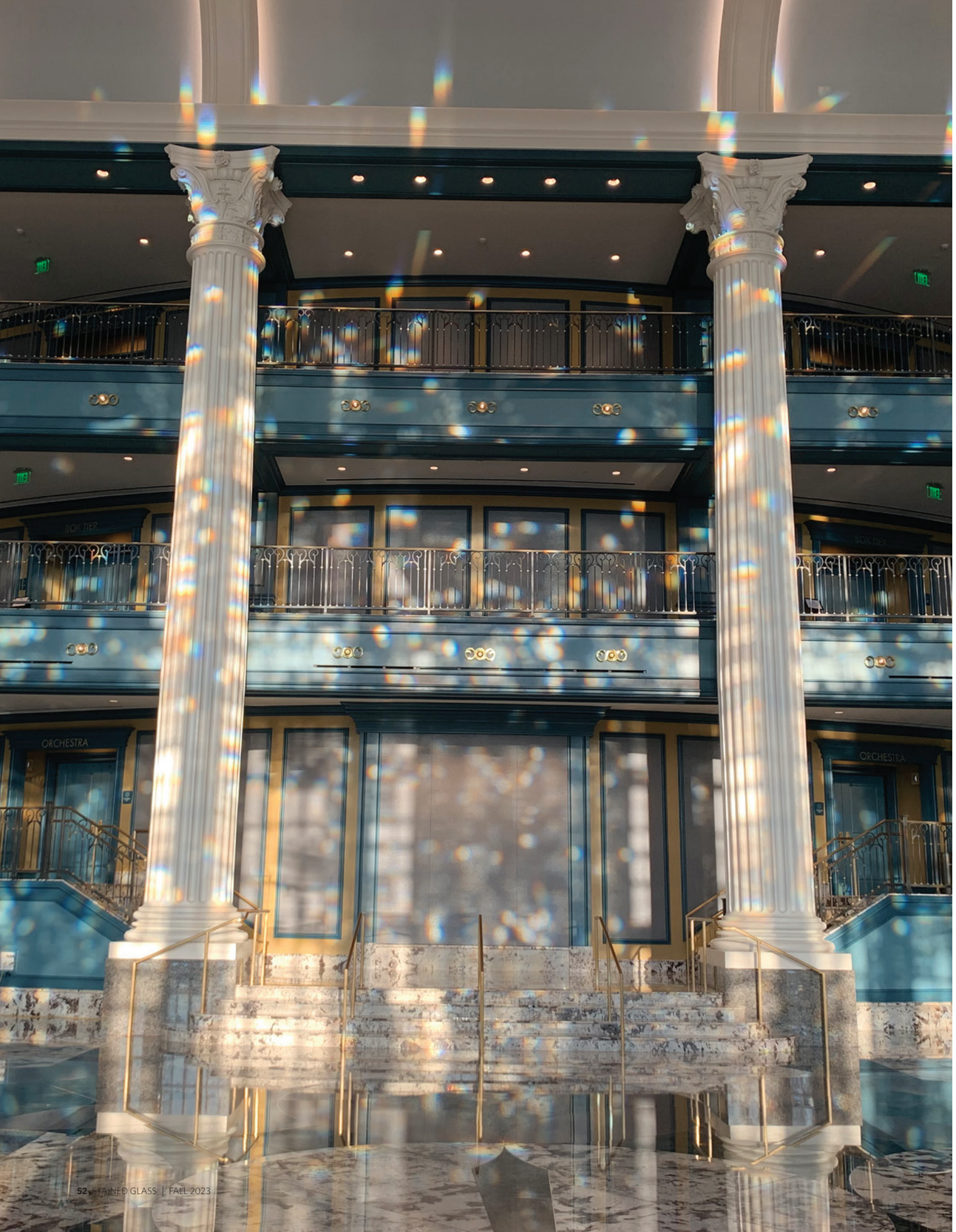


Through a Prism:

Designing, and Redesigning, the Fisher Center at Belmont University

By Liam Greenwell

Pictures fail to capture the scale of the new Fisher Center for Performing Arts at Belmont University, completed in 2021. Walking up from Belmont Boulevard, visitors file past neoclassical columns and gushing fountains, shrunk by building's mammoth size—the space's goal of becoming a top-class performance venue for all of Nashville clear in the ambition of the architecture.

