The wow factor

Twelve years in the making, the Kauffman Center for the Performing Arts has united the arts in Kansas City

The Muriel Kauffman Theatre, inside and out; the backstage area (opposite page)

"Anyone close to me when the orchestra played the first chord ever heard in Helzberg Hall, the opening of Beethoven's First Symphony, heard what I whispered a moment later: 'Wow! I wouldn't have believed it, but my expectations were exceeded.'" This is high praise indeed from the *soundandglass.org* blog of Kansas City Symphony principal trombonist Roger Oyster, for the 1,600-seat Concert Hall in the new Kauffman Center for the Performing Arts in Kansas City, Missouri, USA.

The extraordinary acoustics in Helzberg Hall, coupled with the flexible functionality of the 1,800-seat Muriel Kauffman Theatre, are the culmination of 12 years of planning this new home for the Kansas City Ballet, the Lyric Opera of Kansas City, and the Kansas City Symphony. Architect Moshe Safdie designed the centre's marble, steel, and glass expanse and joining him were a team of theatre design professionals from Theatre Projects Consultants, led by Michael Ferguson.

When it came time to choose a rigging supplier, the proposal from JR Clancy won the bid. "I could tell early on that Clancy was serious about this job and very knowledgeable," reveals Kevin McPartland of JE Dunn, the project's general contractor.

"What has always been characteristic of Clancy's bids is a completeness, a confidence they give the general contractors based on their experience and understanding of the project," adds Michael Nishball, director of Theatre Projects, and the senior rigging designer.

The challenge of equipping two performance halls simultaneously allowed Clancy to put all of its technical and organisational skills to work. "Most contractors do not build many projects like this one in a lifetime," continues Murphy. "Kevin and his team at JE Dunn did a terrific job, providing leadership and keeping everyone on track."

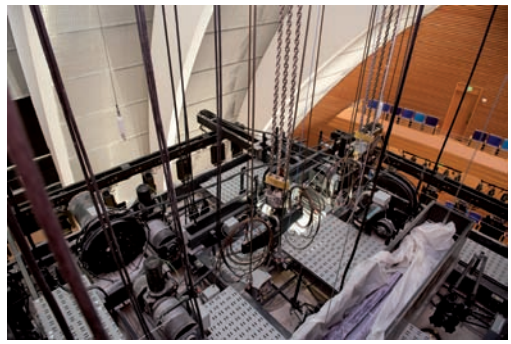
Big projects demand the highest levels of collaboration and knowledge-sharing, Murphy feels: "There were enough co-ordination issues that we needed a full-time, experienced project manager on site. We brought in Brett Cooper to work with JE Dunn and the other subcontractors to make sure our equipment went in the way the design team intended."

Cooper took on the project full-time in October 2008. "JE Dunn used NavisWorks, a computer modelling system, and brought all the elements together before anything went into the building," Cooper says. "The 3D modelling helped us avoid quite a bit. Then it's a matter of working with people on site, talking with the foremen, and watching as it goes in."

The first challenge in Helzberg Hall was the 45,000kg suspended acoustical canopy that had to be installed as early as the building would allow. "It required assembly of all the framing steel and formed reflector surfaces at the floor level," Nishball says.

"We had to get the concert hall built before we could contemplate bringing in the canopy and hanging it," says McPartland. "But the structure was designed so that there was no easy way to do it. We had to work over and under each other. This went on concurrently for several months."

When the time was right, Clancy's team worked swiftly to bring the canopy into the hall. To position the structure, Clancy provided seven chain motors, each with a capacity of 10 tonnes. A Skjonberg 48-channel system with load-readout controls provides the motorised controls for the chain-hoist system.



The Muriel Kauffman Theatre will host ballet, opera and touring Broadway productions (left)**; the hoist system above the canopy in Helzberg Hall** (right)

"The canopy actually came in at 50 tonnes," Cooper says, "so we had plenty of capacity. Then we've got seven more hoists on top of the canopy, which lower three outriggers to the ground with all the lighting and some of the speakers. At the floor, stagehands can add more lights or speakers or make necessary adjustments."

"To achieve the acoustic 'tuneability' that Yasu and Nagata required, the canopy – which is 15m above the stage – adjusts up and down 1m," says Ferguson. "We still had to access the VariLite VL1000s hung around it, so we needed to lower the lighting outriggers to the ground. We control those outriggers and all of the adjustable acoustics from a touchscreen remote."

"There are 75 holes in the hall's ceiling and 36 chain motor potential pick points – each with a receptacle box – where we can move all the motors around in the tech attic," says Cooper. "They can fly banners, flags, whatever they need."

Clancy equipment also completes the acoustic system. "Through the sides walls, we have a retractable roller banner system with 10 acoustical banners – five on each side," he says.

Clancy also provided five 450kg cyclorama point hoists, with a speed of 0-60m per minute. These, as well as the lighting, banner, and speaker hoists, are controlled using a SceneControl pendant. Six Gala lifts, installed by Clancy, create three half-ring risers from the stage floor for the optimal configuration of a full orchestra or choir.

"There's a lot of flexibility in this room," Ferguson says. "It is specifically designed for symphonic music, but we also know that a lot of use will be for other things – from a film, to a corporate event, to an amplified concert. The flexibility allows them to make these changes quickly. It also future-proofs the room."

The Muriel Kauffman Theatre demanded the same kind of adaptability between ballet, opera, and touring productions. With a 23m-high fly tower, the theatre has the capacity to accommodate the largest touring shows.

JR Clancy provided 70 counterweight sets with a loading gallery – scalable to 90 sets as required – and a computer-controlled house curtain. Clancy also provided a 450kg, steel-framed fire curtain, and a house curtain on a custom hoist, with a speed of 0-115m per minute.

Twenty-eight variable-acoustic banners on custom-chain drivers are stored behind the wall, where they can be lowered behind the seat backs using a SceneControl pendant.

"Clancy also installed two Gala lifts with full seating wagons, which can extend the stage floor, provide more auditorium seating, or create two sizes of orchestra pits," says Ferguson. "There's a sound cockpit lift as well. We can go from seating to sound mix in five minutes."

Unifying elements

To bring all of these elements together and deliver on time, complete, and correct shipments of the equipment, Clancy put its Project Quality Assurance Plan (PQAP) to work – one of many tools Clancy developed to qualify for the rigorous ISO 9001:2008 international standards certification.

PQAP gets the whole team – including lead engineer Greg Dale, controls designer Tom Zorn, and production heads – on the same page from the job's first day. "All of the equipment had to be scheduled through the shop in the mix with other projects, and everything has to be tested," says Marilyn Larsen, JR Clancy project co-ordinator. "It's the culture of the business that quality matters – nothing goes out of here unless it's right."

The real testament to Clancy's quality processes comes when the curtains rise on the first performances in each hall. "Clancy kept to a demanding schedule," says Nishball. "Honest and concise communication has always been their style."

"Mike and Brett were very good about participating in co-ordination meetings, talking about the issues and identifying obstacles," concludes McPartland. "We rely on the expertise of our subcontractors, and we are always pleased when they are proactive. It was a pleasure working with Clancy overall." ■

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