CURTAIN UP AT NOTRE DAME

A university best-known for its sports heritage gets a remarkable new performing-arts facility

By Sharon Stancavage

The Marie P. DeBartolo Center is the first performing-arts venue built on the campus of Notre Dame University, in South Bend, Indiana, in 100 years. The facility, which covers approximately 150,000 sq. ft., is comprised of a variety of venues; it is meant to change the image of the university from an educational institution rooted in athletics to one where students can be trained in all aspects of the arts. "Originally, they were going to build a one-room facility," says principal/project manager Bill Murray of Pfeiffer Partners, Inc. (formerly Hardy Holzman Pfeiffer Associates, Los Angeles). "Ultimately, everyone realized that, while you can build a room that's variable acoustically from a schedule standpoint, you could never get it to work for everything that needs to be accomplished academically." The facility was slated to be used by the departments of music and of film, television, and theatre, for both performances and teaching. "There's a lot of stuff in this facility," remarks Benton Delinger, of Theatre Projects Consultants, the firm that handled the DeBartolo's performance-equipment specification and collaborated on the theatre space design with the architect. "I think it was around $50 million for the construction, and they got a lot of building for that money," he adds.

The DeBartolo Center consists of four spaces that can be used for live performances, a THX-certified cinema, a television soundstage, and a recording studio that can record performances in any venue. There is also a variety of rehearsal halls, dressing rooms, makeup rooms, film/television editing suites, green rooms, and faculty offices.

Of the theatrical spaces, the largest is the Judd and Mary Lou Leighton

PATRICK RYAN

The Leighton Concert Hall is a variable-acoustic space featuring 600 seats on the orchestra level and nearly 300 seats in the wraparound balcony.

Concert Hall, with 600 seats at orchestra level and nearly 300 seats in the wraparound balcony. "It's a widely variable-acoustic space designed for symphony, which can also be used for a variety of other performance types, such as jazz, light opera, the spoken word, and so on," explains Murray. It comes complete with its own sound system. "We put in a left/center/right loudspeaker cluster with Renkus Heinz speakers and Crown amplification," explains Rick Wells, formerly of McKay Conant Brook Inc, the acoustician and A/V consultant; currently Wells is with Multi-Media Consulting. "There are also theatrical-effects loudspeakers through the entire concert hall for sound effects and surround-sound for experimental music. They can produce the effects and record them in the multi-track recording studio in the basement for playback as part of a live performance. Or they can produce them 'live' in one of the other venues and send them to the concert hall as part of the program," notes Wells. The effects loudspeakers are JBL 8340s, located on the parterre, balcony, and catwalk. There's also a central control room that's home to a Crest X-8 40 input console and a Peavey MediaMatrix system for processing. Wells used this formula for the entire DeBartolo Center: "Our concept for this type of facility is that each venue is a scaled version of the other, so the operators won't have to re-train to use a different venue. We use the same concept from one venue to the other, but just apply it a little differently to each one."

The Leighton is also is notable for its acoustics, designed by Ron McKay of McKay Conant Brook, Inc. "You can take this room from the symphonic mode and, in a matter of a few minutes, transform it with the push of a button into a place for a lecture or amplified music," explains Murray. This is achieved through a variety of acoustic treatments in the venue that include rigid panels on the sloping ceiling and walls, plus banners and traveler curtains. "We've introduced an enormous amount of absorption in terms of square footage," remarks Michael Nishball, the rigging and machinery specialist at TPC. "We have some very large—14' tall by 20' wide—acoustic panels following the slope of the ceiling that telescope in

and out of an attic room in the ceiling. The limited attic floor space required us to put a wire rope lineshaft winch along the peak centerline of the roof, so the winches lift the lower of the three panels at both sides of the slope simultaneously. There's a total of four sloped acoustic-panel winches in the ceiling that control eight ceiling bays at a time."

