



Set back from the Iowa River, the new Hancher Auditorium cuts a graceful swath along the edge of the University of Iowa campus.



After the Flood

The new Hancher
Auditorium emerges
from a natural disaster

By: Randi Minetor

Imagine that you run a multipurpose auditorium in the Midwest, presenting a diverse mix of orchestral concerts, dance concerts, Broadway touring shows, and A-list solo performers. You've built a significant, loyal subscriber base and your auditorium and its programming are loved by subscribers and single ticket buyers for hundreds of miles around. This center for the arts is more than a stage house; it's the gathering place for people throughout your state and beyond who share a love of music, theatre, and dance.

Now imagine this beloved auditorium filled with Iowa River water. Picture 18" of water on the stage itself, and the house completely submerged all the way to Row O.

That's the dilemma Charles Swanson faced in 2008 as executive director of Hancher Auditorium at the University of Iowa. In what the National Weather Service calls a 500-year flood—the kind that comes along once in five centuries—the Iowa River crested and overflowed its banks for several weeks, busting through levees, devastating entire cities, and driving residents out of their homes and businesses. Hancher Auditorium and the adjacent Voxman Music Building took damage so significant that FEMA declared them “beyond 50% destroyed.” Hancher would have to be replaced, one of 13 buildings on campus that were wrecked by the flood.



Above: The building's outer curves are covered in stainless steel with a brushed angel-hair finish, and lined underneath with cypress wood. Opposite: The spacious, light-filled lobby reflects the architect's mandate to create a more transparent building.

"At first, we thought we were going to fix it up," says Swanson, as the university had done in the 1990s, when floodwaters last penetrated the auditorium. "But FEMA says the damage was beyond repair." Worse, once FEMA padlocked the inundated building, mold and deterioration took over, making any kind of renovation a losing proposition.

Once it became clear that a new building would be required, the university called on the firm Theatre Projects to consult on what a complete replacement of the building would require. Hancher held a special place in project manager Millie Dixon's heart, as she had served as the building's technical director years before.

"Every state organizes FEMA differently," she says. "Iowa has a policy that FEMA replaces its head decision-maker every six months. You go through all of the pain and effort to explain your project, and, six months later, you do the whole thing over again. It took us a year to get through the whole mess about what to build, where to build, and how to build."

As news finally arrived that FEMA, insurance, the university, and private donors would supply the money for a new \$176-million auditorium, spirits throughout the arts community soared. "I was so excited, I was ecstatic," Swanson says. "When you have the opportunity to start with a clean slate, to be able to really work with an amaz-

ing collaborative team of professionals, that's a once-in-a-lifetime experience."

"Can't contain us"

Even knowing that they would build from the ground up, the staff at Hancher did not predict that it would be eight years until the opening of the new 192,000-sq.-ft. auditorium. In the near-decade that ensued, Swanson and his staff reached out to the community of Iowa City to find every possible venue in which they could continue to present their full annual subscription series.

"Our theme was, 'Can't contain us,'" says Swanson. "We had to think about unusual ways to present our work. We presented in high school auditoriums, in churches, in casinos, and outdoors. We toured throughout the state. We performed in a renovated movie theatre. We rented the basketball arena and brought in the Boston Pops. One of the largest attended shows we did was Kathy Griffin in the basketball arena—we sold 4,000 tickets. We showed that Hancher was more than a building—it was a spirit."

The Hancher staff retained its subscriber base through eight long years of design and construction, proof that the spirit had indeed outlived its location. Meanwhile, the process began to find the right team of professionals to bring Hancher home to the university campus once again. A whopping 59 applications came in from design archi-

jects across the country, the most the university had ever fielded for any capital project.

Pelli Clarke Pelli (PCPA), based in New Haven, Connecticut, emerged as the winning architect, in part because of the immediate rapport the agency's principals established with the university. PCPA designs include the Petronas Twin Towers in Kuala Lumpur, Malaysia, the World Financial Center in Manhattan, and a portfolio of world-class performing arts centers. OPN Architects, of Cedar Rapids, Iowa, served as the local architect of record. "The chemistry of the team was incredible," says Swanson. "Everyone felt so lucky to be a part of it."

