

Photograph courtesy Frank White.



Hobby Center for the Performing Arts

Houston

Juror Comment

“Beautiful interior spaces accomplished by good engineering.”

Hobby Center for the Performing Arts grew out of Houston’s Theatre Under The Stars (TUTS) need for an indoor performance space. Also home to the Houston Broadway Series, the 270,000-sq.-ft Hobby Center houses two performance spaces: Sarofim Hall, a 2,650-seat venue in which no seat is farther than 128’ from the stage; and Zilkha Hall, a 500-seat proscenium theater with natural acoustics for smaller companies. The complex also includes an administration building (The El Paso Center for Arts and Education); quarters for the Houston Music Hall Foundation; 3,800 sq. ft of rehearsal space for TUTS’s Humphreys School of Musical Theatre; and 300-seat Artista restaurant.

The Hobby Center, designed by signature architect Robert A.M. Stern, is a world-class facility that advances Houston’s commitment to outstanding architecture. The building features a dynamically sloped standing-seam metal roof with a gold soffit, identifying the facility as an important landmark in Houston’s theater district. Other major building materials include limestone, brick, and painted steel columns. A glazed, 60’-high curtain wall provides views of downtown Houston’s skyline and Tranquility Park. A terrace running the length of the Center offers an outside congregating area for theater-goers. A

soaring covered walkway connects the main entrance plaza with a seven-level, 800-car parking garage.

The building complex is broken up into several distinct volumes, each representing one of the major program elements of the center. Two major pieces of public art are incorporated into the design of the project: a large mural by Sol Lewitt on the north wall of the Grand Lobby, and a bronze sculpture by Anthony Cragg in the plaza.

Engineering Challenges

Haynes Whaley Associates provided structural engineering services for Hobby Center, which opened in May 2002. The firm closely collaborated with all members of the project team to creatively integrate the structural design with the complex project requirements. The below-grade construction consisted of cast-in-place concrete. A composite steel structural system was used for the performance halls and other spaces above street level.

Ambitious architectural goals and close coordination between the theatrical, acoustical, mechanical, electrical, and plumbing systems, presented numerous challenges for the structural design.

Project Goals

Haynes Whaley Associates collaborated with the owner and architects to achieve the primary project goals:

1. Construct a state-of-the-art theater to meet modern theatrical requirements.
2. Construct a large performance hall that provides an intimate theatre experience.
3. Construct two performance halls on the same site that do not conflict acoustically. Acoustical isolation was achieved by dividing the structure into four segments.
4. Construct a grand lobby area that provides dramatic views of Hous-

Owner

Houston Music Hall Foundation, Houston

Architects

Robert A.M. Stern Architects, New York City
Morris Architects, Houston

Structural Engineer

Haynes Whaley Associates, Inc., Houston

General Contractor

Swinerton Builders, Houston

Steel Fabricator/Detailer

Safety Steel Service, Inc., Houston (AISC member)

Steel Erector

Peterson Beckner Industries, Houston (AISC and NEAA member)



ton's downtown skyline and Tranquility Park.

Complexity

The Hobby Center is one of the most complex structural steel buildings ever built in the City of Houston. The structure includes 5,800 tons of steel—enough steel for a 33-story building. The complex framing was dictated by the large volume spaces, the complex geometry, the ambitious architecture, the acoustical isolation of the two performance halls, and the need to make Sarofim Hall both large and intimate.

The cantilevered lobby balconies and the sloped-theater seating balconies are supported by a structural system embedded into the walls that separate the theater and lobby spaces. Steeply pitched theater balconies extend up to 37' unsupported into Sarofim Hall, providing the required seating while maintaining an intimate setting between the upper level seats and the stage. The theatrical consultant required a minimum structural depth for the theater balconies in order to achieve uninterrupted sightlines for all theatre seats. A minimum overall balcony profile was achieved through the use of intricately laced structural framing techniques and details. This balcony framing

approach resulted in minimal structural depths, while providing the necessary structural stiffness for audience comfort.

Prominent architectural features of the Hobby Center's front façade are large, sloping and vertical steel columns, which are integrated into the glass curtain wall. The steel columns provide gravity support for the roof and lateral support for the glass curtain wall. This structural support system provides unobstructed views of the Houston skyline from the Grand Lobby.

For the south-facing glass curtain wall, Robert A.M. Stern wanted a large expanse of glass and required the curtain-wall support system to "disappear." This was achieved by using narrow vertical support fins—4"-wide and 26"-deep solid steel members. These narrow members are hung in tension from the lobby roof structure to eliminate buckling effects.

The design of the lobby roof was challenging due to a wedge-shaped skylight, sloped in two directions, which interrupts the diaphragm of the roof system. The lobby roof trusses, which span through the skylight space, were designed with sufficient lateral stiffness to transfer the lobby-structure wind loads into the main building structure. ★