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architectural | lighting

CHIHULY BRIDGE OF GLASS
AND THREE OTHER PROJECTS
EXPLORE THE UNION OF
LIGHT & MATERIALS

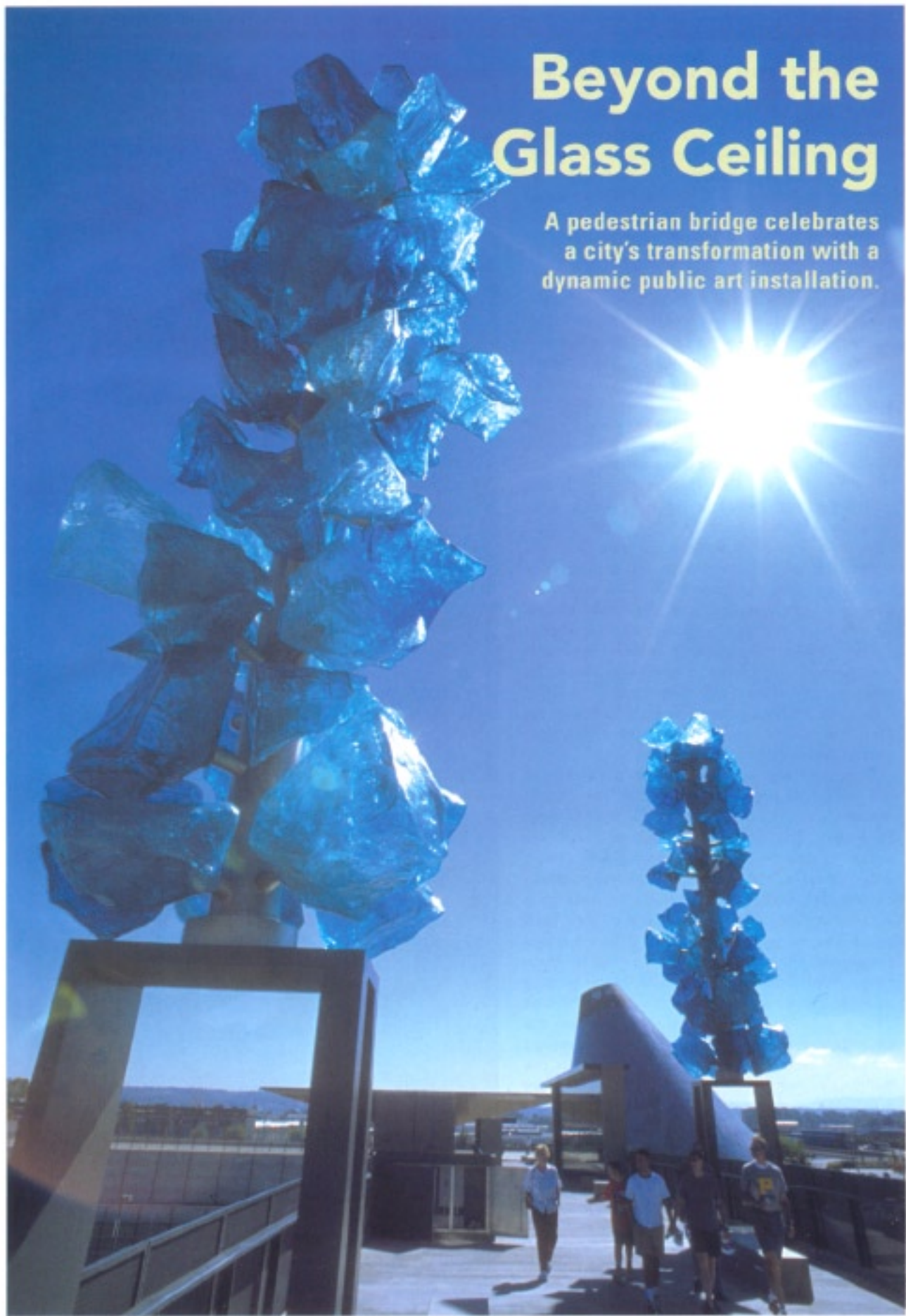
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Beyond the Glass Ceiling

A pedestrian bridge celebrates a city's transformation with a dynamic public art installation.





The Crystal Towers (facing page and top left) provide Tacoma with a new landmark. The bridge columns extend 6 to 17 feet above the deck to become the support casings for the pavilions. The display cases are fabricated from blackened stainless steel with a sat-in reflective finish. The Seaform Pavilion (above) allows visitors an intimate experience with the artwork. Visitors are not allowed to “see” the glass until they enter the pavilion, where they are met with an explosion of color and form. In the Venetian Wall (left), selections from Chihuly’s Venetians, Ikebana and Putti series are illuminated with natural light and a fiber optic system.

