

Safe & Sound At Edmonton's

NORTHLANDS CONVENTION CENTRE

BY ANDREW KING

Perhaps a few too many live sound project profiles (not to mention my musical preferences) have rendered me a bit jaded, but when someone mentions a "PA," I conjure mental images of line arrays flying on both sides of a stage pushing out at least 120dB of volume. Add to that with "...at a convention centre," and then it shifts to a slew of smaller fixtures spread evenly across a hall, sharing the afternoon programming of the local easy rock station. In either case, I wouldn't likely think of a PA system as a life-saving safety tool, but when it came to mapping out a system for a major addition to the Northlands Convention Centre in Edmonton, that's exactly what Dragan Jargic was thinking, and the project certainly benefited from it.



Axe Music's Dragan Jargic.



ABOVE: The hallway outside of the new Hall E.

Jargic and Axe Music Edmonton's Commercial Sales and Installations department were brought into the Northlands project to mainly layout and put in the hall audio package, though when it came time to take on the second part of the task – the life-safety and evacuation paging system – Jargic was able to get a bit creative. Thanks to some technological innovation and forward thinking, Northlands now features a unique audio system that can both soothe expo exhibitors and attendees and, should the situation ever arise, keep them safe from harm.

Basic Rundown

Northlands is comprised of a convention centre, racetrack, and Rexall Place – home of the Edmonton Oilers and host to several large-scale touring productions on a year-round basis. Project Evolution.09, as it's dubbed, is a major site renewal that's well underway and, when completed, will boost the Convention Centre's available space to 500,000 sq. ft. of trade and consumer show floor room and conference and catering facilities.

"When it's all said and done, it's almost a kilometer in size, and is touted as the largest convention centre west of Toronto," offers Jargic as a verbal snapshot. With Project Evolution.09 comes an additional four halls to the existing four within the Centre, along with a food court area, banquet

facility, and salons that overlook the commercial portion of the venue.

Axe Commercial's crew worked in tandem with reputable architectural firm Cohos Evamy, which, along with its Edmonton location, also has offices in Calgary and Toronto, all of which boast impressive portfolios. The firm was enlisted to spearhead the building design for Northlands. When it came time to discuss the extensive audio package that would be incorporated into its design, the firm approached the team at Northlands for a recommendation on a local installation outfit suited for the outing. When Axe was suggested, the project was underway in no time.

"We've done projects directly with Cohos Evamy prior to this one, including the Shaw Convention Centre expansion," says Jargic, and so it would seem this familiarity would bring a level of comfort to the collaboration. "We sat down with the architects, got our set of the plans, and started designing the hall audio system – a typical PA," Jargic explains. Of course, his downplaying of the delivery of "a typical PA" leads me to believe that what originated as a "typical" system would turn into something that's anything but.



Bosch LBC3201/00 XLA Line Arrays in the mall area.

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Two To One

Because the project finds an all-new addition being added to an already buzzing building, the construction is phased. After a year's worth of planning, the ground was broken for the first phase of the expansion. Audio components began going in back in October 2008, with the first portion of the project recently being completed. Hall E – that aforementioned first portion and the largest single hall within the facility – is loaded with 58 Electro-Voice SX100+ speakers itself. What those speakers would be assigned to deliver, though, was decided during the process.

"Basically, we started with the hall audio," says Jargic of the initial stages of the install. "With typical hall audio, you want to put a speaker every 30 ft. centre, have various mic inputs, and what have you. You also want some creative control over the zoning of the audio in different areas – pretty straight forward." As the team bit deeper into the project, the collaborators began to discuss the possibility of putting in the usual round 8" hubcap-type speakers for life safety evacuation paging.

With the facility basically expanding exponentially, it was decided a staged evacuation set-up would be necessary, so that if there were ever a safety concern or emergency in one area of the centre, someone could get on the mic to communicate with and, if need be, evacuate specific areas. "From what I understood, I questioned why we'd need two separate audio systems, right?" he asks, knowing it'd be difficult to argue with his logic. Fair enough.

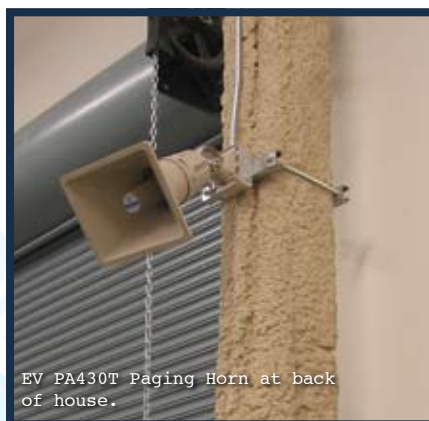
This question led Jargic to incorporate the evacuation system into the new PA system. What had originated as a basic PA installation of (pretty near exclusively) EV gear was now growing a new set of teeth. EV being a member of the Bosch Communications family, though, was a saving grace for the streamlining Jargic had in his head. "Bosch actually has a system called Praesideo, which is often used on cruise ships," says Jargic, "and so my system design tied this high-end voice evacuation and life safety system into the PA, and that started coming about."

