

SUCCESS STORIES



# HELPING PEOPLE HEAR

Behind every Williams Sound installation — from the simplest to the most complex, from just around the corner to half way around the world — there is a story. Stories of vision and ingenuity, born of the basic need to effectively communicate in a timely manner. Each profile story we tell here is unique in people and place — but potentially universal in application. So, we share these communication solutions with all of you — to not only educate but to also, perhaps, inspire. Once upon a time, more than 40 years ago, Williams Sound was inspired to help people hear around the world. Our story continues today.

# JUPITERS HOTEL & CASINO



The new state-of-the-art theatre located within the Jupiters Hotel and Casino complex in Gold Coast, Queensland, Australia, revolutionizes the theatre viewing experience through modern technology and architecture.

After a \$20 million makeover in 2012, and seating capacity now more than doubled, Jupiters Theatre is one of the biggest multi-functional theatres in Australia.

Its mechanical thrust stage now allows for an audience of up to 2150 people. The new design includes a second balcony level, VIP hospitality rooms for pre- and post-event functions, an impressive lighting rig and a high-tech surround sound system. More than \$1 million was invested in upgrading the sound and lighting equipment alone, with the goal of ensuring a custom-designed "perfect sound experience for every seat." And, because Jupiters Theatre is committed

to accessibility, the sound engineering team ensured that the latest in assistive listening technology would be integrated into the overall design of the facility and made readily available to visitors.

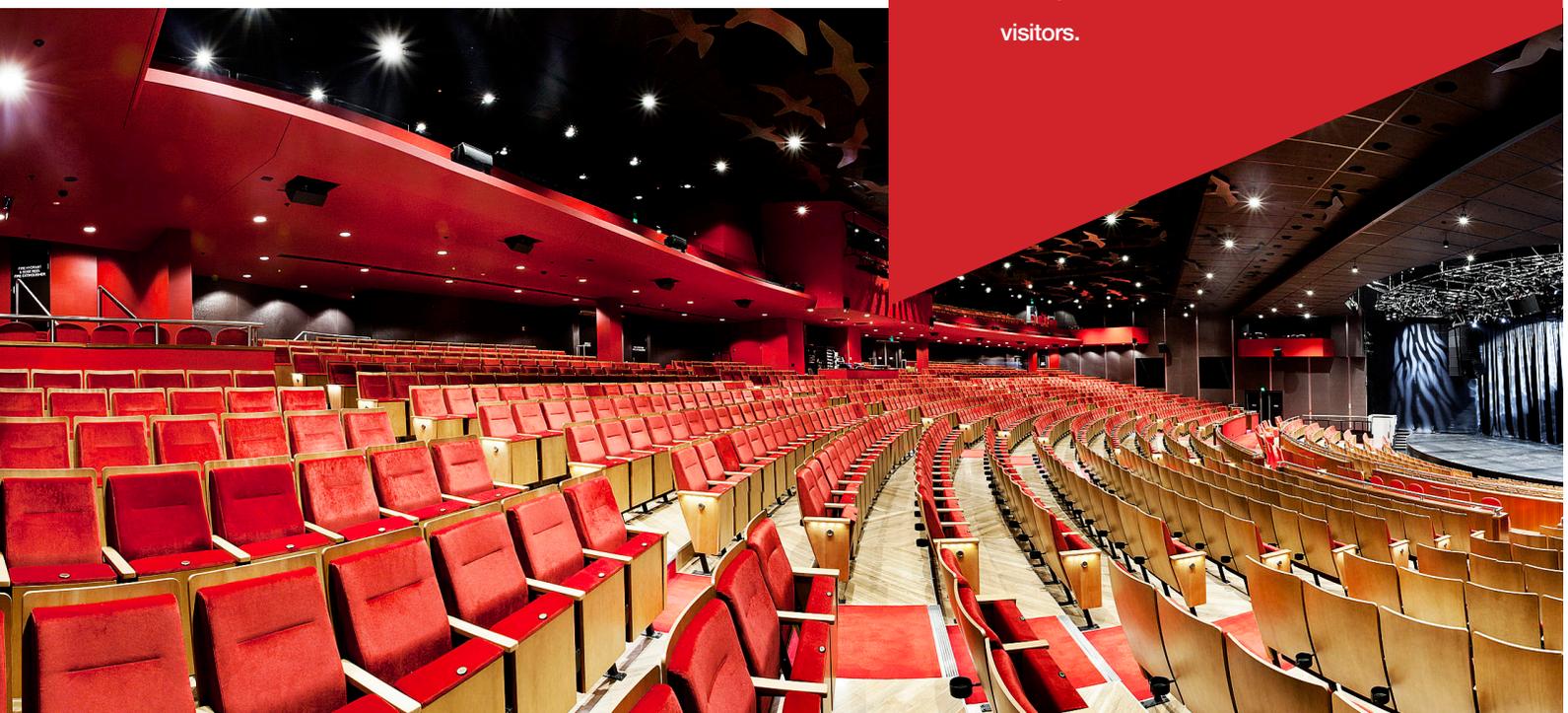
This listening technology includes the installation of multiple WIR TX9s (two-channel infrared emitters), a MOD 232 (two-channel infrared modulator) and multiple WIR RX18s (two-channel infrared receivers) from Williams Sound. This set-up is used for meeting the theatre's hearing assistance, language interpretation and audio description needs.

