



A Christie D4K2560 22,500-lumen projector in the rear control room



EAS had to install an L-C-R speaker solution and two lighting bars overhead



Panasonic AW-HE120 PTZ cameras are fed to an AW-RP50 controller

Towering achievement

Tucked away on the third level of Marina One West Tower are a new auditorium and adjacent meeting rooms, with AV and lighting technologies integrated by Electro-Acoustics Systems (EAS). **Richard Lawn** reports

LOCATED IN SINGAPORE'S NEW FINANCIAL DISTRICT

and designed by world-renowned German architect, Christoph Ingenhoven, the twin office towers at Marina One have been designed to strengthen the Lion City's claim as the financial capital of Southeast Asia. Businesses that have migrated to the two 30-storey commercial towers – Marina One East Tower and Marina One West Tower – can now use the 336-person auditorium and dual 122-person meeting rooms for their bespoke requirements, including conferences, meetings and presentations.

Based on extensive expertise, EAS has maintained an increasing presence in the local AV landscape since its inception in 1982. Project manager Chester Tan and his team executed an intricate design into the fabric of the auditorium, which spans 15m x 19m. The wooden stage, which is the focus for most events, houses a number of floor panels providing audio, VGA and HDMI inputs connecting to the upper rear control room mixers.

A Yamaha QL5 32-channel console receives mic inputs from a DME64 DSP engine inserted with a MY16-AE card and a further three MY4-AEC cards to create a 16-in/16-out AES/EBU interface and 12 channels of acoustic echo cancellation, respectively. An eight-in/eight-out MTX3 unit is loaded with DSP presets for the room's varying functions. Audio sources include a TASCAM CD-200 player together with a large inventory of wired Sennheiser e 945 condenser and e 965 cardioid handheld microphones in addition to ew 522 tie-clip and ew 335 handheld wireless models boosted by an antenna splitter/distribution system.

The acoustic ceiling reflectors discreetly conceal a Renkus-Heinz L-C-R loudspeaker system that combines seven Varia VA101-22 modular point source arrays. These are augmented in the lower frequencies by dual IC118S-R 18-inch subwoofers. Powered by two Lab.gruppen IPD 2400 amplifiers, the front-fills are four Renkus-Heinz CFX42 dual 4-inch speakers inserted into the lip of the stage, while three TRX61 6.5-inch models provide adequate dispersion for the rear-fills. Finally, speakers and performers onstage can monitor themselves using up to six Renkus-Heinz CFX121M monitors powered by three Lab.gruppen IPD 2400 amplifiers.

A total of 48 Williams Sound WIR RX22-4 two-channel receivers and neck-loop telecoil couplers have been supplied to cater for the assistive listening quotient. Four TX9 infrared transmitters enable a clear signal from the MOD 232 two-channel infrared modulator. Two Furman CN-3600 SE power conditioners provide surge protection and electrical on/off sequencing.

Fixed into the rear control room, a Christie D4K2560 22,500-lumen projector can handle a wide range of visual content ranging from simple presentations to cinematic experiences. A Remaco motorised 6.5m x 3.7m tab-tensioned projection screen can be lowered into position at the rear of



Marina One was designed by world-renowned architect, Christoph Ingenhoven

the stage courtesy of Crestron CP3 control. L-R projection is provided by two Christie HD14K-M 10,000-lumen models paired to L-R Remaco 3m x 1.7m motorised screens. Providing a central role in the video schematics, Analog Way SmartMatrix and Expander 16 seamless switchers receive all the video inputs and outputs on the control surface of a Vertige VRC300 console outfitted with a 15.6-inch touchscreen.

'One of the challenges faced was the restricted space of the auditorium as we had to fit one 6.5m and two 3m screens,' explains Tan. 'After an in-depth discussion with Remaco, the screen manufacturer, we managed to customise the screen casting to ease installation and not compromise the screen.'

VGA and HDMI inputs can be connected onstage and enabled via Crestron DM-TX-200C transmitters over the Cat-6a network. In addition to a Blu-ray player, the auditorium is equipped with a PTZ camera tracking system that connects four Panasonic AW-HE120 motorised cameras to an AW-RP50 controller. In addition to the three Remaco screens, other outputs include 46-inch Panasonic and 22-inch Samsung monitors.

Staying true to its signature stage lighting, EAS has installed 22 ETC Source Four Cool Beam spot fixtures onto two lighting bars. Controlled from an ETC Ion lighting desk, a further six Martin Mac 350 Entour profile and Aura wash moving heads are programmed to provide dramatic entrances when required.

To comply with flexible room-combining functionality, EAS has added Biamp TesiraForté AVB processing into the audio rack of the meeting rooms. Two 10-in/six-out DSP processors provide matrix routing with programmed DSP presets stored for various room configurations. Audio inputs include the same Sennheiser microphones and TASCAM CD-200 player as the auditorium. A ceiling speaker solution comprising 18 Tannoy CMS 603DC 8-inch models powered by dual Lab.gruppen E 4:2 amplifiers is relied on for most functions. However, L-R VS12.2Q 12-inch, wall-mounted speakers powered by a single Lab.gruppen C 48:4 amplifier in 8Ω mode can be used for visual presentations requiring higher SPLs. A Sennheiser ME 34 gooseneck microphone has been installed into the portable lectern that can be patched into a number of floor panels throughout the extensive space.

A Crestron DM-MD16X16 digital matrix switcher lies at the core of the visual system, providing connectivity to the two Panasonic PT-DZ13K 12,000 ANSI lumens and two dual PT-DZ680 6,000 ANSI lumens projectors onto Stewart Filmscreen motorised screens. Crestron DM-TX-200-C transmitters receive the various VGA, audio and HDMI inputs concealed in the floor panels and wall plates. Two WolfVision VZ-9.4F visualisers and Blu-ray players have been added to the system. Video conferencing has been provided in the form of an Avaya Radvision XT5000 system connected to overhead Panasonic AW-HE130 PTZ cameras.

Another glowing AV and lighting reference, then, for EAS as Marina One joins Singapore's ever-evolving skyline.

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The auditorium in Marina One's West Tower can accommodate 336 people