

Sound Systems for Jazz

By: Alan Hardiman

Solotech and Meyer Sound collaborate on the Montréal International Jazz Festival

For 10 days ending on July 4, the Montréal International Jazz Festival—the largest ongoing festival of its kind in the world—featured more than 800 concerts and activities on four large outdoor stages, 15 indoor venues, and a scattering of small outdoor spaces to a combined audience approaching two million, generating some \$50 million in economic spin-offs for the city.

Now in its 32nd year, the festival showcased a star-packed program that included Prince, Dave Brubeck, Tony Bennett, Nikki Yanofsky, Robert Plant, Daniel Lanois and Black Dub, Diana Krall, Return to Forever IV, Kenny Garrett, k.d. lang, Joshua Redman, Sade, Paco de Lucía, Southside Johnny and the Asbury Jukes, Alain Caron, Béla Fleck and the Flecktones, Hugh Masekela, Peter Frampton, Oliver Jones, The B-52s, and many more established and rising stars.

To ensure the massive festival would run smoothly and become a true showcase of what would be possible in terms of sound production, Frederick Lalonde, the festival's technical director, and Mikaël Frascadore, director of production services, worked with the official sound reinforcement sponsor, Meyer Sound, and Montréal-based Solotech to equip festival venues with more than 200 Meyer Sound loudspeakers. Frascadore and Lalonde also led a work force that included more than 300 production crew, filling the roles of stagehands, technicians, and video, sound, and lighting engineers.

"The festival has a good reputation for its production quality," said Frascadore. "And having a lengthy and strong relationship with our partners, including Solotech, and working with

our exceptional production staff and high-quality equipment were all key to delivering a good show, and has allowed us to improve the festival-goer's experience year after year."

Every year, the MIJF places additional strain on equipment inventory and human resources, which might swamp a less-experienced team, coming as it does smack in the middle of Montréal's busiest event season. Summer in the city starts early in June, with the Formula One Grand Prix—which took in roughly \$80 million this year—then slides into Les Francfolies de Montréal, a nine-day festival featuring more than 1,000 French-speaking performers from around the world, wrapping up just days before the jazz festival. And this is all on top of the regular summer touring season.

Each year since its inception, the MIJF has grown, and lately it has been evolving with a changing festival site. As a result, it is not possible for the team to copy and paste designs from the year before. Buildings in the urban landscape are changing, the site seems to be always under construction, and stages have moved from one location to another.

"What artists need nowadays is a bit more difficult than in the past, when there was one basic setup and everyone was playing on it. But even though it's a lot more technical now and much harder than it used to be, the sound is still improving every year," said Hugo Tardif, technical coordinator for Solotech's sound department.

Finally nearing the end of construction, Montréal's Quartier des Spectacles ("entertainment district") is a square kilometer centered on Place des Arts, a 1960s-era theatre complex

in the heart of downtown Montréal. The sector's first landmark, the three-block-long Place des Festivals, is (with a capacity of up to 100,000), the major outdoor venue, the main stage occupying one end of its 600' expanse and Montréal's famed Ste Catherine Street bordering the far end.

The main stage and three other large outdoor stages—the 25,000-capacity Rio Tinto Alcan Stage on Boulevard de Maisonneuve, the 20,000-capacity Loto Quebec Stage on Rue Saint-Urbain, and the 9,000-capacity Bell Stage on Rue Clark—are all packed into an area of nine city blocks, with the Loto Quebec and Bell Stages arranged back to back. Artists on one stage may be sound-checking while those on a neighboring stage are performing, so tight coordination is necessary to ensure that everything works well together while municipal noise ordinances are respected.

"Positioning and logistics are really important," said Tardif. "We first have to work with the festival production team to analyze the site plan and then see what equipment we have available. And since we are supplying equipment and staff for tours and festivals in other cities during the same period, we first have to determine what equipment is required from our inventory for each venue—the size and quantities of the boxes—starting with the main stage."

