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## IMMACULATE UPGRADE

Sonic refurbishment at St Mary's Cathedral

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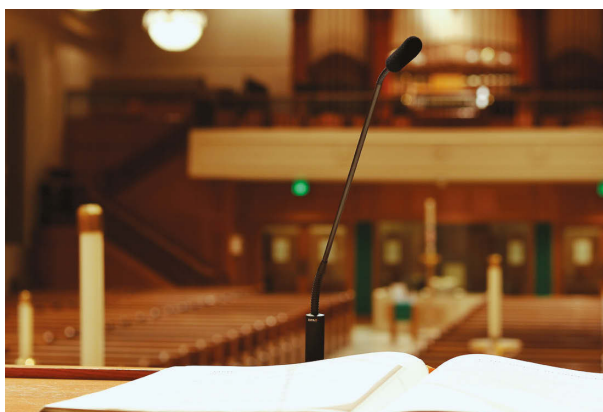


SCAN FOR MORE





The NEXO M6s are painted and embellished in gold



A DPA 4098 microphone on the podium

# Immaculate upgrade

Yamaha, NEXO and DPA all feature as part of a significant refurbishment at St Mary's Cathedral of the Immaculate Conception in Portland, Oregon

**BUILT NEARLY 100 YEARS AGO,** St Mary's Cathedral is the seat of the Roman Catholic Archdiocese of Portland. Even after an upgrade in 1996, the audio failed to live up to the expectations of the parishioners in this beautiful and elegant house of worship. Earlier in 2020, Alpha Sound was contacted to solve complaints from worshippers who were unable to hear or understand speech in the highly reverberant acoustic space.

Devin Sheets, lead engineer at Alpha Sound, describes the church as "the only venue of its kind in our area; modernised yet classical, and quite traditional in a way that is rare in the US these days. The original point source PA system was located in the ceiling behind cloth panels, and it's fair to say the sound was bad, and the coverage awful. The room is so reverberant, with some 4.5–5s of decay, that a line array solution was the only option."

Alpha Sound has become a committed user of sound reinforcement solutions from the NEXO and Yamaha catalogues, and Devin explains that NEXO's compact GEO M6 line array has proven itself in many of its house of worship installations. "It is our best shot at getting intelligibility in these situations," he says. "Instead of spreading unwanted sound everywhere like a floodlight, which leads to a muddy and frustrating result, the unique M6 high-frequency horn focuses the sound like a laser beam on the seating areas alone. This produces a very big and very clear sound from a very small package."

Using NEXO's proprietary NS-1 software modelling tools to plan the system, Alpha Sound arrived at a simple design. Main arrays of six modules of NEXO M6 per side handle the nave, with additional, smaller, three-module per-side clusters of

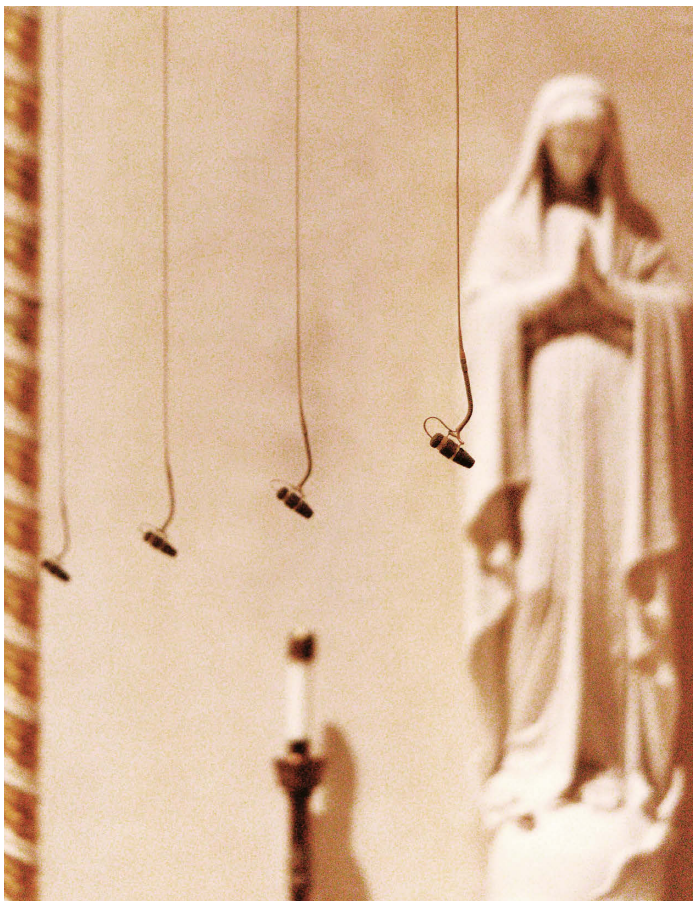


The Yamaha MRX7-D processor

M6 taking care of the transept and aisles. A pair of NEXO's super-compact ID24 point source cabinets in the ceiling provide contingency coverage for the small balcony area.

