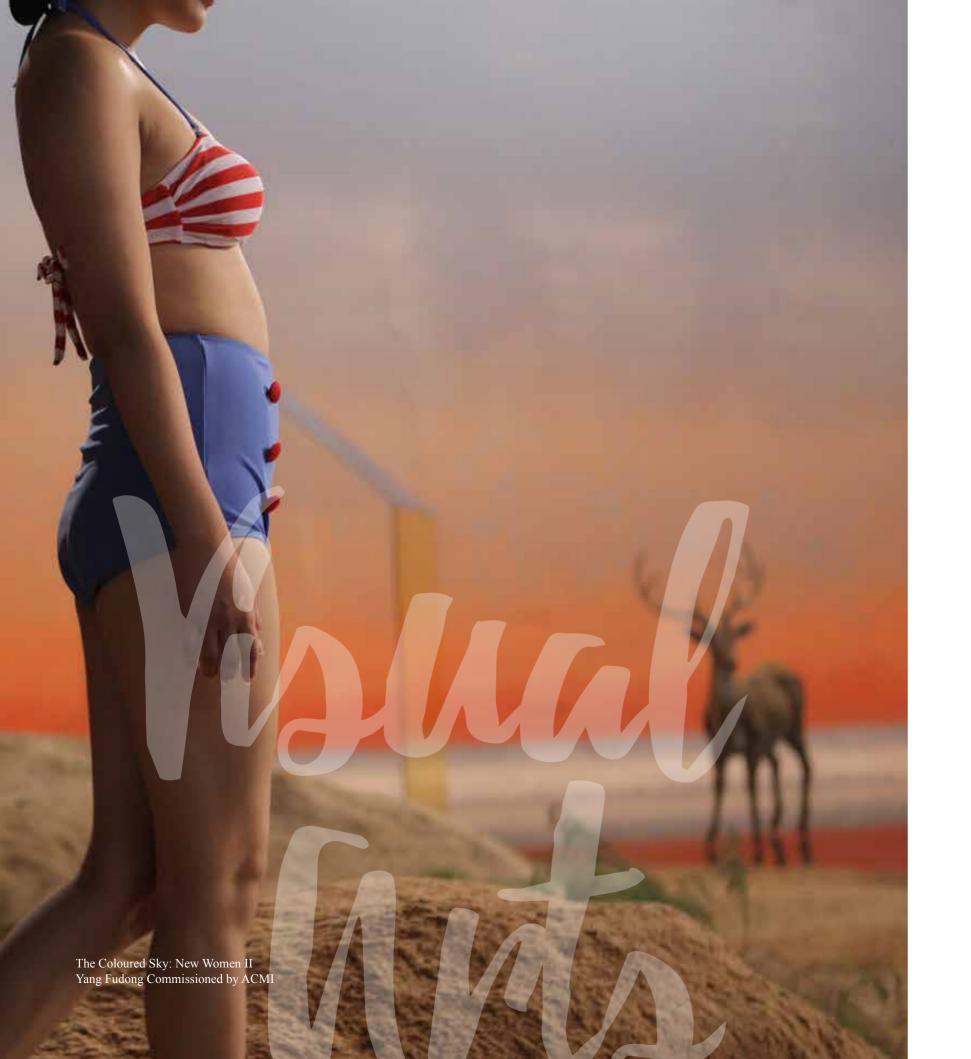
Antony Gormley – Drift Sculpture Marina Bay Sands Integrated



