

The Adaptive Reuse of Soldier Field

Chicago, Illinois

Client

The Chicago Bears Football Club

Architects

LW+Z, a Joint Venture of Lohan
Caprile Goettsch Architects and Wood
+ Zapata

General Contractor

TBMK, a Joint Venture of Turner
Construction Co., Barton Malow Co.,
and Kenny Construction

Completion Date

2003

Construction Cost

\$500 million

Total Area

1.5 million sf

Team

National Football League -
Chicago Bears

Seating Capacity

61,500

Number of Sky Boxes

133

Awards

Outstanding Project Award 2005 –
National Council of Structural
Engineers Association

Best Structure Award 2004 - Structural
Engineers Association of Illinois

Project of the Year 2003: Overall -
Midwest Construction Magazine

Grand Award, Building Team Project
Awards - *Building Design &
Construction Magazine*

Outstanding Engineering Achievement
Award 2004 - Illinois Engineering
Council



The adaptive reuse of Chicago's historic Soldier Field tackled complex geometry and steel construction innovations. Thornton Tomasetti provided structural design services for the renovation, which consisted of a new 61,500-seat stadium bowl fitted within the historic 1920s shell of the current facility, as well as the addition of a new partially underground parking garage for 2,500 cars.

Stadium seats are supported on precast concrete risers that span between and are supported by the main structural steel rakers that are supported at 40 feet centers. The rakers supporting the upper grandstand cantilever 60 feet over the historic colonnades, one of the longest such cantilevers supporting crowds. All of the luxury suites and club seating are located on the east side of the stadium, allowing the grandstand seating on the west side to be much closer to the field. The structure for the suites wraps around the corners of the field, cantilevering over 100 feet of the end zone seating and providing support for the massive video displays. Twenty-one tuned mass dampers, located at the tips of the cantilever of the grandstand, dissipate energy and vibrations, thereby maintaining spectator comfort.

The complex geometry and coordination of this project, together with the fast-track 20-month schedule, were facilitated by the use of Tekla 3D computer modeling of the structural steel frame. This allowed Thornton Tomasetti to electronically provide the fabricator with the geometry needed to fabricate each steel piece and connection. The result was a shorter design review process and aversion of costly miscues from design to fabrication and installation.