The WIR TX9 from Williams Sound produces a wide-angle infrared signal that concentrates infrared energy efficiently where patrons are seated in the theatre. Operating on the 2.3-3.8 MHz bandwidth, the WIR TX9 is less susceptible to radio and lighting interference and thus provides crisper and clearer audio. Each WIR TX9 emitter can cover up to 28,000 sq. feet (2,600 sq. meters) in single-channel operation. This coverage area was easily increased in the theatre by daisy chaining additional WIR TX9 emitters. The microprocessor-controlled MOD 232 modulator

from Williams Sound handles two audio channels. (Baseband outputs can daisy-chain two MOD 232 together for four-channel operation.) Flexible combination jacks permit balanced/unbalanced line-level inputs. Carrier frequencies are controlled by the microprocessor and a frequency synthesizer.

The Williams Sound WIR RX18 two-channel infrared receivers are available upon request, free of charge, to Jupiter Theatre patrons who have difficulty hearing. These easy-to-operate, under-the-chin style receivers feature high-quality, low-distortion sound and silicon ear couplings for maximum comfort and performance.

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# ATLANTIS CASINO



Over the past half-century, the family-owned and operated Atlantis Casino Resort Spa in Reno, Nevada, has grown from a quaint motor lodge into a luxe hotel and gaming facility that has consistently thrived even when the local economy's chips were down.

As part of this constant fine-tuning of the guest experience at the Atlantis, casino management was recently looking to provide more viewer engagement

within its race and sports book and adjacent poker room. For those wishing to watch and bet on games and racing, seeing live broadcasts wasn't an issue, as the room boasts two gigantic 13' x 7' LED screens and more than 70 other video displays. Hearing wasn't too much of a difficulty, either, as audio from the two large displays was zoned to two different seating areas in the sports book and an adjacent bar and grill. But where the opportunity for improvement

arose was in providing personalized audio for guests who want to tune in to their home game on a smaller display at a table or betting carrel, or while playing cards in the poker room next to the sports book.

“We were looking for a way for our guests to be able to hear what they wanted to hear, rather than just the main game, because we get a lot of people from out of state that want to watch and bet on their teams,” explained Zak Gulling, Director of IT for the Atlantis. “We wanted to give guests the freedom and flexibility to watch and listen to what they wanted, and provide the benefit of our poker players being able to listen, too.”

Always on the lookout for new technology, it was on a visit to another casino near the Atlantis’ second location in Colorado that the IT team discovered a new way for guests to hear individual audio feeds using their mobile devices. By simply connecting to the local Wi-Fi network, downloading a free app, and selecting from a list of available TV channels, the casino’s poker players were able to watch and listen to the sporting event of their choice.

