

Mueller Performing Arts Centre

A multi-functional facility that has its priorities straight and its heart in the right place.

Text:/Christopher Holder

WHEN I HEARD A RUMOUR that a private school in Queensland had purchased a chunky L-Acoustics Kudo rig and two (yes, two!) Midas XL8 mixing consoles for its performing arts centre, I had the same reaction as many of you reading this now. *What the...?!*

As I learnt more and then flew up to Brisbane to see the facility with my own eyes, the reality was even more unbelievable.

Mueller College is a Christian school that forms the education arm of a bigger-picture, church-run site that includes a retirement village and a childcare centre. This new performing arts centre houses a bunch of classrooms, a library, recording studios (as yet unfinished), refectory, as well as the centrepiece 1650-seat theatre. On a Sunday it plays host to two church services.

In short, here, in the sleepy northern suburbs of Queensland's capital, is an utterly world-class theatre/church/education complex. At every turn is the best of everything and (when fully complete) if it's not the best equipped facility of its type in Australia then I'd be amazed. One thing's for sure, it's an install guaranteed to make every theatre, church and school in the country turn green with envy. In fact, dear reader, I wouldn't be surprised if you're feeling a slight shortness of breath now; a constriction in the chest... that feeling you get when you see 'the undeserving' being lavished with 'the unbelievable'. Am I right?

Okay, let's explore some of the preconceptions that I'm sure are flooding many minds this very minute:

PRECONCEPTION 1: MORE MONEY THAN SENSE

The Mueller performing arts centre is part of a long-term masterplan that's been in train for decades. Plans for the centre were first worked on 10 years ago. In other words, this isn't something that's sprung up overnight, it's been meticulously drafted and costed, including a budget that has set aside a proportionally bigger chunk for sound, lighting and audiovisuals than anything I've ever seen.

The centre isn't an architectural triumph – it's not a showy, ostentatious edifice... it's pretty utilitarian, in fact – but it's well and truly 'fit for purpose'. And to give you an idea of where the priorities lay, the architectural plans included a porte cochere (an undercover in/out driveway for dropping people off at the front of the building) but the school decided to scrap it and used the money for more of the practical stuff. To think of it: architects playing second fiddle to AV!

PRECONCEPTION 2: UPSELLING THE NAIVE

Surely these poor schmucks have been 'supersized' by wholesalers with dollar signs in their eyes? I don't think so. The college's brains behind the school Bruce and Don Heazlewood are anything but naive – that much was obvious after spending a couple of hours on site. Bruce and Don effectively were the project managers on the job and made it their business to foresee the unforeseen and to ensure every purchase and every aspect of the design was spot on. Time and again I was amazed by the attention to detail.

One small example, take the FOH catwalks. It's possible to roll a flight case full of lighting fixtures out of a lift onto the top level along a generously wide access way and then actually *onto* the catwalk. Imagine that? From van to rigging point without negotiating stairs, or inventing new yoga position to get around/through a maze of girders.

Or have a look at the fly points above the stage: the girders can handle a 10-tonne load. There are more hang points than you can shake a stick at; there's provision for doing the 'Peter Pan' flying performer routine; the ceiling is packed with a polycarbonate acoustic sandwich; there are huge extraction vents for gently sucking fog and haze from the stage; the air conditioning is super low-noise/high velocity; there are high-spec motors and staging systems from Jands; the 16m-wide motorised screen (from Screen Technics) is perfectly positioned to remain unruffled by the downward flow of the air conditioning... I mean, this is not the work and design of



The Lighting

Jands Vista T4 lighting controller
16 x Source Four 26°
4 x Source Four Zoom 15°–30°
6 x Spotlight Combi 25F - 2500W Fresnel
12 x Spotlight Combi 12F - 1200W Fresnel
48 x 3kW ETC IES Matrix Sine Wave dimmers

Seeing The Light

The lighting rig is an all-Jands affair, with Mueller College investing in a fairly modest number of luminaires and some primo dimming. Jands' Blake Garner talks us through a couple of the more noteworthy aspects of the install.

ETC IES Sinewave Dimmers: The sine wave dimmers are a big investment, but they eliminate the hum you get out of a filament, and the dimmer noise is gone. The induced noise you get from the 50Hz harmonics in your audio system is also gone. The only thing left is the possibility of induced 50Hz noise – like you get from any mains cable.

