



MARSHALL DAY  
Acoustics 

COMPANY PROFILE  
EDUCATION

## WHO IS MARSHALL DAY ACOUSTICS?

Marshall Day Acoustics is one of the world's leading firms of acoustic consultants, providing the highest standard of architectural and environmental acoustic consulting to our clients.

For over 30 years, we have been providing innovative acoustic designs on major projects in over 15 countries and employ over 85 professional staff in offices in Australia, New Zealand, China, Hong Kong, and France.

As one of the largest acoustic engineering firms worldwide, we are able to provide our clients with the greatest range and depth of experience and expertise available.

Our strength in acoustic design comes from the diversity of our team members who have been drawn from engineering, architectural, musical and academic backgrounds, with one common focus; to provide innovative acoustic designs of the highest standard.

From concert halls to wind farms and everything in between, we have experts in every field of acoustics who have the specialist knowledge required to deliver quality project outcomes.



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*"I regard the acoustic designs of Marshall Day Acoustics to be amongst the finest and probably the most innovative in the world"*

Dr Anders Gade, Associate Professor Technical University of Denmark

## A COLLABORATIVE APPROACH

We have a collaborative approach to design and work as part of an integrated team with the client, architect and other consultants. We do not specify acoustic performance that “must” be achieved but instead we work with the project team to develop acoustic criteria and treatment that meets the desired project outcomes, whatever they may be. Recognising commercial realities and achieving an appropriate balance between quality and cost objectives is something we take very seriously.

## QUALITY ASSURANCE

Marshall Day Acoustics is certified in accordance with ISO 9001:2015.

The certifying body is SAI Global and the certificate number is QEC 23174.

Additional information about the system can be provided upon request.

*“Marshall Day Acoustics brought imagination and resourcefulness to the task... Their work has set a new standard.”*

Donald L. Bates, Project Director,  
Federation Square, Melbourne –  
Lab Architecture Studio



## TECHNICAL AND DESIGN CAPABILITIES

Marshall Day Acoustics is at the cutting edge of development in the acoustic industry. We are committed to being at the forefront of research and development in our field and have employed significant time, energy and resources into ongoing development of our in-house and commercially available tools across a range of sectors including concert halls, theatre design, building acoustics, environmental noise modelling, intelligent noise loggers, underwater acoustics and more.

We provide a unique combination of design skills, research knowledge and predictive techniques to ensure the client's requirements are achieved.

Our range of acoustic design tools including the facility to carry out computer modelling and also scale model testing on physical models as small as 1:50. This allows the accurate prediction of the objective acoustic properties and simulation of subjective qualities before they are constructed.

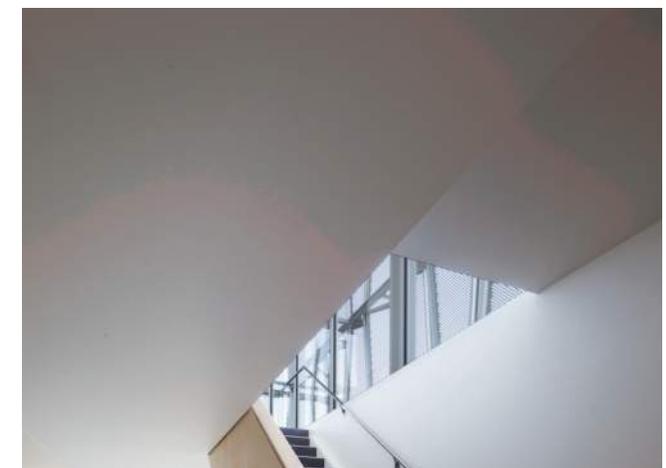
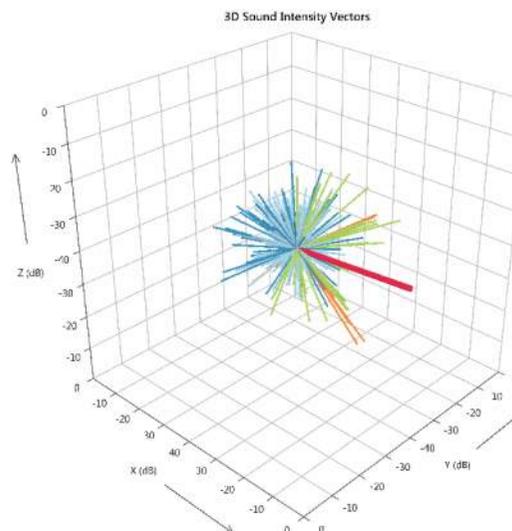
We are a world leader in the development of commercially available sound insulation predictive tools for consultants and engineers. Our proprietary software has sold more than 1,900 licences in 22 countries.