In addition, the urban architecture poses particular challenges: The hard walls of multiple buildings border each venue, so great care must be taken to avoid uncontrolled reflections back to the stage and through the audience area.

On the main stage, a Meyer Sound MILO line array system was used, with 12 cabinets per side complemented by six Meyer 700-HP subs per side. A pair of CQ-2 narrow-coverage loudspeakers provided front fill on each side of the stage. Stereo delays, about

200' from the stage, each used four Milos, one Milo 120, and two PSW-6 subs. Stage monitors included 14 UM-1Ps and four USM-1P cabinets. Front-of-house and monitor-mixing duties were handled by Yamaha PM5D consoles. The entire system was driven via a Meyer Galileo 616 loudspeaker-management system, and was calibrated with a SIM 3 audio analyzer.

“One of the biggest changes this year was that we added subs to the delay towers. We had used Meyer MSL-6s on the delays for a number of years, but we found that they don’t have enough vertical coverage, so we switched them for Milos this year. Then we added PSW-6 subs for their cardioid pattern—they don’t exhibit any back lobe, so they don’t mess up the low end in the front-of-house area,” said Solotech system tech David Vincent.

While municipal noise levels are under review, the city currently permits sound pressure levels of 98-102dB (C-weighted), measured 100' from the stage. “It still needs to be heard at the back 600' away, so it’s quite a challenge. You can’t just put up a left and a right and crank it up! That’s not an option here,” Vincent noted, adding that he achieved 96-98dBC at the rear of the venue using an additional mono delay stack comprised of two Meyer MSL-5s and two MSL-6s 544' from the stage. Standing on Rue Ste Catherine some 600' from the stage, I found it easy to forget that I was not in an indoor venue. The sound was nothing short of incredible.

While the horizontal dispersion of the Milo line arrays is 90°, it required some intricate planning using Meyer Sound’s MAPP Online Pro acoustical



MICA line arrays on the Rio Tinto Alcan Stage.

prediction program to aim the arrays vertically in order to minimize bounce off the ground.

“You just enter your array and MAPP will predict the dispersion at different frequencies,” said Vincent. “You can vary the angle and the software will predict precisely what the result is going to be. There is a virtual simulation of the Galileo DSP control unit within MAPP, so you can plan your zones and set levels, EQ, delays, limiting, and the routing matrix ahead of time, and get very accurate predictions. The team spent a lot of time before the festival, designing everything. Meyer makes it easy to be well-prepared when you get on site—most of the work was already done in advance, and we knew that the systems were going to work as planned.”

Frascadore added that more upgrades can be expected for the main stage in future years: “We’re working to put more video screens and loudspeakers throughout the site to extend the live experience on the main stage to more nearby attendees.”

At the smaller Rio Tinto Alcan Stage on Rue de Maisonneuve, a configuration similar to the main stage front-of-house system was used, but with line arrays comprised of 12 Meyer MICA loudspeaker systems per side, together with four 700-HP subs and two CQ-

2 front fills per side. Stage monitoring was provided by 14 UM-1Ps, four USM-1Ps, and two MSL-3 side fill cabinets. The front-of-house console was a Midas X-1200. Monitors were mixed on a Soundcraft SM24 console.

Just around the corner, the Loto Quebec Stage—the designated blues venue—was situated in a small amphitheatre with buildings on all sides. This venue in particular imposed strict constraints on horizontal dispersion, in order to minimize reflections from all the surrounding walls, while simultaneously providing punch and power in the PA. Three Meyer JM-1Ps were installed in a cluster on each side of the stage, augmented by four 700-HP subs and a pair of CQ-2 front fills.

“The JM-1P was a great fit for this stage because of its really tight horizontal pattern—dispersion is 20° horizontal, 60° vertical,” Vincent explained. “There are a lot of buildings all around, and the JM-1P makes it easy to direct sound to where we want it and keep it away from the walls along the sides of the venue.”

