

ProAudioAsia

LIVE SOUND | RECORDING | INSTALLATION | A/V | BROADCAST | POSTPRODUCTION | May-June 2017

REMAKING HISTORY

Surround sound for shijing yanchu production

CALREC IN HONG KONG

PL&S HITS FRANKFURT
AND GUANGZHOU

FIVE STAR A/V IN KL

GENELEC AT TOKYO
ARTS UNIVERSITY

Singapore: MICA (P) 020/05/2017
PPS 1604/05/2013(022953)

PROBLEM?

$$\delta = mc^2$$

where $m = \mathbf{M}$ (processing) and $c = \mathbf{C}$ (power) and $\delta = ?$

MC²
AUDIO



PROBLEM SOLVED.

Delta 80 DSP Processing Power Amplifier



Delta 100 Network Audio Power Amplifier with Dante

#powermeetsprocessing

www.mc2-audio.co.uk Tel. +44 (0)1404 44633 Fax. +44(0)1404 44660 MC² AUDIO | Units 6-8 Kingsgate | Heathpark Industrial Estate Honiton | Devon | England | EX14 1YG



Opening the Gateway

The E&E team was called in to meet the audio needs of the performing arts spaces in Singapore's new Gateway Theatre. **Richard Lawn** finds out more



The new Gateway Theatre is a new nine-storey venue in Bukit Merah Central

GATEWAY ENTERTAINMENT (GE), A SINGAPORE-BASED creative arts company, has been producing and staging unique artistic, drama and musical performances since the turn of the Millennium. To better serve the community and Singapore's burgeoning arts and entertainment industry, the company embarked on an ambitious project in 2014 to rebuild the former Touch Community Theatre.

The original building was demolished and following a S\$50 million redevelopment project, a new nine-storey venue in Bukit Merah Central rose from the dust. Now known as Gateway Theatre, it is a multi-theatre venue that aims to be a creative arts space that promotes made-in-Singapore works and talents of all cultures. With its goal of developing an appreciation of the arts within the heartlands of Bukit Merah and in Singapore, Gateway Theatre looks set to continue transforming the arts

and entertainment industry in the country. This includes a passionate emphasis on the audio systems it utilises.

The two-storey high, 930-seat theatre includes a movable orchestra pit, a 10m stage and a stage lift. Working closely with audio consultants, Alpha Acoustics, Electronics & Engineering Pte Ltd (E&E) was contracted to design, supply and install the audio system in the main auditorium, black box theatre, dance studio and the building's iconic rooftop Sky Garden. As such a Dante network formed the basis of the nine-storey facility from the outset. Dante provides solid bi-directional audio communications and provides Mik N Su and his technical team with a first hand visual landscape of all the inputs and outputs throughout the whole building.

The entire Gateway Theatre venue is supported by an Allen & Heath dLive digital console platform, which was selected for its flexible architecture, FPGA processing core, dual redundancy, control and Dante networking options. The Harmony user interface comes with gesture control, integrating screen and wrap-around controls with a 12-inch capacitive touchscreen



Mikam Naoko Su (head of audio) at the controls of the dLive S7000 Surface

and configurable widget areas for scenes, meters and FX. The distributed design incorporates a dLive control Surface with a separate MixRack housing all the processing power. 'The audio quality is extremely good and the platform suits our needs perfectly in terms of inputs and outputs,' explains Mr Su, who worked as a touring engineer for many of the main production companies in Singapore.

For the main FOH mixing in the theatre, an S7000 receives its DSP from a DM64 Stagebox incorporating common configuration, setup and show files. The 96k/96bit XCVI Core provides capacity for 128 inputs with full processing and 16 dedicated stereo FX returns, offering 160 inputs to mix, together with a fully configurable 64 mix bus architecture with full processing on all 64 mix channels. Linked to a DM32 Stagebox, an S5000 surface is used for operations at the



The L-R FOH system in the main theatre consists of eight-per-side Anya modules supplemented by four Otto sub modules on an adjacent hang

monitor position. Additional I/O expansion has been provided via the Cat-5 DX ports by connecting a further three DX32 expansion units, whilst network connectivity has been enabled with the addition of a Dante network card.