All of our offices are linked via a company intranet which indexes the collective experience of our consultants, providing access to solutions developed over many years of consulting projects.

We are committed to improving our delivery of quality and to enhancing our reputation as suppliers of quality acoustic consulting services in all of our markets.

*“MDA has developed a unique collaborative process involving 3-dimensional technologies to deliver proficient, yet original design accomplishments. The internationally recognised success in the acoustic designs of the Guangzhou Opera House is a reflection of this testament.”*

Woody K.T. Yao, Associate Director, Zaha Hadid Architects



## CONSULTANCY SERVICES - WHAT WE DO

### ARCHITECTURAL ACOUSTICS

Design or corrective work to make the acoustical environment effective and comfortable. Sound insulation, acoustic quality, speech privacy and the total acoustic design of projects such as music teaching facilities, offices, hotels, reception centres, broadcast facilities and apartments.

### AUDITORIUM ACOUSTICS

Complete acoustic consultancy for all communication and performing arts spaces, including theatres, churches, conference rooms, multi-purpose halls and concert halls. Design techniques include state-of-the-art computer and scale modelling.

### ELECTRO-ACOUSTIC SYSTEMS

Specialist consulting services for the design and commissioning of sound reinforcement and communication systems for performing arts applications, churches and convention facilities.

### ENVIRONMENTAL NOISE AND VIBRATION

Assessment of noise and vibration impact of development proposals, including new roads, railways, air transportation developments and industrial projects. Site noise and vibration surveys, sound and vibration propagation predictions. Recommendations for the enforcement of environmental standards. Presentation of expert evidence for prosecutions or planning hearings. Assistance with development of noise and vibration control policy.

*“Marshall Day Acoustics participated fully in the development of insightful, responsive and appropriate designs for the acoustic and vibration issues across the entire project”*

Donald L. Bates, Project Director, Federation Square, Melbourne – Lab Architecture StudioDenmark

### MECHANICAL SERVICES NOISE AND VIBRATION CONTROL

Design, specification, supervision and commissioning of noise and vibration control systems for mechanical plant. Control of all duct, pipe and structure-borne noise.

### INDUSTRIAL NOISE CONTROL

Occupational noise surveys, noise abatement, factory planning, design of specialist silencers, screening and industrial enclosures.

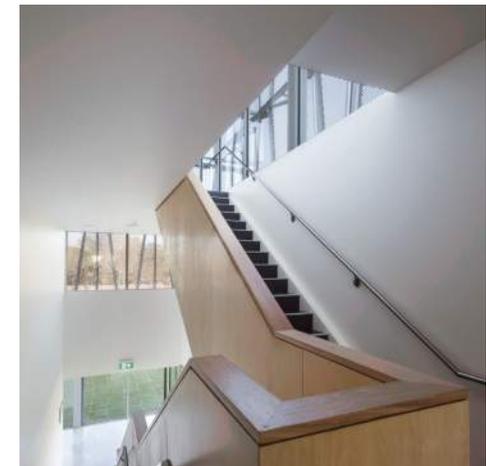
Building vibration and structural dynamics estimation of vibration propagation factors in buildings and other structures. Estimate of re-radiated structure-borne noise. Recommendations for vibration control measures. Empirical, theoretical and numerical modelling.

### SOFTWARE DEVELOPMENT

Development of acoustics and vibration software, including software for the estimation of sound insulation properties, sound absorption coefficients and environmental noise propagation. Developer of INSUL, Zorba, dBSea and IRIS, and agent for SoundPLAN.

### COURSES AND SEMINARS

Provision of courses and seminars in the areas of building acoustics, mechanical services noise control, sound system design, town planning acoustics and SoundPLAN training.



