

# The Music Company

By: Alan Hardiman



Allied Music Centre is a complete venue for live performance and recording

With the commissioning of facilities in a new seven-story tower, the \$189.5-million (Canadian) Massey Hall Revitalization Project in downtown Toronto is drawing to a close. The renovation and refurbishment of the 130-year-old Massey Hall itself were completed two years ago, with such modern appointments as deployable seating, enhanced acoustics, and load-bearing infrastructure to support rigging for state-of-the-art performance lighting and sound equipment, in addition to new lobby and restroom facilities conforming to present-day building codes. (See “Improve Everything, Change Nothing,” *LSA*, June 2022).

The tower houses two new venues: the 500-capacity TD Music Hall, which opened in February 2023, and a 100-seat community theatre that is now operational, along with the Dolby Atmos-equipped Deane Cameron Recording Studio, two capture suites, two small audio-only production rooms, dressing rooms, and offices. The tower also contains Massey Hall’s new lobbies, each with a capacity of 400, and a loading dock. Due to a lack of street-level space in the front of the building, the lobbies are located on two levels behind the stage, connected to the seating areas by four glass-enclosed, climate-controlled passerelles suspended well above street level from the exterior sides of the building. The 350-capacity Muskoka Spirits Basement Bar directly

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Photo: Simon Tanenbaum



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beneath Massey Hall has also been renovated.

The 2,482-seat Massey Hall is completely integrated with the new facilities via an Optocore fiber-optic network specified by consultants Engineering Harmonics. The network provides interconnectivity between all facilities in the hall and tower, permitting the recording, broadcast, and archiving of performances and events in any of the venues.

The overall complex has been named the Allied Music Centre in recognition of an undisclosed “landmark contribution” from Allied Properties, a Canadian provider of creative urban workspaces.

In the nascent stage of the revitalization project 12 years ago, the corporation developed “A Vision for the Future,” which recognized an opportunity for a paradigm shift from being a concert hall company to becoming a music company. “What this means is a

proactive investment in artist and audience development. It is an opportunity to provide inclusive and comprehensive educational programs, all the while embracing technology as a powerful tool for reaching audiences and enriching their musical experiences.”

Regarding the overage from the original \$184-million budget, Doug McKendrick, vice president of production at the Corporation of Massey Hall and Roy Thomson Hall, says, “COVID-19 was devastating for this project, so a lot of the difference is related to all of the shutdowns, delays, and complications that we encountered. There would also be some new scope in there as well.”

### **TD Music Hall**

One goal of the revitalization project was to increase the use of Massey Hall, which, in recent years as a road house, had been programmed more by opportunity than intention and had

been dark an annual average of more than 200 days. Unforeseen during the planning phase was the pandemic-induced shuttering of many Toronto clubs that had long served as venues for amplified concerts; this only increased demand for a mid-sized hall to serve the needs of both local and touring acts.

“Massey wanted to create a smaller-capacity venue to give artists at that scale a completely professional production experience,” says the theatre consultant Clemeth Abercrombie, studio principal at Charcoalblue. The TD Music Hall was designed to fit the bill.

Occupying most of the fourth and fifth floors of the tower, the TD Music Hall boasts a 30' ceiling with four truss grids and three additional ladder trusses around the perimeter of the room to accommodate a full production lighting rig. “This permits hanging and refocusing lights so the room can function both in an end-stage format



and in any other format that you might imagine,” he adds. A 27'-by-16' stage at the west end of the room can be raised to a 4' height for concerts or lowered to be flush with the floor for other events. With the stage in use, capacity is reduced to about 400.

The complement of flown moving head fixtures includes 15 Martin Mac Quantum Profiles, seven Robe DL7S and 13 Robe Spider luminaires, controlled by an MA Lighting grandMA3 compact console running grandMA3 software. A Look Solutions Unique 2.0 hazer is available for special effects. Lighting gear was supplied by Christie Lites.

For video projection, a Blackmagic Design ATEM SDI four-input live production switcher, equipped with various converters to allow for HDMI inputs, feeds a Christie 16K laser projector mounted over the stage. With a 0.38:1 fixed lens, the image fills a 25'-by-15' retractable front-projection

screen rigged to land approximately 14' upstage. AV gear was supplied by Solotech.

