TCF
TWIN CITY FAN

Quick Facts

Industry
Sports Facilities

Application
Fans for SubAir turf aeration and moisture removal systems

Customer
SubAir Systems LLC
Graniteville, SC

Twin City Fan Representative
R.L. Kunz
Greenville, SC

Challenge
Provide cost-effective, high performance fans that fit into limited spaces at World Cup soccer stadiums in Brazil

Solution
Customized, direct drive RBA industrial fans

World Cup Soccer 'Fans'

Overview

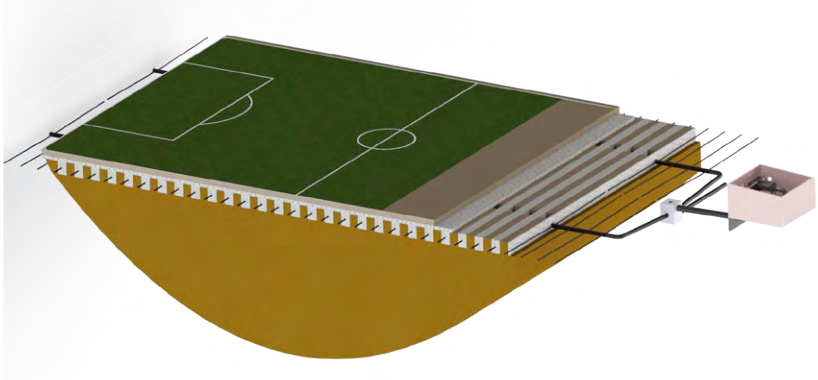
Germany won the 20th FIFA World Cup by beating Argentina 1-0 on Sunday, July 13, 2014. Of the 12 venues located in as many host cities across Brazil, the playing fields at four of the stadiums – Salvador, Porto Alegre, São Paulo and Manaus – were conditioned using aeration and moisture removal systems from SubAir Systems LLC, based in Graniteville, SC.

The SubAir system uses powerful industrial fans to assist the drainage system, remove standing water, provide aeration and introduce fresh air into the root zone of the soccer fields. Because of the longstanding business relationship between SubAir and Twin City Fan & Blower, TCF was familiar with SubAir's requirements for its standard systems. But these systems were definitely not "standard." However, SubAir knew it could count on TCF for a winning solution.

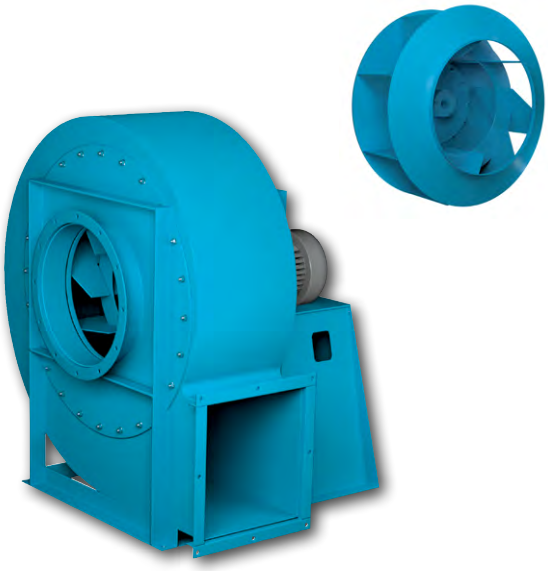
Challenges

SubAir needed larger fans than the Twin City Fan & Blower TBNA high pressure blowers it uses for golf courses because of the performance requirements for the World Cup venues. Each fan had to deliver at least 20,000 CFM at 25 inches WC static pressure. However, the units had to be as compact as possible.

As with many projects, the fans for this application had to be competitively priced. In addition, there was a narrow timeframe for the project so that the SubAir system could optimize soil conditions to prepare the playing surfaces for the events with a limited amount of growing time.



CASE STUDY



Model RBA
Industrial Radial Bladed Fan

Twin City Fan & Blower has the engineering and manufacturing capabilities to accommodate virtually every conceivable application. We have completed thousands of successful installations worldwide and have a proven track record for tackling the most technically complex and unique applications.

We separate ourselves from the competition by offering a greater breadth of products and quickly adapting to the needs of our customers. This is truly a testament to our company philosophy – respond to the needs of the customer, the first time, every time.

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Solution

Twin City Fan & Blower supplied four direct drive RBA arrangement 4 fans that were customized to meet the performance and space requirements. Each of these centrifugal fans have 45-inch backward-inclined wheels capable of supplying up to 140,000 CFM and up to 32 inches WC static pressure – easily satisfying SubAir's specifications.

The SubAir aeration and moisture removal system promotes healthier and stronger playing surfaces through moisture content management, subsurface aeration, and root zone temperature control. As a result, SubAir provides optimum aerobic subsurface growing conditions.

All of SubAir's systems are fully automated. Wireless sensors measure oxygen and moisture levels, temperature, and salinity in the soil. When these parameters fall outside of an acceptable range, the controls activate the SubAir system. In addition to acting on sensor data, the systems are typically programmed to operate daily to provide the best growing conditions for the playing fields.

The SubAir system operates using two modes: vacuum and pressure. Vacuum mode expedites drainage. Pressure mode supplies air under the turf to the root systems. In addition to applying suction in vacuum mode, drainage piping is used as an air delivery system. Both modes use the RBA fans. Mode operation and direction is controlled by SubAir's patented airflow diverter valve.

Results

The custom designed RBA 926 industrial fans from Twin City Fan & Blower exceeded the performance requirements of the high-profile World Cup venues. Because of TCF's engineering know-how, ability to meet size and time constraints, and responsiveness to the needs of every customer, SubAir can rest assured that future projects will also be winners.