

A project where the customer is happy to pay more is the dream of any integrator. Nial Anderson looks at how PZ Multimedia handled the audio overhaul at the Swiss church Basel Minster.

A sound solution



Located in the north of Switzerland near to the banks of the Rhine, Basel Minster is listed as one of the country's heritage sites of national significance.

The current building, which dates back to the mid 1300s, was rebuilt following an earthquake and the historic structure is maintained nowadays through private donations coming from local families. Other institutions in Basel, such as museums and community buildings, are also funded in this way.

When the shortcomings of the cathedral's 40-year-old sound system finally got too much to suffer, locally-based integrator PZ Multimedia were called on to fully update it.

"We have worked for [the client] for 20 years but previously only doing repairs to the existing system," said Peter Zeller, owner of the company.

"The church found it essential that the priest was understood by the congregation and it had got to the point where this was not always the case."

Zeller's company had started

“One family paid for this and they told me in the midst of the project that if there wasn't enough money that they had friends who would be delighted to contribute more.”

- Peter Zeller, PZ Multimedia

installing new systems in churches a decade ago and it was its successes in this area that led to this invitation to move up from doing simple repairs to handling the update of the whole system.

"We started by looking at what was already in the building and doing an analysis," Zeller began.

"Obviously the 40-year-old speakers would have to be replaced but we also had to look at whether the mounting points of the speakers would be suitable for the new speakers. Also there was potentially a large problem in that we didn't know if the cables – which were in the stonework – ran individually from each loudspeaker to a central point."

Thankfully both the speaker mounting points were found to be suitable for the refit and each speaker had

individual wires, which would enable PZ Multimedia to replace them and easily create different zones.

"With the old system they had the ability to switch between about six groups, but without any delay or equalisation," Zeller explained.

"So in this respect we had to start from scratch with the right loudspeakers."

Zeller had carried out installations at three other churches beforehand using RayOn 100 speakers from Active Audio, having tested them thoroughly before the first of these projects.

"The vertical dispersion of these speakers is extremely good and in the horizontal plane they give almost 170 degrees coverage," Zeller explained.

"We had areas in the cathedral – on every second >

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Active Audio RayOn 100 speakers

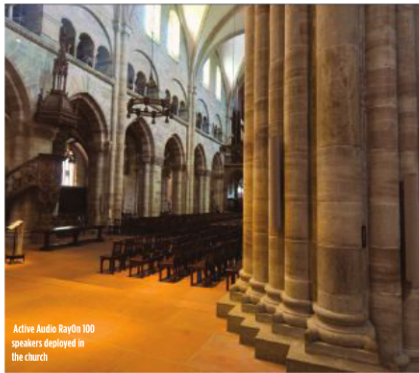
Ampetronic loop amplifier

Ateis MSC 20 speakers

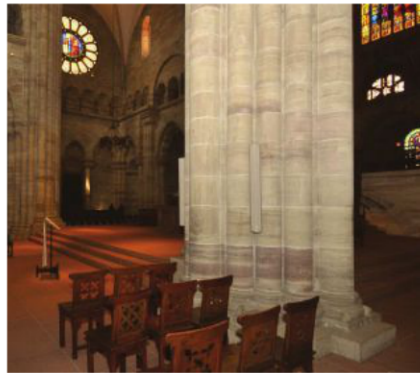
Ecler HZA4-70 amplifiers

Mipro ACT 727 UHF receiver

Symetrix Radius 12x8 DSP



Active Audio RayOn 100 speakers deployed in the church



< pillar on each side of the central aisle - where we needed this sort of coverage. So there were six speakers facing the middle of the cathedral and six facing to the side aisles. We tried another speaker that sounded better, but in this huge area we had a problem with low-end coverage so the RayOn in the end delivered better overall intelligibility."

Zeller chose 100 watt amplifiers with 70 watts per channel from Spanish firm Ecler. Four of these HZA4-70 transformerless amps are housed in one rack.

"The resonance of the low frequency circuits is quite good with this amplifier so we have no loss through transformers," Zeller commented, "and they are also

“ We decided to use the [Symetrix] Radius so we have Dante connections. ”

- Peter Zeller, PZ Multimedia

really reliable."

Everything going in and coming out of the system is routed through a central DSP in the form of a Symetrix Radius 12x8.

"We had started some time ago using Symetrix Solus, which is the smaller product without Dante," Zeller said.

"For this cathedral we had long distances between the microphones and the central amplifier station which is in the cellar. We decided to use the Radius so we have Dante connections. The distance between where the technician is controlling the system and the central amplifier is about 60m. We chose to do that all over Dante and that has worked well."

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< The new system now boasts sixteen equalised and correctly time-aligned groups. Controlling these groups – and the system as a whole – is done using either a touch screen hidden within one of the choir pews, or a tablet that can be used anywhere within the cathedral. These are running proprietary software from Symetrix. PZ Multimedia had used these same tablet and touch screen set ups in previous church installs and had good feedback from customers.

"[The client] used to have a little analogue mixer and, while the whole system now is much more complicated than before, as far as the user is concerned it is actually much simpler to use than the previous system," Zeller said.

"In the old days they used to have to sit beside the mixer and amplifier and had no chance to leave that spot. They are now completely free to go to the priest and help him with the microphone

during a service, turn the mics on or off or alter the loudness with the tablet."

After the installation PZ Multimedia was asked to specify a suitable subwoofer for occasional music events held in the church. As it was only to be used rarely, a

rental item was specified.

"One of the main things we had to improve on partly because of the size of the building was the power of the wireless LAN," Zeller remarked.

"In the first churches we used normal consumer WLAN routers, but it was too weak for the cathedral. So we used a commercial Cisco system for this install."

The system features two UHF wireless channels for two priests. There are separate EQ settings for men and women. For music there is a line-in provided which offers no equalisation. If there is ever external music or a little orchestra or group an external mixer is used.


The unusual aspect of this installation was that the bill would be paid through the charity of local people.

"This is a really special thing in Basel; for several hundred years there have always been citizens paying

for museums and churches and normally nobody knows who these people are," said Zeller.

"It was one family paying for this and they told me in the midst of the project that if there wasn't enough money that they had friends who would be delighted to contribute more. You normally never come across a situation where the customer says 'we can pay more if you need us to'. That was a really special thing you would not find in a commercial installation to find a client who would be happy to spend 20 percent more."

While some integrators would be tempted to flesh out the budget and buy more or better kit, Zeller said that, for him, this was not an option.

"The church is grateful to these families for donating and we also very respectful to them," he said. 

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- Peter Zeller, PZ Multimedia

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