Innovative Design and Excellence in Architecture with Steel

National Winner

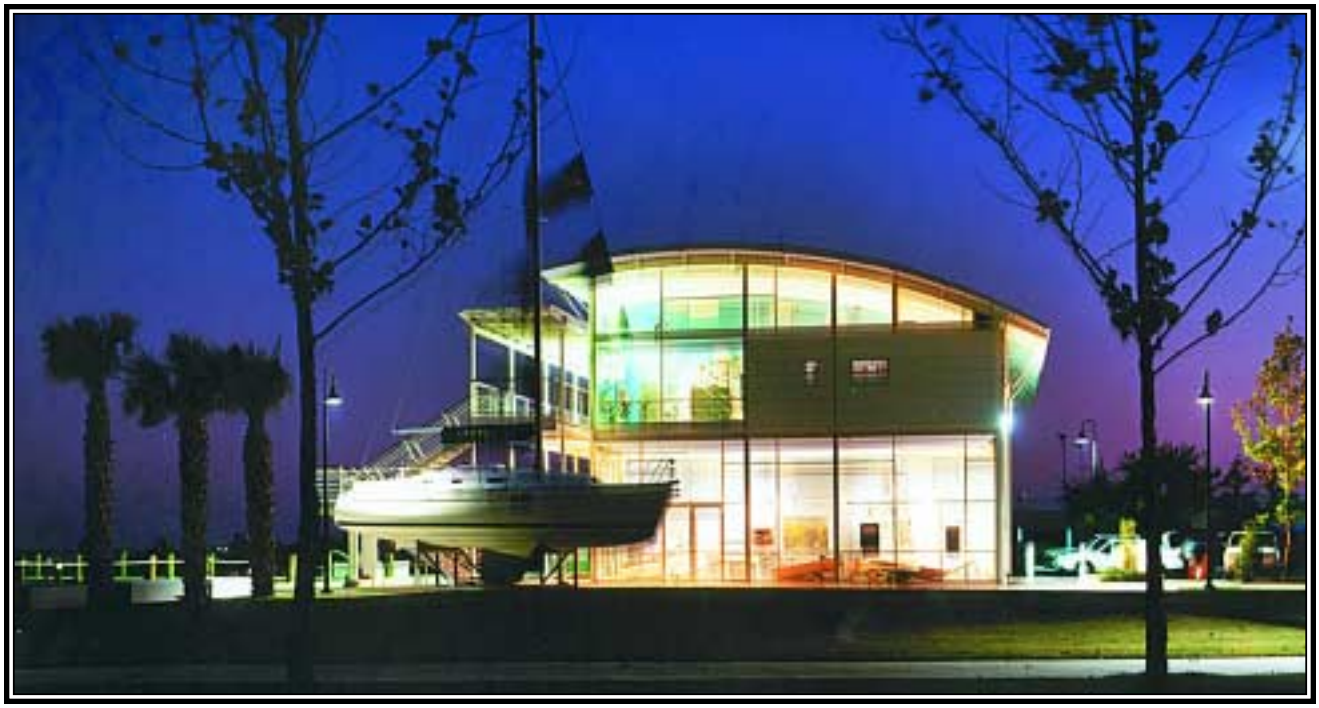
Charleston Maritime Center

The Charleston Maritime Center in is located on five acres of harborfront land in Charleston, SC. The 7,400-sq. ft. two-story center serves both the local fishing industry and the County Parks and Recreation Department. The construction cost of the building was approximately $1.3 million.

The building's position on the site allows for both public use of the open recreational space and the waterfront, and private use by the fishing industry. The lawn to the north of the building is intended for occasional public events such as the 1998-99 Global BT Challenge Yacht Race—an around the world amateur sailboat

race—and for the landside activities of sport fishing tournaments. It also provides public access to the waterfront.

The building is positioned broadside to the waterfront. The ground floor is devoted to fishing related uses and the main space is a large workroom for fish sorting and packing. Overhead, industrial doors open the entire space to allow full access to fishermen from the waterside and to refrigerated trucks from the landside. A retail space for selling fish is located at the north end of the building. The second floor has a large multipurpose community room with a kitchen, gift shop and offices for management of the marina.



The structure is constructed from both steel and glass. The structural frame is made of steel shapes and bar joists. The building is clad in factory finished metal panels and the roof is standing seam metal. In addition, the balcony, canopy and stairs are all made of steel components.

The basic design intention was to create a contemporary building while at the same time respecting the rich architectural heritage of Charleston's lower peninsula. The use of a steel frame and metal cladding was inspired by the project's location in an old industrial waterfront area where there are many steel framed warehouses with corrugated metal siding. The site also borders older neighborhoods of residential and small-scale commercial buildings. Accordingly, a second inspiration for the building's design was the traditional West Indian and Barbadian "single house" design, which appeared in Charleston as early as the 1730s and can still be seen in the neighborhoods. Like the typical "single house", the center is a narrow, one-room wide building with windows on both sides, high ceilings and a broad covered porch—all features that promote natural ventilation. The center also has a piazza, a covered porch, which provides a view of the water.