## EDUCATION

Clear and intelligible speech communication is essential to the learning process. Excessive background noise and high levels of reverberation make speech difficult to hear and understand.

In school environments, poor classroom acoustics can be a source of low student achievement, off-task behaviour and teacher voice strain. Poor acoustics are especially detrimental to students with hearing, learning or language difficulties. Because children are inexperienced listeners and their hearing system is not fully developed, they are less able to separate speech sounds from other competing sounds and lack the experience to predict from context and “fill in” missing words. Children who continually miss key words, concepts and phrases because of poor listening conditions are significantly disadvantaged.

Acoustic conditions in classrooms must support the wide variety of teaching methods used today. Educationalists place a high value on group work and “incidental learning” – what students learn from each other through gathering information casually. Students learning in small groups need to be able to communicate with each other, and not disturb neighbouring groups. Speech clarity, noise intrusion and sound transfer are the key areas of concern in schools, colleges and universities. Specialist uses such as music and technology provide additional challenges.

Our services on educational projects include:

- Baseline noise and vibration measurements to assist site selection
- Sound insulation design of building façades to protect from external noise sources
- Control of internal sound transfer
- Mechanical services noise and vibration control
- Acoustic design of specialist areas such as lecture theatres and performance spaces.



## SELECTED PROJECTS

### INNOVATIVE LEARNING ENVIRONMENTS RESEARCH

Architect: Australian Research Council  
Location: Australia & New Zealand  
Completion: 2019

The University of Melbourne has been awarded funding from the Federal Government for research into Innovative Learning Environments and Teacher Change. Marshall Day Acoustics is proud to be part of the research team, which also includes Ecophon and Hayball architects.

The project will collect evidence of the link between quality teaching and the effective use of innovative learning environments and then produce a strategy to examine how teachers use them most effectively. It will develop a mechanism for implementing this strategy across as wide a range of educational sites as possible in Australia and New Zealand. It will create evidence to verify this impact and guide future teaching approaches, infrastructure and design of facilities.

The new understanding gained through the project is expected to guide developments in pedagogy, policy and design and to produce strategies to improve learning in schools across Australia and New Zealand.

Marshall Day has gained a lot of critical experience through the design and commission of first generation Building Education Revolution schools, and has a clear understanding of how the spaces can best be utilized from an acoustic standpoint. Amanda Robinson, our education specialist, will provide consulting engineering services with other members of the Marshall Day team as required, to help teaching staff understand and best utilise their teaching environment.



## THE STABLES, VICTORIAN COLLEGE OF THE ARTS

Client: Kerstin Thompson Architects

Completion Date: 2018

The former Victoria Police Mounted Branch stables, which date from 1912, ('The Stables') have been transformed into world-class teaching and learning facilities for students of the University of Melbourne's Faculty of Fine Arts and Music following an \$18 million make-over. The Stables feature a new visual arts wing with 170 studios and flexible exhibition spaces, while the former riding school has been converted into a 260-seat multipurpose arts wing for theatre, dance, music theatre and music performances.

### Scope

- Marshall Day was engaged as a core design team member to provide:
- Building Acoustics for the entire refurbishment
- Room Acoustics for the performing arts space
- Theatre Design of the multi-purpose, highly flexible performing arts space

### Flexibility

#### Building services design

The services design responded to the constraints of a unique layout for the offices and stables areas, while maintaining the performance requirements of the brief. Our understanding of acoustic issues gained from a multitude of educational projects and our work on historic buildings was utilised in a close working relationship with the architect and services engineers to develop practical and effective acoustic solutions for the development.

#### Performance space

Providing flexibility in venue sound ambiance within the Performance Space was critical to maintaining the brief for a multi-use space. The provision of fully-retractable heavy drapes which extend around the entire space creates a black-box. This allows control over the acoustics to provide conditions suited to a range of performance styles. Once retracted, the space is flooded with natural light to create a truly versatile environment.

