

ARCHITECTURE



University of Michigan celebrates one of its most famous alumni with its new theatre

By: Judith Rubin Photography: Tom Arban

milller's monument

Arthur Miller's dramas have been produced all over the world, in venues big and small—but the one playhouse he allowed to bear his name is located on the college campus that nurtured his literary aspirations, and where he, in turn, nurtured the aspirations of others: The University of Michigan, in Ann Arbor, Michigan. Miller was very much at home on the university campus, and, throughout his long life, returned frequently to his alma mater to address, advise, and mentor students there. The Arthur Miller Theatre, which opened in March 2007, will help continue his legacy.

Although often at odds with critics, the New York-born, Pulitzer Prize-winning playwright was an icon of American theatre, an intellectual with a keen sense for everyman culture and everyday despair. Miller, who died in February 2005, paid a visit to the U-M campus as recently as April 2004, at which time he reviewed plans for the Arthur Miller Theatre, a courtyard-style venue that is the centerpiece of the Charles R. Walgreen, Jr. Drama Center, a \$43-million, 97,500-sq.-ft. complex built for U-M. Charles Walgreen Jr., the late president of the national drugstore chain, donated \$10 million towards the project.

"In the history of the American stage, there have been few playwrights on the scale of Arthur Miller," said Christopher Kendall, dean of the U-M School of Music, Theatre, and Dance, at the time of the opening. "This theatre honors his accomplishments and influence. For students, it's more than a stage; it's a symbol that theatre is a dynamic means to probe the human condition." The inaugural production was *Playing for Time*, a stage version of Miller's 1980 teleplay, based on the World War II experiences of Fania Fénelon, a French-Jewish cabaret singer who survived life in Auschwitz concentration camp.

Watching Miller's plays, with their unblinking examinations of humanity, morality, family, politics, and individual

responsibility, has been compared to looking into a mirror. Likewise, the exterior of the new theatre faces the world squarely, with a straightforward, raised cube of translucent white glass—at night, a hovering beacon of a lightbox. The adjoining clear glass and steel atrium/lobby, and the concrete-walled interior spaces, continue the clean, contemporary lines of the building design by Kuwabara Payne McKenna Blumberg Architects (KPMB). The KPMB team was headed by Thomas Payne (partner-in-charge), Christopher Couse (senior associate), and David Jesson (associate-in-charge). Inside, the theatre holds 215-280 seats, depending on whether it is in a thrust or end-stage configuration. Theatre Projects Consultants Inc. (TPC) was theatre consultant. TPC's project manager was David H. Rosenberg; Brian Hall was the lead designer for TPC. TALASKE | Sound Thinking provided acoustic, audio, and video system design, led by principal acoustician Rick Talaske, senior acoustical consultant Byron Harrison, and senior audio consultant Aaron Downey. Others on the project included Thornton Tomasetti (structural), AltieriSeborWieber (mechanical, electrical, plumbing, fire protection), Philip R Sherman PE (fire and life safety), Beckett and Raeder (civil, landscape), Suzanne Powadiuk (architectural lighting), and Vermeulens (costing).

In addition to the 8,000 sq.-ft. main theatre, there are three 100-seat, 3,000 sq.-ft., performance/rehearsal studios and two teaching studios, as well as four 275-sq.-ft. dressing rooms—they ring the theatre underground—and other support spaces. Phase Two of the center is set to be completed in January 2008 and features the Stamps Auditorium, an 8,000-sq.-ft., 460-seat lecture hall, as well as additional academic facilities. A benefit of the project is that it unites the university's formerly scattered performing arts faculty offices and academic spaces into facilities specifically designed for their needs.

A Teaching and performance venue

TPC's David Rosenberg says Arthur Miller told Brian Hall that the Cottesloe, in London's National Theatre, was his



The theatre's exterior includes a raised cube of translucent white glass.

favorite theatre. (The Cottlesloe—indeed the entire National Theatre—was a TPC project.) Modeled on the Cottesloe, the Arthur Miller Theatre embodies what Rosenberg refers to as an “archetypical” courtyard theatre layout. But within that, he adds, its thrust configuration echoes the old U-M Trueblood Theatre, which it replaces—a basement space that had been well-used by the drama department.