Project Team

Project: Charleston Maritime Center

Architect: Sasaki Associates, Watertown, MA

Owner: City of Charleston

Structural Engineer: Shoolbred Engineers, Charleston, SC

Steel Fabricator: Campbell Steel Company, Cayce, SC

General Contractor: Republic Contracting Co., Charleston, SC

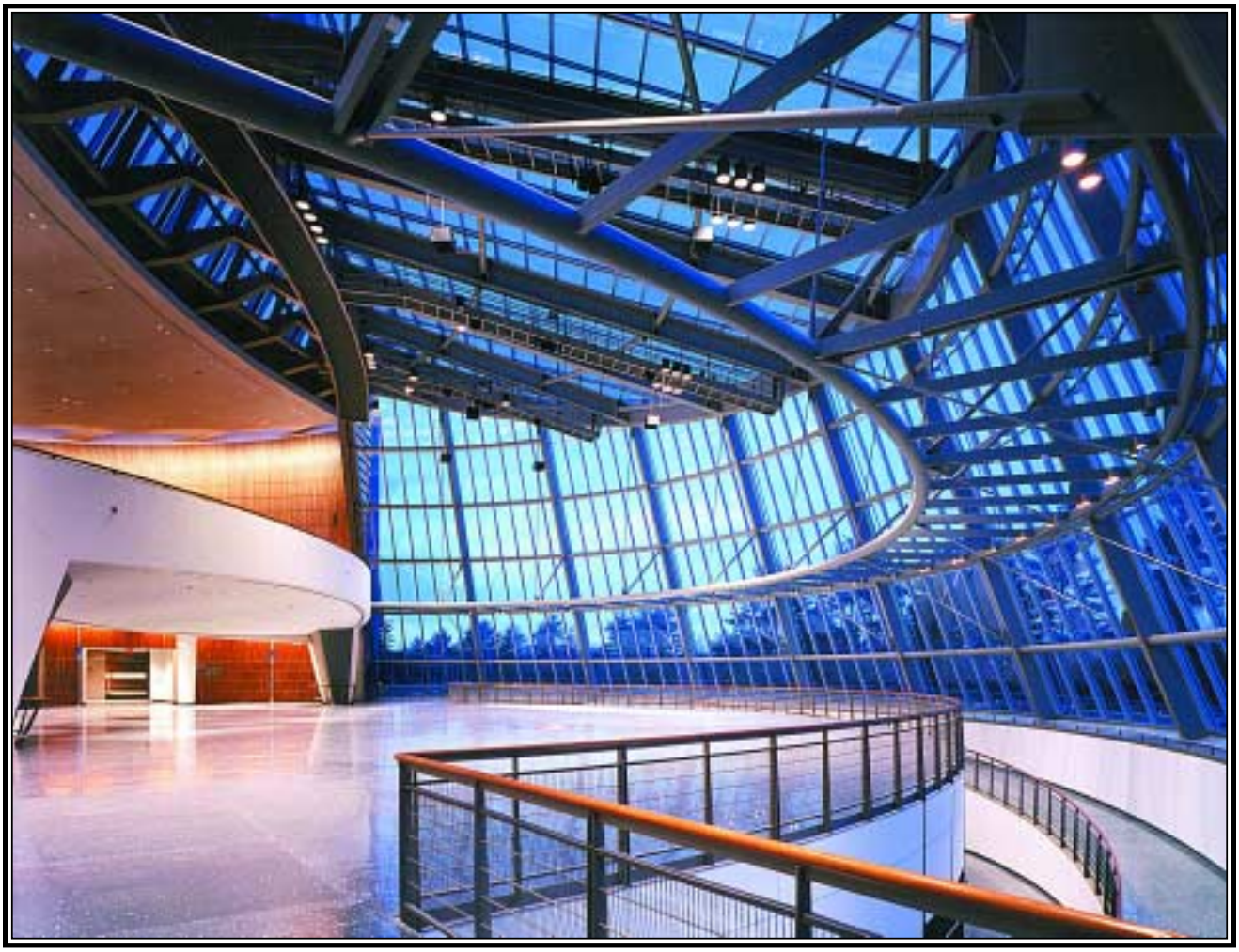
Innovative Design and Excellence in Architecture with Steel