Australian Pavilion, Venice Australia Council for the Arts

Ari Benjamin Meyers – "K62" with Dominique Gonzalez Foerster" / Art Production Fund / Charlie Morrow – "Audubon's Aviary Exhibition" / "Suspended Sounds" / Conde Nast with artists including Leo Villareal / Creative Time "The Smallest of Wings" / Damien Hirst / David Monacchi – "Suspended Sound" / Dominique Gonzalez Foerster – "K62" / Edgar Arceneaux – "Sound Canon Double Projection" / Iain Forsyth and Jane Pollard – "Nuit Blance 2011 – Soon" / "Radio Mania: An Abandoned Work" / "Silent Sound" / Imani Uzuri / Institute of Contemporary Art, Boston / Issue Project Room / James Turrell / Jeff Koons / Joel Chadabe / Kristin Jones / Marina Rosenfeld – "Teenage Lontano" / "Roygbivandb" / Martyn Ware and Vince Clarke / Michael Schumacher / Mike Kelley – "The Day is Done" / Miya Masaoka / MoMA PS1 – "Pole Dance" / Olafur Eliasson / Olivia Block / Performa – "How Wheeling Feels…" / Peter Coffin – "Qualunque Light" / Phil Niblock / Philip Glass / Rice University / Scanner / Shelley Hirch / Stephen Vitiello / Text of Light (Lee Ranaldo, Christian Marclay, Alan Licht) – "Outdoor Symphonies" / University of California at Merced / Wangechi Mutu – "Stone Ihiga" / Xavier LeRoy – "Sacre de Printemps"







Australian Centre for the Moving Image (ACMI)

From the hustle and bustle of its home in Melbourne's main city square, to its serene inner core, the centre for the moving image captivates, amazes, immerses and engages. In just over a decade it has become a leading global cultural hub and tourist magnet for the city.

With its two exhibition spaces, two state-of-the-art production studios and a national screen culture resource centre, ACMI continues to advance the appreciation of the art, history, technique and technology of film, television and digital media.

Melbourne, Victoria Australia

National Gallery of Victoria

It's been described as the most fabulous arts bequest Australia has ever seen – almost £400000 given by Melbourne businessman Alfred Felton to the NGV in 1904 – which transformed the NGV into one of the most lavishly endowed public galleries in the British Empire. While that gift is largely to thank for attracting lovers of Van Gogh, Monet, Cézanne and Rembrandt, it's a more recent re-visioning which underpins the NGV's ability to attract and inspire audiences of all ages. With exhibition spaces improved, access to the gallery collection expanded, a gloriously breathtaking signature roof over Federation Court, inventive daylight delivery systems, new lecture theatres, improved internal environment and a re-positioned shear glass water wall sitting proud and free of its former columns, Melbourne has established a world-class home for its significant collection and opened the door to a new era in international art. This re-visioning was another watershed moment in the Gallery's history, setting new standards for exhibition layout, art storage and conservation and created more new and inspiring ways to explore and engage with art, artists and ideas.

Melbourne, Victoria Australia





Bendigo Art Gallery

Famous for gold, grand architecture and great shiraz, this inland Australian town can now add global blockbuster art exhibitions to its CV, thanks to a redevelopment which gives the Bendigo art gallery the tools, technology and space it needs to borrow from international collections with ease and guarantee artworks are preserved.

The entire gallery addition and specialist sub-terrain storage is so technologically advanced, potential lenders can access data on specific exhibition environmental factors, giving confidence and security to exhibit their works... and when they do, the visitors to the gallery and greater Bendigo region flow like a gold rush or a good red!

Bendigo, Victoria Australia







Melbourne Museum

Standing below a canopy of over 8,000 trees and plants it's hard to imagine you are in a gallery. This virtual green line dividing the 86,500m² Melbourne Museum in two, sets the tone for the spaces that surround. For over 14 years life in all forms, from all ages, has been explored at this award-winning museum, and its permanent collection in eight galleries, including one just for children, provides promises for the stories to come.

Melbourne, Victoria Australia



National Museum of Australia

From racehorses and rev-heads, to outback art and Olympic glory, the stories of Australia's social history, headlines, events and people all have a home here. For 21 years, the museum had no permanent address, until 2001 when this vast 16,000m² space was unveiled.

It has gained international acclaim Canberra, Australian for its outreach program, won numerous tourism awards and continues to play a strong role in defining the culture of Australia's capital city.