The changeover from end stage to takes about a day, done manually by moving and storing numerous platforms. It is accomplished by removing the front seating modules, which are tiered platforms set into a pit 3 1/2' below stage level (into which, one day, a lift may be installed), and extending the stage out into that area.

While the auditorium has two basic configurations and modifications therein, and is minimally designed to support flexibility, it is not that ultimate theatrical blank slate known as a black box. For one thing, it has a fixed balcony, and, for another, it is not black. Rosenberg is no fan of black walls for theatres that double as classrooms, as this one frequently does. “Learning in a black space sucks the energy out,” he says. He is a fan of flexibility and feels that the right balance was struck here.

Gary Decker, professor of theatre at U-M since 1984, reports satisfaction with the space. “It works very well—it has great spirit,” he says. “It’s specifically good for the kind of drama that Miller wrote—a small, intimate venue which really puts the focus on the words.” He’s very happy with the venue’s versatility. “There are lots of lighting positions between rails,” he said. “There aren’t many places you can’t hang a fixture,” says Decker, who specified the lighting equipment.

For the moment, the theatre’s lighting package includes an Obsession II console, also from ETC. Also available are 256 2.4kW and six 5kW dimmers, all from ETC; and approximately 240 ETC Source Fours in different degrees, eight mini-10s with barndoors, twelve R40 eight-foot, four-circuit strip sections; and nine Vari*Lite VL1000TS units. At this writing, the theatre hadn’t yet received its new ETC Eos console, but Decker reported that the lighting faculty was eagerly awaiting its arrival.

Spoken-word acoustics

The location of the building is relatively quiet, the major source of outside noise being a nearby road. The building was planned, from the outset, to

enable acoustic isolation, with the theatre functioning as a separate structure. “It has very few connections,” said acoustician Byron Harrison, of Talaske. “HVAC and electrical rooms, and the scene shops, are all on one side of the acoustic joint, and, on the other side, are the theatre itself and the dressing rooms below.” Low-frequency energy from the oversized air ducts is dissipated by silencers and a minimal amount of lined ductwork before crossing into the theatre side of the building.

The theatre’s walls, made of cast-in-place concrete about 1' thick, plus the concrete-on-metal deck roof structure, provided much of the basis for the room’s acoustic design and acoustic isolation. The rectangular shape of the room itself, as well as the theatre’s configuration, provided their own acoustic reinforcement, says Harrison: “Having the right-sized room does a lot of the work for us. In this small, intimate space, the shaping of the hall and the narrowness of the room help create sound reflection patterns that support speech. There was really very minimal specialty sound-shaping done. There are no moving elements or suspended panels. The concept for the room—an updated courtyard theatre, with seats all the

way up to the proscenium wall and a wraparound balcony—provides a shape that works well to get people as close to the action as possible. That intimacy is the charm of a courtyard theatre, and it works very well for acoustics—when you put people close enough to hear, you don't have to do so many tricks."

The courtyard layout does pose challenges for an acoustician, however. "There are more opportunities for the actors to face away from the audience," notes Harrison. "In that regard, the only thing worse is an arena format. Still, the room is small and narrow enough that we can use the balcony surfaces to reflect sound back down.

the sound, Harrison explains. "In this case, we also offered some adjustability to accommodate musical theatre, aided by de-mountable, acoustic velour curtains along the rear and side walls, positioned in all the places we [were] not counting on getting sound reflections from."

Two-tiered audio and video

The Arthur Miller Theatre's audio system includes both powered and unpowered loudspeakers that can be configured on a show-by-show basis, with surround speakers installed, at both levels of seating, for additional show effects. As the theatre space is used for teaching purposes



The auditorium is designed in the courtyard style; it can be arranged in thrust or end-stage configurations.

The balcony rails have a slight angle, but the simple proximity of the walls does most of the work for us."