### Awards

- Victorian AIA Awards 2018 - Heritage Architecture
- Victorian AIA Awards 2018 - Educational Architecture
- Victorian AIA Awards 2018 - Interior Architecture Commendation



## LEARNING AND TEACHING BUILDING, MONASH UNIVERSITY

Client: Monash University  
Budget: AUD \$180 m

Monash University's new four storey 28,000 m<sup>2</sup> Learning and Teaching Building, situated at Clayton campus and including a new transport interchange, provides a new front door experience for all visitors. The AUD \$180 m building showcases the University's commitment to innovative teaching and learning practices. The layout of the new facility has been designed to reflect recent pedagogical changes, which have seen unstructured or informal learning spaces becoming increasingly important.

### Key Objectives

- To create a significant building and gateway to the Clayton campus, reinforcing the Monash University brand and vision
- To deliver an exemplary building for multi-faculty teaching and learning, that applies the concept of 'long life, loose fit'
- Deliver a building that exemplifies best practice student-centred teaching and learning, aligned with the University's 'Better Teaching Better Learning Agenda'
- To provide a world class, multi-modal, integrated Monash Transport Interchange
- To deliver best practice in sustainable design

### Our Brief

Marshall Day Acoustics provided design input into all acoustic aspects of the project, from the acoustic design of the theatre in-the-round, to bus noise via the facade.

A key challenge was working the wider design team in the analysis of the external environment, whilst considering the complex interaction with ESD and services engineers to develop the best design solutions.

The building was selected for following awards:

- Victorian AIA Awards 2018 - Interior Architecture
- Victorian AIA Awards 2018 - Educational Architecture



## SOUTH MELBOURNE PRIMARY SCHOOL, VIC

Architect: Hayball  
Budget: \$40 m  
Completion: 2018

The \$40-million, five-storey school is the first among a new model of “vertical schools” proposed around Australia. The government primary school will provide education for 525 students, with integrated community facilities for the growing Fishermans Bend community.

Hayball director Richard Leonard, who presented to the juries with director Ann Lau, said it’s an incredible honour for the project to be recognised on the world stage.

“As the first vertical school in Victoria, the project is a ground-breaking one. One of the things we’re proudest of is the combination of a learning hub with a community centre for the local residents to enjoy, which embraces the connection between learning and recreation, students and neighbours,” he said.

Marshall Day Acoustics is part of the design team providing integral acoustic design input to the project. For this particular school, the site is in close proximity to the Westgate Freeway, and the design needed to address noise ingress from outside as well as between floors. Finding creative solutions to these challenges has involved creating solid external barriers around the outdoor learning spaces, which then act as a buffer to the internal spaces.

Amanda Robinson, our lead acoustic designer on the project, comments “The importance of absorptive acoustic treatment throughout a vertical school cannot be overstated, and is critical to the project’s success.”

*South Melbourne Primary School was named the Future Project of the Year at the 2016 World Architecture Festival*



## UTS DR CHAU CHAK WING, FACULTY OF BUSINESS

Principal Architect: Gehry Partners LLP  
Executive Architect: Daryl Jackson Robin Dyke Architects  
Client: University of Technology Sydney  
Completion Date: 2015

Australian-Chinese businessman and philanthropist Dr Chau Chak Wing is the namesake of the new Faculty of Business at UTS. The state of the art building forms a key component in the UTS City Campus Master Plan.

The Dr Chau Chak Wing Faculty of Business will provide lecture theatres, seminar rooms, collaborative teaching spaces, laboratories, group work areas, and academic research and staff office spaces for the UTS Business School. Located in the heart of Ultimo, the new building will also benefit the wider business community with spaces for conferencing, meetings, executive education and lectures available to the public.

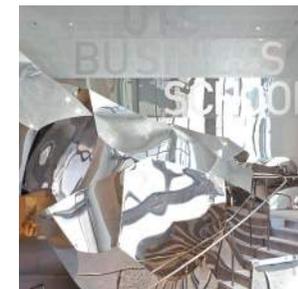
Marshall Day worked closely with UTS, Gehry Partners and Daryl Jackson Robin Dyke to determine the functional acoustic requirements for the building while developing the design to meet the intent of the clients brief and architects vision.

The building facade design is a composite of brick and glass sheets, a reference to Sydney heritage and mirror to the surrounding area. In an area with high traffic noise, the facade sound insulation was an important part of the building's design.