National Winner

Mashantucket Pequot Museum and Research Center

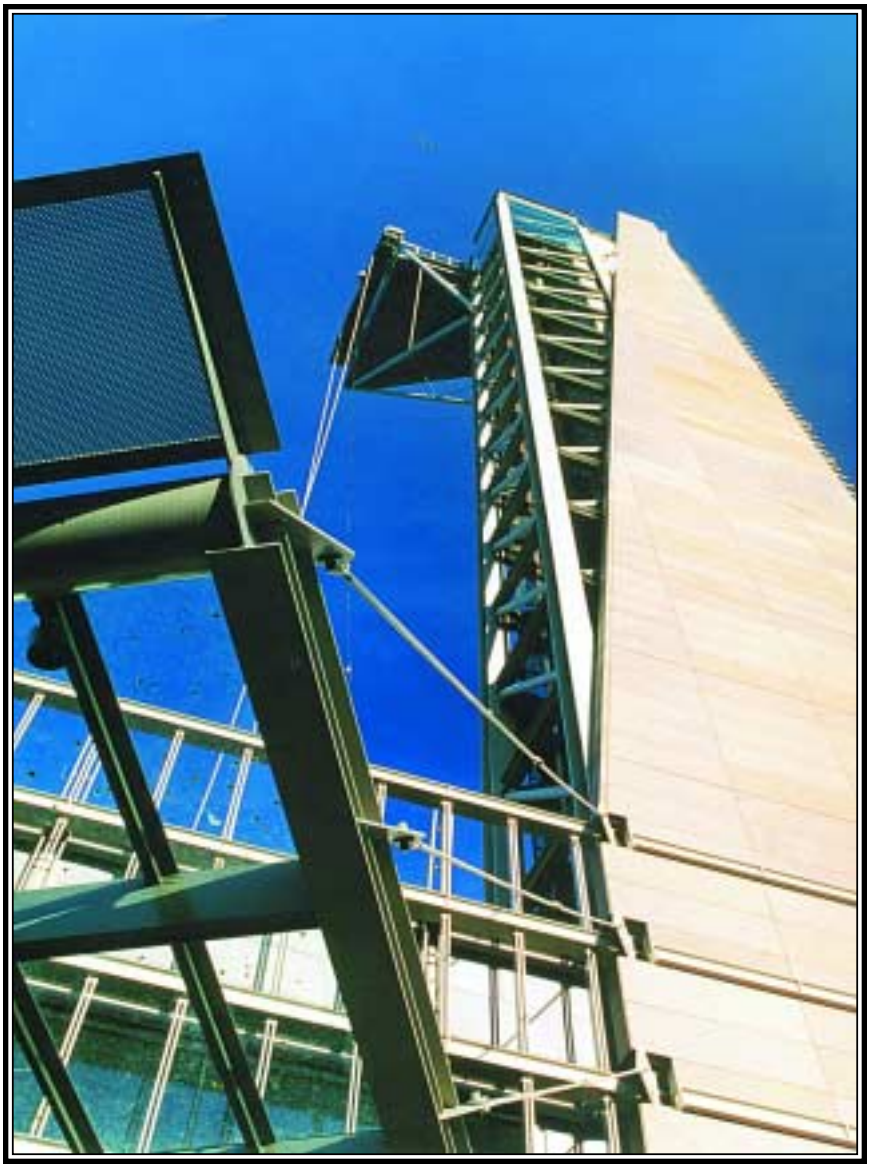
The Mashantucket Pequot Museum and Research Center, located in Mashantucket, CT, is a tribally owned and operated complex that showcases the story of the Mashantucket Pequot Tribal Nation, their history, the histories and cultures of other tribes, and the region's natural history.

The Museum consists of permanent exhibits, the gallery for temporary exhibits, a 320-seat auditorium, a



restaurant, classrooms, a museum shop and administrative offices. The Research Center houses a library, a children's library, reading rooms, stacks, a research department, storage facilities and conservation laboratories.

The $100 million complex, whose striking silhouette results from the individual formal articulation of its three principal program elements—Gathering Space, Museum and Research Center—provides a visual, spatial and textural link to the cultural heritage of the Mashantucket Pequot Tribe. The circular Gathering Space, which is the formal and symbolic center of the institution, unifies the Research Center with the



Juror's Comments:

The museum and research center was a clear winner. The elegant use of steel to create a series of dramatic spaces was truly inspirational. Nested in a wooded site, it is a contextual landmark. Clean, simple detailing with slender structural components are some of the building's greatest attributes. The museum and research center is completely successful.

Museum and provides a view of the forest. It is the dramatic arrival point for the complex, accommodates formal celebrations, and is the point from which visitors access all areas. Its radial structural system and orientation on the site, with respect to the cardinal points, establish the overall order and geometry for the project.

The intersection of a half cone and half cylinder offset in plan, which recalls the tribe's historic fort, is the generating geometry for the Gathering Space. Leaning pipe columns