Having decided on the design, the Alpha Sound team had to ask the client if the main arrays could be hung in the open air, rather than being hidden away like the previous





The DPA 4097 micro shotgun microphones hang from the ceiling

happened with DPA – the company's microphone demos and rentals really made a sonic impression that was too good to ignore.

"The placement of the mics was crucial, as they did not want any microphone stands regularly in the way," says Devin, "so we hung the DPA 4097 micro shotgun microphones from the ceiling, and also the two pairs of DPA 4006 mics for the organ and ambience." Alpha Sound has also installed four DPA 4011 mics on goosenecks and two more on short stands for the various special events the HOW hosts where the position of the choir changes and other instruments are added. The two DPA 4099P piano microphones can also be left inside the piano when the lid is closed for storage, eliminating the need to set the mics back up before each use.

"Everything about this space is elegant and high end," describes Devin. "We had rented some DPA 4006 omnidirectional, 4011 cardioid and 4099 instrument microphones a few years ago with incredible results, and the sonic quality really stuck in our minds. Combined with the industry name recognition, it was obvious that we

quote to include this mic in the final install."

In addition to eliminating the need for stands on a regular basis, there was an immediate requirement to solve the intelligibility issues both in the room and for the livestream. "We needed microphones that would sound as natural and clean as possible," says Devin. "This way, we could ensure that we were not compounding the inherent difficulties with the acoustics. Additionally, there are several fill speakers nearby, which frustrates the ability to achieve gain from the presenter microphones as they move about the venue. The DPA 4098 podium microphone and the DPA 4080 miniature cardioid lavaliers are absolutely astonishing in terms of inherent gain before feedback. For the livestream, having dedicated pairs of microphones for the piano, organs and choir really helps to clear up the sound when combined with the 4006 ambient mics in the centre of the room to pick up audience responses."

Duane reports that reactions to the new system have been incredibly positive. "NEXO's GEO M6 line array speaker system provides smooth and even coverage to every seat, and

system. "Our clients were very nervous about the aesthetic impact of the loudspeaker hangs," says Duane Sheets, president of Alpha Sound. "We had to promise to do everything in our power to make them disappear."

That promise involved trying no less than 20 different paint samples on the M6 cabinets, and 14 different designs of hand-painted gold embellishment, to help the arrays fit discreetly into the architecture of the church and match its classical Italian décor. "This client paid more attention to detail than anyone I've ever worked with; in fact, it was rather thrilling to collaborate with them," adds Duane. "And it shows in the results."

A Yamaha MRX7-D processor has been installed for easy day-to-day operation of the system and was configured to allow turn-key control by iPad and wall panel so that non-technical church staff could use the system elements with simplicity. Around 80–90% of the time, the system is used for spoken word, with occasional piano, trio, quartet or choir performances, but the client wanted to future-proof the system for special events and concerts in the long term. A Dante digital network provides stability and future expandability, and any visiting engineer can just plug into the



Four NEXO ID14 monitors

system and have immediate digital access to all of the mics, processing and NEXO NXAMP4x1MK2 amplifiers.

"They have gone to great lengths to beautify the space, and we wanted microphones that would complement the quality of the NEXO and Yamaha equipment we installed," continues Devin. "We have always loved the 'natural' sound of the NEXO/Yamaha product lines; it was their sound during demos that originally drew us towards them. The same

should be moving in the direction of DPA for our high-end clientele. We have used and sold a few DPA products in the past for smaller jobs as a test run before deciding as a company to move in the direction of integrating DPA for these high-end situations. In particular, the DPA 4098 was used at a small Catholic church install nearby just a few months prior to the St Mary's installation. It was so impressive that we amended the St Mary's job

possesses a very natural frequency contour which complements the venue's acoustics for both speech and music. We had people telling us they could understand everything effortlessly, some for the very first time. For St Mary's, this system has met their highest expectations both in terms of intelligibility and aesthetics."

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