

## Sound For Dynamic Worship

### Upgrading To A Concert-Level System

By Dan Garcia

**T**he Prayer Palace, located in Toronto, Ontario, and one of the larger houses of worship in North America, recently received an audio facelift with a new left-center-right concert-level system in its sanctuary.

The octagonal-shaped sanctuary, with seating for more than 4,500, hosts two regularly scheduled Sunday services as well as a variety of other church, secular and ethnic events. The new sound system project focused on upgrading main loudspeaker selection and placement, an issue that had proven problematic over the past couple of years.

Sound Plus Show Systems of Concord, Ontario, provided the

design, installation and equipment for the retrofit, working closely with Prayer Palace Pastor Tom Melnichuk and the church technical staff. The relationship between the two entities began two years ago with the rental of the odd piece of equipment, and eventually grew to the point where the church asked Sound Plus to consult on the majority of its production work.

"The existing system was beautifully installed," explains Chris Mathany, technical director of Sound Plus. "The problem seemed to be with poor design, with many loudspeaker clusters made up of traditional trapezoidal cabinets. The subsequent addition of more clusters was only serving to muddy the

direct sound in certain areas, while creating hot spots in others. My assessment was that dropping and re-hanging the entire system would be less expensive - but far less effective - than bringing in a line array system that would address the problems."

The previous loudspeakers "were not projecting with clarity, in spite of many relocations and additional equalization," echoes Melnichuk. "Therefore, the 'message' - spoken word and music alike - became a transmission of incoherency. It seemed almost impossible to get sound anywhere near acceptable."

Sound Plus priced upgrade options and presented them to the church tech team. The primary option was replacing the existing clusters with a front left-right configuration of Adamson Y-Axis Y-10 small-format line arrays, supported by a small center line array made up of recently introduced Adamson SpekTrix compact line arrays. Both loudspeaker models are three-way designs.

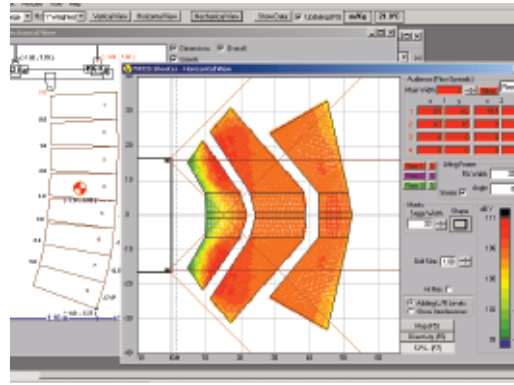
Melnichuk initially expressed a bit of skepticism, with the design calling for just 20 compact loudspeaker elements divided among the three arrays. "I said it wasn't possible," he notes. A full demo system brought in to change minds met its intended purpose. Help in determining final array composition, placement and angles was supplied by Adamson Shooter software, a predictive program.

Jesse Adamson, managing director of the loudspeaker company, provided his input regarding use of Shooter during this phase of the project. "I



*The voluminous interior of the Prayer Palace, with 4,500 seats on a single level with octagon configuration.*

# Project Memo



*Left and right line arrays above the stage provide the vast majority of coverage, with the compact center line array filling in a coverage gap. Predictive software, in this case the Adamson Shooter, provides assistance on array location, composition and other factors.*

up a few more meters in relation to left and right without impacting its coverage.”

The main left-right arrays are each comprised of eight Y-10 elements, spaced roughly 150 feet apart, and tilted slightly inward to account for the room’s octagonal shape. Due to the large distance between the main arrays, necessary in part to maintain clear line of sight with the front platform, the four SpekTrix cabinets are arrayed “dead center” and tilted

downward at an extreme angle, where they cover the slight “hole” in the front/center of the audience area.

Left and right arrays are fed from the L/R mains on the Soundcraft K2 house console at the mix position, while the center array is delivered an L/R sum sent via a matrix output on the console.

The mains, running in stereo, are controlled by an XTA DP226 (two input, six output) processor, while the center array is fed by an XTA DP224 (mono input, four output) processor. All power is supplied QSC amplifiers, mostly retained from the previous system, with eight QSC PowerLight 4.0 units added to drive the low-frequency section of the Y-10 loudspeakers.

Mathany notes that both Sound Plus as well as the church technical team and congregation have expressed satisfaction with the results of the project, adding that plans call for Adamson Y-10 subwoofers - to replace the existing subs - be phased in later this year.

“People that continually complained about our former system are now congratulating us,” concludes Melnichuk. ■

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*Dan Garcia is a regular contributor to Live Sound, focusing on system application projects.*