One of the key areas of our involvement included the internal sound insulation design to achieve speech privacy between offices. A mock-up of the proposed office construction was built to test the construction materials and methodology to assist in determining the most cost effective way of achieving the brief.

*"This building is a symbol of everything UTS stands for – it epitomises our vision to be a world leading university of technology where creativity and innovation intersect."*

Vicki Sara, UTS Chancellor Professor



## VICTORIAN SCHOOLS PUBLIC PRIVATE PARTNERSHIP PROJECT, STAGE 1

Architect: Hayball / Gray Puksand  
Completed: 2011  
Budget: \$255M

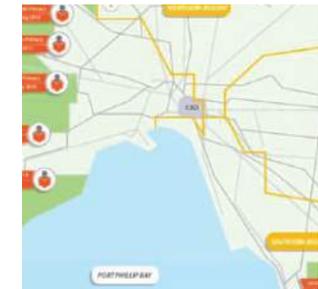
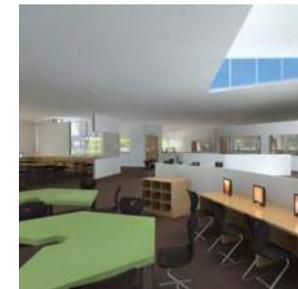
In 2009 the Victorian Government, in partnership with Axiom Education Victoria, embarked on the delivery of 11 new government schools in key growth areas in Melbourne. The result has been a transformation of the education sector. From 2009, more than \$16 B has been spent in Australia and New Zealand to provide transformative learning environments.

The Victorian Government's long term vision involved transforming education infrastructure to ensure that all Victorian government schools are equipped to provide high quality education to students, both now and in the future.

A key part of the design was the acoustic philosophy adopted. At the forefront of the project was the introduction of innovative learning environments, which have multi-modal, technology-infused, flexible layouts to accommodate the new generation of learning. Marshall Day worked with the design team to develop flexible acoustic spaces that enable teaching activities to occur concurrently in open plan learning spaces. Significant modelling work was undertaken to demonstrate key parameters such as speech intelligibility and reverberance for the rooms.

Marshall Day is continuing its work with key research bodies, such as the University of Melbourne, to assist in further evaluating and refining education facility designs, and enable teaching staff to implement quality teaching practices in these new environments.

*The result has been a transformation of the education sector.  
From 2009, more than \$16 B has been spent in Australia and  
New Zealand to provide transformative learning environments.*



## GEELONG GRAMMAR SCHOOL: SCHOOL OF PERFORMING ARTS AND CREATIVE EDUCATION (SPACE)

Architect: Peter Elliott Architecture + Urban Design

Completed: May 2015

Budget: \$20.4 million

The new Geelong Grammar School of Performing Arts and Creative Education opened in May 2015 to a 700-strong guest list. The school's brief was detailed and required a whole complex that would nurture creative education through music and drama classrooms, rehearsal spaces, and multi-functional performance spaces.

A large traditional proscenium arch theatre was clearly not the right response to this brief. Marshall Day Entertech's theatre design solution was SPACE; a flexible and technically advanced building consisting of four main elements that work to foster the important philosophy of innovation and creativity in education:

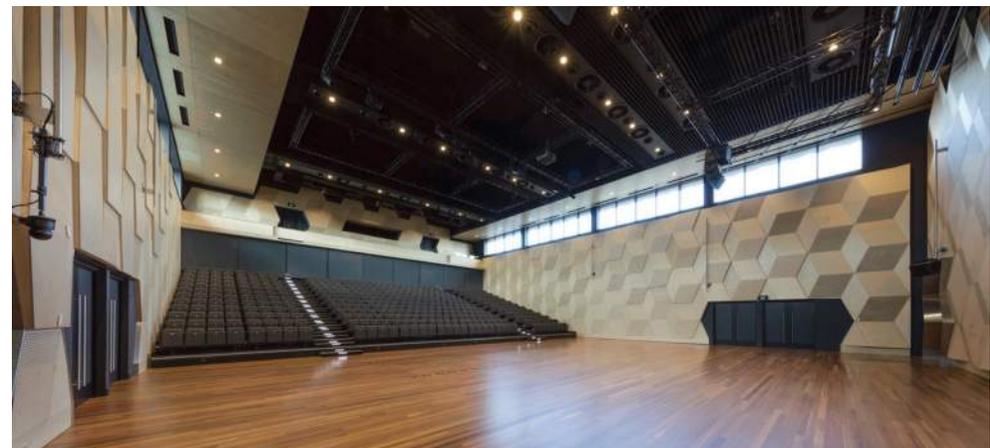
**The David Darling Playhouse** - A large open space venue with a flexible retractable seating system capable of accommodating up to 1000 people, orchestra pit, and motorised lighting and scenery grids to give almost unlimited options for rigging lighting, drapes and other flown elements.

