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CASE STUDY - PLACES OF WORSHIP | CATHEDRAL OF SAINT MARY OF ACHEROPITA





ELEVATING THE WORSHIP EXPERIENCE AT THE AWE-INSPIRING CATHEDRAL MARIA SANTISSIMA ACHIROPITA

The Cathedral Maria Santissima Achiropita, built in the eleventh century in Rossano, Italy, in the Province of Cosenza, is a marvel to behold. In Byzantine Greek, Achiropita translates to “not painted by human hand” or “with miraculous origins,” and the space’s beauty and presence live up to that designation.

The cathedral, which dates back to the ninth century, is famous for the ancient image of the Achiropita Madonna, which is believed to have been created by divine intervention. The cathedral includes four naves and three corresponding apses, along with a bell tower and baptismal font dating back to the fourteenth century.

The cathedral was constructed around the fresco of the Achiropita Virgin and is currently mounted on a column surrounded by a neo-Gothic altar. It is said the icon miraculously appeared on a stone during the construction of the cathedral and represents the image of the mother of God holding the child by her left arm.

The cathedral’s rich history and remarkable antiquities give it a venerated place within the religious community, and modern-day congregants still gather at Cathedral Maria Santissima Achiropita to worship. The worship experience,

then, needed audio solutions to enhance that experience to match the magnitude of the space and preserve its inimitable and awe-inspiring atmosphere.

A solution empowering congregants to hear services clearly and participate in worship in one of the world’s most powerful spaces will ensure the cathedral is ready to meet worshipper’s needs for decades to come.

WORKING WITHIN THE CATHEDRAL’S ATYPICAL STRUCTURE WITHOUT SACRIFICING PERFORMANCE

Architecturally speaking, the cathedral has an atypical structure. In addition to the central nave and two corresponding lateral naves (aisles), as in many churches, the space has a fourth nave located on the west side.

This structure represents an acoustic weak point, and previous audio systems were not able to consistently provide the rich, clear sound needed for congregants in the area. During ceremonies and services, speech and music were often unclear, a limitation that made it impossible to organize musical events in the cathedral and limited celebrations in this cherished house of worship.

MG Tecnosistemi’s Technical Manager, Giuseppe Munno, knew striking the right balance between integrating innovative technology and maintaining the cathedral’s



aesthetics was important. While assessing the original system, it was apparent that the current control system was as limiting as the original sound system and wholly unable to meet the needs of the diverse spaces for holiday services, weddings and baptisms.

Its shortcomings were especially evident during ceremonies with small numbers of people, typically reserved for the west nave.

The inability to exclude the rest of the cathedral's structure during these smaller, more intimate ceremonies caused disruptive echoes and reverberations.

"Our goals for this project were to design consistent, higher quality audio solutions tailored for the unique spaces within the cathedral," shared Munno. "Ultimately, they needed a multizone system capable of providing superior audio during a variety of ceremonies."

BRINGING POWERFUL ACOUSTIC RESULTS TO ALL CORNERS OF THE HISTORIC SPACE

MG Tecnosistemi worked with the company's Bose Professional partner to define exactly what was needed within the cathedral.

The resulting solution was a multizone Bose Professional sound system with Panaray MA12 columnar line array loudspeakers installed throughout the cathedral. In a problematic acoustical environment, the system delivers perfect speech intelligibility and premium musical quality without being overbearing or breaking the immersion of congregants in a truly one-of-a-kind space.

"Bose Professional worked closely with us, but it started when they made me listen to a sound simulation with the old system then compared it to one with the system they were designing ... The difference was clear. There was a sensational improvement."

- Giuseppe Munno
MG Tecnosistemi's Technical Manager

The original system included 50 different loudspeakers, while the new Bose Professional multizone solution used only 38 MA12 loudspeakers to provide improved coverage and intelligibility — 10 are located within the central nave, 12 in the two aisles, four in the alter area to be used as monitors, and the remaining 12 in the fourth nave.

The system used three PowerMatch MP8500N power amplifiers, passively connected with low impedance. The "brain" of the system is the ControlSpace ESP-1240X processor with a ControlSpace CC-64 control center physically located in the sacristy. The full system is managed by a dedicated, user-friendly interface that was programmed with a series of presets for regularly needed scenarios within the church, making powerful performance seamless and simple.



THE LEGACY OF THE CATHEDRAL MARIA SANTISSIMA ACHIROPITA CONTINUES

The resulting audio experience provides everything the cathedral was hoping for and empowers the space to meet a wider range of needs for worshipers and congregants, preserving the magic of this historic space and ensuring it continues to inspire for decades to come.

“Today, every area of the cathedral is covered and independent. If you need to use an area for a specific celebration, you can select the right scenario, and all adjustments are made automatically,” shared Don Pietro Madeo, parish priest of the Cathedral of Maria Santissima Achiropita. “There are no longer microphone whistles or other negative audio effects, which happened with the previous system. The choir songs can be heard perfectly, even from the back of the cathedral and with the same audio quality as those seated in the front.” ■



MG Tecnosistemi
IMPIANTI TECNOLOGICI

Partner: **MG Tecnosistemi**

MG Tecnosistemi has been working for years in the plant engineering sector, accumulating experience and professionalism in the electrical, electronic, audio / video and system integration fields. It has been a loyal partner for 15 years.

SYSTEM COMPONENTS

Panaray MA12 modular columnar array loudspeaker

PowerMatch PM8500N power amplifier

ControlSpace ESP-1240 processor

ControlSpace CC-64 control center



Panaray MA12

Allows stacking of multiple enclosures in a line array configuration to provide increased vertical pattern control which improves “throw” distance and reduces unwanted floor/ceiling reflections.



Bose Professional serves many different markets, delivering great sound in venues all around the world — performing arts centers, theaters, places of worship, stadiums, restaurants, schools, retail stores, hotels, and corporate buildings.

We know that our pro audio customers depend on us in a unique way. This is your business, your reputation, your livelihood — not just an amp, not just a loudspeaker. So, when you buy a Bose Professional product, you get the full weight of the global Bose Professional team behind you — our time, support, and attention. We see every purchase as the beginning of a partnership.



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