

Stadiums

University of Minnesota:

ERA was pleased to be part of the team that designed the new home of Gopher football. **TCF Bank Stadium** is an exciting addition to the Minneapolis Campus of the University of Minnesota.

The stadium which was ready for the fall 2009 season, is a modern, open-air Division 1-A football stadium with a horseshoe-shaped bowl and seating for 50,000 fans.

The design allows for maximum flexibility, including the potential for future expansion to either 72,000 or 80,000 seats.



Hamline University:



Klas Center at Hamline University in St. Paul, Minnesota

is the home of Football and Track and was completed in August of 2004.

The \$7.1 million Klas Center is a multi-use facility which includes a 23,500 square foot Alumni Building and Stadium with 2,000 seat aluminum bleachers attached to the building. The building has three elevated floors and a roof. The

lowest level provides locker rooms, storage and mechanical rooms; the main level has at grade entry and stadium restroom facilities. The second level includes meeting, and classrooms and press box. The third level provides meeting rooms, catering kitchen and support space.

Augustana College:

ERA provided the precast design for the new state of the art Kirkeby-Over stadium in Sioux Falls, South Dakota which hosted its first football game in September of 2009. This \$11 million facility is carved out of a hillside and is bowl shaped with the field recessed below ground level. The stadium can accommodate nearly 7,000 fans. The complex has 11 first-class suites, an amenity-filled press box and a state-of-the-art video scoreboard. Located underneath the stands on the west side is the Kirby Golf Center indoor practice facility.



The stadium superstructure is cast in place and precast concrete supported by a geo-pier foundation system. The exterior skin system is a combination of structural / architectural precast and split-face block.

Arenas

Target Center: **The Target Center in Minneapolis, Minnesota** opened its' doors in October of 1990 at the cost of approximately \$104 M. The arena took 27 months to build.

Target Center contains one of only two moveable arena floors in the country and can be fully raised or lowered in 25 minutes. This allows for the quick transformation from basketball to hockey while maintaining optimum sight lines.



University of North Dakota:



Ralph Engelstad Arena at the University of North Dakota in Grand Forks opened its doors in October of 2001.

This 400,000 square foot arena is home to the Fighting Sioux Hockey team. The facility has seating capacity for up to 13,000 spectators.

Ice Arenas:



ERA has provided the Structural design for multiple ice arenas. We designed community arenas in Minnesota for the cities of Waconia, Minnetonka, Cottage Grove and Victoria and in Wisconsin for the city of Somerset.

In addition to municipal facilities, we have also worked with educational facilities. The Ice Arena at Saint Thomas Academy in Mendota Heights, Minnesota and the one at Shattuck Saint Mary's in Faribault, Minnesota were ERA projects.



Arenas

Williams Arena:



ERA provided the structural review and reinforcement design for the main trusses and elevated platform supporting the new 20,000 pound **U of M Williams Arena Scoreboard** in **Minneapolis, MN**.

The existing structure of the 1928 U of M Basketball Arena and Field House consists of steel 3-hinged arch trusses spread approximately 30 feet apart. These large trusses which carry the roof, scoreboard, and balconies, span 270 feet and have a vertical dimension to top pin of 100 feet. All of the chord and web members were Bethlehem shapes. Additional steel plates were utilized to reinforce the existing trusses to allow more capacity to carry the score board. The suspended hoist platform was reinforced to withstand the new scoreboard load.

Mariucci Arena:

ERA reviewed the existing 1992 **U of M Mariucci Arena** roof framing for the new 20,000 pound suspended score board in **Minneapolis, MN**.

The roof trusses for the U of M Hockey Arena span approximately 240 feet. They are constructed of steel wide flange members for the truss chords and web members. The offset hoist platform was also reviewed to withstand the increased score board hoist loading.





Additional Staff Experience on Sports Facilities:

- Aurora Arena; Grand Forks, North Dakota
- Blake Football Stadium, Minneapolis, Minnesota
- Dakota Dome; Vermillion, South Dakota
- Duluth Arena and Auditorium; Duluth, Minnesota
- Fargodome; Fargo, North Dakota
- Hartford Coliseum Skyboxes; Hartford, Connecticut
- Lexington Center - Rupp Arena; Lexington, Kentucky
- Manatee Civic Center; Bradenton, Florida
- Mayo Civic Center; Rochester, Minnesota
- Metro Millers Baseball Facility; Burnsville, MN
- Minnetonka Ice Arena; Minnetonka, Minnesota
- Ocean Center, Daytona Beach, Florida
- Rochester Regional Sports Facility; Rochester, Minnesota
- SAGA Golf Dome; Minneapolis, Minnesota
- St. Cloud State University National Hockey Center, St. Cloud, Minnesota
- St. Paul Saints Stadium (Lowertown Ballpark); St. Paul, MN
- Southeast State University "Show Me Center, Cape Girardeau, Missouri
- Target Center (Timberwolves Arena); Minneapolis, Minnesota
- University of Minnesota Baseball Stadium Study, Minneapolis, Minnesota
- University of Minnesota Field House Renovation; Minneapolis, Minnesota
- University of North Dakota Englestad Arena; Grand Forks, North Dakota (Peer Review, Steel Erection Plans)
- Utah Jazz Arena; Salt Lake City, Utah (Peer Review)
- Volusia County Civic Center; Daytona Beach Florida