**The Bracebridge Wilson Studio** - A studio style space with retractable seating in banks on three sides to seat up to 270. It is equipped with flown motorised lighting and scenery grids and surround drape systems providing a very high level of flexibility.

**Multi-Purpose Space and Classrooms** - Beautifully adaptable classrooms and a large multipurpose space

**Video Presentation System** - In addition to the performance spaces, the building itself features a spectacular external projection system that can transform the façade into a colourful beacon, with endless configuration possibilities. The grand foyer space features an impressive suite of video walls and interactive touchscreen learning pods that allow for both traditional foyer multimedia during public functions and also, importantly, as an innovative learning space that can be used to teach the visual and creative arts to suit a range of learning styles.

Marshall day Entertech designed this complete interactive Audiovisual system to seamlessly work together with a central control and processing system designed for easy use by all staff and students. Marshall Day Acoustics was engaged to provide full acoustic design services for the performing arts complex.



## CAREY GRAMMAR SCHOOL, MELBOURNE

Architect: Gregory Burgess and Associates  
Budget: AUD \$16 m

Set over three levels and connected via a large spiral light void and grand staircase, Carey Baptist Grammar School's performing arts centre is an environmentally sustainable building that makes effective use of natural light and ventilation. The Gregory Burgess and Associates designed facility features rehearsal and teaching spaces, green room facilities, offices, a foyer and a large music auditorium.

As acoustic consultants to the project, Marshall Day Acoustics worked collaboratively with the school and the architect to devise solutions for auditorium acoustics, room acoustics, and mechanical and services noise isolation.

The flat floor auditorium features a performance area suitable for a 120 musician orchestra, raked seating for 275 audience members, encircled by a balcony usable for choirs and additional audience seating. Designed as an un-amplified music hall, the versatile space also includes a PA system to enable lecture and theatre use. A large timber acoustic reflector positioned above the performance area acts to enhance the energy to the audience, and theatrical drapes allow the acoustics to be varied to suit the performance.

The theatrical design of the auditorium was undertaken by Marshall Day Entertech and included the installation of lowerable lighting bars and essential theatrical equipment and control systems.

Each of the music spaces is designed around its function, from small tuition and practice studios designed to suit specific instruments, to large singing and band practice rooms. As part of the overall thermal design of the building, many of the classrooms feature exposed slabs rather than ceilings, requiring absorption and acoustic walls panels to balance the exposed concrete.



**ST STEPHEN'S SCHOOL  
DUNCRAIG CAMPUS, WA**

Client: Coda Studio

Upgrade of the Primary School at the St Stephen's School Duncraig campus. The library will be converted into learning spaces, and the school has engaged Marshall Day Acoustics to provide advice that will ensure the acoustic performance of the new learning space is in accordance with standards.



**METHODIST LADIES COLLEGE  
JUNIOR YEARS, PERTH**

Client: CODA Studio

New junior school including classrooms, drama, dance and music rehearsal spaces, and staff areas. Acoustic challenges included separation of drama and music spaces from adjacent classrooms and room acoustic design for flexible, open plan teaching areas.



**CAMBERWELL GRAMMAR  
SCHOOL, VIC**

Client: Bovis Lend Lease Pty Ltd

Room acoustics, sound insulation and noise control for new \$7.5 m school building.



**ADELAIDE HIGH SCHOOL, SA**

Architect: JPE Design Studio

New wing and upgrades with additional classrooms to Building 4. The new wing incorporates: Lower Ground - underground carpark, HPE teaching room, drama workshop and offices; Ground Level – Resource Centre, study spaces, flexible teaching spaces, offices, meeting room ICT help desk and recording booth; First Floor – science teaching rooms, GLA's open areas and offices; Roof Top – deck.