Vista T4: The Jands Vista T4 lighting controller was chosen for its ease of use. It's accessible to beginners but you don't lose functionality – it provides the same level of power you get out of the other top-end desks. The graphic interface is a good modern way of controlling lights.

Pathway Pathport Network: There are plenty of DMX-over-Ethernet systems out there: ArtNet, StrandNet, sACN are some of the main ones, and Pathway has

its own as well. With so many protocols it's slowed the growth of DMX-over-Ethernet. Integration is a problem. You might have a console that talks one language and needs to integrate into a system that talks another. Merging different protocols is difficult. You're forced to swap out gear or relay cable.

The Pathport system allows you to easily plug into your existing Ethernet backbone. You convert the DMX, run it down the Ethernet cable and convert back to DMX as required. So it supports ArtNet, sACN, ShowNet... and it'll allow them to switch out their Vista and put in an Ion, for example, and not have to completely bypass their DMX-over-Ethernet system.

There are Pathport wallplate nodes (four input nodes with two ports on each node and 10 output nodes) in the control room and dotted about the venue. So building a system is as easy as plugging into a converter wall plate.

Stage Two will see Mueller College buying moving heads among some other goodies.



Midas Touch: The Midas XL8 is probably the single biggest audio investment anyone could currently make. Mueller Performing Arts Centre has two. Jolly nice console.

‘babes in toyland’, happy to be slipped a mickey by some travelling sales guys.

PRECONCEPTION 3: IT'S TOTAL OVERKILL

I pondered long and hard about whether Mueller College's Performing Arts Centre is a technical triumph or simply 'too much'. There are plenty of other private schools who have spent millions on performing arts facilities – many far flashier and more extravagant in design – so why will this one raise more eyebrows? Maybe it's because we're so accustomed to seeing the money being poured into the architecture and design and so *unaccustomed* to seeing the technical/practical infrastructure given top billing. Is it so wrong that Mueller College spent more on the PA than they did on the carpets? Why can't a college have a top-notch lighting rig for its students to perform under and practice on rather than an enormous lighting *feature* in the foyer that photographs well for the brochure?

Sure, you could very easily contend that one Midas XL8 would have been more than sufficient, but Mueller instead invested in another for monitors (not to mention nine L-Acoustics 115XT HiQ wedges)... why not? And what about the rack of ETC IES sine wave dimmers (to stop the hum from the lights); the AMX control system for managing the automation of the lights,

curtains, winches and projector etc; the L-Acoustics 5.1 surround speakers on the rear walls; the generator for auto changeover and instant start of continuous power? Overkill? Okay, yeah, probably. But occasionally, isn't it satisfying to see the best technical solution being adopted rather than one riddled with compromises?