Capital Territory Australia



Federation Square Arts Complex

Debate still rages over the look of what has become Melbourne's main meeting place, locals either love it or don't. But the stats speak for themselves with more than nine million visitors drawn to the cultural precinct each year. The hub is now truly living up to its name, just like Australia did at Federation – stepping out in its own right, uniting communities and shaping the city's way of life. Its fire safe steel is a feature from any vantage point in this home of endless possibilities where culture, entertainment, education and lifestyle converge.

Melbourne, Victoria Australia





National Portrait Gallery

The faces of over 400 Australians who have helped shape the nation, now fittingly hang on the walls of the most significant building to grace Canberra's Parliamentary precinct in two decades.

Since opening in 2009 this quiet, contemplative gallery has helped visitors increase their understanding of Australian people – their identity, history, creativity and culture – through portraiture, vibrant exhibitions, lectures, education programs and events.

Canberra, Australian Capital Territory Australia





Garangula Gallery

Private Art Gallery

Like oil and water, light and precious works-of-art usually don't mix, but at this private gallery cleverly designed skylights beam daylight to the floor of the gallery spaces, keeping direct light at bay from the works themselves.

Art lovers at this gallery are treated to stunning artworks, each illuminated by diffused, even light and surrounded by light reducing and redirecting materials which protect the precious works from harmful UV rays.