Only once inside, though, does the focal point become clear: three elegant and imposing front windows, 45 feet tall, largely composed of prismatic glass.

Designed by Kenneth von Roenn at Kaiser/von Roenn Studio based in Tallahassee, these windows draw the eye no matter the time of day. Looking through them, the fountains out front are thrown into Cubist rearrangement, and the previously-intense midday sun of Nashville refracts and disperses around the grand foyer. As the windows face west, they serve an important role in ensuring that the foyer space remains comfortable through the afternoon and evening.

Indeed, it's in the evening when the real light show begins, just as hundreds of visitors stream through the open doors for one of the many concerts and shows on offer in the center. The evening sun throws dots of rainbow color onto the columns and Madagascar marble floor, making the room its canvas. In between distinct sections of the glass panels, the architectural datum—a white opalescent glass—turns from transparent and barely noticeable to the color of the sun, one more detail in the assemblage that changes radically over the course of a day.

Up close, the precision of the glass is clear, as each individual piece is cut to exacting specifications. On a recent visit, fingerprints dot some of the eye-level sections, as the design seems to encourage intimacy—the crystalline nature of the glass makes people want to touch. "People really enjoy the windows", Gage Baxter, Director of External Affairs at the Fisher Center, says. "It's such a unique feature."

The success of the project, though, was hard-won. The design went through several iterations, as von Roenn had to balance the desires of the client with the needs of the space. The manufacturing process also tested the limits of the studio. It culminates, however, in a grand design that serves as a capstone for von Roenn's long career—and, von Roenn hopes, suggests a path forward for glass art in a changed world.

This image shows the reverse view of the foyer, with the windows to the photographer's back and the main performance space directly forward. In the evening, the entire foyer is bathed in rainbow dots of light, thanks to the windows.