“There is a distinct advantage in not having to set angles with the JM-1P,” he added. “You just stack them together and they match. The transition between them is seamless, so the stack acts as a point source, but sums as an array. On top of that, the sound



Detail of rain hoods on JM-1Ps.

of the JM-1P is really impressive, particularly the low end, and it has a very long throw compared with a lot of narrow-dispersion speakers. It will shoot for hundreds of feet. All the engineers really loved it, although some were not sure at first—they thought the PA was too small. It's an amazing speaker. I was really surprised myself when I first set it up," he added.

Dave Lawler, front-of-house mixer for Diana Krall, said that he, too, was concerned about the coverage before he arrived in the theatre, because typically there would be more cabinets in the vertical plane. "There is no other product I can think of or that I've ever tried that would cover the entire orchestra and both those balconies that evenly. I also like the body of the JM-1P. It has 15" drivers in it, and I'm unhappy with a lot of other systems available these days that have very small drivers, because transitioning from an 18" subwoofer to an 8" driver seems strange to me—it's not so much that frequencies tend to be missing, it's the sound of it, the excursion in the low-midrange.

"By contrast, the JM-1P has a big, warm, beefy sound, and the usual fantastic Meyer quality," he added. "We were able to zone the JM-1Ps horizontally so we could EQ the on-stage and off-stage areas differently, because the EQ would be different for units nearer to the wall compared to those closer to the center. The JM-1P definitely did the job, and we were pretty amazed that it did what they said it was going to do. I don't know how anything else would have done that."

Speaking of the JM-1P, Tardif said, "There are many venues in Montréal that demand that type of cabinet, where you have a large stage but the walls of the venue are really close to the stage. Line array systems don't work, but the JM-1P is the perfect box for that application. You just follow the wall, and you know that you're going to get as far as you can inside the venue with great coverage. I know that we're going to be using them in many different venues in Montréal in the years to come."

Last year, the JM-1P was intro-

duced indoors at the 1,458-seat Theatre Maisonneuve. "Due to their high power and extended throw, we were able to design a system with just four JM-1Ps per side, and that raised a lot of eyebrows among people who were used to seeing two or three times that many boxes," Tardif said. "But, as soon as we turned the system on, it did a fantastic job covering the entire venue. Everyone was amazed at how powerful the system was for the quantity of cabinets we used—so, this year, the JM-1P was an obvious choice. That is very important for us as a rental company—you don't want to be using 20 cabinets to do the job that eight can do." The system was augmented by two 700-HP subs per side, four UPA-1P front fills, and four M1D stage lip fills. Avid D-Show Venue consoles were used for mixing both front-of-house and monitors.

"We knew that they would work," said Tardif. "It was a good recipe. And because mixers and sound engineers were so positive, it was a great opportunity for us to add a significant number of JM-1Ps to Solotech's inventory this year—we didn't have any before. The timing was a little tricky, because Meyer had to make the boxes at really late notice, but everything turned out great. The systems are installed and playing and everybody's really happy."

The JM-1P may be the latest and greatest from Meyer at this year's festival, but it shared the limelight in Montréal with some older and much-loved products. The Bell Stage, for example, was equipped with four Meyer MSL-5s, four MSL-6s, four MSL-2s, and eight 700-HP subs, all driven via a Galileo 616 for this venue's eclectic mix of jazz, electronic, and progressive music.

"This festival uses so many of Solotech's cabinets in their busiest period that it's fortunate they're able to extend their inventory by using some of the systems that they bought so many years ago, including MSL-2s and UM-1 monitors. We refer to these as legacy products—products that are no longer

on the market, but that are easily combined with the latest products that we've introduced," said Steve Bush, Meyer Sound technical support, who assisted Solotech at the festival.

Solotech maintains a rigorous service program for its extensive inventory, maximizing the return on investment while recognizing the affinity that some live sound engineers have developed for Meyer's MSL series of sound-reinforcement products.