New South Wales

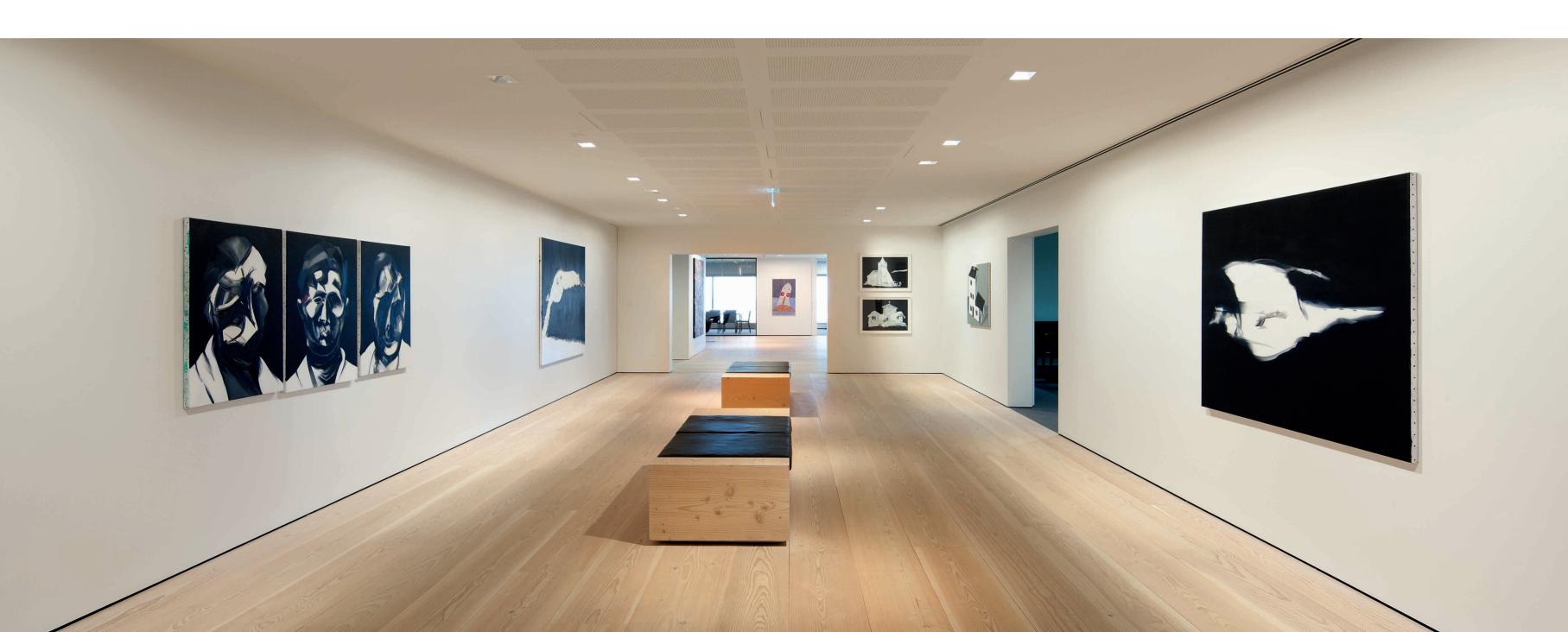


Visual Arts

> Allens Linklaters Art Gallery

Art and law – one is about free expression, the other is about rules and sets a framework for a civilized society. The two are cleverly married in this part art gallery, part reception of a major Australian legal firm, which also entwines business, culture and the firm's modern workplace typologies.

Melbourne, Victoria Australia



Australian Museum, Crystal Hall

Age certainly shall not weary this museum. It may be the oldest in Australia, but this handsome sandstone home of natural history and anthropology now even has its own social media profile. From cyberspace 'tweets' and 'likes', to an outstanding collection, this museum has cemented its status as one of Sydney's leading attractions and a major renewal program is growing its international reputation for many years to come.

Sydney, New South Wales Australia





Marina Bay Sands ArtScience Museum

A lotus flower can live for over a thousand years. A symbol of purity, its face is a work of art and its heart a complex science. Artfully combining the lotus flower's history, art and science this addition to Singapore's art scene transports visitors from a modern, bustling world, to an inner sanctum of prehistoric times, with fossils, specimens, and original illustrations reconstructing extinct species. You can't fast forward a real lotus' growth, but 3D modeling saw this flower bloom in record time to breath life into the Marina Bay area.