AMIDST THE BACKDROP OF A UNIQUE SET OF SITE CONDITIONS—an interstate highway, railroad tracks and a waterfront—sits a testament to the process of collaboration, and a native son’s commitment to his hometown of Tacoma, Washington. The result of a unique public/private initiative, the Chihuly Bridge of Glass was commissioned by the neighboring Museum of Glass and presented to the city in 2002. It links Tacoma’s four major cultural institutions: the Washington State History Museum, Union Station, the Glass Museum and the Tacoma Art Museum—all part of the city’s initiative toward renewal that began in the 1980s. The 500-foot-long, 20-foot-wide pedestrian structure is home to three unique Dale Chihuly installations and the largest public display of his work: the Seaform Pavilion, the Crystal Towers and the Venetian Wall.

The bridge was originally conceived by Chihuly, and designed in collaboration with Arthur Andersson of Austin-based Andersson-Wise Architects, designer of the adjacent Washington State History Museum. An early concept involved a triangular tube of colored glass—a virtual kaleidoscope; but it was not structurally feasible. As they continued to investigate forms, Andersson suggested to Chihuly the idea of pavilions that would each house a “different experience with glass.” Chihuly liked the idea, and the bridge became a set of controlled objects—the pavilion-like display cases—in which the glass is just allowed to “be.” The result is an interesting juxtaposition between the fluid glass forms and the square

display cases. As Chihuly became intrigued with the possibility of large-scale installations on the bridge, the original concept of five small structures was reduced to three in the final scheme. But the idea that the pavilions would provide varying degrees of enclosure, sheltering visitors from the noisy freeway below, always remained intact.

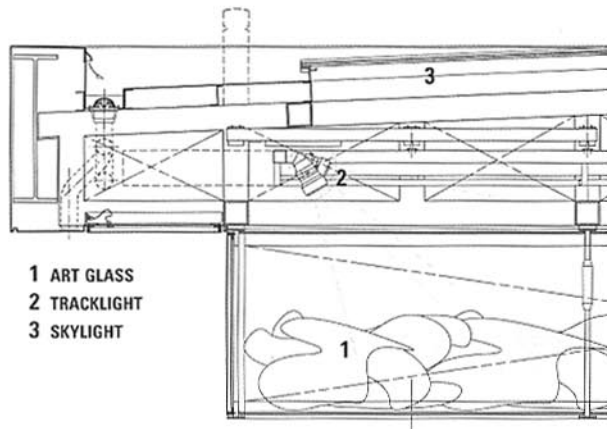
INTUITIVE PROCESS

The San Francisco offices of Horton Lees Brogden Lighting Design (HLB), under the direction of project principal Angela McDonald, served as the lighting consultant to Andersson-Wise Architects. HLB’s goal was to navigate the technical requirements for the pavilions and create a museum-like experience, while incorporating the Chihuly Studio’s approach to light; the lighting also had to foster a safe pedestrian space.

The pavilions’ lighting schemes were driven by the Chihuly Studio’s experience with glass and its response to different lighting conditions. A lighting solution is incorporated and discussed from the beginning of every Chihuly project; it is part of his process, and this awareness stems from the extreme reflectivity of the materials he works with—glass, ice, water and plastic. It is an intuitive process, he says, based on site and conditions, light, reflection and optimum visual opportunity. Full-scale mock-ups are constructed in Chihuly’s studio prior to actual installation. The Crystal Towers, for example, required three mock-ups before final construction.

PEDESTRIAN JOURNEY

From either end of the bridge, visitors are met by a seductive threshold, the glass itself. The challenge for the Seaform Pavilion, located at the east end of the bridge, was to create a secure environment for the 2,364 pieces from Chihuly's *Seaform* and *Persian* series, while controlling the amount of daylight backlighting the art. The art glass is placed on top of a 50-foot-by-20-foot plate glass ceiling. Above the art, rows of dimmable fluorescent lamps and halogen accent tracklights provide additional light on cloudy days and illuminate the pavilion at night. An upper skylight built of translucent gray glass protects the equipment and art from the elements. The tinted glass



SEAFORM PAVILION SECTION DETAIL

2'

sidewalls of the pavilion allow visitors to immerse themselves in the space without visual distraction.

The midpoint of the bridge is marked by two towers made of 63 polyvitro crystals, a polyurethane material suited to outdoor applications, first used by Chihuly in his *Light of Jerusalem* installation in 2000. The towers rise 40 feet above the bridge deck and are uplighted with six 1000W metal halide floodlights.

The 65-foot-long, 15-foot-tall Venetian Wall houses 109 glass pieces, some of the largest blown-glass objects ever created. The bulletproof display case uses a super clear, low-iron glass with a polyvinyl butyryl layer in between. The challenge was to balance the display, and ensure that the art would be at home in both natural light, and with the specially designed fiber optic system. In order to prevent condensation and minimize dust collection, clean, dry air is continually circulated through the cases.

