



I.D.E.A.S.

2003 awards

Sponsored by the American Institute of Steel Construction, the I.D.E.A.S. awards (Innovative Design and Excellence in Architecture with Steel) recognize architectural designs using structural steel as a prominent architectural feature.

AISC presented each project's architect with their I.D.E.A.S. award at the AIA 2003 National Convention and Expo in San Diego in May. Awards were presented in four categories based on project cost: less than \$10 million—single family residence; less than \$10 million; \$10 million and greater, but less than \$25 million; and \$100 million and greater.

Eligibility

- Structural steel must form a prominent architectural feature of the building, either as an interior or exterior application.
- Building construction must have been completed after January 1, 1999.
- Projects must have been designed by architects licensed in the United States.

Judging Criteria

- Creative use of exposed structural steel in the architectural design
- Overall aesthetic and visual impact of the project
- Design resolution demonstrating exemplary sensitivity in the resolution of formal, functional and technical requirements as outlined in the project description
- Technical advancement in the use of structural steel in the architectural expression
- Creativity and sensitivity in the combination of structural steel elements with other materials

This Year's Jury

AISC sincerely thanks this year's jury participants:

- Paul Tonti, Vice President/Director of Architecture, SmithGroup, Detroit
- Neil Anderson, Partner, NBBJ, Columbus, OH
- William Hartman, AIA, Vice President and Managing Director, Gensler, Detroit

award winners

\$100M and greater

National Winner

The Kimmel Center for Performing Arts, Philadelphia—
Rafael Viñoly Architects, PC, New York City

\$10M and greater, but less than \$25M

Merit Award

New 42nd Street Studios, New York City—
Platt Byard Dovell White, New York City

Less than \$10M

National Winner

West Campus—Des Moines Area Community College—
Renaissance Design Group, Des Moines

Merit Awards

Desert Garden Ramada, Tucson—
Seaver Franks Architects Inc., Tucson
Lake Austin Boat Dock, Austin—
Miró Rivera Architects, Austin
Woodstock Branch Library, Portland, OR—
Thomas Hacker Architects Inc., Portland, OR

Less than \$10M—Single-Family Residence

National Winner

Residence for Art, Dallas—
Lake/Flato Architects, San Antonio

Merit Award

Greenwich Playhouse, Greenwich, CT—
Austin Patterson Disston Architects, LLC, Southport, CT



national winner
\$100M and greater



Kimmel Center for the Performing Arts

Philadelphia

juror comments

“Notable strength for a project of this scale. Clever use of simple geometry and materials to minimize the appearance of the steel structure.

The Kimmel Center for the Performing Arts is the centerpiece of Philadelphia’s Avenue of the Arts, also known as Broad Street. The one-block complex includes the 2,500-seat Verizon Hall, home of The Philadelphia Orchestra; the flexible, 650-seat Perelman Theater, for performances including chamber music, dance and drama; and a vibrant, inviting civic space. Verizon Hall and Perelman Theater are treated as stand-alone buildings under an immense steel-and-glass barrel vault. Perelman Theater, with its curved façade, is placed off-axis toward the front of the site on Broad Street, and Verizon Hall, with its polygonal exterior, is centered at the far end.

In addition to the main performance spaces, The Kimmel Center includes a rooftop garden that offers striking views. It also includes a “black box” theater: a two-story space with a pipe-grid hanging system, control room and sprung floor. There is an underground parking garage that accommodates 144 cars. The center also includes lounge and banquet facilities, warm-up and dressing rooms, and a restaurant.

The signature steel-and-glass vault rises from the top of the perimeter building to reach a height of approximately 160’ above the plaza floor. Its structure of folded steel ribs sheathed in plate glass creates a transparent enclosure with a free span of approximately 160’. The end walls of the barrel vault, supported by cable structures, achieve such a high level of transparency and structural lightness that they seem to disappear as sunlight pours into the plaza. The barrel vault covers the full length of the building, and in plan measures 350’ by 174’.