Still, the numbers are staggering: It took 18 months to establish a site plan for the new auditorium, and 30 months until the final design was approved. Only then could the construction crews break ground, which they did in June 2013. By then, Hancher staff knew it would be another three years before the building would open to the public for the first time.

Reflections of the river

With funding in place and a new building to design, it might seem like the sky was the limit for the architects—but they had an unusual challenge on this project.

"It isn't typical that we work with a government agency like FEMA," says Mitchell Hirsch, AIA, PCPA design principal. While the university maintained the direct relationship with FEMA, the architects had to take its exacting criteria into account. First and foremost was the location of the building: FEMA required that it be placed somewhere on campus that would be out of reach of another major flood like the one in 2008. The new site is 7' above the Iowa River's 500-year flood level, placing it beyond the worst flood ever to affect the university.

The site still takes advantage of sweeping views of the bend in the Iowa River, and the river itself inspired the building's design, Hirsch notes.

"We were designing a building on a pastoral site," he says. "It has marvelous landscape and waterscape fea-





This page and opposite: Hoops of light in the Hadley Main Stage present the appearance of floating halos.

tures. Once we started to recognize that our context was the river and this gentle hill to the east, Park Road and a public park to the north, and the remainder of the arts campus to the southeast, we realized that we wanted to orient Hancher on its new site 180° from the way it was originally sited.”

The old Hancher had a northern entrance, turning its back on the university and the rest of the arts campus. “You couldn’t see the river,” says Hirsch. “We wanted a panoramic view to the east, south, and west.”

The original building celebrated the mid-20th century’s love of solid concrete, presenting monolithic, windowless walls to the rest of the campus. PCPA rejected that approach, choosing to line the building’s gathering spaces and construction shops with ceiling-to-floor windows for maximum transparency overlooking the bend in the river.

“We have curved stainless steel ribbons and glass, which reflect the flow of the river and the topography of the land and the colors of the sky,” says Hirsch. “So as the hills rise, the building’s ribbons also rise up to the sky.”

Cantilevered planes present a graceful curve to arriving

attendees, coming to a point and reaching beyond the building below in a seeming rise—an illusion created by the angle of the roof. “It addresses the university at large and welcomes people in, while having panoramic views out,” Hirsch says. “When there is a connection between the architecture and the landscape, the character and integrity of both are heightened.”

The 14,000 stainless-steel panels on the building’s exterior are brushed with an angel-hair, random-direction finish for diffusing reflections. Cypress wood lines the underside of the cantilevered sections, lending a warm, inviting quality to the building as a whole.

Moving from the spacious lobby into the performance hall, the ribbons and curves continue to unite the spaces. “The hall is this perfect symmetric form within this bending, asymmetric building composition,” says Hirsch. “The balcony fronts are made of two layers of metal mesh, and behind them there are LED lights that give you an impressionistic, almost star-like quality. The hoop lights in the ceiling are the next level of interpretation, some of which are full circles, while others are pieces of a circle. They are

reminiscent of the shapes of the balcony boxes, taken to another scale for the purpose of lighting. From the exterior to the interior is a series of consistent architectural ideas.”

PCPA worked closely with architectural lighting firm Cline Bettridge Bernstein on the custom-designed ribbons, curves, and arcs that provide house lighting inside the theatre, as well as the lighting throughout the building.

Legendary functionality improves

In its 46 years as one of the foremost performance venues in the Midwest, the original Hancher Auditorium had built its reputation on being a versatile, highly functional performing arts center. The new Hancher could be no less—in fact, it had to exceed the expectations of its performers and audiences.

Years of experience with the design of performing arts centers led Hirsch’s team to ensure important practical relationships, like a loading dock that is level with the stage floor. “The old building was precast concrete; for whatever reason, the height of that soffit was too low to get a truck underneath,” says Dixon. “You had to pull the ramp out and everything had to be ramped into the building—in the cold. Now there’s a proper scene dock and transfer bays.”