The acoustician comments on the need to optimize the room for the spoken word against concrete's natural tendency to reflect sounds of all frequencies. "When we design a theatre, we try to create a moderately reverberant environment, with the proper balance between clarity of sound and support of live events," Harrison says. "We strove to maintain a moderate level of liveliness for mid- and high-pitched sound, and introduced even more control for low-pitched sound—which is very important, so that speech and sound effects have a tightness to them, and do not sound boomy, or excessively reverberant. We used a plenum liner of semi-rigid fiberglass board, very porous and thick, to provide low-frequency sound absorption."

The theatre also accommodates some customization of

almost daily, there are separate theatrical and educational modes of operation, each with its own audio system. A portable classroom rack has its own CD player and mic inputs and laptop connections. There is no permanent video system in place, but the infrastructure is there for future installation.

The performance loudspeaker system includes six Renkus-Heinz PN121/9s, ten Renkus-Heinz PN61s, two Renkus-Heinz PN81/9s, two Meyer Sound USW-1P subwoofers, four EAW UB12Se units for in-set effects; and one Crown CTS600 amplifier. For under-balcony coverage, there are six Frazier C399-T6027 ceiling units with a Crown CTS1200 amp. An EAW MK2399e loudspeaker and CTS1200 amp are used for lectures. There are two Electro-Voice ZX1 loudspeakers for lobby use.

On the theatrical side, "it's pretty straightforward," says

Talaske's Aaron Downey. There is a Clear-Com two-channel wired and two-channel wireless intercom system, respectively serving stationary and mobile operations. Show audio and video, plus paging, are distributed to the backstage area, dressing rooms, corridors, green room, and lobby. Because the lobby doubles as a corridor to the studios, classrooms, and offices, and is a place for students to hang out during the day, its AV has the capability to double as an internal digital messaging system. And to accommodate simultaneous theatrical and teaching uses—such as a rehearsal in the theatre while classes are in session elsewhere—the system allows the stage manager to control whether or not an audio or video stream is distributed to other parts of the building.

The rest of the theatres' audio rig includes a 24-channel Soundcraft Series 2 mixing console, Biamp AudiaFLEX digital signal processing, Ashly digital equalizers, and a Lexicon

throughout the building to studios, classrooms, back of house, and offices. "Various professors can be in their offices and have a video shot of what's going on in the theatre at any given time," said Downey. A robust cabling infrastructure system snakes through the theatre itself, from the pit up to the catwalks, providing flexibility from show to show. Fifty-six mic lines run from the stage area and 32 audio tie lines are distributed throughout the theatre for routing audio to loudspeakers, reinforcement of effects, etc., adds Downey.

Studios and classrooms

The three black-box, 100-seat academic studios are acoustically very similar and more or less identical in size; they all feature partially concealed, wall-mounted, sound-absorbent fiberglass panels, strategically placed to avoid flutter echo—each faces a reflective surface on the opposite wall. Some studios have movable curtain panels of theatrical

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MPX550 digital effects processor. An HHB CD recorder, and Tascam cassette deck and mini-disc recorder/player handle playback and recording. The microphone system includes two Shure SM57s, two SM58s, and two SM8s, with two Shure ULX wireless systems to go with two ULX258 wireless handheld mics. The AV installer was Ann Arbor Audio.

Other details of the theatre's sound system include 62 Atlas Sound FA118 loudspeakers comprising the backstage system. For assistive listening there's a Listen Technologies RF hearing-impaired system.

Technical video is distributed

velour. The suspended ceilings are an Armstrong product of gypsum board with sound absorption on the underside. The studios are all on the first floor. Like the theatre, they are acoustically isolated to prevent sound transfer to the rooms above. This was accomplished using special mounts, on head tracks, of the gypsum board walls: The studs sport little neoprene pads. Likewise, the ceiling is entirely suspended on a grid of springs and neoprene. The removable seating is supplied via telescoping risers.

Equipment varies from one studio to another, depending on its function. Acting and stage combat are taught

in Studio 1 during the day, and, in the evening, it functions as a ticketed performance venue, with the typical accoutrements of a flexible small theatre space: Renkus-Heinz powered loudspeakers, a Soundcraft Live 4 mixing console with Biamp digital signal processing, a two-channel Clear-Com intercom system, technical video, assistive listening, and playback and recording from Tascam and HHB. It has a sprung floor, pull-out seating, a pipe grid for stage lighting and curtains located 14' above the floor, and a stage lighting system with 96 dimmers. A control room and storage room are adjacent.