**NOSSAL HIGH SCHOOL SELECTIVE  
ENTRY SCHOOL, BERWICK, VIC**

Client: Woods Bagot

Specialist selective entry government school for gifted and high achieving students.



**HUME CENTRAL SECONDARY  
COLLEGE SENIOR CAMPUS, VIC**

Client: Gregory Burgess Architects

Open plan school environment over two storeys with ecologically sustainable design features adjacent to busy road.



**BUILDING THE EDUCATION  
REVOLUTION PROJECT**

Client: Hayball

Development of standardised school designs  
for the Department of Education



**INTERNATIONAL SCHOOL  
HO CHI MINH CITY, VIETNAM**

Client: Cognita Asia

Engaged to provide theatre, AV, sound  
system and acoustic consulting services for  
the International School Ho Chi Minh City  
(ISHCMC) Performing Arts Centre project. The  
project includes a 350 seat theatre with shared  
foyer areas, change rooms and all the usual  
spaces associated with a theatre in a school  
environment.



**SACRED HEART COLLEGE, VIC**

Architect: Williams Ross Architects

Design of a Performing Arts Centre with a  
retractable 200 seat platform for flexible use.



**STAMFORD AMERICAN  
INTERNATIONAL SCHOOL,  
SINGAPORE STAGE 2**

Client: Lend Lease Project Management and  
Construction

\$300 m extension to a large international  
school in Singapore catering for students  
aged 2 to 18 years of age, accommodating  
approximately 2,500 students.



**VCA SCHOOL OF DRAMA,  
MELBOURNE, VIC**

Architect: Lab+Bates Smart

Sound insulation, noise control and room  
acoustics design of the Victorian College of the  
Arts Drama School.



**IVANHOE GIRLS GRAMMAR  
MULTIPURPOSE CENTRE, VIC**

Client: Ivanhoe Girls Grammar School

New multi-purpose centre for Ivanhoe Girls  
Grammar school including classrooms, library,  
offices and cafeteria.



### MONASH CENTRE FOR ELECTRON MICROSCOPY

Client: Monash University

Research facility that conducts research and provides advanced instrumentation, expertise and training in electron microscopy and atom probe microscopy. Marshall Day was commissioned to carry out a vibration study to investigate the effects of demolition and construction work on the facility.



### TARONGA ZOO INSTITUTE OF SCIENCE AND LEARNING, NSW

Architect: Taylor Constructions

Acoustic design of a new state-of-the-art science and learning centre at the Taronga Zoo. The centre includes specialised classrooms and lecture rooms for the teaching of natural wildlife conservation for schools and students; and research laboratories and offices. Extensive use of timber design throughout.



### UTS THOMAS STREET BUILDING, NSW

Architect: BVN + DBJ

Provision of acoustic design and construction advice for the new Faculty of Science and Graduate School of Health. The Thomas St Building includes superlabs, practice and consultant rooms, lecture theatre, seminar spaces and research areas.



### UNIVERSITY OF TASMANIA SMALL ANIMALS FACILITY, TAS

Architect: Hames Sharley

Benchmarking of existing facilities and provision of acoustic design advice pertaining to external and internal sound insulation. In addition, mechanical services noise control recommendations were provided for the purpose built animal research facility.



### ANU HEDLEY BULL CENTRE FOR WORLD POLITICS, ACT

Architect: Lyons Architects

Acoustic design of the international studies hub of ANU incorporating lecture theatres, seminar rooms, offices, study and research spaces and a central forum space for meetings and exchanges.



### LATROBE UNIVERSITY LIBRARY, BUNDOORA, VIC

Architect: John Wardle

5,000 m<sup>2</sup> library development at Latrobe University's Bundoora campus.



### UNIVERSITY SQUARE, MELBOURNE, VIC

Architect: Metier 3

Marshall Day provided the room acoustics, sound insulation and noise control design of a complete new campus at the University of Melbourne.



