











U-505 Submarine Exhibit

Chicago, Illinois, USA

This structure is located 40 feet below the northeast lawn of Chicago's Museum of Science and Industry. After being on display outside the museum for 50 years, the German U-505 submarine was severely corroded. Conserving the 700-ton artifact—listed on the National Register of Historic Places—was paramount. The climate-controlled, underground pavilion fully displays the submarine and protects it from further deterioration. The 27,000-square-foot addition includes interactive exhibits, a theater and a wall commemorating American sailors from World War II. Renovations were made to 5,000 square feet of adjacent space.

The museum's objective was to insert this structure without compromising the historic significance of the original building—one of only a few remaining from the 1893 World's Fair. To meet this goal, the addition was placed below grade, a uniquely appropriate setting for a submarine.

The design recalls World War II-era submarine pens and dry docks, with exposed concrete walls and arched steel girders. Visitors can now walk around the submarine's entire perimeter; a series of ramps provides cantilevered observation points and access on two levels. The structure's unique form responds to the shape of the submarine and the physical forces of the site underground. The angled design resulted in a structure that is approximately 10 feet wider at the roof. Because the top of the exhibit space is broader, major features such as the conning tower, periscopes and artillery can be viewed easily, and spaciousness is achieved within the enclosure. The arched, structural steel roof girders support up to 7 feet of soil above and could be erected more quickly than a concrete structure after the submarine was lowered into place.

Project Data

SIZE

32,000 sf total underground exhibit

27,000 sf addition
5,000 sf renovation

CLIENT

Museum of Science and Industry

Recognition & News

RECOGNITION

2008, Mies van der Rohe Honor Award for Innovation – American Institute of Architects, Illinois Chapter

2007, Interior Architecture Award – American Institute of Architects, Chicago Chapter

2006, Patron of the Year – Chicago Architecture Foundation

2006, Merit Award for New Construction Chicago – Chicago Building Congress

2006, Thea Award for Outstanding Achievement, Museum Exhibit – Themed Entertainment Association

2006, Award of Merit, Medium Structure – Structural Engineers Association of Illinois

2006, Outstanding Engineering Achievement Award – Illinois Engineering Council

2006, Illumination Design Award – New England Section of the Illuminating Engineering Society of North America

2005, Award of Merit, Cultural – Midwest Construction Magazine