Floor-to-ceiling windows span the width of the room behind the stage, offering a city view that can be used as a unique backdrop or hidden with a full-stage black velour drape. Sun blinds are also available to allow natural light through. (Studio interiors were by Hamilton Scenic.)

“We said, ‘We’re going to glaze the whole back of the room and the stage will be like Jazz at Lincoln Center,’” recalls Chris Couse, founding principal of KPMB Architects, whose partner-in-charge, Marianne McKenna, led the design. “It will have this phenomenal view out over the city with the Old City Hall tower in the distance.”

“They fully realized that glass is not the best acoustical surface for a lot of things; neither is the cityscape always the best thing visually, right behind the band,” says the acoustician Bob

Essert, founding director of Sound Space Vision. The vertically retractable drapery functions both as a generic background and as an acoustical absorber. A perimeter drape system permits hanging curtains or production elements both upstage and around the room.

A d&b audiotechnik immersive sound reinforcement system controlled by a DS100 Signal Engine consists of 58 loudspeakers: 16 Yi8 and four Yi12 line array cabinets; four Vi-GSUB and four Vi-SUB subwoofers; eight 8S front-fill, eight 5S overhead, and twelve 8S surround loudspeakers; and two Yi10P deck fills, all powered by d&b amplifiers. Up to four monitor mixes can be routed to six d&b M6 stage monitors.

A dedicated front-of-house mixing position, 45' from the downstage edge, is equipped with an Avid VENUE S6L-24C console, with an E6L-112 engine and MADI-192 card. An Avid

Stage I/O Rack is fitted with six AVID SRI-192 analog input cards, providing 48 analog inputs; three AVID SRO-192 analog output cards, providing 24 analog outputs; and one AVID DSI-192 AES input card plus one AVID DSO-192 AES output card, providing eight digital inputs and eight digital outputs respectively.

The 35 microphones allocated to the venue are from Shure, Sennheiser, AKG, Neumann, and Audio-Technica; ten Radial Engineering DIs round out the mic locker.

With such a capable sound system, isolation from Massey Hall and other performance spaces in the complex is paramount, especially when shows are running concurrently.

“We designed a double-suspended, isolated ceiling below the sixth floor and above the lights: two sets of two layers of drywall are suspended on springs with a big air space under the steel beams,” Essert says. “On top of the concrete floor above it is a floating floor slab on neoprene pucks for the sixth-floor theatre. From the concrete slab down to the upper ceiling, the depth is that of a big beam, some 800mm [31.5"], and there’s another 300–400mm [11.8–15.75"] down to the second tier of double plasterboard.

“Both ceilings are sprung from a spring above the upper ceiling,” he continues. “You’ve got the concrete slab, a spring hanger, a rod that comes down from the spring hanger that picks up the upper ceiling, continues through, and picks up the lower ceiling. The walls protect the flanking around the slab or up the side of the external wall of the building.

“There’s a structural steel grid below that, to hang the rigging for lighting and sound over most of the room area. Supporting that steel structurally through the double spring ceiling was a challenge. The steel beams themselves aren’t a big carrier of sound; they don’t have membranes, they’re not like loudspeakers, and they don’t accept a lot of sound pressure because they’re reasonably small elements. A ceiling, on



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the other hand, is a big membrane; a large surface can accept a lot of sound efficiently and transmit it. We tried to keep the ceiling isolated from the

building structure [while allowing] a few penetrations to come down through that—not touching it; we used soft sealant—to pick up the rigging beams



The sixth-floor theatre is the smallest performance venue in the center, intended as a recital hall for students and community ensembles, and as a showcase room for emerging artists. It also accommodates panel discussions, artist interviews, classes, rehearsals, and educational workshops.



The Deane Cameron Recording Studio control room is located on the seventh floor. An adjacent flexible classroom space, with a window into the control room, functions as an occasional performance studio.

below that. The rigging beams are rigidly tied to the structure but through the floating ceiling.” Rigging was supplied by Joel Theatrical.

“On the walls, there’s a complex set of finishes, a patchwork of absorbing and reflecting elements in an architectural grid motif,” he adds. “We’re not trying to kill 100% of the sound; it’s got a little bit of character. It’s not trying to be a recital hall by any means, but the opposite. With this rigging grid, big drapes can be deployed for acoustical or visual effect, if desired.”