The roof structure uses the depth of the vaulted section to create a vierendeel truss that arches across the atrium spaces and provides vertical and lateral support. These trusses are propped against each adjacent element to provide a folded plate action that resists the longitudinal wind loads. High-strength steel was used to minimize the

member size, and the spacing of the members was designed to support an optimal glass panel dimension.

The building façade along Broad Street is largely transparent at street level, which allows passers-by to see into the public plaza. To maintain the scale of the surrounding residential

and cultural buildings, the brick walls rise approximately to the height of the neighboring University of the Arts. The building footprint is 100,075 sq. ft, and the gross program area is 429,085 sq. ft. Ground was broken on Nov. 12, 1998, and the building opened on Dec. 16, 2001. ★



All photographs courtesy Rafael Viñoly Architects, PC



ARCHITECT

Rafael Viñoly Architects, PC,
New York City

OWNER/DEVELOPER

Regional Performing Arts Center,
Philadelphia

STRUCTURAL ENGINEERS

Dewhurst Macfarlane and Partners,
in association with Goldreich
Engineering, PC, New York City

STEEL FABRICATOR

Helmark Steel, Inc. (AISC member)

STEEL DETAILER

Base Line Drafting Services, Concorde,
Ontario, Canada (NISD member)

BENDING SERVICES

Chicago Metal Rolled Products,
Chicago

GENERAL CONTRACTOR

LF Driscoll/Artis T Ore Joint Venture,
Bala Cynwyd, PA

ENGINEERING SOFTWARE

ROBOT Millennium

DETAILING SOFTWARE

SDS/2, SteelCAD

FIRE SAFETY ENGINEER

Hughes Associates, Inc., Baltimore



merit award

\$10 million or greater, but less than \$25 million

New 42nd Street Studios

New York City

A three-dimensional collage of architecture and theater, the New 42nd Street Studios building is an 11-story, 84,000-sq.-ft creative “factory” for the performing arts, located on 42nd Street, Times Square. It contains 12 rehearsal studios, two combined studio and reception halls, a 199-seat “black box” experimental theater, offices, dressing rooms, and support space for dance companies and non-profit performing arts groups.

As part of the 42nd Street Development Project, the program required prominently lit signage. This condition was innovatively accomplished with a steel façade that reflects a computerized system of colorful uplights, effectively making the entire building a giant illuminated sign. Combining exposed structural steel, specially perforated stainless steel fins, and an elaborate armature of programmable theatrical lights, the architecture appears to change from solid to liquid. In addition, sun-catching dichroic glass at the base, a 175’ vertical light pipe and the movement of the dancers inside animate the structure.

All the materials were chosen carefully for both their function and their aesthetic place in a daytime and nighttime composition. The steel screen acts as a reflective sun lounger in the daytime and as a surface for nighttime projection. The steel system was designed to create the impression of lightness and transparency, from the

All photographs © Eliot Kaufman

juror comments

“Innovative use of steel. Thoughtfully detailed façade system offers both nighttime and daytime interest.”



long spans of steel across the 50'-wide studios to the exposed steel filigree on the face of the building. The overall result lends a sophisticated and authentic modernism to a New York City district better known for unrestrained glitz.★