All photos for this article courtesy of Kaiser/von Roenn Studio

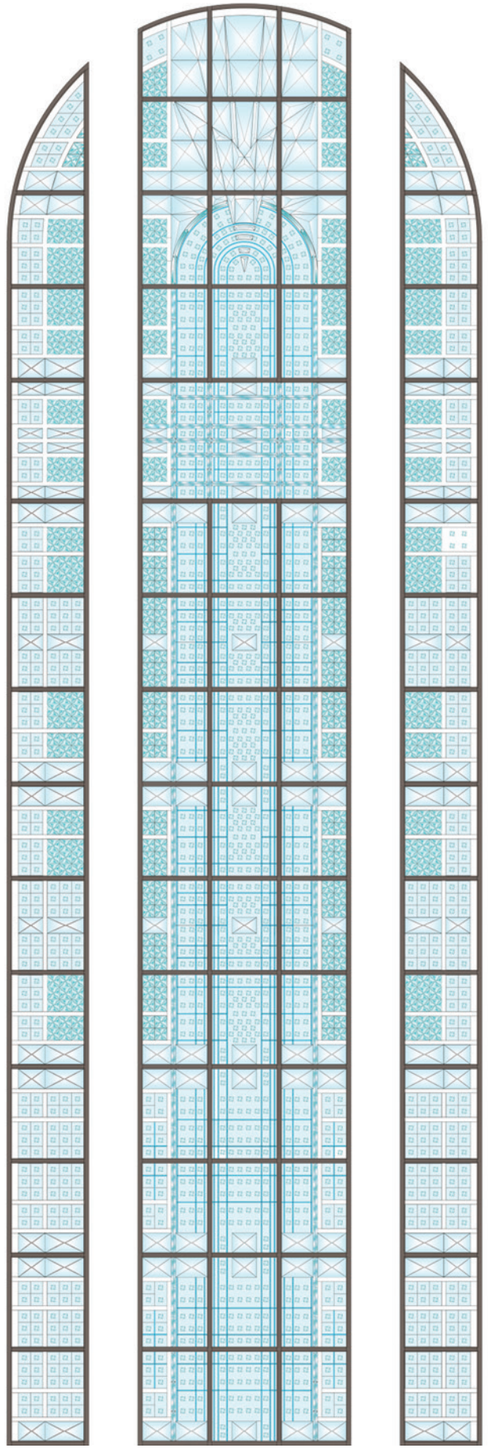
ARTISTIC CONVICTION

Kenn von Roenn doesn't want to make you mad, but his career has sometimes pitted him in opposition to glass art's mainstream. In 1975, as an up-and-coming glass artist, he was invited to give a keynote speech to the Stained Glass Association. "Essentially what I told them was that stained glass wasn't dead yet but it was dying," he says. "I said, you all are like rats on a sinking ship."

Not surprisingly, the tone didn't come off so well among an audience that had made stained glass their lives. "I don't think there was any applause at all," he recounts. But it didn't change what he believed—that glass needed to evolve from doing feature windows in churches to "thinking about the skin of buildings, the skin of skyscrapers." Only then would this antique art form be able to survive in a world where architecture was becoming more and more radical in its application of new materials. If glass artists couldn't find a way in the door, no one would remember to invite them in later.

This belief has motived von Roenn through his entire career, even if he's softened his tone since then. He has designed his own share of glass adorning buildings and skyscrapers (and some feature windows as well). This fall, he's been invited to give another keynote address to the Stained Glass Association, and though he's no longer the militant he once was, he hopes to illustrate the differences in his philosophy and offer some paths forward for the industry.

When he got the commission to work on the Fisher Center, he almost let his conviction about how glass should lead him into making a big mistake.



Clockwise from left:

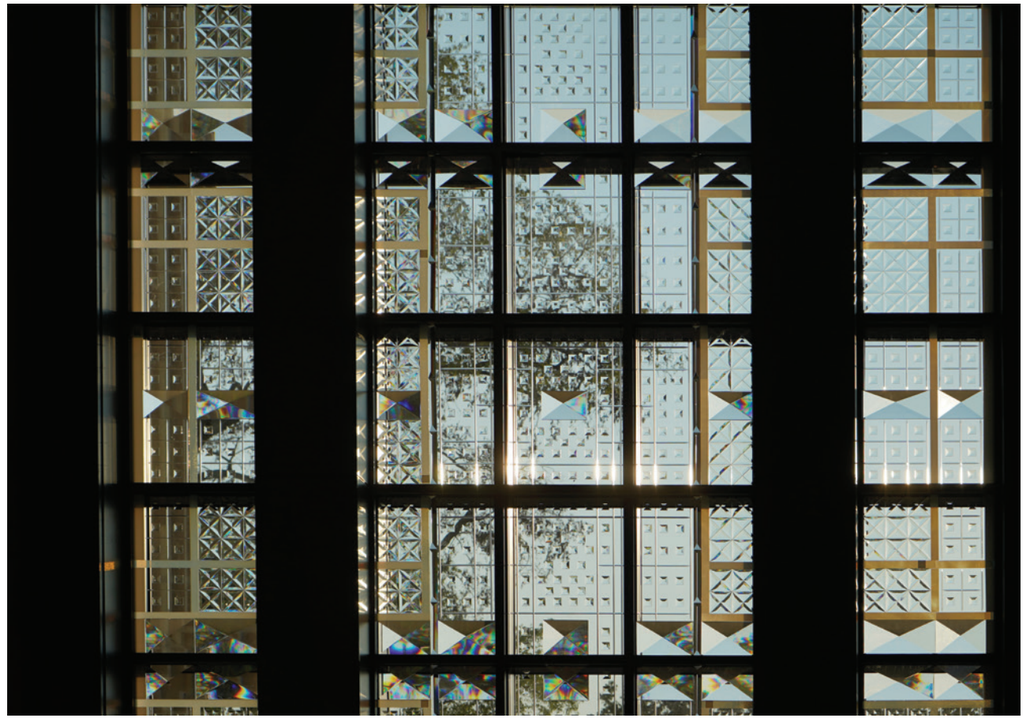
The original technical drawing for the Fisher Center windows. The final design includes three identical windows using over 3,000 glass prisms in total, plus significant opalescent and antique glass.