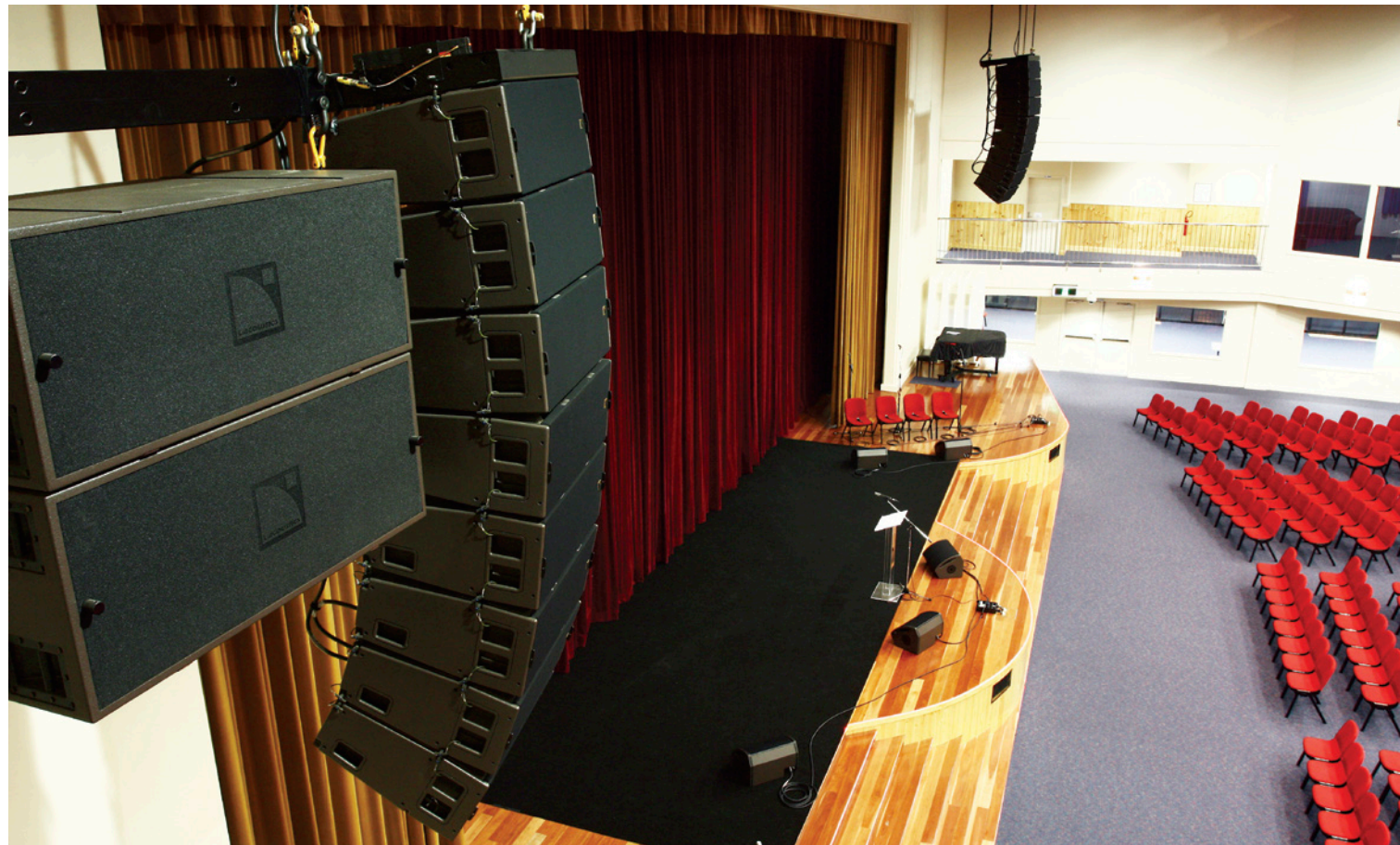
One final observation: it's amazing what can be achieved when a community pulls together, applying their various skills, time and expertise. Bruce and Don Heazlewood in particular have made it their business to understand and research every aspect of the build – mostly while they've both held down nine-to-five day jobs!

This spirit of volunteerism permeates everything, and it's clear to me that blood, sweat and tears binds together a centre like this far more effectively than a handballing, buck-passing regime of committees, subcontractors and tenderers; a regime that can result in a facility that 'ticks enough of the right boxes' but is often let down by a few people who simply don't care.

Meanwhile, the Mueller College theatre sounds and looks great and I've no doubt the install will attract some world-class professionals to pass on their technical knowledge to the next generation of engineers and technicians.

10 More Things You Should Know

1. All cabling for audio, speakers, video, and data has been allocated into specific corridors totally separated from any electrical wiring, with all four audio and lighting control rooms interconnected with fibre optic links. All technical power is filtered and has generator backup with three-phase in-line filtered UPS units mounted at switchboards.
2. All eight air-conditioning plant rooms have been separated and isolated from the auditorium and recording spaces, with all equipment mounted on rubber pads to eliminate noise and vibrations through the structure.
3. Building Management Systems have been installed to control energy efficient air-conditioning, access control, and CCTV systems.
4. Above the stage is a rigging grid which allows maximum flexibility for hanging lighting trusses, scenery bars, speaker stacks, cyclorama screens, longitudinal beams to fly personnel or items across stage, and the provision for hanging point loads anywhere over the stage to a maximum loading of 10 tonnes.
5. There are multiple lectern positions which have been wired for full AMX control of lighting, audio, AV, curtains and screen.
6. Stage is equipped with a smoke machine extraction system (separate to air-conditioning).
7. There are audio and video links throughout the facility to areas including the refectory, coffee shop, kitchen, foyer, and mother's room. Also broadcasts of live performances and church services are fed into the Peninsula Palms Retirement Village adjacent to the site.
8. Direct off-street ramp access is available to four levels of the building.
9. Recording studio (Stage 2) has direct links to the stage, control rooms, and to external broadcast vans in the undercover car park.
10. The timber stage floor has been sprung.