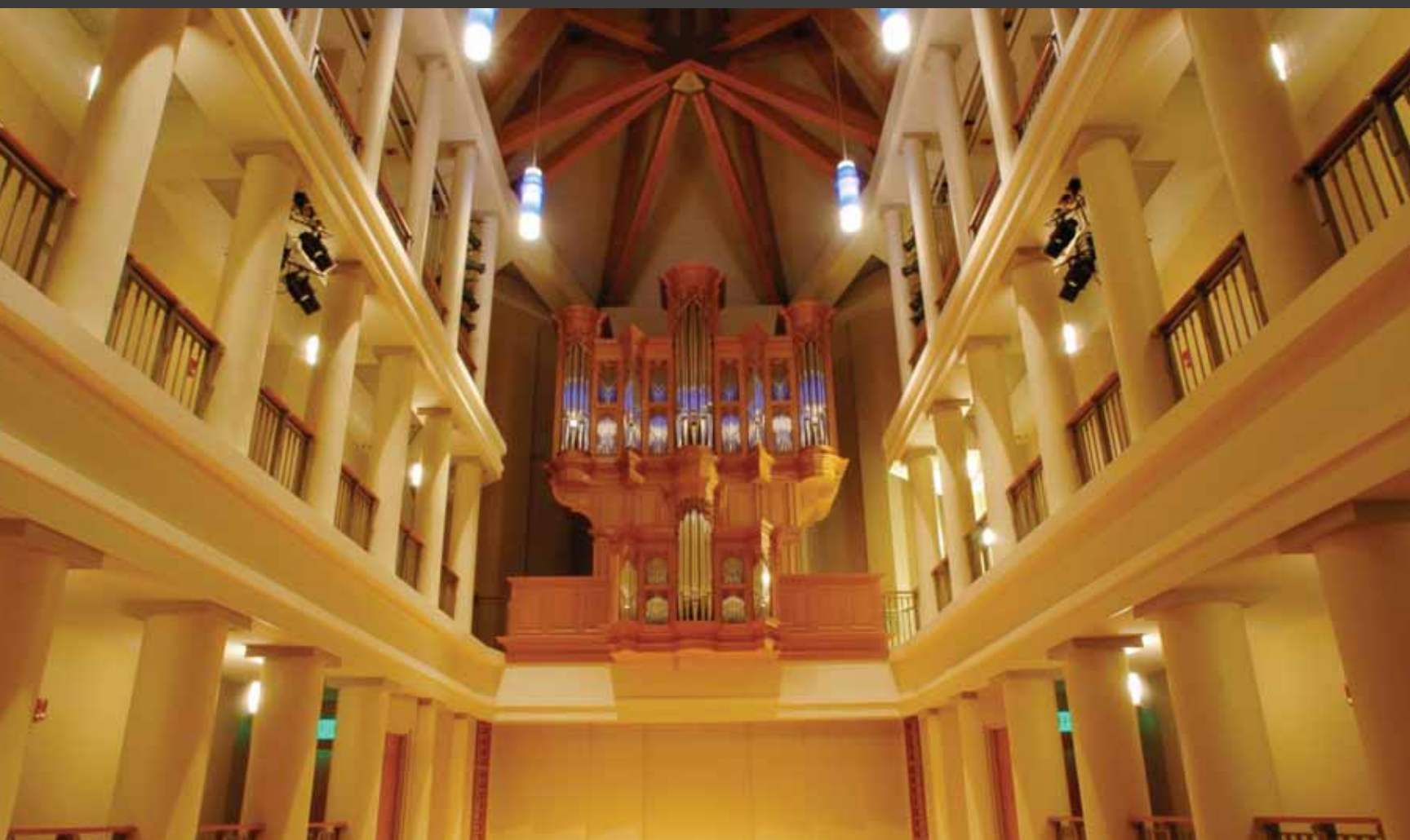
Various lineshaft winches and drum hoists also control the sidewall rigid panels and the ten 24' long x 8' wide double-faced banners. "They're rigged in a Roman-shade style with a decorative bottom batten," Nishball says.

The room also features a sound-reflecting canopy over the stage. By changing the elevation of the six individual kites that make up the canopy, it can be utilized for performances of vastly different sizes. In another venue, rigging the kites might have been easy; the design of the Leighton made for quite the rigging challenge. "There's no sizable grid area above the platform, so we had to figure out a way to lift these units without hiding the motors up above," says Delinger. The solution was a self-climbing hoist system that is rigged upside down. "We integrated the hoist machine on the kite frame and rigged their dead-off points to the limited attic floor, to the existing truss work, or the catwalk framing," says Nishball.

