



# **RENKUS-HEINZ**



PRESS RELEASE: **FOR IMMEDIATE RELEASE**: MARCH 2008

## **ICONYX WINS OVER A SKEPTICAL CONGREGATION IN MONTREAL**

CANADA – The embossed stone St. Cunégonde church, one of Montreal’s unknown treasures, is impressively topped by two identical pavilion style spires with verdigris-colored copper bell tower roofs. Directly beneath a large rose window, a monumental portal frames the main entry. The five-bell carillon was blessed in 1907; a year after the church was built in 1906, on the site of the original church, which was destroyed by fire in 1904.

The interior of St. Cunégonde is distinctive as well. A mansard roof surmounts the basilica-style layout, without transept. The vaulted apse is very high at 98 feet / 29.9 meters, but has no pillars. The nave is generously lighted by three-story-high windows all around the building.

The church’s neo-baroque interior, inspired by the Fine Arts School of Paris, is sumptuously decorated by paintings and frescos. The vaults are decorated with “backed” paintings attached directly to the masonry and framed by ornate plasterwork. The largest of these, by Georges Delfosse, depicts the Apotheosis of St. Cunégonde: it almost covers the entire vault. The interior also features an ornately sculpted pulpit and baptismal fonts.

Established in 1875, the parish of St. Cunégonde remained prosperous for many decades, but was ravaged by the construction of the Ville-Marie auto route (Route 720) and several “urban renewal” projects. The church was closed and its 55-stop, 4-manual Casavant organ suffered severe water damage. More recently, a Catholic Korean community has renovated the building for its services. The building was restored in 1984 under the supervision of architect Claude Beaulieu.

In 2006 the congregation of St. Cunégonde contacted SISCOM of Montréal for advice on improving speech intelligibility in the church. With over a million cubic feet of internal volume enclosed by plaster, glass and other hard reflective surfaces, St. Cunégonde's RT60 is at least 6 seconds. As SISCOM explained to the church building committee, "with these difficult conditions for speech, care must be taken to concentrate the audio energy of the sound system on the assembly in the nave and to avoid as much as possible projecting sound on the reflective surfaces of the walls and the ceiling. Good speech intelligibility can be obtained only by reducing to a minimum the effect of the reverberant field."

Obvious enough to anyone involved in professional audio, but apparently not to those responsible for the previously installed sound system that SISCOM was asked to evaluate. The celebrants at St. Cunégonde were attempting to communicate with the congregation using several full-range two-way loudspeakers mounted on the side walls at a height of 15 feet. In this location, the high frequencies were projected above the listeners and directly onto hard reflective surfaces. The considerable low frequency energy produced by these compact two-way speakers was completely uncontrolled, further degrading speech intelligibility. This type of design works well for music playback in acoustically controlled environments, but was totally inappropriate for a large reverberant space such as St. Cunégonde.

As if to add insult to injury, the front end for the system resembled a portable DJ's system that had been left in a closet. One of the power amps and a portable mixer (rather inappropriate for a church that lacks a proficient operator) were stacked on top of two road cases. Two Rane equalizers were "installed" on a shelf next to the racks. Among the equipment in those racks was a disco CD player with a variable pitch/tempo feature. SISCOM adapted some of the components of the previous system to provide monitoring functions for the choir loft and occasional soloists.

Clearly (or not so clearly in this case) the system at St. Cunégonde had lots of room for improvement. The main feature of SISCOM's design was a pair of IC 32 Iconyx Digital Controlled Arrays from Renkus-Heinz. SISCOM has installed these digitally controlled columns at the largest churches in Canada, bringing intelligible speech and song to the Basilica of Notre Dame at Cap de la Madeleine on the banks of the St. Lawrence river near Trois Rivières as well as the even larger Oratoire-St. Joseph du Mont Royal in Montréal. Similar in design to St. Cunégonde but even larger, this basilica is surpassed in size only by St. Peter's in the Vatican.

SISCOM's Jean Giroux points out that "it was not easy to sell such an expensive and high-tech system to a community like this one, especially 24 months after they spent tens of thousands of dollars on a disco-type system that was completely ineffective. It took patience, detailed explanations, years of experience with intelligibility problems, and providing many examples to prove our claims."

"Koreans are a very polite and respectful people," he points out. "The parish committee seeks as far as possible to gain unanimity of all parishioners before taking an important decision."

The initial cost of SISCOM's proposal was too high for some of the parishioners, and for the parish advisor from the diocese of Montreal. The church volunteer who worked with the existing system to adjust mics, amplifier gains and so on, was skeptical that two slender Iconyx columns could out-perform the massive nigh-club-style system then installed at St. Cunégonde.