ARCHITECT

Platt Byard Dovell White Architects, LLP, New York City

OWNER/DEVELOPER

The New 42nd Street, Inc., New York City

STRUCTURAL ENGINEER

Anastos Engineering Associates, New York City

ENGINEERING SOFTWARE

RAM Structural System

GENERAL CONTRACTOR

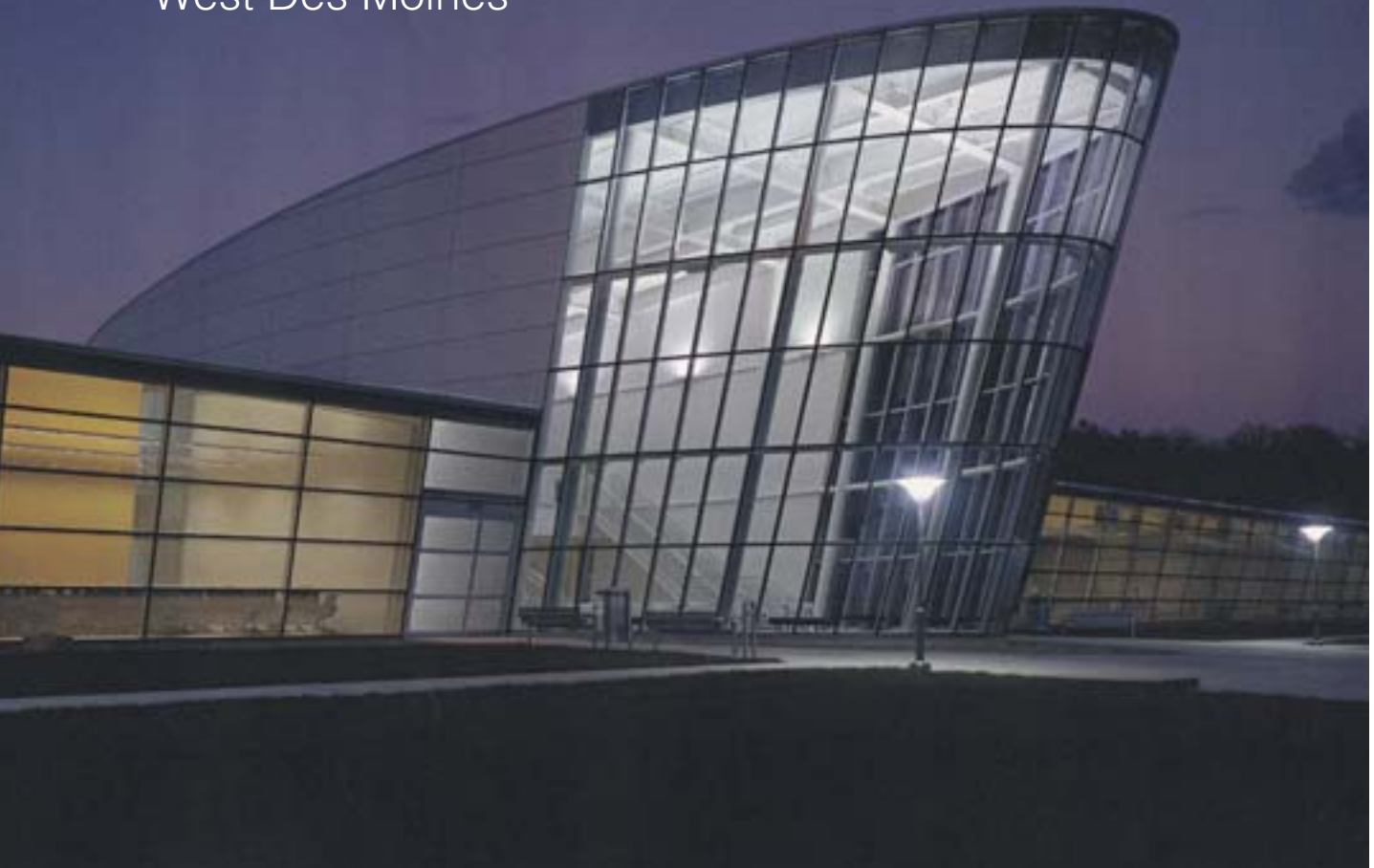
F.J. Sciamè Construction, New York City



national winner
less than \$10 million

Des Moines Area Community College

West Des Moines



Photograph © Assassi Productions

Des Moines Area Community College envisioned its west-campus facility as a super-computer for education. Steel is used to organize the functional spaces into what resembles a computer data board in a central processing unit. An elliptically shaped social space at the core of the building includes a reception area, coffee bar, auditorium and lounge. It is a gathering

place for students and faculty to relax and learn more about what's happening throughout the college.

The ellipse is flanked by two expandable wings with various teaching components, such as the flexible labs, telecommunication lab, networking computer lab, classrooms, offices, team rooms and mechanical support rooms. Raised computer-access flooring provides flexible integration of technology,

juror comments

“Extreme simplicity and clarity of organization. Straightforward and simple framing offers refined elegance.”

and the use of strategically placed glass provides both acoustical separation and visual connection.