"If we could, we would never use anything outdoors that's more than five years old," said Tardif. "In previous years, we used only our older inventory for the jazz festival. Nowadays, that's just absolutely unthinkable, and, as a company, we have to accept that a substantial portion of the inventory will sustain damage, because for six months of the year they're going to be outside, and the rest of the year they'll be touring in arenas and theatres. We do festivals in the winter—for example, Igloofest in the Old Port of Montréal, which is a three-weekend event. Our equipment stays outside for three weeks, whatever the weather, so we've come to accept that, when it comes back in, it will require servicing."

Weather was a factor this year; it rained during setup and for the first three days of the festival.

"It brings a tear to my eye, because I know the damage that rain can cause," Tardif added. "The weather takes its inevitable toll—and that's just the way it is—but Meyer cabinets are the first I'd hang outside. For one thing, the paint job on them is amazing. We cover our PA systems as soon as possible after a performance, but the festival runs from noon until midnight every day for 10 days, and you can't bring down the cabinets after every show, so the protection afforded by the paint is really important. And Meyer's rain hoods work great, minimizing weather-induced damage."

The rain hoods are molded plastic covers that bolt onto the rear of the cabinets, allowing both cable access and cooling through traps and vents



The B-52s perform at the MIJF.

that permit air flow while keeping water out. “I’ve seen really, really hard rain, and there was never even one tiny water droplet that got into the speakers,” Vincent said.

Perhaps the most difficult space of all for sound designers, the 2,990-seat Salle Wilfrid-Pelletier is the largest indoor venue used by the MIJF. Designed for symphonic music, the hall has acoustics that are a little too live for reinforced jazz, and features three balconies that require extended vertical coverage. Solotech installed a Meyer Mica line array system with 14 cabinets per side, supplemented by eight 700-HP subs, four UPQ-1P front fills, and four M1D stage lip fills. Front-of-house and monitor mixes were handled by two Yamaha PM5D consoles.

“Each year, we rethink every setup to ensure the sound quality will be the

best we can provide, and the Mica system is certainly doing that for us in Salle Wilfrid-Pelletier,” said Frascadore.

“We nailed the system in Salle Wilfrid-Pelletier this year,” said Vincent. “It’s a difficult room, because it’s made for an orchestra, so there’s a lot of rejection from the stage and the height of the three balconies makes it hard to deal with. This year, using MAPP, we were able to refine the angles and the number of cabinets to ensure even coverage. We designed a cardioid subwoofer system to prevent any low-frequency back lobe from coming back to the stage, so it’s a lot cleaner and more consistent than it used to be. Each balcony has the same SPL and the same frequency response. Comments after the Robert Plant show on opening day were very positive, which is

not often the case in this venue.”

I took in the Return to Forever IV concert in Salle Wilfrid-Pelletier two days later, and can attest to the superb and even sound, even at a measured SPL of 110dBC at the start of their set.

Summing up, Frascadore said, “If we want the musicians to play well and take their art to another level, we have to provide first-class sound. We endeavor to provide the highest level of support, to give them the best environment in which they can give just that little bit more to their fans. We are proud of our reputation for sound quality that we have earned through our partnership with Meyer Sound and Solotech. Artists and the public now expect that when they come here. They know we care about sound—they can hear it with their own ears.”

Inside Solotech

by Alan Hardiman

The 2011 Montréal International Jazz Festival named Meyer Sound as its official sound reinforcement sponsor for the second year in a row. Montréal-based audio provider Solotech, which has been supporting the festival for the past 31 years, supplied Meyer systems exclusively throughout the festival in all indoor and outdoor venues. Solotech also supplies Meyer Sound systems for major international acts including Céline Dion, Cirque du Soleil, Leonard Cohen, and Michael Bublé.