Learning that this fan-friendly audio streaming was provided via the Hearing HotSpot™ from Williams Sound, the Atlantis team requested a demo. Then it was only a couple of simple steps later that the race and sports book had its own listening system in full operation.

Setting up the Hearing HotSpot Server with a separate wireless SSID on the existing guest Wi-Fi network, the Atlantis team basically flipped a switch and had everything they needed to stream multiple channels of audio in real time. “We gave it a separate range of IP addresses, and then just allowed it to route back out through our guest internet, so it never touches our internal network,” Gulling detailed. “By giving the Hearing HotSpot its own separate wireless

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— Zak Gulling, Director of IT for the Atlantis



network, we were able to pinpoint the locations areas where we want it to be available.”

Up to 32 channels (per server) of better-than-MP3 audio quality can be streamed directly to individual Android or iOS smartphones or tablets via Williams Sound’s advanced Hearing HotSpot software algorithm, which delivers audio with ultra-low latency so it stays in sync with the video source or even a live performance. In-app links also offer each venue the option of personalizing the app background, banners and ticker scrolls to further their brand.

Any concerns the Atlantis team had about increased traffic on the network were unfounded, as they discovered that the stream is relatively small. But to ensure that guests could still use Wi-Fi for surfing the web and checking email, even while audio streams were being sent to numerous devices, Gulling’s team augmented the network across a total of three Wi-Fi access points, including the Hearing HotSpot server.

Atlantis race and sports book team members, who control audio and video from the casino’s DirecTV sources with a Crestron system, are now able to easily provide guests with individual access to audio for their chosen channel by guiding them to download the free Hearing HotSpot app from Google Play or the Apple App Store. Once there, guests see a list of available channels and select for themselves the game they’re watching or the sporting event they want to listen to while playing poker. Within the app, they might also find out about promotional deals and contests, as the Atlantis has also made use of the customizable advertising features built into the Hearing HotSpot app that allows them to reach their guests on their own mobile devices.

The Hearing HotSpot system has been a hit with Atlantis guests, who like having the option to listen to what they want, even if they’re not looking at a screen. To bring this option to guests elsewhere on the Atlantis grounds, plans are in the works to expand the Hearing HotSpot deployment. “We are looking at rolling it out to several areas of the casino, so depending on where you are, you can stream the audio of what you see on TV,” Gulling said. “We’ve had great feedback from the guests, especially our poker players. Now that we have it set up and the guests know about it, we’re seeing more and more guests using the app.”

# UTS



When the University of Technology-Sydney (UTS) built a Superlab facility for its students to conduct experiments, the notion of teaching en-masse in a noisy, reverberant underground facility appeared a lost cause. Yet as the biggest and most flexible Superlab in Australia, the unique facility was designed to run multiple classes at the same time. Accommodating

up to 220 students, each of whom is provided with a workbench and computer station, the 170-foot (52-meter) long Superlab can be configured to allow up to 12 classes at the same time.

“We wanted to build in flexibility, so students could wear headphones with microphones, allowing us to isolate them and talk directly about what they’re doing,” explains UTS’ professor Nicolson. ‘The goal was for each student to hear only what their instructor was telling them, while they’re in the same room as other students doing different experiments in other disciplines.’”

A schematic plan of the laboratory was drawn up consisting of 26 tables with eight students positioned at each. Associated with this, up to 12 individual teaching stations were added to provide up to 12 individual groups of students. The potential to teach one large group from the same teaching position was also designed into the master plan. Crucially, the entire room locks out any other networks, ensuring no interference can affect transmissions.

“The initial idea was to provide the students with streaming video together with wireless audio so that they could hear the teacher’s presentations and engage in talk-back,” explains senior project manager Rob Hardy. “We looked high and low for a solution and eventually sourced a Williams Sound Digi-Wave™ system with 12 DLT transceivers for each teaching position across the room. We further separated the students into two tables so that 16 students in total can receive signals from any of the transceivers. We then separated the students into groups so they could receive teaching lessons from anywhere in the room via the local transceivers that can be fed to any position.”



