



The main PA is formed from couplings of SR-S4L and SR-S4S speakers



Clear hearing for Saint Ambroise du Jubilé

With a growing reputation as a house of worship specialist, Protech Distribution was called upon by Paroisse Saint Ambroise du Jubilé to increase the church's STI

HOUSES OF WORSHIP ARE RATHER

unique when compared to other large gathering spaces, such as cinemas or concert halls. While each house of worship, be it a church, mosque or temple, is unique in itself, they often (but not always) possess similar features to one another. These features can include high levels of reverberation due to impressive aesthetic appearances that come at the expense of audio intelligibility. After all, traditional places of worship, prior to the invention of the loudspeaker, would have encouraged echoes to help carry the speaker's message throughout the sanctuary. Modern houses of worship often retain the characteristics of their ancestors, including the highly reverberant décor, providing a challenge for those tasked with designing a suitable system for intelligible sound reinforcement.

Paroisse Saint Ambroise du Jubilé (the Parish of Saint Ambrose of Jubilee) in the southern city of Abidjan in Ivory Coast is one example of a church built to look the part, constructed from stone and marble with a high ceiling. When it comes to sound, however, reverberation can cause an issue in such an environment. The church was equipped with a system for sound reinforcement, only it struggled to keep resonance under control and, therefore, sermons were not always intelligible throughout the sanctuary. Seeking a new solution to increase



Four of the HX-5W speakers outside

its STI (Speech Transmission Index) rating, the Paroisse Saint Ambroise du Jubilé committee turned to Protech Distribution for assistance.

'The church's old sound system had a poor STI rating,' recalls Inza Bamba, managing director of Protech Distribution. 'Our brief was to ensure the church could achieve SPLs [Sound Pressure Levels] of greater than 100dB and an STI rating of greater than 0.5.'

Protech Distribution was approached to take on the project having become somewhat of a specialist at equipping houses of worship, including churches and mosques, in Ivory Coast with tailored audio setups. 'We completed five church projects in 2019 alone,' says Bamba. 'I would certainly consider myself a specialist in providing solutions for houses of worship and their specific needs at this point.'

Bamba and his team have had previous success in designing sound systems for houses of worship formed from TOA loudspeakers. Protech Distribution's experience with the manufacturer's products wasn't the only benefit provided though. 'TOA's SR-S4L two-way line array speakers were the perfect solution,' Bamba explains. 'They are designed for sound transmission across a long distance – perfect for a church of this size and with high reverberation. They also don't break the bank, allowing us to offer a solution that fits within the church's budget.'

The Protech team installed two SR-S4L enclosures inside the church and a pair of SR-S4S speakers, which are built for short throw to cover the front of the room, with low-end reinforcement delivered by two FB-120B subwoofers. Outside the building, nine HX-5W compact speakers were deployed and paired with nine MT-200 matching transformers for announcements. The speaker setup is powered by TOA DA-250FH and DA-550F four-channel amplifiers as well as three Dynacord L1300FD DSP amplifier units.

Four Audio-Technica U857QL gooseneck microphones were installed to capture the voices of the priests during sermons, as were two TOA DM-1300 dynamic vocal and two WT-5225 wireless handheld mics with WT-5800 wireless tuners.

The choir, meanwhile, was supplied with 15 Shure SM58 mics for vocal captures, three Electro-Voice ZLX-12P powered loudspeakers for monitors along with two EVID 4.2 two-way surface-mount speakers.

Controlling the sound system is a Mackie PROFX30 digital mixing console, as well as a D-901 modular digital mixer from TOA, which is stored in the rack with the amplifiers. The D-901 is accompanied by six D-921E mic/line input modules, two D-971M output modules and a D-911 fader unit.

The installation process went smoothly, with only one minor challenge cropping up. 'The challenge was to prevent the sound from aiming towards the ceiling to avoid reverberation,' says Bamba. 'To ensure this, we needed to manually tilt the SR-S4Ls down by 30°.'

With the new sound setup installed, Paroisse Saint Ambroise du Jubilé has reportedly overcome its reverberation issues with the help of Protech Distribution. 'The church is very happy with the end result,' Bamba concludes. 'We were able to obtain the STI rating they were looking for in the end, which is 0.6. Thanks to all of our work in houses of worship, Protech has become known as one of the best solutions providers in Ivory Coast when it comes to working in reverberant spaces.'

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