Since its founding in 1977, Solotech has grown strategically to become the largest sound company in Canada, with a staff of some 300 in 265,000 sq. ft. of office and shop space in Montréal, including wood and paint shops where it manufactures all its own road cases. Solotech also boasts a CNC aluminum fabrication facility for

manufacturing rack panels and power distribution systems, and has in-house UL and CSA certification to enhance its already robustly efficient operation.

Solotech counts itself among the top five sound companies in the world, and has opened a Las Vegas office to support a large number of high-profile shows, including Cirque du Soleil spectacles in seven Las Vegas venues—New York-New York (*Zumanity*), Luxor (*Criss Angel Believe*), MGM Grand (*Kà*), Mirage (*The Beatles LOVE*), Treasure Island (*Mystère*), Bellagio (*O*), and Aria CityCenter (*Viva ELVIS*).

In addition, Solotech is supporting Cirque du Soleil's *Iris* at the Kodak Theatre in Hollywood, *Zarkana* at Radio City Music Hall in New York, and *ZAIA* at The Venetian in Macau, as well as a number of other touring shows. As part of its growth strategy,

Solotech acquired Audio Analysts of Colorado Springs in May of this year, and completed the relocation of those facilities to Las Vegas in August.

This reflects Solotech's confidently relaxed, yet highly efficient, corporate culture: The company has grown largely by acquiring its competition, rather than expending resources competing head-to-head in new markets. In fact, it was the purchase of Audio Analysts' Quebec operations by Solotech founder and president Denis Lefrançois that launched the company on April 1, 1977. Lefrançois had just completed a six-month contract for the Montreal Olympic committee, coordinating all the sound systems at the 27 Olympic sites during the 1976 games.

"Audio Analysts had used a 40-box Clair Bros.' S4 loudspeaker system for the opening and closing ceremonies, and had just signed a contract with Emerson, Lake & Palmer to use that system to support ELP's upcoming world tour with a symphony orchestra.

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They approached me to buy their local operation, so that they would be free to go on tour. The first year, we did \$1M business on our \$280,000 purchase," Lefrançois recalls.

Solotech expanded laterally into the lighting market with the acquisition of Tanguay Eclairage in 1986, subsequently adding video and AV to its growing list of services, and currently has Canadian offices in Kingston, Quebec City, Gatineau, and Chicoutimi. Along the way, it acquired the assets of a number of other firms, including Half Nelson Systems, Canadian Staging Projects, Discospec, and Bruit Bleu. The company remains privately held.

Lefrançois credits Solotech's success to "full-service sound, lighting, video: one customer, one bill, and one company responsible for the project. We strive to provide the very best equipment and people available in each of those areas. When you quote on a job, your quote is usually lower if you can render all required services


than if those services were being provided separately."

Solotech's inventory includes 2,000 Meyer products. "One big advantage of Meyer is that a UPA from 1988 still works to specification—it still sounds the same after 20 years, and has therefore retained a very high value for our rental division," he adds. "Reliability has never been a problem with Meyer products. There is a very short list of people who can sell or rent this caliber of equipment. Providing great sound with the best equipment in the world is the best marketing we could have."

"Meyer is like a Formula One product—if you don't have a good driver, the results aren't there. Meyer is sophisticated equipment, and you need highly trained experts to run it properly. Therefore, we send a lot of our people to Meyer for training, in order to get the maximum level of performance out of our sound systems," he says.

Vice-president of project develop-

ment Bob Barbagallo says that, due to their scope and originality, many shows require Solotech to do things that have never been done before. "Ultimately, it's the sound designer whose ideas we're trying to bring into reality. Along the way, there are consultants and manufacturers' reps involved, some of whom push their own agendas for the project. We try to integrate them all, and we heavily leverage manufacturers such as Meyer to get the job done. In cases where two systems don't talk to each other, we have to bring the vendors together to solve the problems," he says.

"When all is said and done, we're not engineering a system; we're integrating systems, so we need the support of our manufacturers. Meyer has been always there as Number One for us. They're my go-to people, and more often than not, they help us successfully get to the end of a project." 

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