Von Roenn conveyed exacting specifications for the dimensions and angles of each prism to his collaborators in China. This is the design of the most complex rectangle of the whole design, seen in the crescendo of the window.

A member of the K/vR team assembles the square glass designs that make up much of the lower part of the window. Each individual square uses sixteen separate pieces of glass, laminated in an autoclave rather than with silicone like the rest of the design.

Two members of the K/vR team, Chilton von Roenn and Wes Burt, work on assembling the complex glass panels at 310 Tempering in Louisville, KY.

A member of the K/vR team assembles the square glass designs that make up much of the lower part of the window. Each individual square uses sixteen separate pieces of glass, laminated in an autoclave rather than with silicone like the rest of the design.



Dr. Fisher, the project's benefactor and a former Belmont president, wanted to work with von Roenn because of previous work on Belmont's chapel, and he had requested similar windows in the new building. Von Roenn knew that such an idea wouldn't work, however, because of both the scale of the new windows and the positioning that would leave the interior space far too hot in the afternoon as direct light streamed in.

So von Roenn ran ahead with his own plan. He had been interested in a quote from Goethe, who said that experiencing architecture was akin to experiencing music. Individual moments of appreciation, then, were "frozen music"—fluid, but arrested in a single moment—which was a concept he found fit perfectly with a performance space. He went so far as to create models of that design, which utilized a digitally-printed background to control the light. But when von Roenn presented the idea to the client, Dr. Fisher was disappointed. "You've missed it," von Roenn remembers hearing.

"It was an amateurish mistake," he explains. He had ignored the ideas of the client and tried to shoehorn in his own concept—something he had learned not to do more than forty years prior, at the beginning of his career. So von Roenn went back to the draughting table, attempting to address the client's needs while still making the light less direct than that in the chapel. One way to do that was to focus more on prismatic glass elements, a part of the Belmont Chapel project that Dr. Fisher had been comfortable with and which would still serve the purpose of reducing the strength of the light.

CRYSTAL VISION

This time, von Roenn emphasized finding a way to relate to the classical architecture without direct historical references—so that the glass would feel classical but also contemporary. Once he decided on prismatic forms, he knew the way to get there would be to make it feel as if it were "carved out of one big crystal."

He started by creating a model, working on a scale of ¾ inch to one foot. With such a large-scale project, this size gave him the leeway necessary to alter the glass elements until he found the right configuration. For each individual prism, he drew where he wanted the angles and peaks of each piece to go, with full knowledge of how those lines would create different light inside the space. Decades of intuition gave him the confidence to predict exactly how the light would move through such complex forms. In its final form, the peak of each prism is rarely at the shape's center—instead, its location plays with the location of the others around it.

The literal high point of the design is what von Roenn calls the "crescendo," and the idea is that it draws the visitor's eye towards the top. People may first come close to the glass at eye-level, where the design incorporates antique glass as well as some of the large prisms he designed. "Your vision kind of narrows down to wherever your peripheral vision is," von Roenn explains. "When you step back, your peripheral vision expands. So that when people look, they look beyond the chandeliers and they discover the top." There, each rectangular panel of glass is made of prismatic elements, all working together to create an eruption at the top of the window.

