

Serving the masses

Covering almost 10,000m², the newly opened Tianhe Church is now the largest house of worship in Guangzhou. **Sue Su** takes a look around



The church is the largest HOW in the province

THERE ARE AROUND 370,000

Christians in the Guangdong Province. The region's capital, Guangzhou was in need of a modern church. The Guangzhou Christian organisation, with the help of the government, started planning the construction of the Christian Church of Guangzhou Tianhe (Tianhe Church) in 2004. Construction wouldn't begin until 2009 and another eight years passed before the now third largest church in China officially opened in early 2017.

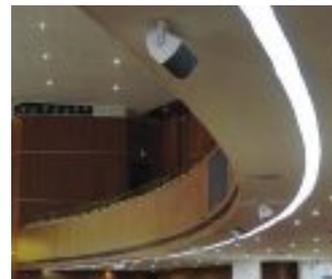
With a floor area of 8,830m² and a total architectural footprint of 9,970m², the sanctuary includes the main hall, a baptistery, a belfry, a training building, which serves as a multifunctional space, and a separate administrative building. Such a large project drew in the support of several Christian organisations, including some from overseas, as well as Hong Kong-based systems integrator Jolly Pro Audio. Jolly Pro Audio's director, Andy Leung, is the nephew of a pastor who served as chairman of The Committee of the Three-Self Patriotic Movement of the Protestant Churches and the Christian Council of Guangzhou.

'About six years ago, my uncle told me that Guangzhou was going to build a new church,' recalls Mr Leung. 'He knew I was familiar with the A/V systems of churches, so he asked me to provide some free consultancy for Pastor Feng Hao, who was one of the people in charge of the project. Unfortunately, my uncle passed away, but I kept in touch with the organisation and as I had been involved in the project from early on, I was already familiar with the venue so they hired me to provide a turnkey solution for the whole system from consultancy to installation.'

Mr Leung possesses almost four decades of experience in the A/V industry. He has completed several A/V renovation projects for churches in Hong Kong, but had never worked on one from the construction phase or one so large. 'Churches in Hong Kong are relatively smaller,' he notes. 'As this is the first church I have been engaged with during construction, I was very clear about the acoustic design.'

Jolly Pro Audio designed a sound reinforcement solution for the main hall and baptistery comprising of loudspeakers from Fohhn Audio. In

the main hall, which accommodates 2,500 visitors, four white Linea LX-501 loudspeakers form the main PA system, tasked with providing sound coverage at ground level and in the gallery. These are installed on either side of the stage area where, due to the room's tall stained glass windows, they are said to be unobtrusive. At the edge of the stage, four Arc AT-601 systems are used as nearfield speakers. On festive occasions, these are concealed behind floral arrangements. In contrast, four AS-40 subwoofers have been rendered permanently invisible by being integrated into the front of the stage. Serving as delays beneath the gallery are four AT-061 systems, while a pair of AT-05s deliver side-fill. The manufacturer's Chinese distributor, Guangzhou Shoushan Audio Equipment, provided assistance with system alignment.



Four Fohhn AT-061 speakers are installed under the balcony

'This church does not have many bustling performances and it's mainly used for preaching, so intelligibility is most important,' explains Mr Leung. 'I have used Fohhn before and think they have excellent intelligibility. Many people doubted whether the Fohhn speakers would be able to cover the whole area at the beginning, as they are so small. We used EASE Focus to predict the acoustic measurements at the end of the project and this showed us that it would reach more than 90dB SPL. Also the slim shape and white colour of the cabinets are a perfect match for the church's decoration.'

Complementing the Fohhn setup on the lows are a pair of Renkus-Heinz RFX-18S subwoofers, which have been concealed beneath the podium in the main hall. Audio is further reinforced on the balcony at the rear of the room by two Renkus-Heinz TRX 81/12 speakers hung from the ceiling in an L-R configuration with a centre

TRX62H. The choir monitors are two TRX 121-9 enclosures. Completing the loudspeaker setup – which is entirely managed by three Fohhn FC-9 DSP system controllers and a Behringer X32 digital mixer and powered by Crown XLI 2500 amplifiers and Fohhn’s D-4.750 multi-channel and D-2.1500 amplifiers – is a pair of Audio Performance MP 12 portable cabinets.

For vocal capture, Mr Leung selected a Sennheiser ew 100-ENG G3 wireless microphone system. This includes EK 100 G3 adaptive diversity receivers, SK 100 G3 bodypack transmitters, ME 2 clip-on microphones and SKP 100 G3 plug-on transmitters that



The LX-501 main PA

enable standard XLR mics to be used wirelessly. A Symetrix Voice Processor 2x two-way mic processor was also integrated. ‘When a line signal enters the X32 console, we can use the Voice Processor 2x to change configurations to recall the preset EQ for different pastors,’ says Mr Leung. ‘Because it uses Wi-Fi to connect we can bring a computer to the podium on the stage and adjust the EQ and dynamic in front of the pastors.’

On the visual side, Tianhe Church required a system to enable the recording of services as well as the ability to playback PowerPoint presentations. The Jolly Pro team supplied three Doteck O4 HD cameras, an EverFocus EQH5102 1080p mini



The Countryman mic at the piano

box camera and a camera from Blackmagic Design. The feed is then distributed via a Blackmagic Atem Production Studio 4K 4x4 matrix switcher to both the main hall and the baptistery. The output in the main hall is delivered by a pair of Vivitek projectors, which fill the 170-inch screens either side of the stage. ‘We wanted to install LED displays, but they would block the beautiful coloured glass windows,’ says Mr Leung. So we used elevated screens instead.’ An LED monitor has also been set up on the stage as a prompt for the pastors.

Meanwhile, the baptistery, which accommodates 500 people and is used for weddings as well as baptisms, has been fitted with a scaled down version of the Fohhn PA system in the main hall. There is a piano to provide the background music for such ceremonies and this is captured and reinforced by a Countryman microphone. Control is

courtesy of a Yamaha console.

The installation process wasn’t without its challenges, particularly when it came to also keeping the decorator happy. ‘The contractor knew how to decorate very well, but isn’t well versed in A/V systems, so it took us a lot of time to communicate,’ Mr Leung reflects. ‘Also something unpleasant happened during the Chinese New Year. The cables were cut and stolen from the site. We had to buy new cables, but as time was too tight, we could not do the wiring again and had to splice in some connectors. This is the only thing I regret about the project but it couldn’t be helped and compromises had to be made.’

That compromise did not affect the quality of the system though. The church invited Professor Zhou Xitao from the Acousto-optical Technology Research Institute of the University of Guangzhou to compile the acceptance report. In the final report, 99.9% of the system meet the highest national standards. More importantly, all of the pastors, as well as those visiting from around China and Hong Kong, praised the system as sounding and looking very good throughout the large space.

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