

Already noted for its award-winning architecture, Seoul's Moohak Presbyterian Church has set about bringing its audio system into line. **Tim Goodyer** reports



The award-winning architecture of Seoul's Moohak Presbyterian Church.

ALTHOUGH IT WAS ESTABLISHED

back in 1947, Seoul's Moohak Presbyterian Church only moved into its present building in 2005 – and was quickly selected by the Korean Association of Architects as one of the most beautiful building structures of that year. The three-storey-high, arched-roof building is reminiscent of a European opera house and contains a main sanctuary, a prayer hall, a mission hall, various cultural spaces and cafeterias.

However aesthetically appealing the main sanctuary might be – a wide, asymmetric fan-shaped space with 1,630 seats and a balcony – the original sound system quickly disappointed both the church's Pastors and members, so it was decided to upgrade and replace the existing sound system. The church required a significantly higher level of sound reinforcement for the various styles of Christian bands that now perform there, alongside the traditional spoken services. In addition to its function as a worship space, the church has also opened its doors to local residents for other cultural functions, further increasing the demands being made of its audio system.

Earlier this year, Pastor Chang Keun Kim, chief sound engineer Young Ho Ho and sound engineer Keun Hyung Park began to assess



The church's interior space.

the situation, determining to replace main sound system including the under-balcony speakers and adding a stage monitoring system.

A number of internal structural and acoustic issues had to be taken into consideration with the installation – there were several different reverberation 'hotspots' due to the ceiling height of 82 feet, and the rear of the stage is triangular in shape, produced lot of resonance and making monitoring particularly problematic. There is also a glass wall above the balcony that is highly reflective.

The church contacted Acoutek as it has a proven track record with church installations in Korea. Although the consultant is also Adamson's Korean support partner, the church researched all the options available with the main considerations of sound quality and intelligibility, but it also had to blend into the award-winning design of the church. Custom colours would be required for the boxes.

Adamson's SpekTrix finished at the top of the evaluation and Acoutek installed 18 SpekTrix, four SpekTrix Waves and two SpekTrix Subs for the main left and right-hand arrays. Ten CB-1s were placed for under balcony and side fills, and two MX10s provide monitoring on the stage for the pastor. In each hang, five of the

Adamson SpekTrix system rigged for demonstration.



SpekTrix boxes were aimed at the second floor and a SpekTrix Sub was set to avoid direct reflection from the balcony. Below the woofer, four further SpekTrix boxes were aligned to cover first floor



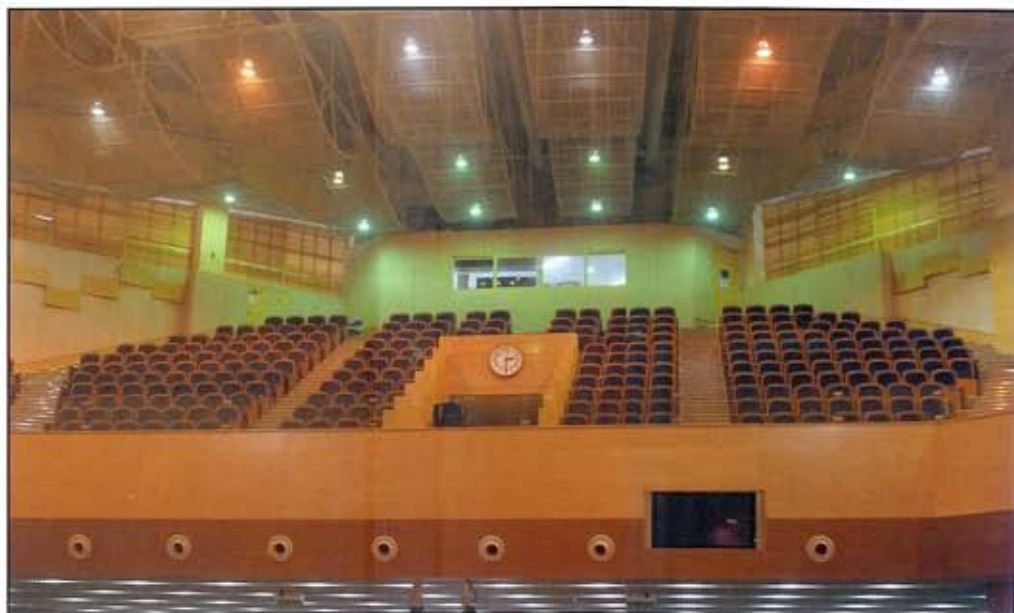
The final SpekTrix installation.

and LF drivers. A Crown MA-5002 is used for the subwoofers and some of the existing amplifiers were used for monitors as well. All the Lab.gruppen amplifiers are controlled with XTA DP226s with Adamson presets, and the church's sound engineers and Acoutek are working together on custom presets to cover the various events now regularly taking place at Moohak.

At front-of-house there is a 40: Midas Legend 3000 console which now resides in a booth at the end of the balcony seating, having been relocated from its original location on the third floor. The move required relaying the cabling serving the console.

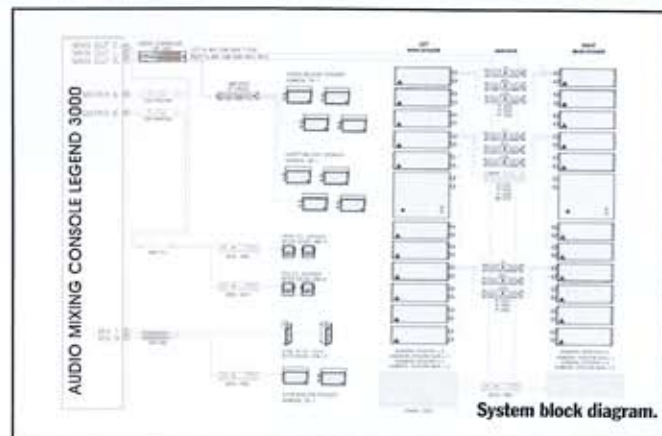
With its award and coverage in South Korea's architectural magazines already assured, the Moohak Presbyterian Church is now ready to receive the accolades of the audio press.

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The upper balcony.

and two SpekTrix Wave 15° degree boxes at the bottom of each array were angled to provide downfill. With this arrangement, reflections are kept to a minimum, and last row of the upper balcony and front row of the orchestra seating are equally evenly covered. The ceiling height had caused a problem with the previous speaker installation, but the directivity offered by the Adamson system allowed this to be well controlled. When rigging the main line array, the greatest difficulty was to keep the system at the same height as the centre cross-structure behind the pastor's platform, requiring Acoutek to use special rigging for the speakers. The walls of the choir pit were also treated in order to eliminate a standing wave. Three fp2200 amps are matched to the high-frequency drivers and six fp3400s are used for the mid



System block diagram.

The hall before the new sound system installation.