But having visited the Oratoire-St. Joseph, the parish committee and their pastor, Father Pierre Sung, were convinced that Iconyx technology would solve their problems and allow the entire



Renkus-Heinz, Inc. • 19201 Cook Street • Foothill Ranch, CA 92610-3501 USA  
T (+1) 949 588 9997 F (+1) 949 588 9514 •W [www.renkus-heinz.com](http://www.renkus-heinz.com)

congregation to participate fully in worship services. “They worked hard to explain, to convince and finally to get the approval,” says Giroux. SISCUM supported these efforts by extending their normal two-year guarantee to three years and by guaranteeing the performance and intelligibility of the Iconyx system, not simply the parts and labor they provided.

The two IC32 columns installed at St. Cunégonde were assembled on site from sets of four IC8 array modules. Each module includes eight high performance four-inch coaxial loudspeakers. Each of these is driven by its own high-current pure digital amplifier and controlled by a dedicated DSP processor that implements FIR (Finite Impulse Response) filters. Horizontal coverage is a wide 140° – vertical coverage is determined in BeamWare software. An IC32 can produce beams as narrow as 5° vertically, and these can be steered up to 30° above or below horizontal. Up to 16 separate beams can be produced from a single IC32 array, giving the system designer a wide range of options for matching the array’s coverage to the actual geometry of the listening area. An IC32 controls acoustic energy above 175 Hz and can produce up to 96 dB SPL over distances of up to 300 feet.

Like St. Cunégonde, SISCUM’s other Iconyx installations have been in buildings of major historical and religious significance. In these situations, the near-invisibility of Iconyx columns is another benefit. Although an IC32 array is over 12 feet tall, it is only six inches wide. Because the acoustic energy is digitally controlled, the columnar arrays are mounted flush to the walls. At St. Cunégonde, “we considered several factors: the movement of the congregation, the distance and relative position of microphones, and the visual aspect” Giroux recalls. “The best place to install both Iconyx IC32’s was on the first pillars each side of the nave. But there is a kind of corniche about 12 feet high on the side walls, so we had to build a special pedestal exactly the size of the Iconyx so that the array would just clear the corniche. We had the pedestals painted the color of the lower part of the wall, and the Iconyx columns painted to match the upper part, so that they disappear.”

The acoustical challenges of St. Cunégonde are considerable, but so are the operational issues. SISCUM was determined that any system it installed should be able to control itself. This requires sophisticated front end electronics such as an elaborate automixer with the ability to handle multiple vocal microphones as well as the choir and organ. A Biamp Nexia CS digital mixer and multi-processor fits the bill for this project; Biamp’s VS8 control panel allows the church staff to select from a number of pre-programmed system configurations, while behind the scenes the DSP power of the Nexia unit takes care of the essential mixing and signal processing functions.

The finishing touch to this upgrade was provided by new microphones from Audio-Technica. From start to finish, St. Cunégonde’s signal chain is now state of the art. Thanks to SISCUM’s forward-looking design and meticulous installation, this church now has audio technology that helps the impressive structure serve its intended function and purpose.

Jena Giroux supervised the entire project for SISCUM and made personal visits to St. Cunégonde to check that everything was working properly. The parish committee members even began referring to the new system as “your baby” when discussing it with him. But all that attention has paid off. “The parishioners are happy with the system and the intelligibility that it provides,” Giroux reports. “In fact, they recommended SISCUM for a new Korean Protestant church in Montreal.”



Renkus-Heinz, Inc. • 19201 Cook Street • Foothill Ranch, CA 92610-3501 USA  
T (+1) 949 588 9997 F (+1) 949 588 9514 •W [www.renkus-heinz.com](http://www.renkus-heinz.com)

*Headquartered in Foothill Ranch, California, Renkus-Heinz, Inc. is the worldwide leader in the design and manufacture of audio operations networks, digitally steerable arrays, powered and non-powered loudspeakers, system specific electronics and fully integrated Reference Point Array systems. For additional information contact:*

**Renkus-Heinz (US Office)**

**Margie Ulm**

Email: [Margie@renkus-heinz.com](mailto:Margie@renkus-heinz.com)

Tel: +1 949 588 9997

Fax: +1 949 588 9514

**Renkus-Heinz (Export Office)**

**Karl Brunvoll**

Email: [Karl@renkus-heinz.com](mailto:Karl@renkus-heinz.com)

Tel: +46 (8) 544 725 88

Fax: +46 (8) 544 725 89

**Editors' Contacts**

**Mike Lethby at ML Media**

Email: [Mike@mlmedia.eu](mailto:Mike@mlmedia.eu)

Tel: +44 (0)1403 275919

Cell: +44 (0)7773 773490



Renkus-Heinz, Inc. • 19201 Cook Street • Foothill Ranch, CA 92610-3501 USA  
T (+1) 949 588 9997 F (+1) 949 588 9514 •W [www.renkus-heinz.com](http://www.renkus-heinz.com)