Sight lines ensure a clear view of the stage from every seat. The original building seated 2,200 audience members, but the new Hancher pared down the capacity to achieve greater intimacy, with just 1,765 seats.

The new auditorium features an orchestra pit with two Gala Systems motorized forestage extensions, so the pit area can become a larger stage when a full orchestra is not required. The house sound mixing position sits on a Gala lift, making it easy to lower it beneath the floor and replace it with a Staging Concepts seating wagon. (The auditorium features a variety of Staging Concepts seating wagons and platforms.)

In response to a FEMA requirement that any student should be able to gain access to the stage from the auditorium, Theatre Projects specified side seating boxes on mechanically assisted NIVOflex Airstage platforms that can be lowered to audience level, allowing a person in a wheelchair to access the stage.

“The project was all about trying to accommodate spaces appropriately,” says Dixon. “We had to give them everything they wanted in pre-approved square footage. The team was very clever in navigating the government rules, rearranging things so they fit into an awkward space, and being flexible in every aspect of our approach.”

In addition to the main hall, Hancher also houses Strauss Hall, an adjustable-configuration space that seats 100 to 200 people for theatrical, dance, and musical performances. Theatre Projects outfitted this room with an Interamerica Stage Inc. Skydeck wire tension grid system for lighting, and acoustic curtains for flexibility in controlling and directing the sound. The hall serves as an informal meeting space; a rehearsal room for chorus, symphony,



The view from the stage, showing audience seating on three levels.

and dance; and a performance space for small theatre productions, solo music acts, and lectures.

Four large dressing rooms with six showers each, a number of smaller dressing rooms, a scene shop, and a costume shop with a wall of windows and a 60-gallon industrial soup kettle for dyeing fabric are among the new building's amenities. The facility even includes a visiting production office, which provides business space for artists and their company managers.

Fine-tunable acoustics

"When you build a performing arts center, you're not necessarily building one building," Hirsch says. "You're building two or three. The hall is isolated, structurally and mechanically, from the rest of the building, as is the rehearsal room. Events can happen there or in the lobbies and the sound will not transmit from one to the other."

Kirkegaard Associates, the acoustics designer for the building, strongly encouraged the hall's isolation from vibrations coming from other spaces throughout the building. "The audience chamber and stage house are surrounded by a concrete wall—the rest of the building is a steel building built around this concrete core," says Joseph Myers, Kirkegaard president. "So toilets can flush, elevators can move, people can walk across terrazzo floors, you can build in the set shop, and there is no hint of noise getting into the hall."

Kirkegaard Associates took on the challenge of making this multipurpose performance hall as acoustically flexible as possible, taking into account the many different kinds of performers Hancher presents in any given year.

"It has to be a concert hall for symphony orchestras, but at the same time, one of the really important things it will be is a venue hosting touring Broadway productions," says Myers. "And historically, dance has been really important at Hancher, so they want clear, exciting performances, whether it's recorded music or performed live in the orchestra pit."

Solo performances by luminaries including world-renowned cellist Yo-Yo Ma and opera legend Renee Fleming are also featured, Myers says. "So the hall is being asked to do a whole range of things. We want the hall to sound like it was designed for that kind of performance, whatever it may be."

The room's high ceiling provides the reverberation required for a concert band or orchestra, he continues, but smaller performances and Broadway tours need a different kind of sound. In addition to sets of fabric curtains that can be deployed to reduce reverberation, Myers and his team came up with a unique solution for adjustable bass absorption: acoustical "train cars."

"Think of partitions you'd see in a ballroom, except the track is in the upper corners of the room, and the cars have a metal face on them that is designed to absorb low-

frequency energy only," Myers explains. "So when you want them, you trundle them out and they reduce the low-frequency sustain. When you want a strong, rich, classical bass response, you push a button and the train cars go off into their pocket."