Each Digi-Wave DLT transceiver is slim, lightweight, robust and simple to set up — perfect for UTS’ requirements. With the push of a button, students access two-way communication for immediate interaction or Q&A for which the transceiver’s 300-foot (100-meter) range ensures perfect operation in the 2.4GHz ISM band utilizing FSK modulation with frequency hopping software to reduce interference potential.





“In this room we were a little restricted with the wireless,” further explains Hardy. “We ended up using the 2.4 GHz bandwidth and had to cut off all the other available wireless for the students, leaving the Williams Sound system as the exclusive system, although the 5GHz band is available for mobile devices. It’s brilliant for academics, as they can communicate collaboratively and understand the teacher clearly.”

The Digi-Wave transceivers feature an LCD on the front panel, displaying battery level, mode, time, channel number, group number, and the number of other DLTs with the talk button on. The transceivers have a battery life up to 14 hours per charge and are constantly powered between lessons on Digi-Wave multi-bay docking stations.

“The DLT transceivers receive any of the lessons from any of the teaching positions from throughout the room,” continues Hardy. Teachers preside over their lessons from their virtual Crestron control panel, allowing them to drag and drop devices onto their touchscreens. Students can watch the video content from their dedicated all-in-one PCs or from 12 wall-mounted displays associated within each teaching area. Clearly visible LEDs in each teaching position light up amber or blue should a student wish to receive help or have a question, clearing the way for dialogue via the Digi-Wave DLT transceivers worn on lanyards around their necks. “The signal strength of these is very robust,” continues Hardy. “The DLTs are kept on permanent charge in the drawer, while the students bring in their own headphones, plug them into the DLTs, and they’re ready to go.”

“At first, the teachers were a little apprehensive in adopting the technology. However, once we properly demonstrated it to them, the transformation has been remarkable.”



# EDUCATION CITY MOSQUE



The Qatar Faculty of Islamic Studies/Education City Mosque in Doha was searching for a solution to their communication challenge: simultaneous interpretation/real-time transmission of their daily prayers into

multiple languages over multiple channels. Qatar-based integrator Darwish Technology proposed a Wi-Fi solution over conventional FM / infrared communication technology.

In conjunction with Dubai-based distributor Nicolas M Kyvernitis Electronics Enterprises (NMK), Darwish recommended and ultimately installed in the mosque Williams Sound's innovative Hearing HotSpot technology.

The Hearing HotSpot features everything needed to stream multiple channels of audio in real time over an enterprise Wi-Fi network. Once a system is installed in a venue, the software license is activated by Williams Sound based on the number of channels at that venue. Using their own IOS or Android device, participants can download the free Hearing Hotspot app from the Apple App Store or Google Play. In an interpretation scenario such as this, each individual is then able to select and listen to the language/channel of their choosing.

According to Darwish Technology, "Hearing HotSpot completely fulfills the requirements of this project, including compatibility with most smart phones and tablets used in this region. It is a key part of this interpretation system, where the floor language is transported to a remote interpretation center, and the translated signal is pushed back to the mosque on the same infrastructure. Hearing HotSpot takes this signal (multiple channels) representing the different translated languages, plus the floor language, and distributes it wirelessly in the venue. It was an easy implementation, and the result was more than satisfactory. This project was definitely a positive experience."