All of the columns were hollow structural shapes. The center elliptical section columns were 14" in diameter with $6\frac{5}{8}$ " HSS struts. The columns in the two wings were rectangular. All columns "leaned" toward the front of the structure. Lateral loads were taken out with a concrete shear wall in the center section.

The roof was supported on wide-flange shapes rolled to a 417' radius. Floor beams were composite with the slab. The slab between floor beams was supported on long-span metal deck. Connections were mostly welded to eliminate visible bolts.

The placement of the structure obliquely in relation to the street both animates the building design and protects computer-intensive courses from the sun. The passive solar design solution is supported by a pond-water-sourced geothermal mechanical system, providing exceptional energy performance. The 45,000-sq.-ft building was completed in 2001. ★

ARCHITECT

Renaissance Design Group,
Des Moines

OWNER

Des Moines Area Community College,
Ankeny, IA

STRUCTURAL ENGINEER

Dennis & Magnani Structural Consultants,
Des Moines

ENGINEERING SOFTWARE

RISA-3D

STEEL FABRICATOR/DETAILER

Johnson Machine Works, Chariton, IA
(AISC member)

DETAILING SOFTWARE

AutoCAD

GENERAL CONTRACTOR

Taylor Construction Group,
Des Moines, IA



Photograph courtesy Johnson Machine Works, Chariton, IA



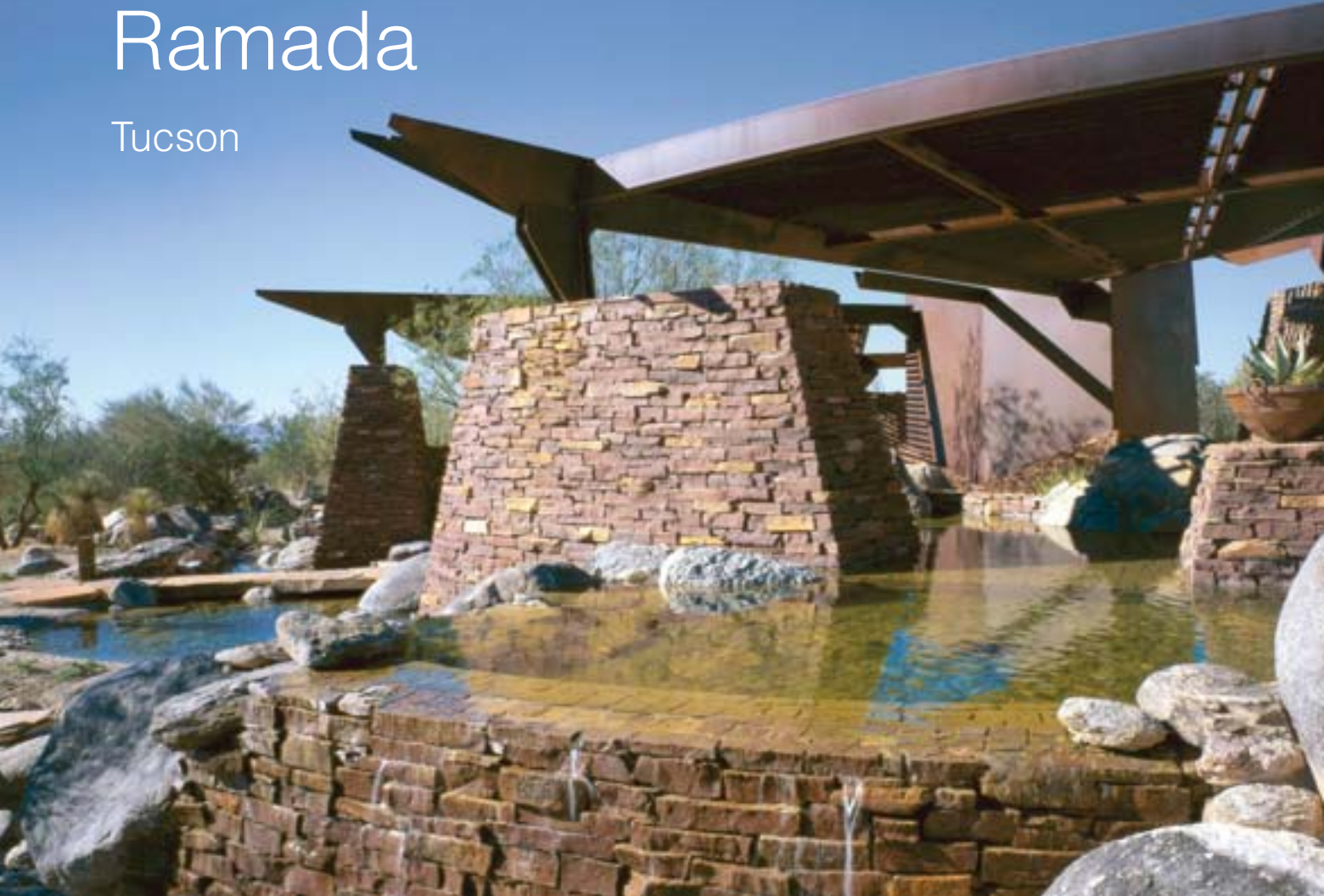
Photograph © Assassi Productions



merit award