Singapore



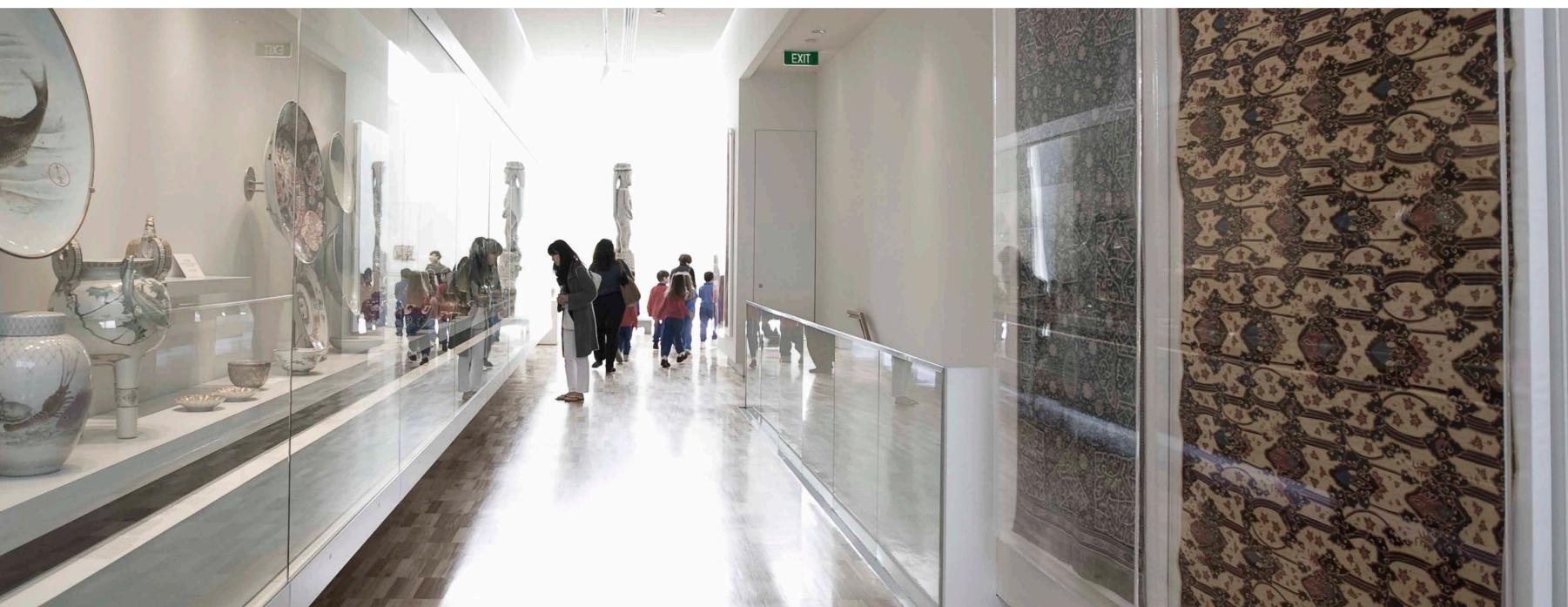


Art Gallery of New South Wales, Asian Gallery It was a grand vision for Sydney as a 'globally competitive, contemporary and culturally-sophisticated city' that lay behind a major makeover to arts infrastructure in the harbour haven. A key piece to the cultural jigsaw was the Art Galley of NSW Asian Galleries extension, with its much talked about steel lotus flowers and floating glass and steel cube which glows after sunset, hovering above the glimmering habour like a paper lantern.

Subtle layers of exciting engineering - of structure, façade, fire and acoustics - played a vital hand in the gallery's clear lines, flexible spaces and variable light which work in harmony to enable all types of art to be showcased to their best advantage in the 720m² space.

This inviting new home for Asian collections also helps the gallery expand its visitors and extend its dynamic public and exhibition programme, both essential ingredients in positioning the gallery - and its home town - to meet future challenges and growth that come with maintaining the city's place on the world stage.