Project Team

Project: Mashantucket Pequot Museum and Research Center

Architect: Polshek Partnership, New York, NY

Owner: The Mashantucket Pequot Museum and Research Center

Structural Engineer: Ove Arup & Partners, New York, NY

General Contractor: Cives Steel Company, Gouverneur, NY

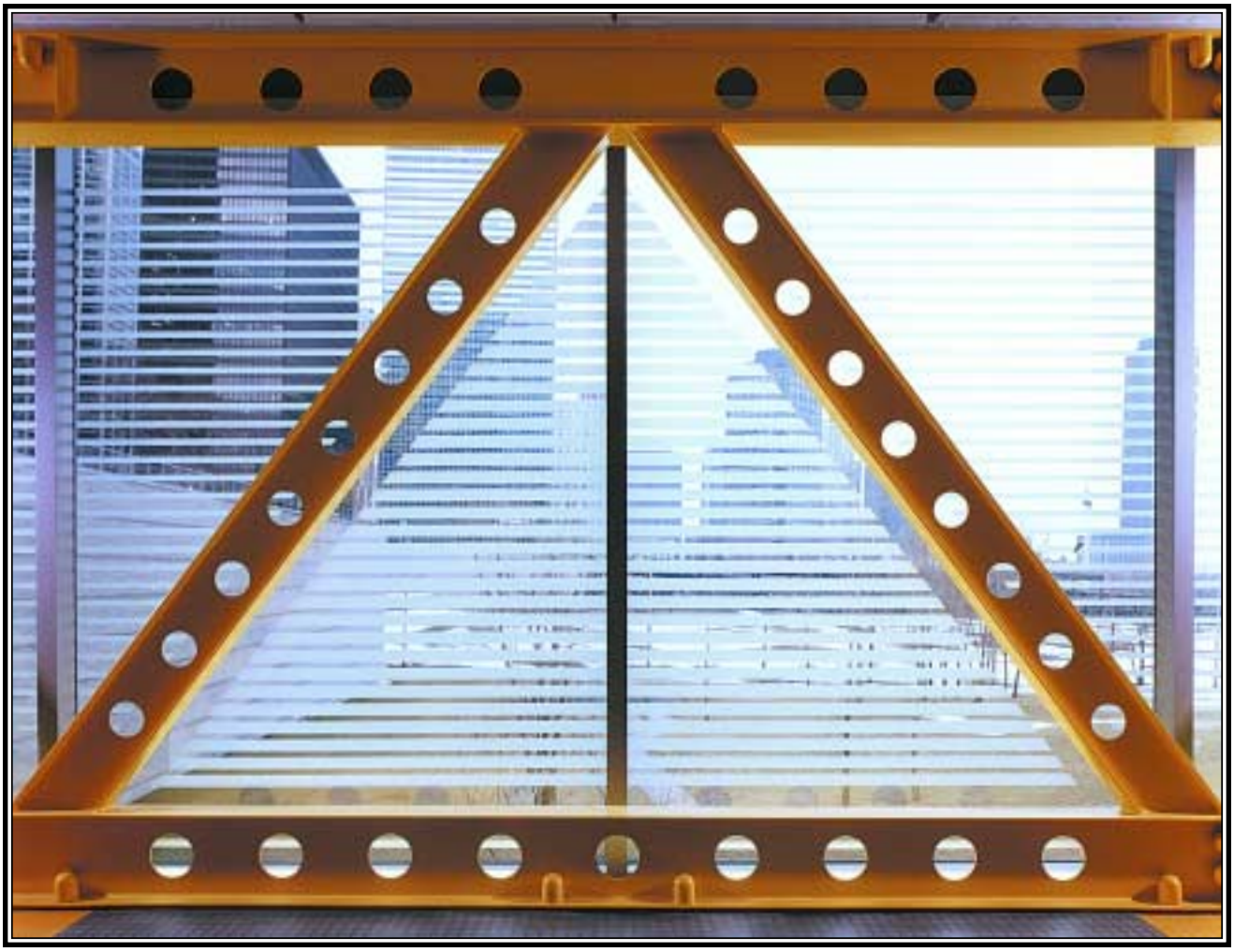
arranged in a radial pattern around the semicircular base provide immediate support of the glass wall. Lateral support of these columns is provided by a horizontal arched vierendeel pipe truss, which transmits the thrust loads of the wall into the floor diaphragm of the elevated dining area. Roof support is provided by sloping 36" I-beams that are radially arranged and span from the top of the wall columns to the main roof truss. The main truss spans 180' and functions as a three-dimensional tied arch, built of a combination of I-beams and pipe sections. The roof beams are both supported by the arch and provide its stability.

Innovative Design and
Excellence in Architecture with Steel

Honorable Mention

Chicago Pedway

(300 East Randolph Street Pedway Connection to Monroe Street Garage)



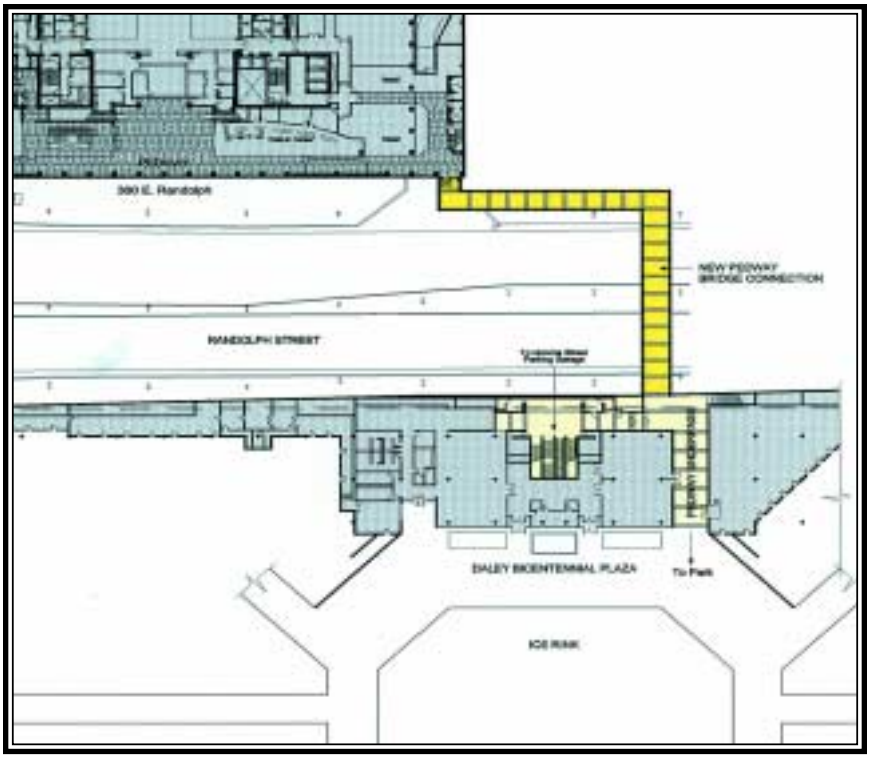
Situated on the northern edge of Chicago's Grant Park, the 275'-long pedway section was completed to connect 300 East Randolph building with a public parking structure. As an important part of the city's pedway system master plan, linking the 2,000-car underground parking structure in Grant Park was a logical step in the completion of the system.