less than \$10 million

Desert Garden Ramada

Tucson



All photographs © George Howard

This composition of rugged steel, rock, water and shadow terminates an entry spine road and sequence into a new residential subdivision.

Rusted, angled building and roof forms suggest the jagged profile of the nearby Catalina mountain range. Stepped walls of stone echo ancient ruins. Steel beams, both angular and sharp, resemble the barbs of the native vegetation.

The sweeping steel shade structure creates a space with void and mass. It is composed of $\frac{1}{4}$ " and $\frac{3}{16}$ " plates, and round HSS supports. All connections

are welded, and there are no bolts in the structure. The roof plates are louvers that provide shade below. Almost all of the connections were shop welded, with final field welds made after the structure was erected. Above the louvered roof are large triangular plate beams that were shop fabricated.

This combines with the massive stone buttressed walls, the dynamic of water over stone, and the desert vegetation to act as a gathering place for the community and a destination for quiet contemplation in a desert environment. ★

ARCHITECTS

Seaver Franks Architects, Inc., AIA, Tucson

OWNER/DEVELOPER

Diamond Ventures, Inc., Tucson

STRUCTURAL ENGINEER

Watson Engineering, Tucson

GENERAL CONTRACTOR

Bob Kolt, Tucson

juror comments

“Rich interaction between steel details and masonry piers—steel used in an unexpected way.”