Sydney, New South Wales Australia

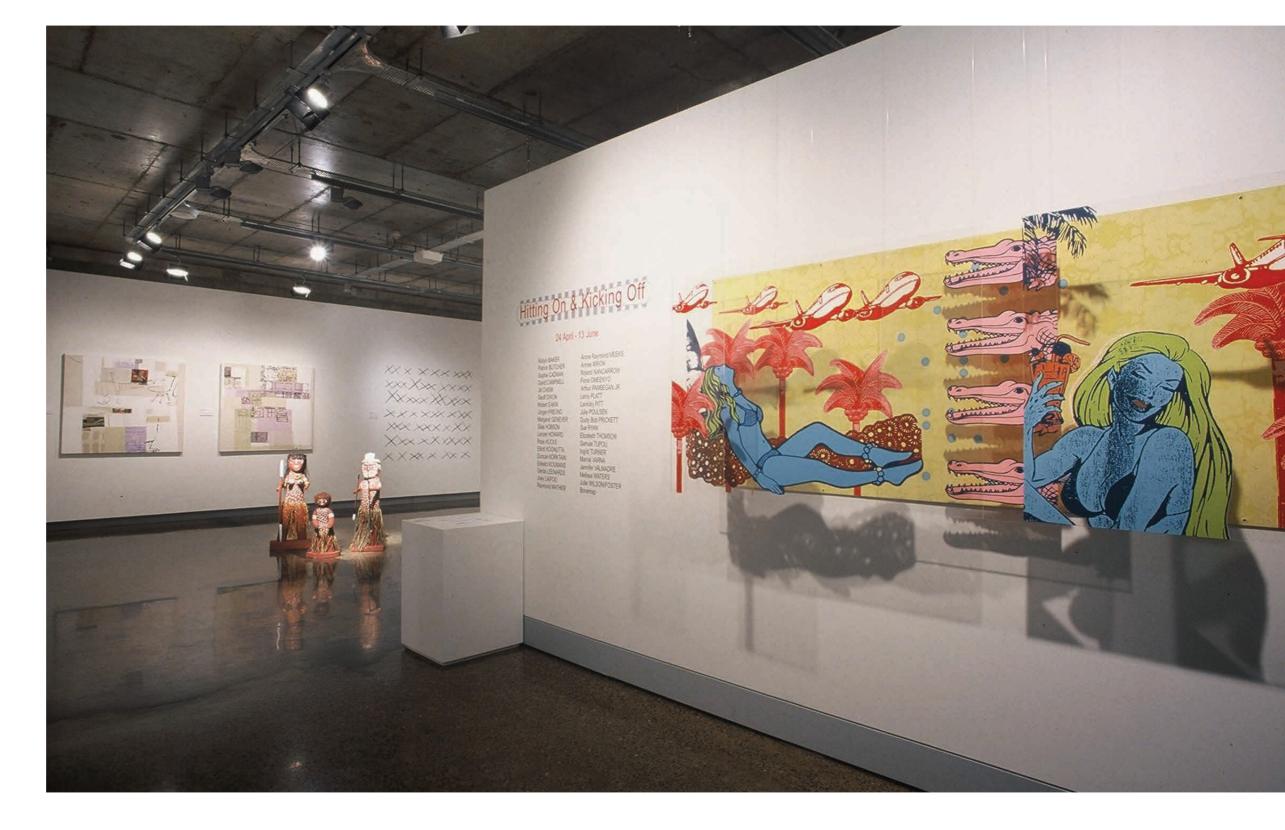


Centre of Contemporary Arts (CoCA)

Cairns has seen rapid growth and some radical change in the last 50 years, with over 130,000 new people calling the town home. In the sixties, this building was once a well used office, and its conversion into a contemporary arts centre has given it a new life and relevance.

With the volume of residents and tourists set to continue its trajectory, this state-of-the-art cultural facility in the heart of town is being, and will continue to be, well utilised. It attracts top artists and performers who keep audiences coming back for more performances, film screenings, art exhibitions, and workshops.

Cairns, Queensland Australia



Arup Services

Ai Weiwei – 'Sunflower Seeds 3D Audio'
Acoustics and 3D audio documentation

Ai Wewei – 'Vito Acconci and Ai Weiwei Sound Installation'

Creative consulting, customised multi-channel audio software development, sound system specification

Allens Linklaters Art Gallery

Structural, fire, mechanical, electrical and public health engineering, security and risk consulting, acoustics, specialist lighting, fire, audio visual and multimedia, environmentally sustainable design

Anish Kapoor – Marsyas Sculpture

Structural engineering

Antony Gormley –
Drift Sculpture + Angel of the North

Art Gallery of New South Wales, Asian Gallery

Acoustics, façade engineering, fire engineering structural engineering

Arts West Redevelopment University of Melbourne, Arts Faculty

Environmentally sustainable design

Australian Centre for the Moving Image (ACMI)

Fire and acoustics

Australian Museum, Crystal Hall

Structural, civil engineering, acoustics, façades, fire, transport planning

Australian Pavilion, Venice Australia Council for the Arts

Structural, mechanical, electrical and civil engineering, fire and hydraulics, security, lightin

Bendigo Art Gallery

Acoustics, mechanical (post construction), fire (post construction), security (post construction

Bill Fontana – 'Harmonic Bridge'

Sound and vibration system and technology design, spatial composition of the sounds

Carriageworks

Acoustics

Centre of Contemporary Arts (CoCA)

Structural and civil engineering

Chanel Mobile Art Travelling Pavilion

Structural, mechanical, electrical and plumbing engineering, lighting, façades, fire and life safety project management, DDA consultant, planning permission at each location

Chatswood Civic Place

Fire engineering

Creative Industries and Performing Arts Development (CIPAD),

University of Tasmania

Acoustics, theatre consultancy, structural, services (mechanical, electrical, hydraulic), façades, fire engineering, audio visual and specialist lighting

David Byrne – 'Playing the Building' Installation

D audio documentation and post processing

Elisabeth Murdoch Hall Melbourne Recital Centre

coustics, theatre consulting

Emmaus College Performing Arts Centre

Acoustics

Esplanade – Theatres on the Bay (Project completed as Artec, acquired by Arup in 2013)