INTO THE DEPTHS

The prisms were manufactured by a longtime collaborator in China. Von Roenn sent extremely precise specifications for each piece, with exact thicknesses at every point on the prism. After making more than a thousand graphite molds, that company poured molten glass into each one from a 3,000 pound tank on rails above. The glass, poured at a temperature of over 2,200 degrees, then had to cool for around 36 hours in an annealing chamber so it wouldn't crack—especially important because there was such a great difference in thickness between the pieces.

After being removed from the chamber, the glass went through a long polishing process. Each of more than 3,000 individual pieces had to be ground by hand with three separate grit sizes to ensure a perfectly clear crystal—and generate the illusion that each of the pieces were actually all one.

With the pieces finished, and accurate to a precision of 0.5 mm, the K/vR team received them in Louisville, KY. There, they worked at the facilities of 310 Tempering to assemble the prisms into the 71 separate rectangles that make up each of the three windows.

Top: This image shows the middle area of the window, which incorporates large prismatic elements (some 1.5 inches thick) as well as antique glass. White opalescent glass, here visible as tan-colored lines between some of the squares, regularly change color over the course of the day.

Bottom: The foyer of the Fisher Center for the Performing Arts at Belmont University is the primary space of the building, where visitors congregate before and after shows. The three large windows, each 45 feet high, are designed by Kenn von Roenn at K/vR Studio.

All photos for this article courtesy of Kaiser/von Roenn Studio

The highest parts of the windows are the "crescendo" of the space, incorporating almost exclusively prismatic glass in a complex arrangement that throws refracted light through the main foyer. Each prism was individually designed, molded, and polished, then laminated to a quarter-inch-thick pane of tempered glass. The top-middle rectangle, the most complex, includes twenty separate prisms.

The glass creates rainbow "leopard spots" that paint the interior of the space, including the white columns, for a nightly light show. The glass also diffuses the strength of the Nashville sun.

The large prisms are bonded to a base sheet of tempered, engraved, low iron, quarter-inch glass with liquid silicone from Bohle, a process of which von Roenn was an evangelist long before many of the silicone companies even realized or admitted their product worked with glass. But despite his expertise, the process wasn't simple.

"To laminate with silicone, people think it's really easy: you just mix your stuff up and you pour it, you throw this stuff down on top of it, come back tomorrow and you clean it up," von Roenn says. But it's not. He wanted it to look like a "blazing crystal inside that building," which meant that any mistake that made the lamination obvious would destroy the intended effect. On the lower part of the window, the team also built squares made of sixteen small pieces of glass, which they laminated in an autoclave with laminating film instead of the Bohle adhesive. All in all, the project required a great deal of precision, flexibility, and creativity to pull off in a way that von Roenn was happy with. In addition, von Roenn got quadruple bypass surgery in the middle of production, meaning that he had to oversee this important work from afar.

When it came time to deliver, the team got one final surprise. The architects needed the glass two full months early—in mid-April 2021 rather than the expected date in June—because of the necessities surrounding the marble floor installation. K/vR made the new deadline, barely—but in the end, despite all the issues, von Roenn says it was worthwhile.

"I know this project, and when I saw this for the first time, I stopped breathing," von Roenn says. "Not [from] the glass, but just [from] the experience from the light in that space."

Von Roenn is a true believer in the power of artistic work to adjust our perception, for good or evil (he says The Medium is the Massage, Marshall McLuhan's seminal work about the power of media to worm its way into our minds, is one of the most the most important books he's ever read). So when he stands up for a view of glass art, it's with the conviction of someone who believes in the importance of the work to have profound implications on who we are.

The windows at the Fisher Center, in its somewhat tumultuous development and pristine execution, is a fitting summation of von Roenn's career—a project that melds with architecture, puts the play of light front and center, and stands as a testament to the power of contemporary glass to push beyond its historic bounds.

Liam Greenwell is a writer and educator originally from Cambridge, Massachusetts. He has lived in Mexico City, Chicago, and has done research in India. As a writer, his interests include art, political activism, travel, and technology. You can read more of his work or drop him a line at liamgreenwell.com. ■