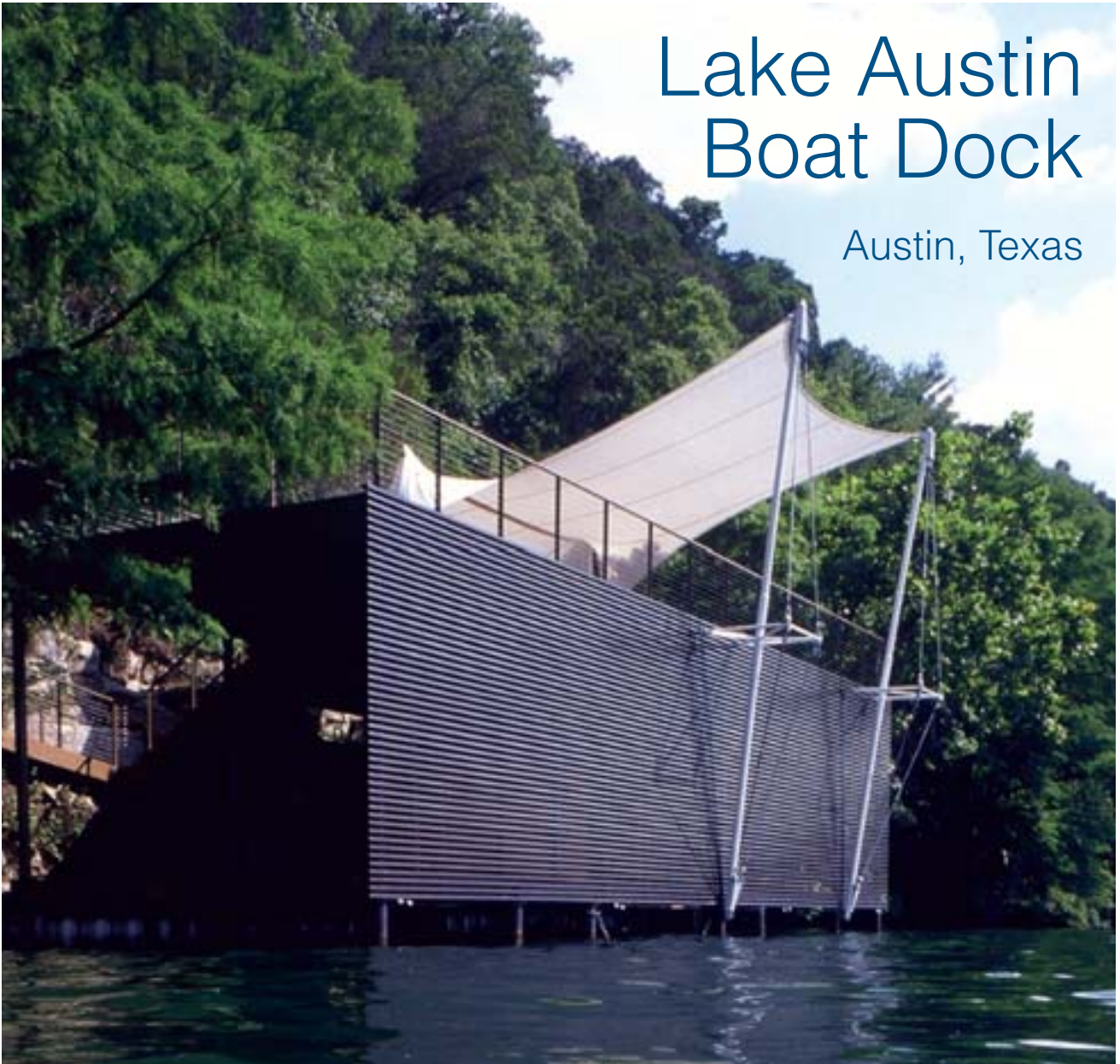




merit award
less than \$10 million

Lake Austin Boat Dock

Austin, Texas



All photographs © Patrick Wong

To create space for two boat slips, along with storage for skis and floaters, the architects of this boat house at Lake Austin, TX created a light and dynamic structure that appears to float on the water's surface. The structure also provides space for the owners to entertain friends in a lakeside location.

The boat dock is located at the bottom of a 300' bluff on the lake, and is connected to the house above by a tram. In order to limit encroachment into the lake, the architects tucked the

boat dock into a natural recess flanked by large trees, and laid out the two boat slips parallel to the shore rather than perpendicular to it. To address these site considerations and programmatic needs, the design features three distinct elements: a box, a screen and a canopy.

The box consists of a structural frame of steel wide-flange beams and HSS columns that contains the two slips and a closet. The top is occupied by a large wood deck, which has an extension towards the hill with built-in benches and table.

The screen consists of 3.5"-by-1.5" steel HSS spaced 1.5" apart. Measuring 52' by 13", this latticed wall screens the interior from the lake. It also establishes a plane that continues the one defined by the trees at the shoreline.

The canopy is a tensile structure with porous fabric providing shade to the upper deck. It is conceived independently of the box and creates a dynamic contrast to it. Its white fabric, mast, tensioning cables and stainless-steel gear are inspired by sailboats. ★

juror comments

“Illustrates steel’s ability to achieve attractive and lightweight solutions. Novel application and precise details.”