Acoustics

Eureka Flag

Structural engineering

Federation Concert Hall

Acoustics consultancy

Federation Square Arts Complex

Fire engineering and continue to be involved with various fitouts and other advice

Garangula Gallery

Environmentally sustainable design, mechanical, electrical and public health engineering, lighting, acoustics, façades

Genexis Theatre

Acoustics, audio visual and multimedia, theatre, structural and fire engineering, lighting design

Glasshouse Arts, Conference and Entertainment Centre

Acoustics and façades

Gold Coast Cultural Precinct

Civil, geotechnical, mechanical, electrical, public health and fire engineering, lighting consultancy, flood modelling and vertical transportation. Concept, schematic, design development, construction documentation, construction phase services

Greening the Arts Portfolio

Energy and water consultancy, sustainability, project management, management consulting

Han Gang Art Island

Acoustics

James Forbes Academy, Scotch College

Acoustics, mechanical, electrical, hydraulicalifice, audio visual

James Turrell – Twilight Epiphany Skyspace Rice University

Acoustics, audio-visual and security

Llewellyn Hall Refurbishment, Australian National University Acoustics and theatre

Lou Reed – Metal Machine Trio

acoustics, audiovisual, audio spatialisation, udio recording

Marina Bay Sands, ArtScience Museum

Civil, structural, geotechnics, traffic, façade and fire engineering, acoustics, security and risk consulting, building modelling (3D)

Marina Bay Sands Theatres

Geotechnical, infrastructure, structural, traffic consultancy, risk, blast and security, fire, acoustics, facades, site supervision

MediaCorp Campus

Acoustics, theatre planning, theatre, studi technical systems, fire engineering

Melbourne Museum

Civil, structural and traffic engineering

Melbourne Theatre Company, Sumner Theatre Acoustics and theatre

Millennium Arts Project

Structural (Qld State Library, New QAG Entry and Site Infrastructure), civil, traffic, environmental and geotechnical engineering

MPavilion 2015

Structural

Museum of Modern Art – Cellophane House Lighting, mechanical, electrical and plumbing engineering

National Gallery of Victoria

Mechanical, electrical, public health – schematic design, civil, structural, façade, traffic engineering – full design

National Museum of Australia

Civil, structural and façade engineering, fire and transportation

National Portrait Gallery

Acoustics, structural engineering, façade engineering, fire engineering, civil engineering, transport planning

Ngeringa Concert Hall

Acoustics

Nick Cave – The Death of Bunny Munro

3D immersive audio mix, sound design, mastering consulting

Queensland University of Technology, Creative Industries Precinct 2

Acoustics, theatre and technical systems consultancy

Samsung Electronics Concert Hall

Acoustics, theatre and audio visual consultancy

School of the Arts Singapore

Acoustics and theatre consulting, façade and fire engineering

Serpentine Gallery Summer Pavilion

Structural, mechanical, electrical and plumbing, civil, façade engineering, fire and life safety, environmental consulting

Sidney Myer Music Bowl

Façade, structural, civil, mechanical, electrical and public health engineering, acoustics. Ongoing façade and structural consulting.

South Bank Studio,

Queensland Symphony Orchestra

Acoustics, theatre and technical equipment design

State Theatre, Arts Centre Melbourne

Acoustics, fire and structural engineering contract administration

Sydney Conservatorium of Music

Structural, mechanical, civil, hydraulic, fire, geotechnical, vertical transportation, transportation planning

Sydney Opera House

Facilities management acquetics

Tate Modern

Civil, structural, mechanical, electrical, public health engineering, controls and commissioning, fire safety design, acoustics, communications, daylighting, geotechnical engineering, site supervision

The Star Performing Arts Centre (Project completed as Artec, acquired by Arup in 2013)

coustics, theatre and audio visual consultancy

The Travellers

Structural, mechanical and electrica engineering, lighting

Victoria Theatre and Concert Hall

Acoustics, theatre consulting, fire engineering, environmentally sustainable design

Vivid Festival

Lighting, acoustics and soundscape design, structural

William Kentridge – "I am not me, the horse is not mine"

