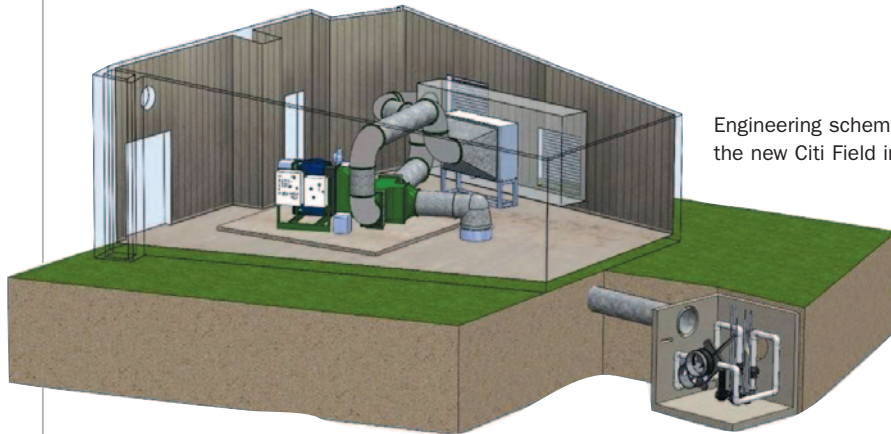


Rootzone tool less expensive than electric or hydronic systems



Engineering schematic of system at the new Citi Field in New York.

SUBAIR IS A TOOL that field managers use to better condition the turf's rootzone. The system can be used for temperature moderation, moisture control, and for gas exchange. The SubAir system is essentially a motor/blower assembly that is connected to the field drainage located beneath a playing surface. The field drainage network is subsequently composed of a matrix of perforated pipe.

This piping network is used by the SubAir system to move air through the subsurface layers. The operator can use the system to push air through the piping network (commonly referred to as the "pressure" mode) and into the rootzone or pull air through from the surface downward through the soil and through this piping network (commonly referred to as the "vacuum" mode). An airflow reversing valve, directly connected to the motor/blower assembly, allows the system to operate in either "Pressure" or "Vacuum" mode.

"Our SubAir proves to be very useful, both during concerts and the baseball season. It provides good air

movement under the Terraplas flooring during shows that keeps our turf from going into too much heat stress," says Mike Boekholder, head groundskeeper for the Philadelphia Phillies' Citizens Bank Park.

"During the season, it provides us with a valuable tool to keep air exchange occurring during the hot summer months without having to do nearly as much aeration," Boekholder

says. "The ability to exchange air through the rootzone daily really does help keep toxic gases from becoming a problem. The system also helps remove excess moisture during rain events much more efficiently than gravity drainage alone."

The SubAir system is completely automated, but can be controlled locally by a pushbutton. The control panel is located in an equipment room and



A shot by Bret Baird of his system at Dick's Sporting Goods Park in Denver.

remote operation via the SubAir AirWave Monitoring and Control system is available at any internet connection. The AirWave system is an internet-based program that allows the user to control his/her system from any location in the world via the SubAir website. Once the system is installed, the turf manager has complete control over the system and operation schedules. The turf manager can operate the system manually (at his/her own discretion), can place a timer on a system, or can create an operational schedule for unit operation.

Bret Baird, head turf manager for Dick's Sporting Goods Park in Denver, says he uses his SubAir system early spring through late fall for three main tasks: jump-starting the turf's spring "wake-up" from dormancy; "vacuuming" moisture out of the rootzone; and enhancing oxygen exchange in the summer. "We have a furnace hooked up to our system so we can blow hot air through the soil profile," Baird says. "But we don't try to heat our field through this system because we don't play during the winter.

"After heavy precipitation we put it in vacuum mode to help get moisture out of the rootzone," Baird says. "It doesn't dry out the field completely but it helps speed up the process."

Baird says when he hosted a concert he was able to blow air into the soil profile for 2 days to help keep the temperatures down underneath the Terraplas covering.

"I try to run the system for about 15 minutes every day to enhance oxygen exchange," Baird says. "You can smell the musty air from the rootzone."

SubAir provides customers with a recommended maintenance schedule. These schedules are typically incorporated into the stadium's routine maintenance on other equipment, with maintenance typically performed by stadium/facility employees or outsourced through stadium ownership. SubAir also provides support for all products and provides support for equipment operation, repair, and upgrades. With the advent of the AirWave technology, SubAir also has the ability to monitor equipment remotely and make recommendations routinely if so desired by the field manager.

SubAir can be implemented in both existing as well as new construction facilities.

SubAir is currently researching and testing new technologies and methods for modulating subsurface soil conditions, the company says, and they are currently seeking "green" technologies to increase operational efficiencies while decreasing energy and water usage. The company is also constantly upgrading and investigating the use of wireless turf sensor technology and how to provide this technology as a valuable tool for the field manager to increase efficiency and root quality. ■

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