Aesthetics were also an important issue surrounding the acoustic kites. "We were very concerned about the visual aspect, and it was hard to pre-visualize and convince the architect that we wouldn't see a whole lot of machinery through the translucent acrylic reflectors. I had to work very hard at integrating the dual-drum gear motor, overspeed brake, the blocks, concert lighting junction boxes, and the motor-starter cabinets, within the minimal open frame," Nishball notes. "We then painted everything to look as elegant as possible," he adds.

A programmable logic controller

Delinger: "If the base part of the system is simple, it will invite students to explore; if it's complicated, it will invite confusion."



addresses all of the motorized acoustic devices. “It’s a hand-held pendant control—designed by Larry Lutz at Texas Scenic—with four lines of text readout in a very compact design,” Nishball says. The controller is also user-friendly. “We try really hard to make the devices that people are using as simple as possible, so you don’t have to be an engineer to understand how to bring something in or out or up or down,” Delinger says. It was so easy, in fact, that Delinger, who isn’t a rigger, was the one who configured the system in the air prior to the first public events. (Texas Scenic fabricated and installed the acoustic devices in the Leighton and two other spaces.)

As for lighting in the Leighton, “we designed the ETC performance-dimming-and-control system, with an ETC house worklight control system,” notes Delinger. There are two ETC Sensor SR48 dimmer racks, an ETC Expression 3 console, a variety of ETC Source Fours and two Strong Super Trouper Spotlights.

Spaces for drama

While the Leighton is designed for music, the Patricia George Decio Mainstage Theatre is a traditional, 350-seat venue for drama. “It gives the university the ability to really teach kids what it’s like to do professional theatre,” says Murray. The facility includes many traditional features—linesets, a gridiron, a fly rail, an orchestra pit, and a trap system. “This is a fledgling drama department that can grow in leaps and bounds in this facility,” adds the architect. (Texas Scenic provided the counterweight rigging system, fire safety curtain, adjustable proscenium towers, and chain motor-control system for this space. Other contractors included Gala, for the theatre’s orchestra lift, and Seating Concepts, provider of seating throughout the building).

There are acoustic treatments in this space, but they’re hidden. “All the surfaces have been coordinated to work for drama. There’s a lot of absorption up above the catwalks,” notes Delinger. From a sound-reinforcement standpoint, the Decio’s system is designed in the same way as the Leighton’s, but, instead of a 40-channel console, there’s a 32-channel version. There’s also a Peavey MediaMatrix system and JBL 8340 loudspeakers for theatrical effects; the main cabinets are Trap 40s from Renkus Heinz. “We worked with the architect and the acoustician to integrate the main PA into the proscenium canopy, and are very pleased with the sonic and aesthetic results,” says Wells.

In another sense, the room is very flexible. “We don’t have dedicated electrics,” says Delinger; “we believe in letting the students decide where their electrics should go, so they don’t have to fight where they are versus where the scenery has to go.” In the grid, Delinger has a series of boxes with 70’ six-circuit VEAM connectors on them; on-stage there are six- and 12-circuit multi-pins.

Philosophically, Delinger has kept education at the cornerstone

The stage in the Leighton features a sound-reflecting canopy that can be adjusted for different styles of music (opposite page). The Reyes Organ and Choral Hall is a tall, narrow space with three levels, an arrangement that recalls the great medieval cathedrals (left).

The DeBartolo Center consists of four spaces that can be used for live performances, a THX-certified cinema, a television soundstage, and a recording studio that can record performances in any of the venues.

The Decio Mainstage Theatre is a traditional, 350-seat venue, designed to give students the experience of working in a professional theatre.

of the design. "If the base part of the system is simple, it will invite students to explore. If it's complicated, it invites confusion," he says.

The Regis Philbin Studio Theatre has flexible seating for up to 150, and is in a 40' x 60' room. "It's a highly flexible space with a full array of lighting catwalks. It has the ability to configure in a variety of ways, which is something they didn't have in the past," says Murray.

Since it is a studio theatre, the facility isn't quite as complex as the other venues. "It's four walls with a catwalk system above; we have raceways as well as multi-pin connectors down on the floor," Delinger says. He adds, "We have pieces of unistrut in the walls to allow the students to attach things, like pipes and pieces of scenery, to the side walls, so it becomes more of a work space in three dimensions." Lighting can be hung from above, from the catwalks, or from the unistrut. The theatre also has a full contingent of ETC Source Fours, and a variety of accessories, including sidearms, top hats, donuts, and boom bases.