### MONASH UNIVERSITY, BERWICK STAGE 2, VIC

Architect: Woods Bagot

Marshall Day provided the room acoustics, sound insulation and noise control design of the extension to the Berwick campus at Monash University.



### UNSW FACULTY OF LAW BUILDING, NSW

Architect: Lyons Architects

Acoustic design of the new Law Faculty building incorporating a 350 seat auditorium, teaching spaces, a new library and office accommodation.



### DEAKIN UNIVERSITY CENTRAL PRECINCT, VIC

Architect: H2O

New university precinct with gymnasium, lecture theatre, classrooms and office accommodation.



### ANU CANBERRA SCHOOL OF MUSIC, STAGE 2, ACT

Architect: MGT Canberra

Acoustic design of Stage 2 of the Canberra School of Music, including a recital room, jazz and classical music practice rooms and rehearsal spaces.



### MONASH SCIENCE TECHNOLOGY RESEARCH AND INNOVATION PRECINCT STAGE 2 AND 3, VIC

Architect: DesignInc

The Monash STRIP Stage 2 & 3 project is an extension to the existing STRIP 1 facility. Extensive ESD elements are incorporated into the design including exposed slabs, chilled beams and displacement air-conditioning systems. Marshall Day provided full acoustic design consultancy on the project.



**VICTORIA UNIVERSITY LEARNING COMMONS AND EXERCISE SCIENCE PRECINCT, VIC**

Client: John Wardle Architects

New purpose built sports facility including sleep assessment areas, VO2 measure, laboratories, teaching spaces. Used by Western Bulldogs as a training facility.



**UNIVERSITY OF MELBOURNE CHEMISTRY BUILDING, VIC**

Client: S2F Pty Ltd

Acoustic design services for a new chemistry building, including the assessment of 120 future cupboard fans and associated plant.



**CHISHOLM TAFE, FRANKSTON SCHOOLS TAFE ALLIANCE TRADE TRAINING CENTRE, VIC**

Client: Gray Puksand Pty Ltd

New trade centre developed as part of Frankston Schools Consortium project.



**HOLMESGLEN TAFE, VIC**

Client: Holmesglen Institute of TAFE

New 6 level educational building.



**DEAKIN UNIVERSITY GARS STAGE 1 & 2, VIC**

Client: Deakin University

Geelong Accommodation Relocation Strategy project for Deakin University.



**DEAKIN UNIVERSITY INSTITUTE OF KOORIE DEVELOPMENT, VIC**

Client: Deakin University

Community based learning facility for Deakin University.



### DEAKIN UNIVERSITY BURWOOD HIGHWAY FRONTAGE, VIC

Client: Deakin University

Eight level tower and expansive podium at Deakin University's Melbourne campus, incorporating state of the art sustainable design principles.



### VICTORIA UNIVERSITY LECTURE THEATRE UPGRADE (FOOTSCRAY PARK BLDG C), VIC

Architect: DesignInc

Refurbishment of lecture theatres, classrooms and tutorial rooms at Victoria University's Footscray campus.



### VICTORIA UNIVERSITY STUDENT LED HEALTH CLINIC, VIC

Architect: Woods Bagot

Inter-professional Student Led Health Clinic building at Victoria University's Werribee Campus, includes treatment and consulting rooms, work rooms, office spaces and meeting rooms.



### UOA KATE EDGAR INFORMATION COMMONS, NEW ZEALAND

Architect: Warren & Mahoney

The first and largest Information Commons in the University of Auckland's Library system. Marshall Day provided design advice on the acoustic qualities of the public spaces and acoustic performance of the various study rooms.



### PETER DOHERTY INSTITUTE, PARKVILLE, VIC

Client: University of Melbourne

The Doherty Institute is a world-class institute combining research, teaching, public health and reference laboratory services, diagnostic services and clinical care into infectious diseases and immunity in one building. MDA was responsible for the design of acoustic treatment and vibration control.



### MELBOURNE BRAIN CENTRE, VIC

Client: Florey Institute / University of Melbourne

The Melbourne Brain Centre is home to Australia's largest brain research collaboration. MDA provided services for acoustic design and vibration control. Key challenges at the University of Melbourne's Parkville site included the location of highly sensitive laboratory floors with stringent vibration specifications, in close proximity to vibration sources.





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