The steel and glass structure is suspended between the upper and intermediate levels of a three-level roadway system connecting Lake Shore Drive and Michigan Avenue. The design challenge was to construct the bridge without disruption to traffic on a limited budget of $3.5 million, as

Juror's Comments:

This yellow brick road is a guiding light in an otherwise dark, urban underground. The pedway connection is a relief for both the pedestrian and driver in a very foreboding area. It is simple and unpretentious.

Simple, elegant and direct expression of the structural steel provides an exciting relief to a rather dark and dreary surrounding environment.



well as avoiding past mistakes of creating dark, orientation-less tunnels.

The means of construction were very economical in concept and erectability but additional care was given to details such as prefabricated exposed triangular castellated steel beams and web members and precast concrete coffered floor and roof planks. Four-sided silicone glazed fritted patterned glass panels elevates these components to the point of elegance that they become ornamental. The selection of materials—steel, glass and concrete—and their composition provides a structural truss-like expression that appears to fly across the roadway and its light-filled interior is inviting, memorable, exciting, but economical and practical in terms of construction and utility..

Project Team

Project: Chicago Pedway

Architect: Lohan Associates, Chicago

Owner: City of Chicago

Structural Engineer: Alfred Benesch & Company, Chicago

General Contractor: Walsh Construction Company of Illinois, Chicago

Innovative Design and
Excellence in Architecture with Steel

Honorable Mention

Jacobson Athletic Office and Training Facility

The Jacobson Athletic Office and Training Facility at Iowa State University in Ames, IA, is located amongst the university's athletic complex at the football stadium. A steel frame supports the graceful curved balconies of the existing stadium. They cantilever above earth berms that form an oval configuration with open ends. The project is located at the open end to the north and consists of a three-phase addition and remodeling to the existing athletic office and training facility.

The first phase added new athletic offices toward the field to the south. Its lightweight steel structure with dramatic cantilevers is exposed and recalls the nature and image of the stadium framing system. The choice

Juror's Comments:

Strong and clear message created through the careful and confident use of steel. The whole is equal to more than the sum of its parts.

Clean, crisp and light—it couldn't be anything but steel! The clarity of the overall form is sustained by careful detailing and thoughtful interplay of materials.

of structure helped the completion occur before the critical kick-off of the football season. Phase II remodeled the locker rooms and athletic training areas within the existing main building that had bearing walls every 28'. Phase III gutted the old athletic offices in the northern portion of the building and exposed the original steel frame and bar joists. This created a large open area for weight training. The steel frame was extended to the north to support a curved glass block wall that was crowned with a skylight. This replaced the deeply shadowed north wall with a dynamic backlighted facade and created a new street presence for the entire complex.

A grand common lobby forms the connection between the new 2 ½-story athletic administration facility and the existing single-story building. The converging office bars of the addition form a keystone insertion into the oval configuration of the stadium. A folded metal roof and deck hovers over the simple solid base of the office bars. The surrounding clerestory windows accentuate the floating roof and introduce daylight into the open offices below. A skylight spine at the roof also allows daylight to flood the central light court and helps blur the distinction of the enclosed public spaces from that of the open-air stadium. The light court space connects the office bars and is intended to help facilitate an

Project Team

Project: Jacobson Athletic Office and Training Facility, Iowa State University (Ames)

Architect: Herbert Lewis Kruse Blunck Architecture, Des Moines, IA

Owner: Iowa State University

Structural Engineer: Charles Saul Engineering, Des Moines, IA

General Contractor: Taylor Ball, Des Moines, IA

interactive work environment that projects a sense of "teamwork" and encourages "shared success".

The skylight rests on custom steel trusses that elevate in section as the tapered plan increases the span. The auditorium occurs within this vaulted space. The resultant gambrel is sympathetic with the surrounding agrarian countryside. The auditorium's elevated location allows the hall-of-fame, light court, and exterior balconies to function as free flowing public spaces at the main level. These spaces are easily accessible from the grand lobby and can be set up to house special banquets and celebrations including game-day functions, which can share in the excitement of the crowd-filled stadium. The "hangar door" at the auditorium stage cab opens to the light court allowing the spaces to work together for special activities, or the door can be dramatically raised to unveil the field beyond and create a sense of theater for important recruiting and marketing presentations.