The L-R FOH system in the main theatre consists of five-per-side Anya modules supplemented in the lower frequencies by four Otto sub modules. Anya was specifically designed for such applications requiring precise coverage with the ability to adapt coverage in seconds. 'We're running the speakers flat,' elucidates Mr Su. 'I like the fact that it's beam steerable, you can direct the energy where you need to and there's great feedback rejection.'

Each Anya module includes 14 HF compression drivers that provide a continuous line of apertures on a horn that

expands to fill almost the entire face of the enclosure. The MF section is composed of six 5-inch cone transducers, whilst dual 15-inch transducers comprise the LF section. Each driver and transducer is powered by its own integrated amplifier. Furthermore, integral processing provides independent power and control of each individual loudspeaker component. The Anya modules are controlled via Resolution 2 software over the Dante network tailoring the coverage across the entire coverage area. Operating within a frequency range of 35Hz to 18kHz, a single column displays a nominal horizontal bandwidth of 70-degrees.



The Clear-Com FreeSpeak II Base II station can support up to 25 belt-packs via ten transceiver antennas and two splitters

Like the loudspeaker system, the Shure ULX-D wireless microphones were upgraded to the Axient platform. 'It's extremely stable so I understand why it's rider friendly,' enthuses Mr Su. 'There are three frequency hops on one handheld and it never seems to crash. It also integrates with the UR4D system, so if you forget to charge the batteries you can still use a UR4D handheld, sync it and carry on without a problem.'

The back-of-house communications were also reviewed and as such the intended Clear-Com Tempest system was replaced by the FreeSpeak II platform with a wireless Base II station that can support up to 25 belt-packs via 10 transceiver antennas and two splitters. With digital signal transmission over the 1.9GHz and



EAW MicroWedge monitors provide a compact footprint on stage

2.4GHz frequency bands, the Core Configuration Manager (CCM) provides remote configuration for real-time system changes.

In the 300-seat black box theatre space on the eighth floor, a smaller L-R loudspeaker system consisting of four Anna and single Otto modules per side is mixed on an Allen & Heath dLive S5000 surface connected to a DM32 mixer. The slimmed down system is extended with eight channels of Shure Axient wireless. A Dante gateway to the main theatre, dance studio



The 930-seat theatre includes a movable orchestra pit, 10m stage and stage lift

FEATURES: INSTALLATION

and other rooms has been created by integrating four Symnet Edge processors into the Black Box control room, where three Netgear GS724T network switches offer LAN, primary and secondary control. 'This space is particularly useful when the main theatre has sold out, allowing the overspill audience to enjoy the performance in a great acoustic environment in HD with a compatible audio system,' explains Mr Su.

The EAW theme is extended in the fourth level dance studio where dual Redline RL12 tops and subwoofers operate as a portable system.



Terence Tan, Zubair, Andy Boon and Mikam Naoko Su at FOH

On the sixth floor, a sky terrace can be used for intimate performances. Here 14 Community Professional DS8 wall mounted speakers powered by a Powersoft M50Q amplifier serve as a background music system, whilst DSP management is provided by a Symnet Edge processor.

At the height of the project, some 30 E&E employees were on site terminating all the cabling in the control room racks. The fruit of the team's labour can be seen in the end result. The venue stands proud and is ably equipped to meet its goal of serving the local arts and entertainment industry.

www.fcbs.org.sg

www.enepl.com.sg



Introducing tomorrow's
Control Room, today!

Fireface UFX+ and ARC USB

More I/O – featuring 188 channels of future proof I/O, including Thunderbolt technology™, USB3 and MADI, and with free routing of everything to everywhere, you have all the connectivity you'll ever need.

More gain – an all new preamplifier design gives incredible amounts of usable gain.

More functionality – connect the optional ARC USB and benefit from unlimited routing and mixing control at your fingertips. Improved DUREC recording from the front panel now timestamps your audio files.

Less latency – together, RME's famous low latency hardware and innovative drivers deliver maximum performance without limits, for your Mac, PC and iOS devices.