Chihuly's work is an exploration of color and form, of the spatial interaction between color and light, and of the transition between object and architecture. Andersson-Wise's challenge was to create a backdrop worthy of the art in these pavilions. HLB's task was to use the artist's glass as "light fixtures" in a way that conveyed his ideas about the media. The pavilions offer an intimate environment in which visitors can interact with the glass, against the charged atmosphere of nearby buildings, cars and trains below, and the waterfront beyond. Tacoma is left richer with an inviting public space and a native son's generosity. **ELIZABETH DONOFF**

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In the Seaform Pavilion construction detail (top), the art glass is suspended mid-air on a plate glass ceiling, and illuminated from above. The lighting designers created a staggered path of light that gives distinct spatial definition to the different areas on the bridge. Embedded lights in the poured concrete benches illuminate the pathway without populating the bridge with additional fixtures (bottom).

DETAILS

PROJECT Chihuly Bridge of Glass, Tacoma, Washington

OWNER City of Tacoma, Washington, and Museum of Glass

ARTIST Dale Chihuly, Seattle

ARCHITECT Andersson-Wise Architects, Austin, Texas

LIGHTING DESIGNER Horton Lees Brogden Lighting Design, San Francisco, and Pacific Lightworks, Portland, Oregon

PHOTOGRAPHERS Scott M. Leen, except as noted

COST \$10.7 million (bridge); \$1.5 million (pavilions); \$12 million (art)

MANUFACTURERS

Bega
Edison Price
Lutron
Special-T
Bega

APPLICATION

Crystal Tower floodlights
Seaform Pavilion tracklight
Seaform Pavilion dimmers
Venetian Wall fiber optic system
concrete bench uplights

**Q + A with artist
Dale Chihuly**



A|L: How do you approach working with materials that have reflective qualities?

DC: As you say, all of the materials I like to work with—water, plastic, glass and ice—have the qualities of light, transparency and reflection. In fact, I keep looking for other materials that have the same qualities and have yet to find any. In a sense, I approach them the same, because I am asking them to respond to my use of their qualities. I suppose the real difference is in the outcome of the project—because each of the materials has different limits of what I can ask of it.

A|L: How is light considered in the creation of a piece?

DC: How the materials respond to light is one of the key reasons why I use these materials. It is a major factor, in conjunction with suitability for the project.

A|L: What are the studio's criteria for illuminating glass? Are there overall principles found in every installation, or does it vary from project to project?

DC: Each installation is lighted to meet my standards and the needs or qualities of the site. But as a rule, I have my team use narrow beam spots. But I have used many different fixtures as needed. One rule I keep is that unless I am working with ice, I do not use colored lights.

A|L: How do the use of daylight and electric light sources contribute to the display and transformation of the work?

DC: First, I do not have daylight in my museum or gallery installations if possible. I like the concept of the black box. But I do understand that people do not just live in black boxes. We put the lighting on dimmers so that during the day when there is light in the space the fixtures can be lowered, and when it is dark we increase the lighting.

A|L: Could you elaborate on the term "optimum visual opportunity"? What does this mean for the work and creating environments?

DC: Artists want their work shown in the best possible environment. For me, that means that a great deal of effort must go into the lighting to make the work come alive.

A|L: What was your artistic vision/concept for the bridge?

DC: First, I liked the challenge of doing something architecturally that I had never tried before. Next, I wanted to create something in an open public space. I wanted to address the issue of sustaining a person's interest along a 500-foot-long pedestrian bridge—what would keep them moving forward and what would have them come back, and at the same time create something useful. I saw it as a journey.

A|L: What was the working process between the Chihuly Studio and Andersson-Wise Architects?

DC: Arthur Andersson and I worked together on various projects before the bridge. I welcomed the partnership, as I have always respected his opinions. Because of the challenge I wanted someone I was comfortable working with on the creative and problem-solving end of the project.

A|L: How was the type of work selected to be part of the bridge pavilions?

DC: I wanted to work with two installations, which had always been the favorites in my various museum exhibitions. The two I chose were the *Venetians* and the *Seaform Ceiling*. Then in the middle of the bridge I wanted to expand on the sculptural concept working with plastics that I had developed for my exhibition in Jerusalem.

A|L: How did you want the experience of this place and people's interaction with your work to change from near and from afar and during the bridge's transformation from its day to night identity?

DC: I guess the main answer for this question is that I wanted the bridge to have the same type of impact on the viewer, whether it was near or far, light or dark. That is one of the real successes of the bridge, that constant sense of "wow."

A|L: Did any of your existing ideas about glass and light change with the creation of this bridge project?

DC: I cannot say that any of my ideas about the materials or light changed with this project, but I did have another chance to control the environment, even when the works are outside.