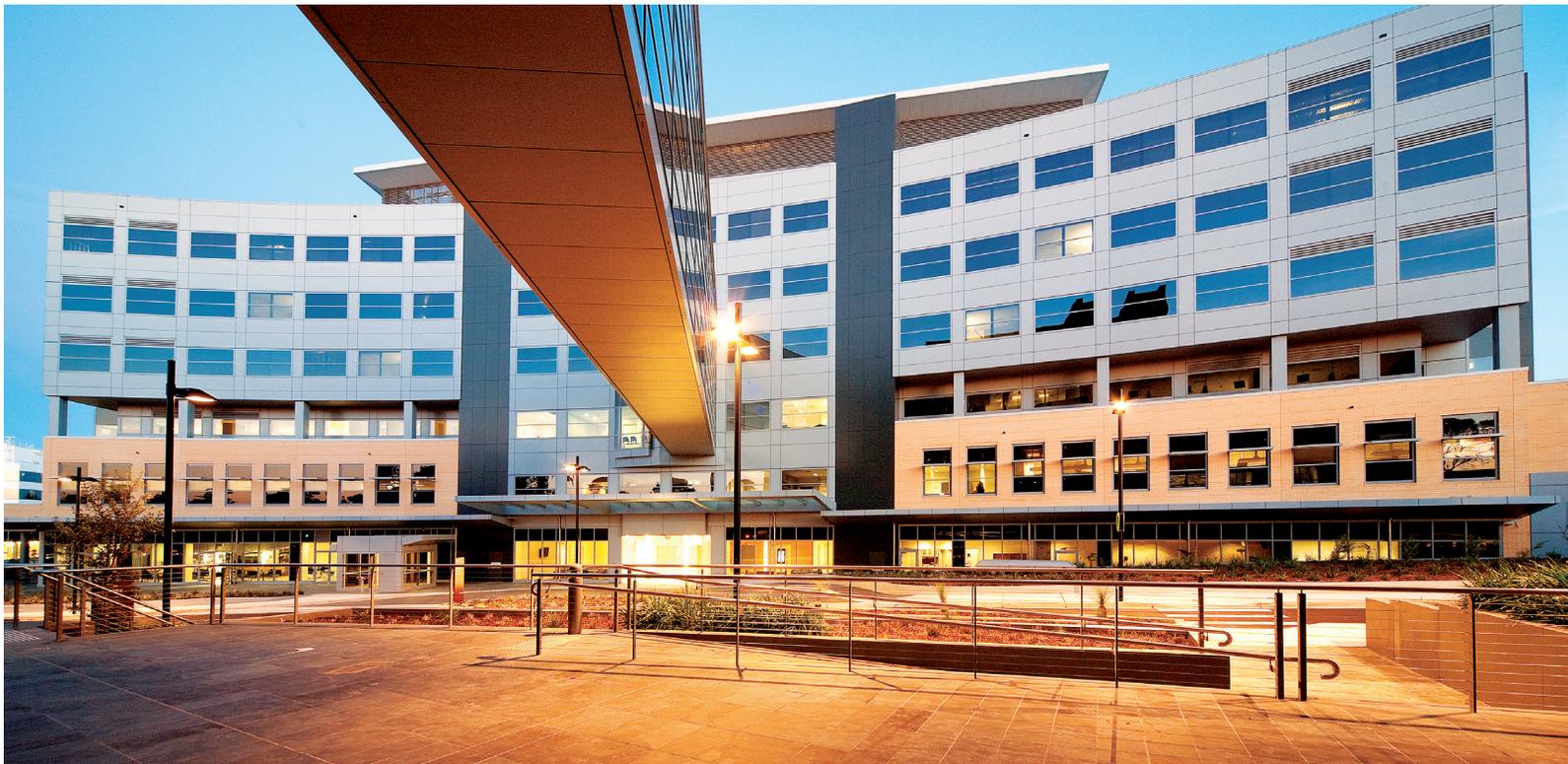


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— Darwish Technology



# MACQUARIE UNIVERSITY



Macquarie University Hospital (MUH), located in Sydney, Australia, is a 183-bed, state-of-the-art facility offering a comprehensive range of services and specialist areas, with links to the Macquarie University Clinic and the Australian School of Advanced Medicine. Opened in 2010, it has quickly become a renowned academic hospital, “where doctors are committed to a culture of continuous improvement in patient care through teaching and research.”

Hills SVL Group, Williams Sound's partner and a leading distributor of pro-audio and audio-visual products in Australia, demonstrated to MUH staff how quickly and easily the Williams Sound Digi-Wave™ digital communication system can help maximize educational efforts in the hospital's new operating theatre complex. The 16 surgery suites therein have been recognized as among the best in the world, offering exceptional patient care and clinical education — and

access to the most up-to-date medical and communications technology available. This line-up of cutting-edge technology now features Digi-Wave as well. Digi-Wave is a simultaneous, two-way, digital communication technology. It is slim, lightweight, and simple for hospital staff and medical students to set up and use. With the push of a button, users can access two-way communication for easy, more focused group leader / group member participation.

