

Questacon Theatre

Technology of the Future Helps Science Innovators Reach Out to the World



In the beginning, there was a simple lighting desk, three speakers, a pair of radio microphones, and a PC and projection screen for Powerpoint presentations. There were no sound effects, no moving lights, not a whiff of a special effect. But that was before an audiovisual “revolution” swept through Questacon – The National Science and Technology Centre in mid 2009, when calls for tender were issued for the upgrade of the Japan Theatre.

Sydney-based company, Auditoria Pty Ltd did the audio design work used for tender, with Construction Control winning the tender to overhaul the Japan Theatre and sub-contracting the audio-visual component to Canberra’s own Sound Advice. The project also involved Hills SVL and the audiovisual integration and control system – Crestron.

The result: a venue where the celebrated science theatre troupe known as the Questacon Excited Particles can do just about anything they need to in terms of the audiovisual elements of their performances – and can now link their exhilarating hands – on shows with scientists and students across the world.

“Thanks to the integration provided by our new control system, Questacon is now realising its goal to reach into the lives of both the Australian and international scientific community,” said Questacon’s Excited Particles Coordinator, Patrick Helean.

“Since the completion of our Theatre upgrade, we’ve been able to extend our science education beyond the walls of Questacon, and ‘bring-in’ guests

from overseas for interactive discussions with groups of Australian students.”

Those discussions – conducted remotely through video conferencing codecs – have so far included an American astronaut, Japanese scientists, radio telescope operators in Chile and Australia and dozens of Australian schools.

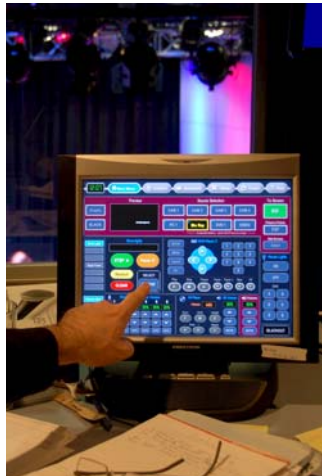
When the Prime Minister, the Hon Kevin Rudd MP, visited Questacon in February 2010 with Nobel Laureate Professor Elizabeth Blackburn AC, the pair discussed Professor Blackburn’s pioneering DNA research with eight regional schools – via the Crestron’s Pro2 control system.

The 150-seat Theatre is renowned as Australia’s leading science education venue, with 13 performers providing a rich variety of themed shows, seven days a week, 364 days a year, for groups of visiting children and families.

Last year, 1,308 shows were presented to an estimated 106,000 visitors. The shows have helped Questacon scoop many awards, including four Qantas Australian Tourism Awards and five consecutive Canberra and Capital Region Tourism Awards.

But the Questacon shows – like the scientific principles on which they are based – are growing in scope and complexity, their rocket launches, hydrogen balloons and fiery demonstrations requiring greater technological support.

PROJECT SPOTLIGHT



Crestron in Control

As well as enhancing the Theatre's sensory experience, the Questacon brief called for a simple intuitive interface that would enable the Excited Particles, most of them solo performers, to control every element of their shows, from the sound and lighting to videos, live cameras, curtains, music and, of course, explosions.

Overarching control went to a Sound Advice and SVL favorite: the multi-award-winning Crestron Pro2 dual-bus system, offering state-of-the-art IP control through its dual Ethernet card, and multiple COM, IR and Serial ports providing ultra-fast interfacing between all modern AV media – plus scalability for a few yet to be invented!

For the all-important user interface, the designers chose two Crestron TPS15G-QM Touchpanels, offering dual-window video and HDTV displays alongside stunning crystal-clear graphics. Again, scalability was a key factor, with Crestron's e-Control2 software enabling users to turn an ordinary PC into a third touchpanel with identical looks and functions.

With a special program designed by Sound Advice, the Excited Particles can now control the different elements of the shows, either from their central control room or – in the case of solo shows – from a touchpanel on the stage.

"The beauty of the whole thing is that, instead of having to go to the sound desk or the lighting desk or the curtains, you go to one central desk where there are 'pages' of clearly defined show formats that can be activated – or adapted – on a simple touchscreen," says Sound Advice's Managing Director, Norman Korte.

"With a little tuition, each performer can program every element of their show. We've given them a simple programming language so that they can change the details and sequences of their shows, if they want to insert some new material, change the mood, or adapt any part of it."

For the sound system, the choice was equally far-sighted: a PA system wired as a 7.1 surround system, but with the capacity to upgrade to 16 channels in the future. In addition to 18 speakers and three under-seat subwoofers – "so the audience can really feel the rockets taking off" – the audio setup included four digital sound processors, a state-of-the-art mixing desk, and a robust wireless microphone system.

In addition to a top-of-the-range, fully motorised lighting rig – with a spectrum of colours, washes and patterns capable of precisely defining the Theatre's mood, the Questacon installation included steel-band hoists for "flying" performances, motorised drapes, and an array of HD video sources and live cameras, fed through a digital vision mixer with a plethora of effects.

This job was all about bringing the full excitement of Questacon's performances to the audience. Sound Advice designed a compliant induction loop system using Ampetronic Induction loop amplifiers, which enables visitors with a hearing impairment to enjoy the same quality of aural experience.

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Equipment

Crestron Pro2 Processor

Crestron C2ENET2 Dual Ethernet Card

Crestron C2COM3 Comm Cards

Crestron TPS15G-QM Touchpanels with complete x-panel and eControl functionality

Crestron QM-TX for touch panel feeds

Crestron C2N-DB12A 12 Button Panel

Crestron CNX-B6A 6 Button Panel

Lab.Gruppen C20:8X Power Amplifiers

Ampetronic ILD1000G Induction Loop Driver

About Hills Sound Vision and Lighting (Hills SVL)

Hills Sound Vision and Lighting (Hills SVL) is the leading provider of professional audio, audiovisual, lighting and digital signage solutions in Australia and New Zealand.

For over three decades, we have led the market in the seamless integration of next-generation audio, audiovisual, control and lighting technology. We are a division of Hills Industries Limited and have branches in Sydney, Melbourne, Brisbane, Adelaide, Canberra, Perth and Auckland.

Since 2005, we have been the Australian home of Crestron products, introducing the power and reliability of the world's most advanced electronic control systems into homes, offices, schools, shopping centres and entertainment venues across the country.

Today, Hills SVL is making soundwaves that are circling the globe, with our Australian Monitor Revolution Series, AMD mixers and amplifiers attracting sales – and acclaim – on all five continents.

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