Sounds Big: The 1650-seat theatre has a world-class L-Acoustics sound system, based on eight Kudo a side, two SB218s and dV-Subs a side, MTD108 inflill flushmount in the stage, and a stack of 115XT wedges.

Kudo Kudos

There's plenty that's unusual about the Mueller College audio design. And then there comes a point where the 'unusual' tips over into the plain 'unheard of'. And when Random Audio's Wyn Milsom found himself gazing into a big hole in the ground where the new performing arts building would be, talking about the design of the L-Acoustics Kudo PA... well, he must have thought he was in the twilight zone.

Wyn Milsom: Normally in an install of this type you're an afterthought, having to compromise and make do. But it was certainly an advantage to be able to see this project through from the beginning. Mueller College's Don and Bruce Heazlewood are clearly audio buffs and they made the audio a priority from the beginning. I was really impressed by their clear vision and commitment to getting the best, even if it meant waiting and being patient. These guys have put years of their life into this facility and it shows.

The PA provides more than enough power for a room this size. Mueller College was gunning for 100dB maximum and the rig will more than comfortably go to 110dB. But the quantity of Kudo is required to get full coverage of the room. The top three Kudo in each of the arrays covers the balcony, the next three covers the inclined section of the floor and the bottom two the flat floor area down to about Row 7, whereupon the inflill (flushmounted L-Acoustics MTD108a speakers in the stage) take over.

There are two SB218 (double 18-inch) subwoofers flown aside. These form part of the overall Kudo sound, taking over from the Kudo from about 60Hz downwards.

During the demonstrations, Mueller College liked the punchier sound of the dV-Subs as much as the more enveloping SB218s, so additionally they opted to install dV-Subs on the ground (in the stage structure) and run them, almost as an effect, from an auxiliary send.

Intelligibility is paramount in a system like this, given the reliance on the spoken word. Time aligning the front fill was quite painstaking but pulls the image down nicely for those people in the front rows.

Apart from the regular left/right PA, they decided they wanted to do 5.1 playback when using the big screen and projector [a Panasonic 10,000 ANSI lumen model]. For this reason we've got surround speakers on both levels, as well as a 115XT HI-Q centre speaker above the proscenium arch. The centre speaker also helps to fill a small gap in the nearfield centre coverage – a gap that opened up in the design after it was decided the stage would be widened by a good six metres.

Elsewhere we wanted all the speakers in the ante rooms, mothers' room and foyers to be time aligned with the sound in the main theatre. This makes for a smooth transition when going in and out of the theatre. L-Acoustics speakers are also well known for having great tonal consistency in its range and this really assisted in making it "sound the same" regardless of where you are. So we have in-ceiling speakers and MTD108Ps dotted about. There's even one going into the kitchen facilities. L-Acoustics' prediction software, Soundvision came up trumps. The new version had just introduced delay finder and time delay characteristics features and the predictions and time analysis were right on the money.

The PA

Auditorium:

- 8 x Kudo per side
- 2 x SB218 subs per side
- 2 x dV-Subs per side
- 6 x MTD108a frontfill speakers
- 1 x 115XT HIQ centrefill speaker
- 4 x 115XT rear surround speakers
- 1 x 115XT (anteroom area)

Stage Monitor system:

- 9 x 115XT HIQ stage monitors
- L-Acoustics Amplifiers (LA48a/LA24a/LA17a)

Foyer: 6 x MTD108a

Refectory: 8 x MTD108a

Mothers' Room: 1 x 108P

Control Room Nearfield Monitors: 2 x 108P

The Staging

- 3 x Jands HP250PV pile hoists
- 3 x Jands JLX PRO modular lighting bars
- Full drapes & tracking system