Though this amalgamation would require a bit of extra time at the drawing board (Jargic claims some engineers at EV were initially in disbelief when approached with the idea), an immediate benefit was the extra millions that Northlands would save without having to put in a separate evacuation system – and I'd guess a few million would go a long way towards keeping a client content.

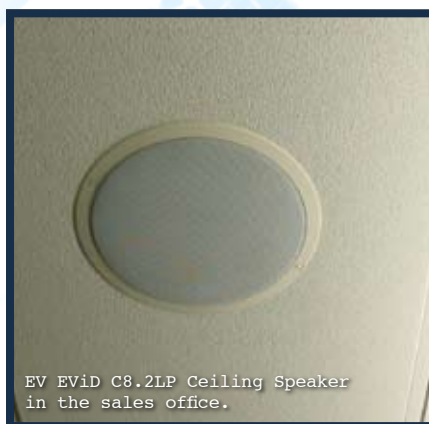
The "Typical" PA

Ambitious amalgamation aside, the main EV PA going into the Northlands expansion is impressive in its own right. "We're talking four new halls," offers Jargic as a reminder. "There are 172 SX100+ speakers in there, and then we're using TG amplifiers to power them. It really is a good PA system." The system was, for the most part, originally intended for speech and paging.

With the initial system design, Axe recom-



EV PA430T Paging Horn at back of house.



EV EViD C8.2LP Ceiling Speaker in the sales office.



EV SX100+ speaker suspended in Hall E.

mended the SX300E fixtures from EV. "They're robust in the bottom end, so it's great as a foreground music system," says Jargic with practicality in mind. Thinking economically, though, the SX100+s were chosen as the main workers. "We still have perfect intelligibility and the fidelity that was required, but just without that bottom end."

While it was initially thought that the system would only be for paging and simple speech, it seems that now, in an effort to cut back on costs, the venue is interested in using it for music and other media to avoid having to rent out a system from a third party. "Now, we're talking about adding some flown Xsubs in the near future for a bit more bottom-end reinforcement."

The Story So Far...

Here's a current gear list from Project Evolution.09 as it stands so far...

ELECTRO-VOICE

AO1 – 14
C4.2LP – 62
C8.2HC – 60
C8.2LP – 20
CM1 – 7
DSP1 – 7
MI1 – 14
N8000 – 7
NRS90226 – 6
PA4150L – 6
PA430T – 96
PWS6 – 24
PWSC – 10
RCM26 – 24
RPK42 – 88
RPK82 – 20
SX100+ & MB200 – 172
TG5 – 25
TPI8 & TPM8 – 4
UCC – 1

BOSCH

LBB4414/00 – 2
LBB4416/00 – 3
LBB4416/01 – 20
LBB4416/02 – 2
LBB4416/10 – 2
LBB4417/00 – 1
LBB4418/00 – 1
LBB4421/10 – 4
LBB4422/10 – 5
LBB4430/00 – 8
LBB4433/00 – 1
LBB4434/00 – 3
LBB4436/00 – 1
LBB4442/00 – 15
LBB4444/00 – 2
LBB9081/00 – 1
LBC3200/00 – 16
LBC3201/00 – 6
LBC394111US – 12
LP1UC20E – 16
PRS-16-MCI – 2
PRS-NCO-B – 1

Safety First

The integration of a main PA and traditional evacuation system is a new concept for a venue of this size. The idea really came into fruition after Fred Leber of Toronto-based fire protection engineering firm Leber/Rubes Inc. (LRI) offered his input. Being given a list of requirements from Leber with which the system would need to comply, Jargic and Co. were able to meet them with a unique arrangement.

"I've done work in similar large spaces like the Rogers Centre and Air Canada Centre," says Leber, "where we've been putting in voice communications systems as part of fire systems for some time, even though the code doesn't require it."

The voice communication system Leber proposed is meant to facilitate evacuation in an emergency, even though this kind of system isn't required in a venue like Northlands. Once it was decided that this measure would be taken, though, Jargic's system went above the call of duty.

"Fire alarm systems that are designed to have voice communication included as part of them typically don't do voice communication very well," continues Leber. "I was happy to find that the more sophisticated sound systems have all kinds of protections built into them that emulate the things required for fire alarm systems."

The Bosch system's detailed supervision and monitoring offers a solution that's actually better than what's required by law in facilities where voice communication is mandatory – usually high-rise buildings. "It's a great system," says Leber in summation. "It's all internally-supervised and, in this case, everything down to the voice coils is supervised."