Kirkegaard enhanced this effect with curtains on the side walls in the front of the room. "You can pull some curtains out of pockets so you are not kicking sound into sideways patterns in the room," he says. "When you have a symphony in there, you put away these curtains to give audiences a good sense of the reverberation in the room. You expose the curtains when you're doing amplified shows, and retract when you're doing natural sound shows. Exposed, the curtains keep things clear for the audience, but gives them a sense of envelopment." Nearly all of the curtains can be revealed or retracted at the touch of a button, using a custom control system supplied by Texas Scenic Company, Inc.

The plan for amplification and other audio support systems came from Threshold Acoustics. "We worked very closely and collaboratively with Jonathan Laney at Threshold, and made sure that what we wanted from the room was designed in collaboration," says Myers. (Laney is now with d&b audiotechnik.) "We were certainly supportive of getting an in-house mix position, and worked in our acoustic model to make sure that wherever he was showing loudspeakers, we were looking at how sound from that loudspeaker was bouncing around the room, and that it would result in a happy, nice amplified sound."

The audio package for the auditorium includes an Avid Venue Profile console, d&b loudspeakers (a mix of V-Sries, T10s, E8s, 5Ss, Q7s, Q10s, V-Subs, and J-Subs), and a range of Shure, Neumann, and Sennheiser microphones. (Communications are facilitated by Clear-Com Tempest 2400 and Telex BTR-700 systems.) The new auditorium even includes a recording studio, tucked neatly under the stage house. The original plan called for the recording room to be at the back of the hall, but this limited its usefulness as a studio for independent projects. Myers advocated for it to move to the lower level. "[The house crew] can now come in and grab performance recordings from the hall, and the school can use it as a mixing room for recording projects and such," says Myers. "I'm quite proud of the fact that we managed to slide it in under the hall without the two interfering with each other."

A chance to make changes

"Hancher was the best stage I ever worked on, because it was 172' wall-to-wall clear span," Dixon says of the original building. "They had no storage, but it was a great stage."

FEMA rules require that the new performing arts center have the same overall square footage as the original, so Hancher has exactly the same performance footprint as it



Strauss Hall is an adjustable-configuration space seating 100 to 200 patrons.

had before, but with a new configuration that allows for storage. “Now they have a cavity to put the orchestra shell in,” Dixon says. A custom-designed shell by Wenger Corporation helped make this storage solution possible. “The negotiation had to do with seating and access, and trying to explain to FEMA why we needed to have more restrooms than code required.”

Long-desired upgrades took place as well, including a move from an old Peter Albrecht Company double-purchase rigging system to a full fly tower and a new 120-line counterweight rigging system, provided by Texas Scenic. The system also includes six motorized line sets and five portable motor assist winches, which can be attached to any of the manual line sets to mechanize them.

A combination of ETC Source Four and Altman instruments provide a range of stationary lighting choices, while Philips Vari*Lite VL1100 and VL4000 moving lights complete the instrument inventory. Front-of-house positions feature Lycian 1293 followspots. ETC Eos and Ion consoles provide lighting control. (A Christie Roadie HD14K-M projector is also available.)

When the building celebrated its grand opening with a month of special events in September 2016, local media gave the experience high praise.

“The magic begins even before visitors walk through the doors,” wrote Diana Nollen at *The Gazette*, Cedar Rapids’ newspaper. “The superstructure’s elegant, curved lines reflect the beauty of Hancher’s surroundings and the sweeping curve of the Iowa River...The centerpiece, however, is the auditorium, with its curved balconies and curved lighting fixtures that seem to float in space.”

Swanson reports that the staff and the university could not be happier with the new Hancher. “We’re still learning about the building. It’s like a new toy,” he says. “We still have a ways to go in terms of knowing exactly what this building can do. But from the very beginning, everyone knew that love of Hancher and that real spirit. Everyone wanted to hold on to that. The team was at the top of their game, some of the finest in the country. For me, it was a real joy ride.”

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