Three dressing rooms with washrooms and showers are provided for artists, along with a large green room, complete with catering facilities.

“Many venues of this capacity are like a converted Masonic temple, with a few lights and speakers hung from the ceiling,” Abercrombie says. “Coming from a live music production background, for me it’s such a joy working for an organization like Massey Hall that understands quality in the arena of live music.”

Longtime live music aficionado Ella Monk reports that at an October concert that she attended, singer-songwriter Charlie Cunningham stopped midway into the acoustic introduction to his set to remark that the hall’s “acoustics are absolutely unreal” and the enthralled crowd concurred in full voice. “Having been to shows in just about every venue in the city,” she says, “I can honestly say that TD Music Hall is like no other. It gave me chills all the way down my spine. I was totally immersed in the music—it felt like the sound was wrapping around my brain!”

### Community theatre

The sixth-floor theatre is the smallest performance venue in the center, intended as a recital hall for students and community ensembles, and as a showcase room for emerging artists. It also accommodates panel discussions, artist interviews, classes, rehearsals, and educational workshops.

Retractable seating increases its flexibility. “The risers themselves retract into the back wall, so the room can be used in a more formal way with seats focused on the stage, or more informally, without seats for open-floor events,” Abercrombie says. With the risers retracted, capacity is increased from 100 to about 150, and the theatre appears more like a black box. The seats themselves are Model K, from Series Seating. In its technical appointments, the theatre “has a lighter touch than the other venues, with full production capability, but more of a fixed nature,” he adds.

Six Robe Cuete compact spots, eight GLP X4S moving heads, and eight ETC Desire D40 luminaires on the grid are controlled by an MA Lighting grandMA3 compact console. A modest d&b audiotechnik sound reinforcement system, comprising one ALi60 and two ALi90 loudspeakers, plus one V-SUB subwoofer, is under the control of a Soundcraft Vi1 mixing console.

## Muskoka Spirits Basement Bar

The Muskoka Spirits Basement Bar, directly beneath Massey Hall, is ideally suited for post-concert parties and receptions, as well as film shoots, group entertaining, and team-building events on non-concert days.

The bar is equipped as a plug-and-play club environment. All overhead lighting is permanently installed over a small stage, with one static, pre-programmed look. If more sophisticated control is required, a controller may be brought in for programming.

The d&b audiotechnik sound reinforcement system is arrayed in a left-right configuration, with two 24S loudspeakers and two 18S-SUB subwoofers per side. In addition, two 8S loudspeakers are hung in each of three delay rings. An Avid S6L-16C console, with two Stage 16 remote stage boxes accepting 32 inputs, feeds a Meyer Galaxy 616 AES loudspeaker processor, routed to one d&b audiotechnik 10D and two 30D four-channel amplifiers driving the loudspeakers. Six L-Acoustics 108P powered wedges are available for stage monitoring.

## Deane Cameron Recording Studio

Designed by Martin Van Dijk, senior consultant, partner and head of design at Engineering Harmonics, with the acoustic envelope by Bob Essert, the Deane Cameron Recording Studio control room is located on the seventh floor. An adjacent flexible classroom space, with a window into the control room, functions as an occasional performance studio. "We treated it acoustically as a live room, but it's still a classroom that gets used every week for our education and outreach programs," McKendrick says.

The control room is centered on a Solid State Logic System T S500 control surface with 64 faders, a dynamic automation package, Dolby ATMOS monitor controller, and TE2 processor engine. One SSL A16.D16 interface in

the control room rack provides a combination of 16 analog and 16 digital inputs and outputs. An SSL A32 located in a rack room provides 32 analog inputs and outputs for facility patching.

Eight remotely controlled Neve 1073OPX eight-channel preamps and one SSL SB 32.24 stage box provide a total of 96 channels of mobile mic preamps that connect to the control room over fiber optic cable from any performance location in the complex.

Recording and editing are facilitated by a Pro Tools Ultimate HDX 2 digital audio workstation offering 128 inputs and outputs at a 48kHz sample rate (64 I/O at 96kHz). Two Tascam DA-6400 64-channel multitrack recorders serve as backups.

