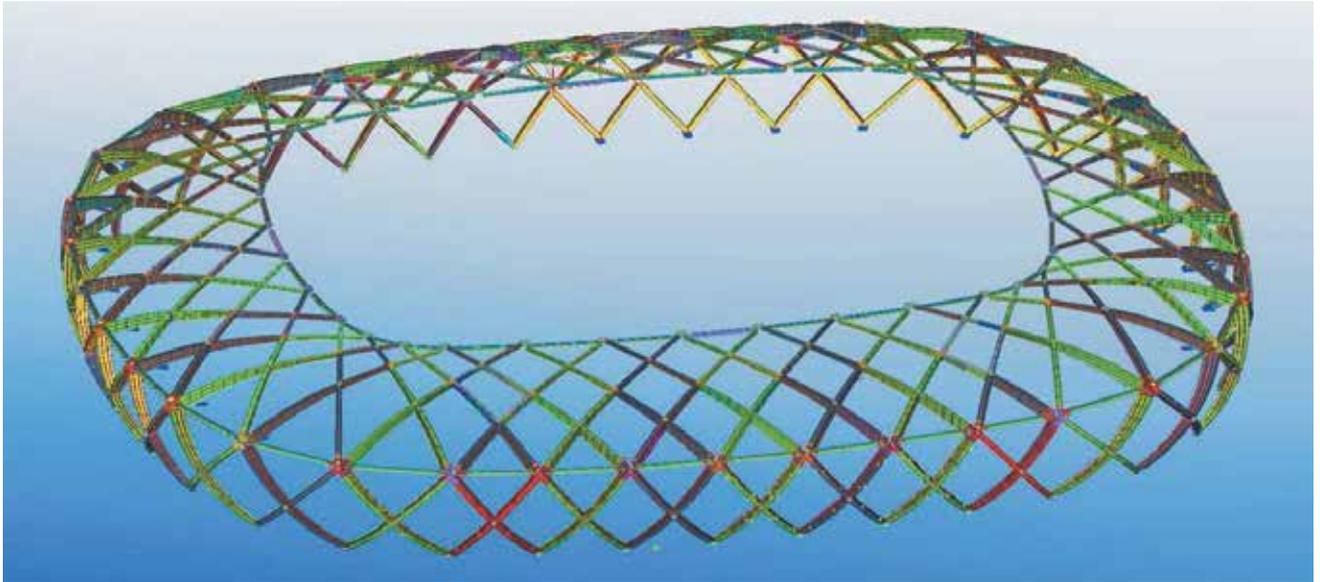


structurally  
sound

## THE BEAUTIFUL GAME



**FROM JUNE 12 TO JULY 13**, the eyes of the world were on Brazil, which hosted the 2014 FIFA World Cup.

For four games, they were specifically focused on Arena Amazônia in the city of Manaus. One of 12 host stadiums for the Cup, Arena Amazônia opened earlier this year and seats 44,500.

Manaus is in the heart of the Amazon rainforest. Its natural surroundings, as well as the straw baskets of the local indigenous people, inspired Gerkan, Marg und Partner (GMP) to create the stadium's basket-like design, which was built by Martifer Construções.

A steel structure circles the stadium, creating a 23,000-sq.-m (247,600-sq.-ft) roof. Built from 7,000 tons of steel, the main and secondary structures of angled and H profiles and steel plates rise to the height of 31 meters (102 ft). The pitch is surrounded by the steel structure, which is coated with translucent white PTFE

membrane sheets to reduce the temperature in the stadium.

Fabricating the twisted and cambered beams, which required exact coordinate control, was a challenge. To manage preassembly and assembly as well as track materials during manufacturing, Martifer used Tekla software to ensure that planning and design advanced as they should. The design team modeled Arena Amazônia in 3D and extracted 2D drawings plus CNC and material listings, and created specific files to control geometric coordinates of the beams during manufacturing, preassembly and final assembly in stages—with dead, partial and final loads.

Martifer began work on the arena in November 2012 and it was inaugurated this past March. Following the World Cup, it will host concerts and other events. ■