From a sound-reinforcement standpoint, the Philbin Theatre uses the same system as the previous venues, and utilizes a Crest X-8 24 input console. "The Philbin has an additional level of flexibility built into it, insofar as there are no fixed loudspeakers—they're all portable," Wells notes. He's referring to Tannoy V12 cabinets, which can be hung off the catwalks or placed on stands. "The Tannoys sound similar to the Renkus Heinz loudspeakers, because they both use a dual-concentric design," explains Wells. The room is also set up for a projector. "It can be located off any of eight locations in the room, and of the four quadrants of the ceiling, or any of the four quadrants off the catwalks."

A hall for music

The final venue is the Chris and Anne Reyes Organ and Choral Hall, which seats 100. "This is the most Gothic space in the project," notes Murray. It is a tall, narrow room with three levels, a configuration reminiscent of a medieval cathedral. "The stage is big enough to support a small chorus," the architect adds.

Like the Leighton, the Reyes also contains some acoustic treatments. "We have acoustic drapery on the upper level. It's a very traditional

track-and-drape layout," notes Nishball. The drapes are located on the third level and change the room from a two-second to a four-second reverberation time.

In addition, "The Organ Hall has a very simple lighting system," notes Delinger. "The space just needed basic house lights and the system is actually quite appropriate," he adds. The sound system is minimal as well. "It only has a portable system comprised of a few Tannoy V12 cabinets and a small Crest XR 20 mixer with playback," says Wells. "In fact, the sound system is mostly for their teaching function."

A home for film

The most unusual venue in the DeBartolo Center is the Browning Cinema, a 200-seat THX-certified professional space for film. "The film/TV department has a broad-based approach to teaching and making films, so we gave them a professional house to run cinema. It's the only THX-certified cinema in all of Indiana, and it's probably the only one in an academic setting," says Murray.

A THX certification is not easily achieved. The company has numerous requirements that must be met, including room proportion, viewing and projection angles, the spacing of speakers, and the quality of amp level. "THX reviewed the design and approved it; when it was finished, they came out and certified the room," notes Wells. The room itself is actually quite different from a hardware standpoint. "They have two Century projectors, THX-certified JBL loudspeakers, Crown THX amplifiers, a Stuart cinema perforated projection screen and a movable masking system, since they operate in different formats." Also included in the gear package is a Christie video projector. "The room has video functions, presentation functions and film functions. Because THX is so rigid, we had no room for flexibility, so everything had to be built around that system," Wells says. The challenge lay in making the Browning suitable for teaching. "We simply built a complete presentation system on top of the THX system," says Wells. To achieve this goal, he chose a Crestron control system to control the lights, video projection, and sound system.

From a lighting-equipment standpoint, the Browning is similar to the Reyes. "We put in a very small dimmer pack—13 ETC Sensors SR12 dimmers—that allow them to control the house lights. We then put in eight dimmers that are adjacent to a lighting bar up in the ceiling, so they can hang lights up there and connect with the system," Delinger says. The system also makes use of Ethernet technology that can run automated lights, which can be controlled in the projection room.

The final two areas of the DeBartolo Center are the television soundstage and recording studio. "The soundstage is designed for a three-camera shoot and has a full pipe grid as well as a full control room," notes Murray. The room is acoustically neutral. It also contains a pipe grid, two racks of dimmers, and quite a bit of power. "A lot of TV lighting units are big HID fixtures, so there are big chunks of power in that room," says Delinger. "We also have cycs and scrims that can wrap around the whole space that they can pull out to create backdrops in the room."

The recording studio brings all of the venues together. The room, located in the basement, is on its own isolated ground power, and offers the ultimate in creative flexibility. "It has a 32-channel Crest console, with Tannoy System 1000 studio monitor loudspeakers and Crown reference series amplifiers; we also have video capabilities of seeing what's going on in every venue," Wells notes. The recording studio can record from each and every venue in the DeBartolo, thanks to some intricate engineering. "The entire system of audio, video and production communication is a gigantic matrix within the venue—all the gear can be patched from one room to the other," says Wells.

Of course, the best way to see the DeBartolo Center for the Performing Arts is in person. A variety of events scheduled, from concerts to theatre to films; it's not impossible that people will soon be seeking out Notre Dame for something besides sports.