At the new street facade, the curved plan extension naturally translates into the crowned elevation of the skylight. The small addition adds valuable daylight to the weight training area. The patterned glass block wall and colored glass sculpture suspended within the skylight form a glowing backdrop for the stadium entry plaza. The plaza feeds into tree-lined promenades that edge the complex and provide processional access to the stadium complex from the surrounding parking areas.

Innovative Design and
Excellence in Architecture with Steel

Honorable Mention

North Carolina Museum of Art Outdoor Cinema and Amphitheater

When designing the plan for expanding the North Carolina Museum, in Raleigh, NC, the architect's idea was to successfully mesh the collection of 20th century art and the surrounding landscape into the 167-acre site.

The project entails the possibility of a solution beyond simple site work, earth moving, and the traditions of landscape. Equal emphasis is placed on the development of both theory and program. This approach to the museum entailed: the design of grove parking areas; active cultural areas, such as an outdoor sculpture court; artist's cabins; a greenhouse containing classrooms and workshops; an amphitheater and outdoor cinema; recreational facilities such as group picnicking areas; and a reading garden. Also involved was the preserva-

Juror's Comments:

This project is playful and whimsical; however, the attention to detail regarding the use of structural steel is of the highest order.

These unencumbered structures are terrific fun! This is an honest expression of steel structure that also defines space and creates exciting forms with truly minimal means. Beautifully detailed!

Project Team

Project: North Carolina Museum of Art Outdoor Cinema and Amphitheater

Architect: Smith-Miller + Hawkinson Architects, New York, NY

Owner: North Carolina Museum of Art, Raleigh, NC

Structural Engineer: Ove Arup and Partners, New York, NY

General Contractor: Clancy and Theys, Construction, Raleigh, NC

tion of existing vegetation and new plantings.

The first phase of the plan was the three-acre site Amphitheater and Outdoor Cinema, which is located adjacent to the existing museum. The new site would increase the museum's capacity for outdoor programming, and better incorporate the natural landscape. The roof of the amphitheater not only protects visitors from the elements, but its sculptural form provides an identity and focus for the amphitheater. The big screen attached to the west side of the museum is composed of aluminum and steel, and is 30' by 60'. It is angled for viewing from the sloped landscape in the foreground. The outdoor cinema accommodates 1,200 people with an overflow area of an additional 1200 visitors in adjacent areas.

Innovative Design and Excellence in Architecture with Steel

Honorable Mention

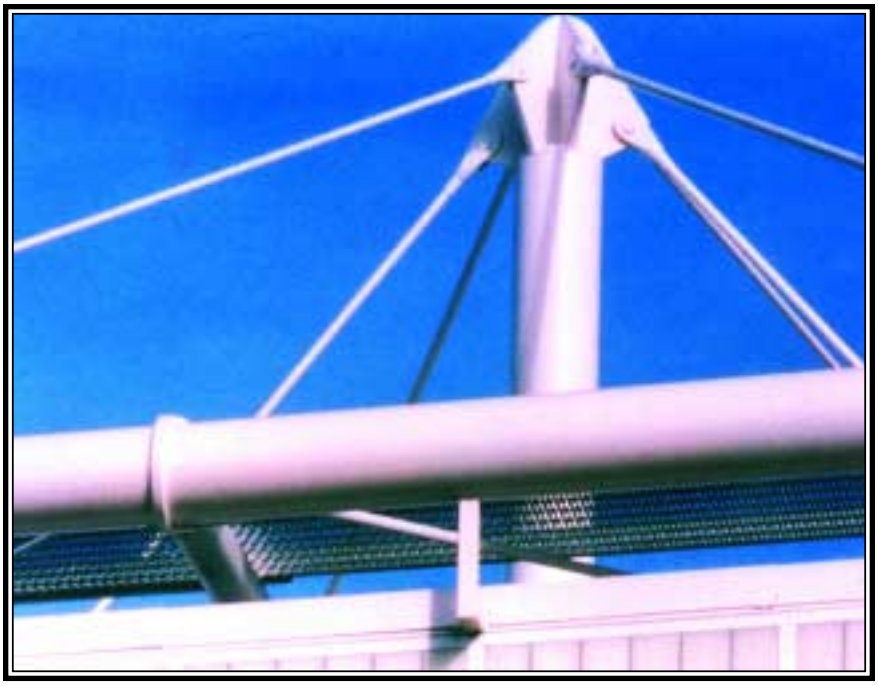
PUENTE Learning Center

In the midst of a once riot-torn neighborhood, the PUENTE Learning Center is a beacon of hope for both teens and adults. The center, a nonprofit, nonsectarian education group run by People United to Enrich the Neighborhood through Education, now serves more than 1,600 students a day, providing basic education, job training, English as a second language, child preparedness and assistance to at-risk high school students.

In designing the center, the goal was to build a 40,000-sq.-ft. educational facility on two acres of land donated by Richard J. Riordan, then a business leader and philanthropist and now mayor of Los Angeles.

Schemes were developed around the theme of an internal courtyard space, but the severe need for parking and the decision not to build underground parking led to a more innova-

tive proposal. The architect's solution was to place classrooms on the second floor, which was considerably larger than the first floor. The smaller first floor then left room below the overhang for parking. In the initial sketches, the second floor was clad with Kalwall, a translucent composite panel consisting of an aluminum grid between two layers of fiberglass-reinforced polymer, and the cantilevered second level was suspended on cables from three-story masts.