ARCHITECT

Miró Rivera Architects, Austin, TX

ENGINEERS

Bradley C. Patterson, P.E., Austin, TX

ENGINEERING SOFTWARE

MultiFrame, Enercalc

CURTAIN STRUCTURE

Bill Murrell Fabric Structures, Inc.,
Emerson, NJ

GENERAL CONTRACTOR

Signor Enterprises, Inc., Austin, TX





merit award
less than \$10 million

Woodstock Branch Library

Portland, Oregon



juror comments

“A classical steel expression; refined, simple, expressive.”



All photographs © Timothy Hursley

The Woodstock Branch Library in Portland is a new light-filled room for the community. Located at the intersection of two streets, one commercial and the other residential, the 7,500-sq.-ft branch library was intended to create a feeling of openness and availability. It includes an airy pavilion where the focus is on books and people. The exposed steel structure of the reading room's large overhanging canopy is cantilevered out of the ground with intricate bundled columns that eliminate the need for supporting walls. This allows an unusual transparency between inside and outside. The library was built for a construction cost of \$1.4 million.

The welcoming corner entry emphasizes access. It leads library patrons into the main reading room, which includes the library collection, reading areas and information desks. The floor of the reading room is level with the sidewalk. A new meeting room, rest rooms and service rooms are located in a service spine, which is articulated as a lower masonry element along the back edge of the building.

The design incorporates a notable use of public art. Over the east alcove of the reading room, a 37' painting by Margot Voorhies depicts a history of

language and writing. Clear anodized aluminum panels and a series of stainless steel panels etched with images clad the building exterior. At the main entry, Kim Stafford's poem "Open This Door of All Doors" alludes to the power and mystery of public libraries.★

ARCHITECT

Thomas Hacker Architects, Inc., Portland, OR

OWNER/DEVELOPER

Multnomah County Library, Portland, OR

STRUCTURAL ENGINEER

Degenkolb Engineers, Portland, OR

LANDSCAPE ARCHITECTS

Mayer-Reed, Portland, OR

CIVIL ENGINEER

Symonds Consulting Engineers, Seattle

GENERAL CONTRACTOR

McCarthy Building Companies, Inc., Beaverton, OR





national winner
less than \$10M—single-family residence

Residence for Art

Dallas



All photographs © Paul Hester

The Residence for Art is located on what was once a larger estate of rolling meadows, hedgerows, and woodlands. It is composed of two intersecting walls that reinforce the natural edge of a large meadow. The walls separate the land from the rest of the estate and create a separate courtyard around an existing carriage house.

The client wanted a simple, pared-down home that focused on the bare essentials: a bedroom, a living/dining room, and a dynamic space for an extensive painting and sculpture collection. The main public spaces with steel “butterfly” roofs include the long ramping gallery, the living/dining room, and the master bedroom. They are designed as light steel-and-glass pavilions that rest gently on art walls

and are open to the courtyard and meadow. The living room and master bedroom pavilions have large, sliding-glass doors that allow the rooms to flow onto a shared grass plinth with expansive views to distant sculpture.

The architecture of the house called for an extremely light steel roof structure. No member sizes exceed 8” in depth, and most roof purlins are W6s. Likewise, because the columns were

juror comments

“Extreme simplicity and clarity of organization. Straightforward and simple framing offers refined elegance.”

designed to be integral with all glass walls of the house, the columns could not exceed 4". Therefore, all of the steel columns are either W4x13s, 2-C4x7.25s tied together, or a composite column made up of an L4x4x1/2, reinforced with an HSS 2x2x1/4. The inherent lightness of the structure and the modest spans enabled all of these elements to work, and they add to the overall feel of an open, glass house for the display of art.

Given that two sides of the living-room wing and three sides of the bedroom wing are all glass, and that the member sizes were exceedingly small, the lateral resistance of the structure could not be accommodated with the steel framing. Fortunately, the architect wanted exposed concrete and/or natural stone for the other walls of these spaces, thus allowing them to be utilized as shear walls.

Two masonry-clad wings house the private/service part of the house. A plaster wing houses the main garage and master bath. A wedge-shaped stone wing houses the kitchen, and forms the walls for paintings and exterior spaces for sculpture.