Tying It Together

The original four halls of the Centre – A,B,C, and D (conventional titles for a convention centre, I suppose) – have a pre-standing system. "There's a legacy system comprised of old Soundsphere speakers and Crown Macro-Tech amps – a very simple system that's relay-controlled with a fire and evacuation panel in two locations." With the venue seeking something more monitorable and flexible in terms of voice communication, the new package was presented.

Jargic admits that the amalgamation of both systems has been done in an on-the-fly-troubleshooting manner – quite akin to how the idea came about in the first place. As previously mentioned, though, the extra head scratching here and there would pay off in dividends with the eventual outcome.

"The EV NetMax system allows you to have relay control or inputs in the physical world, and does line monitoring and component monitoring right down to the driver if needed," says Jargic in reference to what Leber previously mentioned as a major benefit of the system. "The Bosch system works the same way, but on a 70-volt principle."

The 70-volt amps are used in the new offices, some of the mall areas, lavatories, Ticket Master office, and spaces like that. For the halls, though, the package includes EV TG 5s, which are actually on tour with AC/DC right now (now *there's* my initial idea of a PA). "They're big rock 'n roll amps, but they have built-in DSP processing, so we can monitor an 8-ohm speaker over a distance, and we can monitor a 70-volt system over a distance," explains Jargic, "but the two aren't usually interfaced together."

As far as basic system operation, every hall has a show office loaded with an 8" touch panel, so users can control which audio source is being played in that specific area, or audio can be matrixed from the old section of the facility. Getting the new and old systems linked together was another challenge that came with the expansion.

One of the old halls, for example, has 50 mic inputs, and the legacy system has a Yamaha O1V for hall matrixing with 1/4" patch bays stacked like an old telephone switchboard unit, where one input can be plugged into another zone. There was also a concern with getting a signal back and forth to the amp rooms from the old and new sections of the facility, which are 1,600 ft. apart. "We ended up putting EV processing into that room, and now with CobraNet, we can take 32 channels of audio and send it down a dedicated fibre network between the two areas." Problem solved.



In Case Of Emergency...

The basic rundown of the life safety and evacuation system is as follows: if the alarm is sounded, a relay from the master panel triggers the Bosch system, which cuts off all audio to the halls by sending a relay signal to the EV system. The EV system detects the issue, mutes all audio, and passes an alert tone through all of the halls. Someone at the fire panel or security desk will then get on the system for an all-call to report the issue, or use a pre-recorded message. The option is also there to manually choose a zone into which the page can be delivered.

"On the flipside," offers Jargic of the self-monitoring capabilities, "if there was an issue with one of the horns on a speaker in the hall, the impedance curve will change and the system will detect

a curve change on that line, then send a message back to the Bosch system." The system can then send out a pre-made e-mail message to the staff at Axe Commercial or Northlands indicating which zone, line, and even component has an issue.

"The old system actually had two Sony cassette decks integrated in using relay. If there was an issue, you'd hit a button on the panel and the relays would turn on the tape players for a message," explains Jargic of the legacy system. "I actually lifted those messages, cleaned them up, and they can now be played from the Bosch Praesideo unit." The Bosch system comes with a 1 GB card, which can hold hundreds of messages or tones. "All the call stations or panels are programmable, so on button action, it'll play a tone, play a message, and pause, or we can go live on a mic."

Shaping Up Nicely

Also down the road is a revamping of the audio system in Hall D, which Northlands is hoping to turn into a performance space of sorts. "It's an old hockey arena, so now they're taking down an old Delta Max PA cluster, as they want to start doing concerts in there." Axe has proposed a package of SX300Es for the lower and upper levels, "and we're adding more amps so we can monitor that area, so it can be used as a PA system or life evacuation system." I guess when you find a solution that addresses your needs to a tee, you milk it for all its worth.

"It just keeps getting bigger," says Jargic of the project. "The beauty of it is, as we meet challenges, it's not, 'I need another part.'" It's just a matter of changing some programming." The Northlands project is still ongoing, though to date, Jargic reports that the project has been running rather smoothly. "We're both on-time and on-budget, and things are going quite well."

The next phase, which is now underway in terms of planning, is Hall F along with some more office space. Halls F, G, and H are actually split-combined, so they can be turned into a massive hall or three separate, smaller halls. "They're gearing towards December for getting everything completed, though Hall F needed to be ready for Capital Ex," explains Jargic, referring to Edmonton's annual summer exhibition, held within the Northlands facilities.

If the past is any indication of the future, there may just be a few more creative concoctions to come out of this project. Considering it's mid-way through and already boasts an impressive amount of engineering, this is probably a project worth following. Even at this early stage, it's safe to assert that future clients and visitors to the Northlands Convention Centre can rest easy thanks to the extensive safety system being installed. Let's just hope they never need to see it in action. ■



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