After extensive feasibility studies, it was determined that the 32' overhangs could indeed be hung from large masts. In the final design, the overhanging portions of the second floor and the entire roof are suspended from two rows of six 18"-diameter ASTM A500 Gr. B steel

Juror's Comments:

Interesting use of structural steel to solve site and function requirements. Excellent steel details enhance the visual expression.

The use of "external" structure to free up the ground plane while facilitating full-roof daylighting is a strong concept, gracefully executed and artfully detailed.

Project Team

Project: PUENTE Learning Center, Venice, CA

Architect: Stephen Woolley and Associates, Venice, CA

Owner: PUENTE Learning Center, Venice, CA

Structural Engineer: Drew A. Norman & Associates, Los Angeles

General Contractor: Swinerton & Walberg Company, Los Angeles

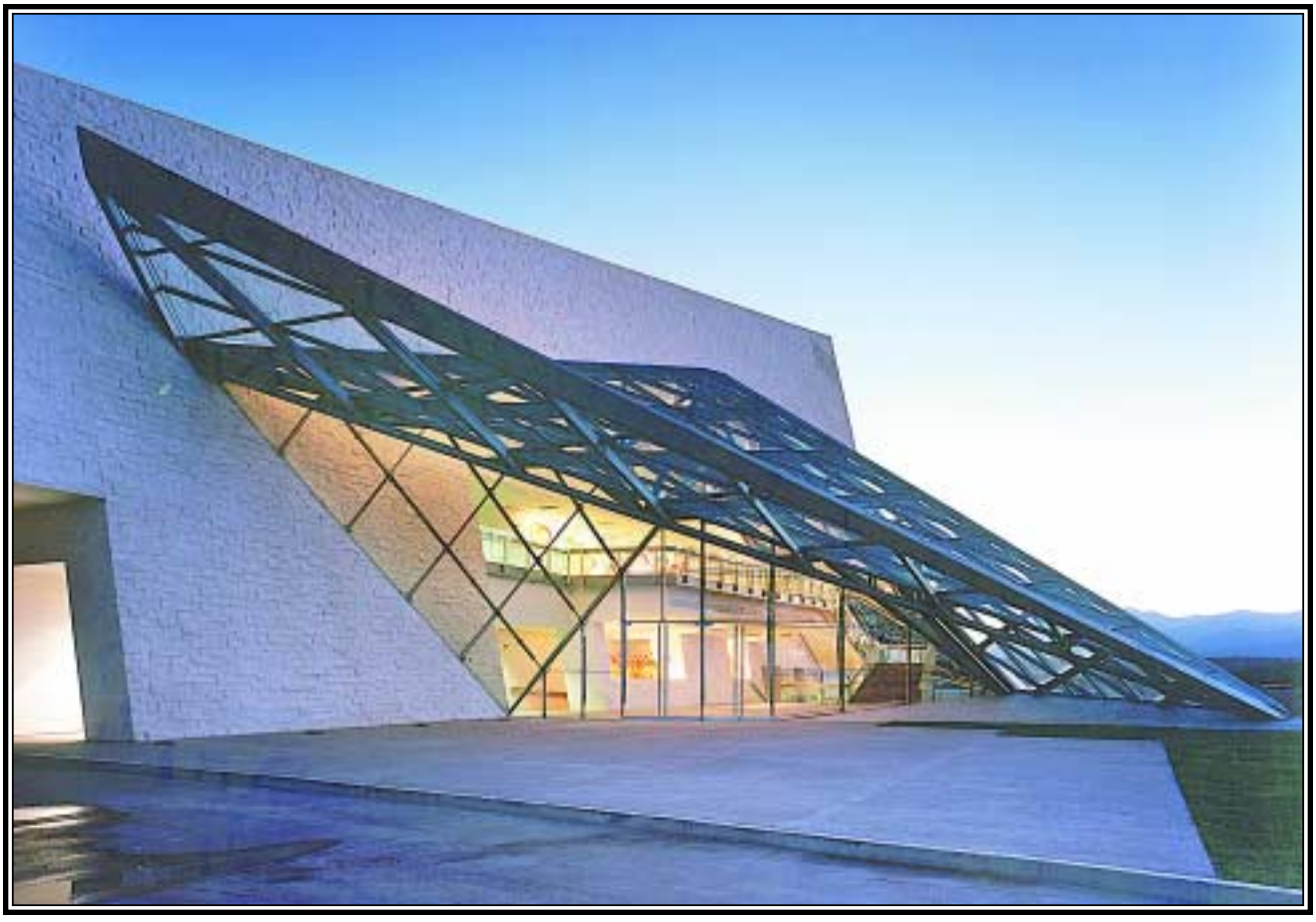
Steel Fabricator: Junior Steel Company, City of Industry, CA

tube masts via tension rods and clevises in sizes varying with load. Hanger rods supporting the cantilevered portion of the second floor are attached to tendon points along the roof perimeter.