In the MUH surgery complex, Digi-Wave is now used to facilitate intercommunication between a teaching surgeon and medical students. While demonstrating surgical procedures, a surgeon can speak wirelessly via a Digi-Wave transceiver to a listening audience of students wearing similar transceivers. During Q&A, each student can communicate with the surgeon via their own transceiver with a quick push of a button. The question is heard by all. When the surgeon replies, his answer is also heard by all. The surgeon is entirely hands free. There is no equipment to manipulate, no buttons for him to push and no adjustments to make. All participants can hear everything and enjoy the simplicity and effectiveness of the Digi-Wave.

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# McCORMICK PLACE



McCormick Place is committed to accessibility and continues to provide an array of assistive listening technology for visitors throughout its facility. In 2007, when the McCormick Place West expansion closed in on completion (adding 470,000 square feet of exhibition space and 125,000 square feet of meeting

room space to the already massive facility), the design team accounted for changing technology and added a more advanced AV system than was originally planned. This technology included the installation of multiple WIR TX90s (integrated two-channel infrared systems) from Williams Sound. These systems con-

tinue to be used for meeting hearing assistance, language interpretation and/or audio description needs.

McCormick Place now consists of 173 meeting rooms offering 600,000 square feet of meeting room space, assembly seating for 18,000 people, and a 4,249-seat theater. Ongoing AV challenges include an urban, RF-hostile environment and sound that must frequently be confined to each of multiple, adjacent spaces. More than 100 WIR TX90 transmitters were permanently wired and installed, using Williams Sound BKT 004 mounting brackets. The completed install ensures that each large ballroom has full coverage in its entirety and that multiple rooms can be covered when client events require each ballroom be divided by air walls into multiple, small meeting rooms. The TX90s are controlled for audio feed from one remote, centrally located control room.

The WIR TX90 from Williams Sound is a powerful transmitter that combines modulator and emitter technology into a single operating unit (2.3 / 2.8 / 3.3 / 3.8MHz) — reducing operating costs, eliminating need for rack space and easing set-up. The system features application preset controls for music, voice,

or hearing assistance applications; so, no guesswork is required by McCormick Place AV staff during audio configuration. Williams Sound WIR RX22-4 four-channel selectable infrared receivers (body-pack) are ideal for use with the WIR TX90 and are available upon request, free of charge, to McCormick Place visitors who have difficulty hearing.

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INTERPRETATION

UAEM



The Universidad Autónoma del Estado de México (UAEM) in Toluca, in the state of Mexico, has combined two Williams Sound FM base-station transmitters, 300 FM eight-channel receivers, and two Interpreter Control Consoles (IC-2) to create a highly effective, simultaneous language interpretation system for everyday use in classrooms or lecture halls where Language and Humanities courses are offered.

The IC-2 from Williams Sound is an audio control console for simultaneous language interpretation of one or more languages. It has been paired with the FM transmitters in this application to allow one or more interpreters to monitor floor or relay sources, activate microphone inputs, and route their interpretation signal to one or more language groups. The FM receivers offer UAEM students and staff a simple, user-friendly design that can operate on up to eight channels simultaneously -- ideal for language interpretation applications in an educational setting.

The PPA T35 professional transmitter features a powerful microprocessor, sleek digital display and easy-to-use menu controls. The technical staff at UAEM can quickly switch between application preset controls for music, voice, or hearing assistance. The PPA T35 configures itself to the appropriate setting, taking the guesswork out of complex audio installation. With an operating range of up to 1000 feet (300m), the transmitter is ideal for auditoriums, stadiums, theaters and other large venues on this and other college campuses where superior coverage is essential.





## SEND US YOUR STORY

If you'd like to see one of your projects featured in a future edition of **Success Stories**, submit it for consideration to:

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