Acting, movement, and directing are taught in Studio 2 during the day; at night, it is a rehearsal hall and performance venue for student projects. It has a sprung floor, mirrored wall, a pipe grid for stage lighting curtains 14' above the floor, and a stage lighting system with 24 dimmers. The Towsley Studio is designed for musical theatre and music rehearsals, with an audio system that includes a Mackie 1604-VLZ PRO mixer, Renkus-Heinz loudspeakers, and Shure mics. It also has a sprung hardwood floor, dance mirrors and ballet barres, a pipe grid for stage lighting, curtains 14' above the floor, and a stage lighting system with 48 dimmers.

The Stamps Auditorium is the adjoining lecture hall and recital space, which is the center's primary Phase Two feature. Harrison describes it as being of similar construction to the theatre, with an acoustic joint and concrete walls. However, these walls are made of tilt-up concrete-highly engineered panels poured into molds that give them a sound-diffusing texture on the inside. "The design was done cooperatively by us and the architect," he says. "The faceted texture of the panels is still reflective, but diffuses the sound, which keeps the sound from being very harsh when it arrives at your ear." Because the room will serve



laptop for editing and post production offsite—it's a portable post studio," says Downey. The whole thing lives on the ADapt Lectern, a sophisticated and accessible piece of furniture that raises and lowers and tilts at the push of a button, made by Spectrum Industries. The studio has a pipe grid for lighting and curtains 14' above the floor, plus a full component of lighting fixtures. The sound system includes two Shure SM81-LC mics, two Symetrix 528E voice processors, and a Pioneer PRV-LX1DD pro DVD recorder.

There are several additional rooms in the building. A 1,200-sq.-ft. voice studio for teaching and recording is equipped with Shure MX202WP/C mics hanging from the ceiling, two Mackie SRM450 loudspeakers, and a Shure SCM262 mixers. The design and production studio is an 1,800-sq.-ft. space equipped with

widely divergent uses, it has also been fitted with adjustable acoustic curtains and a versatile audio and video system.

Talaske also designed the system for the 350-sq.-ft. sound studio in the building's basement, equipped with a Yamaha DM1000 digital console with Digidesign Pro Tools, Lexicon MPX550 digital effects processor, a Shure KSM32 mic, four Tannoy Reveal 8D studio monitors, and a Clear-Com intercom system. It has audio and video tie lines to the performance spaces for remote live recording and monitoring. Like all the other rooms in the building, the sound studio doubles as a teaching space, with a raised area in the back from which students can observe mixing sessions.

Another busy new teaching/rehearsal space in the building is the 1,200-sq.-ft. acting-for-the-camera studio, which "probably contains as much AV technology than any of the other spaces, including the theatre," notes Downey. Students work in a space equipped with an entire nonlinear digital video recording and editing system, and three broadcast-studio-grade video camera packages with tripods, pan/tilt arms and dollies—"the works," according to Downey. This classroom was collaboratively designed: "They told us what they wanted and how they wanted to use it, and some of the brands they were familiar with, and we designed the system and helped guide them to the final equipment list," adds Downey. The HD-capable setup includes the Sony Anycast system, a hard-disk-based digital editing system that can be removed and folded up like a large briefcase. "You can set it up like an oversized



The theatre's lobby is defined by clean, contemporary lines.

30 design stations. The 900-sq.-ft. costume classroom is equipped with cutting tables, sewing machines, and other specialist equipment, plus an adjacent dye room. There are a 900-sq.-ft. design and production classroom for teaching theatre design, a 700-sq.-ft. lighting design laboratory with a pipe grid 14' above the floor, a 96-dimmer lighting system for teaching stage lighting, a 4,100-sq.-ft. scene shop with 18' ceilings and a spray booth. and a 3,300-sq.-ft. costume shop.

"The country is now being ruled by actors," Arthur Miller told *New York Times* reporter Mel Gussow in 2004. We are glad that some of that rule is being shaped in the stimulating environment of the U-M campus. 🌐