A crucial aspect of the design was the resolution of the forces in the sloping hangers. The roof structure acts as the compression chord of a truss, and the Kalwall roof is supported on hangers from the structural frame, which consists of tubes and wide flange shapes. The panels span 14' between continuous rows of headers that also support rain gutters. No supports penetrate the panels.

The project design is extraordinarily efficient. The use of steel in pure tension, rarely seen in buildings, allows full cross sections to be uniformly stressed, taking maximum advantage of the natural strength of the material. Members are smaller and the framework lighter than in conventional flexural/compression stress systems. More practically, the extensive use of architecturally exposed structural steel provided the desired high-tech appearance at no additional cost.

For a more complete look at the Puente Learning Center, please see MSC *April 1997.*



Innovative Design and
Excellence in Architecture with Steel

Honorable Mention

Spencer Theater for the Performing Arts

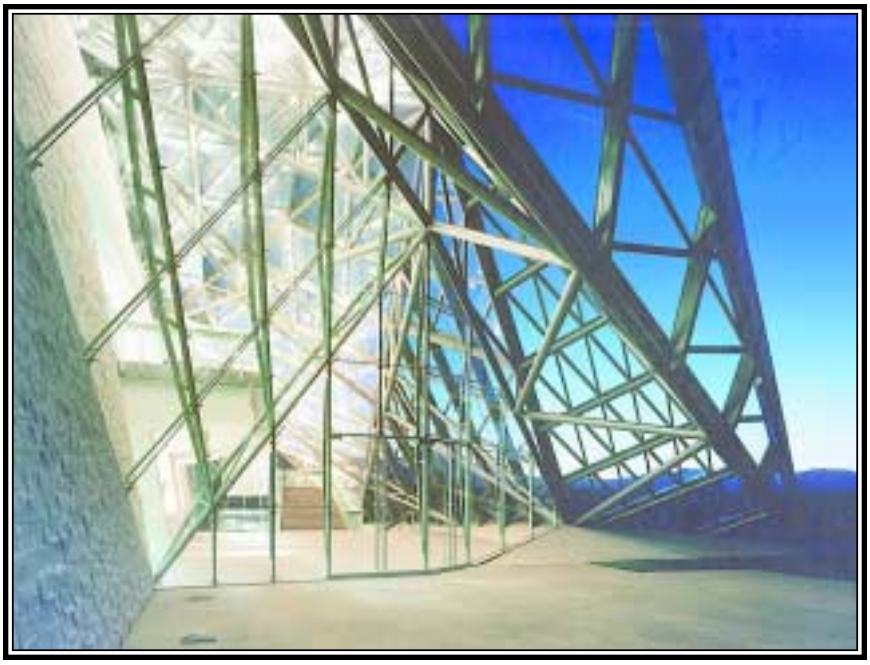
The Spencer Theater for the Performing Arts is situated on a high mesa near Ruidoso, NM, overlooking the Capitan Mountains and Sierra Blanca peak. Since its opening in October 1997, the 514-seat theater has become a cultural landmark in New Mexico. Along with its summer and winter performance seasons, the theater also hosts free performances by students during the month of April. It is also home to three permanent installations by glass artist Dale Chihuly

When designing the structure, the owner and architect were looking for a design that would be a convergence of "the theater of landscape and the theater of performance." The site, situated in the middle of the Fort Stanton Mesa in southern New Mexico, stands dead center between

Juror's Comments:

The Performing Arts Theater is an extremely dynamic composition. The juxtaposition of the fragile steel and glass structure leaning against the monolithic mother ship is dramatic. The enclosed space is light and airy and the drama played out between the glass, steel and masonry whets one's appetite for the performance within.

What is striking about this project is the delicate use of steel and glass as a counterpoint to the massive body of the theater. The dynamics created between site theater and entry are spectacular.



Project Team

Project: Spencer Theater for the Performing Arts (Alto, NM)

Architect: Antoine Predock Architect, Albuquerque, NM

Owner: Spencer Theater

Structural Engineer: Paragon Structural Design, Inc., Phoenix, AZ

General Contractor: PCL Construction Services, Inc., Denver, CO

Sunset peak on the east horizon and Sierra Blanca peak to the west, along the axis of the summer sun. Sierra Blanca becomes the initial locus for the building's form and position, a sculpted limestone mass that has been excavated into exact relationships between light, views, performance and procession.

The wedge like form of the theater, a seemingly monolithic piece of stone, symbolically forces its way up from beneath the fragile crust of the mesa. Lodged within a fissure, and erupting from the north flank, a crystalline, chandelier-like shell of laminated glass links the vertical procession to the upper lobby and entry to the theater house. This faceted glass entry consciously subverts the mass of the body of the building.

The lobby is constructed from a standard aluminum framed skylight system supported by a three-dimensional steel frame. Due to the placement of the structure within the lobby, and the desire to maintain the lightest appearing structure possible, the design of the frame was undertaken in heavy wall pipe. It presents the smallest aspect from all vantage points. Components were shop fabricated in the largest transportable sections and field assembled to form the three-dimensional structure that is a dramatic architectural element. The steel components are finished in a metallic gray paint. Backstage, most of the structural steel frame is exposed and forms an integral part of the theater rigging system.