Audiovisual, lighting, live production, technical direction

Yale-NUS College

Environmentally sustainable design, acoustics, AV and theatre consultancy, façade and water engineering, IT and communications systems

Clients and Collaborators

Ai Weiwei – 'Sunflower Seeds 3D Audio' Ai Weiwei Studio Creative Industries and Performing Ai Wewei – 'Vito Acconci and Ai Weiwei Arts Development (CIPAD) Sound Installation' Client University of Tasmania Ai Weiwei Studio Allens Linklaters Art Gallery Anish Kapoor – Marsyas Sculpture Elisabeth Murdoch Hall Melbourne Recital Centre Antony Gormley – Drift Sculpture Emmaus College Performing Arts Centre Antony Gormley – Angel of the North Emmaus College EM Building Design Esplanade – Theatres on the Bay (Project completed as Artec, acquired by Art Gallery of New South Wales, Asian Gallery Arup in 2013) Ministry of Information, Johnson Pilton Walker Arts West Redevelopment University of Eureka Flag Melbourne, Arts Faculty Federation Concert Hall Australian Centre for the Moving Image (ACMI) Federation Square Arts Complex Australian Museum, Crystal Hall Garangula Gallery Australian Pavilion, Venice Collaborators Fender Katsalidis Mirams Genexis Theatre Bendigo Art Gallery Client Kisho Kurokawa Fender Katsalidis Mirams Bill Fontana – 'Harmonic Bridge' Client Jurong Consultants Pte Ltd Glasshouse Arts, Conference and Carriageworks Entertainment Centre Tonkin Zulaikha Greer Architects Centre of Contemporary Arts (CoCA) Hansen Yuncken

Chanel Mobile Art Travelling Pavilion

Zaha Hadid Architects

Chatswood Civic Place Francis-Jones Morehen Thorn David Byrne – 'Playing the Building' Installation Communication and the Arts Client Tasmanian Symphony Orchestra Collaborators Forward Brianese + Partners

Gold Coast Cultural Precinct

Melbourne Museum

MediaCorp Campus

Greening the Arts Portfolio

James Forbes Academy, Scotch College

Llewellyn Hall Refurbishment,

Australian National University

Lou Reed - Metal Machine Trio

Marina Bay Sands Theatres

Collaboration Lou Reed and Arup

Marina Bay Sands, ArtScience Museum

James Turrell – Twilight Epiphany Skyspace

Thomas Phifer and

at Rice University

association with Aedas

MediaCorp Pte Ltd

Designcamp Moonpark dmp

Han Gang Art Island

Rice University

Client

Victorian State Government

Melbourne Theatre Company, Sumner Theatre

Millennium Arts Project

Architects (Old State Library)

MPavilion 2015

mouldCAM

Museum of Modern Art – Cellophane House

Kieran Timberlake

National Gallery of Victoria

National Museum of Australia

Australian Capital Territory Client

National Portrait Gallery

Johnson Pilton Walker

Ngeringa Concert Hall

Nick Cave – The Death of Bunny Munro

Oueensland University of Technology, Creative Industries Precinct 2

Samsung Electronics Concert Hall

School of the Arts Singapore

and Information (MCI)

Serpentine Gallery Summer Pavilion

South Bank Studio.

Oueensland Symphony Orchestra

Richard Kirk Architects

State Theatre, Arts Centre Melbourne

Sydney Conservatorium of Music

Sydney Opera House

Tate Modern

Tate Gallery

The Star Performing Arts Centre (Project completed as Artec, acquired by Arup in 2013)

The Travellers

Atelier Hapsitus Nadim Karam

Victoria Theatre and Concert Hall

Vivid Festival

William Kentridge –"I am not me, the Horse is not mine." New York and Germany

Yale-NUS College

Pelli Architects (PCPA) Local architect: Forum

Sidney Myer Music Bowl

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MPavilion 2015 © John Gollings

Australian Pavilion, Venice, Australia Council for the Arts © John Gollings

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Art Gallery Toi o Tāmaki

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