It was the desire of the architect to express the steel structure and incorporate the steel columns and spandrel beams into the exterior glass wall. This, however, would create heat gain and condensation problems with the outside exposure of the steel members to the extreme Texas heat, and the inside exposure to air-conditioning. In order to eliminate this problem, the columns and spandrels would utilize double-steel channels separated by a 3/8" air space. Thus, the columns are 2-C4x7.25s, and the spandrels are 2-C6x13s, with 3/8" plates tying them together at 36" o.c. This achieved the desired appearance of an exposed steel structure, while also solving the thermal problems. ★



ARCHITECT

Lake/Flato Architects, San Antonio

OWNER/DEVELOPER

Residence for Art, Lake/Flato Architects, San Antonio

STRUCTURAL ENGINEER

Goodson Engineers, Inc., Dallas

GENERAL CONTRACTOR

Tommy Ford Construction, Dallas



merit award
less than \$10M—single-family residence

A Greenwich Playhouse

Greenwich, Connecticut



Photograph © David Sandberg/Esto. Austin Patterson Disston Architects

juror comments

“Strong, simple roof gesture made possible by steel. Integration of the total site including landscape; clearing, bridges and vistas.”

Located on rolling, wooded land punctuated by rocky outcroppings, and surrounded by orchards and gardens, this “playhouse” in Greenwich, CT replaces an existing guest house with a multi-functional entertainment facility. The owners wanted an easily accessible playhouse that was separate from the main house. They required an entertainment space with media facilities, a hearth with fireplace, and a view of the adjacent rock outcropping. The playhouse includes an area for pool and ping-pong, a crafts area, and a media workshop. The style of the playhouse is compatible with the white stucco and flat roofs of the main house.

In addition, zoning requirements dictated that the new footprint follow that of an existing guesthouse, which was demolished.

The playhouse design was influenced by the Italian Renaissance villa tradition, and the project became associated in the designer’s mind with gardens. The experience of walking from house to playhouse became an important part of the design and is reflected in an elevated walkway, steps, ramp and meandering paths. The walkway was requested by the clients, and connects the playhouse with the second floor of the main house. The playhouse also features a tower with a lookout.

An overhanging steel roof unites the party room with the terrace outside. Its asymmetric form relates the skewed axis of the guesthouse footprint with that of the main house.

Stretching back towards the sky, the roof of the playhouse vaults over its glass walls and seems to keep going. The in-plane shear strength of the metal roof deck was chosen to enable the strength and stiffness of the folded plate geometry of the roof. Mimicking the leaf of a beech tree, the primary roof-framing members spring from the center spine member and cantilever over the glass walls to the roof edge.

Most steel connections are exposed and detailed to be continuous. This is



Photograph courtesy Ed Stanley Engineers, Guilford, CT



Photograph courtesy Ed Stanley Engineers, Guilford, CT

in order to optimize system strength and stiffness while minimizing member sizes. In-plane shear stresses in the metal roof deck were evaluated to verify the required pattern of fasteners necessary to enable folded plate behavior. The roof edges were shored until the metal deck was fastened.

The framing members of the roof and the HSS columns of the glass walls all pierce the weather wall and are exposed at the exterior. This allowed the temperature effects on the framing system's shape due to seasonal temperature fluctuations to be evaluated. Heat tape was used to control condensation on the interior surfaces of the exposed steel during the heating season. Other loads considered are unbalanced roof live loads and eccentric wind loads.

The concealed columns were rolled W10 shapes and the exposed columns in the glass wall were round HSS. The roof beams were rolled W10 shapes with the tapered spine beam cut from a W18.

The \$1.5-million playhouse is 2,793 sq. ft and was completed in 2002. ★

ARCHITECTS

Austin Patterson Disston Architects
Southport, CT

ENGINEERS

Edward Stanley Engineers, Guilford, CT

ENGINEERING SOFTWARE

RISA-3D

GENERAL CONTRACTOR

Artisans, Inc., Rowayton, CT