An ATC active control room monitoring system, configured in a 9.1.4 system for mixing in Dolby ATMOS, consists of three SCM100 ASL Pro loudspeakers, ten SCM25A Pro loudspeakers, and two SCS70 Pro subwoofers. A Hear Technologies Hear Back PRO system is available for headphone monitoring. Monitoring in the live room is via a Renkus-Heinz Iconyx system augmented with a Renkus-Heinz subwoofer.

"We want high-quality sound to be part of our brand, because we're a music hall, and we want to be a place that sounds great when people come, and that should extend to what we're recording as well. We do a lot of recording from the main stages in that control room, and there will be some commercial uses as well," McKendrick says. The studio is named for the late Massey Hall and Roy Thomson Hall president and CEO Deane Cameron.

Just across the hall from the control room, two audio-only production suites are available to artists and members of the community. These rooms are supplied with a pair of Adam Audio A7V monitor speakers, a T10 subwoofer, and Pro Tools Studio, and Logic and Ableton digital audio workstations. "We use Pro Tools primarily here ourselves, but we've provided options," McKendrick says. "The

Pro Tools systems in those rooms come with an Avid MBox Studio interface and run natively on the Mac Studio. The focus of the sixth and seventh floors is artist development and education, and community outreach. With the studio, theatre, and the little writing and mixing rooms, we're trying to provide a service for the artist community."

## Audio and video capture suites

A small footprint of the fifth floor, reserved from the upper reaches at the rear of the TD Music Hall, houses a pair of capture suites networked via an Optocore fiber optic network to the four performance venues in the center, the Deane Cameron Recording Studio, lobbies, dressing rooms, and lounges. The audio and/or video of any performance may be captured for streaming, broadcast, recording, or study.

"We've started to use the capture suite as a central switching hub for the whole building. As we're running more events when we're using multiple floors, it's proving to be a really useful room because it's connected to everything," McKendrick says.

For video capture, a complement of Panasonic AW-UE150KPJ 4K PTZ cameras, controlled by two Remote Camera Technology CT CS-3 PTZ control systems, feeds a Ross Video live switching and control system consisting of a Carbonite SD/HD/3G/UHD switcher, Ultrix-FR5 12G router, TouchDrive TD2S control panel, Ultricore-TLX tie-line management system, and RCP QE36 router.

Livestreaming is via a Blackmagic Web Presenter; eight Blackmagic Hyperdecks and two Datavideo HDR80 decks are available for recording, and a Blackmagic MultiDock facilitates editing. A Tektronix SPG8000A Master Sync/Master Clock Reference Generator keeps everything in step.

Two NEC E498 large-format video displays and a pair of Focal Shape Twin audio monitors handle control

## CLOSE-UP: INSTALLATION



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room monitoring duties.

The audio capture suite is built around an Avid VENUE S6L-24C console with E6-144 engine, MADI 192 card, and Stage 32 rack, plus Waves Soundgrid processing and a Pro Tools digital audio workstation with 64-track capability. Control room monitors are a pair of Focal Trio6 Be nearfields and Sub6 subwoofer. Comms are handled by the Riedel Performer party-line system.

Optocore was selected for networking due to its extremely low 41.6-microsecond (two samples) latency and robust build. "We're using

Optocore to transport things like room microphone audio, where extremely low latency is vital for streaming, broadcast, and recording," McKendrick says. "Optocore is also very stable and reliable: At Roy Thomson Hall, it has been running everything for ten years. We turned it on, and we've never done anything to it since. Tying all our venues together, it's important not to have different systems or different protocols where latency becomes an issue. It's also less finicky than a typical blend of consumer and professional audio infrastructure."

Noting the versatility offered by the new facilities, he adds, "One day recently, engineer Doug McClement was in the audio capture suite recording Andy Kim from the Massey Hall main stage, while I was in the Deane Cameron Recording Studio recording the Julian Taylor Band in TD Music Hall. We've certainly upped the ante on the live recordings that we do."

With the completion of the Massey Hall Revitalization Project, the substantial investment in technology to reach audiences and enrich their musical experiences has already begun paying handsome dividends. 🎧