

NATURAL TURF FOR INDOOR STADIUMS
-A WORLD CUP '94 UPDATE
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On June 19, 1993, the final game of the U.S. Cup '93 was played on a natural turfgrass field inside the Pontiac Silverdome. The field had been installed as a practice run for the World Cup 1994. The U.S. Cup '93 game marked the first and only time in world history in which a major sporting event was successfully played on a portable, natural turfgrass field inside a covered stadium.

Between June 18-28, 1994, the Pontiac Silverdome will host four 1st round games of the World Cup, the world's largest and most watched sporting event. The games are expected to generate at least \$120 million, much of it from international visitors, for the local economy. Over 1 billion people worldwide are expected to watch the Pontiac Silverdome games on television.

Preliminary research to build and maintain the portable field was conducted by Michigan State University during June-July 1992 at the Pontiac Silverdome. Starting in the autumn of 1992, and continuing through to the present, additional research has been conducted by Michigan State University in the MSU indoor turfgrass dome at the Hancock Turfgrass Research Center, East Lansing, MI. Grass species, soil types, fertility and lighting requirements were among the variables tested to determine the maintenance requirements for indoor turfgrass. In January 1993, a 320 ft² portable, indoor playing field was installed inside the research dome to simulate the installation planned for the Pontiac Silverdome.

The field for the US Cup '93/World Cup '94 was constructed in the parking lot of the Pontiac Silverdome beginning in March 1993. Over 1850 steel hexagonal trays were placed in the shape of a field and filled with soil. Each tray has a 6 inch depth and 7.5 ft. diameter. The walls of the trays are removable for player safety. Ten to 30 people worked for nearly four weeks to load and compact the soil. Most of the labor was donated by Detroit area golf courses, lawn care companies, and MSU turf students.

From April 12-20 the field was sodded using a mixture of Kentucky bluegrass/perennial ryegrass. The grass, only 5 months old, was shipped from California in refrigerated trucks. Approximately 12,000 ft² of sod was laid each day, all of it cut to fit each individual tray. Between April 20-June 7 the field was maintained by MSU staff and students. Rick Fogarsi, an MSU turf student in the 2-yr. program, was an intern supported by the Michigan Turfgrass Foundation. His aid was invaluable during field construction and maintenance. From April 20-June 7 the field was mowed on a daily basis and fertilized biweekly. Grass height was initially maintained at 2" and eventually brought down to nearly 1" prior to installation of the field inside the stadium. The field was watered daily using six travelling sprinklers. Handwatering was performed nearly daily around the field edges. The field was topdressed and rolled five times over a five week period to help level the surface and stabilize the sod. Individual seams between sod pieces within modules were topdressed by hand to facilitate knitting of the sod.

By the end of May the sod had developed a dense root mass down to the bottom of the trays. Installation of the field inside the Pontiac Silverdome was started on June 7. Thirty to 40 people were split into several crews to complete each stage of the installation. Forklifts were used to load the trays onto flatbed trailers, five trays per trailer. Approximately 370 trailer loads were driven into the stadium during a 4.5 day period. Forklift operators inside the stadium removed the trays from the trucks and set them in a line parallel to the field. As the steel walls, or rings, were removed from each tray, a second set of forklifts moved each module into place to form the field, one row at a time. One hundred rows, each having either 17 or 18 modules, were eventually installed to form the field.

By noon on June 11 all the trays had been moved into the stadium. Over the next three days the field was rolled to smooth out seams between the trays. When necessary, seams were topdressed by hand to create a uniform playing surface. The field was mowed daily at approximately 1" height. All

clippings were removed. No irrigation was necessary inside the stadium due to a low evapotranspiration rate. On June 16 the field was lined and the goal posts installed in preparation for an international press conference on June 17. Due to the lack of sunlight and air movement, the lining paint had to be dried using leafblowers.

On Friday June 18 the German national soccer team and defending world champions became the first professional soccer players to practice indoors on natural grass. Several hours later the English national team followed for a 1.5 hour practice. Although player comments were held to a minimum due to the impending game, the players appeared to like the turf. Surprisingly, players on both teams seemed more excited with the cover on the stadium than the grass itself, with players from each team spending the first 10 minutes of the practice kicking soccer balls towards the roof.

The long-awaited game was played on Saturday, June 19, before a crowd of 62,500. This was the largest crowd ever assembled for a soccer game in the United States. Over 17 million people in 45 nations around the world viewed the game on television. Despite steel cleats, and the players diving and sliding, the grass appeared to hold up well. At halftime, MSU personnel examined the field for divots. The turf was in marvelous condition! In no instance had a player ripped below the sod layer to expose the soil; in all cases only the foliage had been ripped. Examinations after the 90 minute game also revealed no real divots. The turf system, despite its immaturity, had held up exceedingly well.

After the game, players and coaches from both teams praised the turf quality. Jurgen Klinsman, the German team leading scorer and MVP, was quoted in the New York Times stating "The field was absolutely perfect. We didn't expect it to be so good." David Platt, the English team co-captain, said of the field, "It was perfectly magnificent. There was no problem with it." During the next 10 days three more games, plus six more practices, were held on the field to simulate the conditions for the World Cup '94. In addition, the field was used between the second and third games for the '93 Watchtower Convention from June 24-27.

Even after the last game the turf remained in good condition. FIFA officials flew in from Zurich, Switzerland on June 29 to evaluate the field quality. After having been indoors for nearly four weeks and having four soccer games, six practices, and a three day convention held on it, the turf was fantastic enough to impress the soccer officials. The officials proclaimed the indoor natural turf field "experiment" a tremendous success.

Between June 30 and July 3 the field was moved back outside to the stadium parking lot. During the summer the field was maintained as an athletic field with mowing and watering performed by groundskeepers from National Garages (Pontiac, MI) under the direction of Michigan State University. Fertilization and pest controls were applied periodically by MSU personnel. In December of 1993 a snow cover was placed over the field to prevent winter desiccation. In June of 1994 the field will once again be installed inside the Pontiac Silverdome for the entire world to see, showcasing Michigan and the Michigan turfgrass industry.

We would like to thank all the golf courses, lawn care companies, equipment and product suppliers who provided people, equipment, and turfgrass supplies to the project. Without your help the project would not have been a success. A special thank-you is reserved for the Michigan Turfgrass Foundation who provided the funds for Rick Fogarsi's internship, and to all the MSU staff and students who donated their labor and expertise.