

**COOL AND GREEN:
NEW ARTIFICIAL TURF FIELD AT WHITTIER COLLEGE
FEATURES STATE-OF-THE-ART COOLING SYSTEM**

Like most collegiate athletic directors, Rob Coleman at Whittier College had a tough time keeping up with the demands for his main sports venue, Chief Newman Field,

During football season the turf had to be in top condition for Whittier's Division III home games, putting it off limits to all other events.

Everything changed last summer, however, when the historic stadium was converted to artificial turf.

"The synthetic field completely revolutionized our sports program," reported Coleman.

"Along with football, Newman Field now hosts an incredible range of year-round activities – intramural sports, lacrosse playoffs, soccer leagues, plus local high school events, like sports camps, cheerleading competitions and much more.

"The field has become a multi-dimensional facility – activities are scheduled nearly round-the-clock," he said.

Economic Benefits

Chief Newman Field is a landmark site on an historic college campus. Located in southern California, Whittier was founded in 1887 as a liberal arts school with a Quaker heritage. President Richard M. Nixon is among the well-known grads and he often liked to recount his Whittier College football days under Coach Chief Newman during the 1930s.

When the college decided to revamp the field, they had the financial support of enthusiastic alumni who could foresee the economic benefits of converting to synthetic.

"We added up the numbers and found that the field would soon pay for itself by lowering labor, maintenance and irrigation costs. It would also generate revenue from outside activities, such as soccer leagues and sports camps, which help support our athletic programs," said Coleman.

Prior to making a decision, Coleman surveyed a number of synthetic turf installations at high schools and colleges in California, including the football field at UCLA, which recently installed Sprinturf™.

He liked what he saw, with one exception:

"The only disadvantage was the field tended to get hotter than a standard grass field, but we found a solution: state-of-the-art cooling which operates just like an irrigation system," he said.

Ready to roll, Coleman decided to go with Byrom-Davey of San Diego, CA, for field design and installation. Headed by contractor Steve Davey, Byrom-Davey has completed more than 100 synthetic fields for colleges, high schools and community parks in California and Nevada, and is among the most experienced artificial turf installers in the country. General superintendent Paul Pankow headed up the effort at Whittier.

After graduation ceremonies in May 2008, the old field was demolished and within three months the new field was ready for football practice – and a big calendar of sports-related events.

“Our challenge was to install turf that not only looked and felt like natural grass, but also offered greater durability and player safety,” said superintendent Pankow.

“The benefits to the college were clear: very little maintenance, no re-seeding, fertilizers, pesticides or irrigation. The site could be used year-round in nearly all weather and the playing surface would be consistent and safe.

“Plus the field never needed to be closed down to re-grow turf,” he said.

The renovation team decided on UltraBlade Dual Fiber™ from Sprinturf. UltraBlade features a straight, soft polyethylene fiber that has aesthetic appeal while also minimizing field injury, such as cuts and abrasions.

State-of-the-Art Cooling

To handle the cooling function, the team selected Hunter’s ICC Controller with remote, along with an Underhill 2Wire control system and Underhill M-125 long-throw sprinklers. The cooling system was installed just like a standard irrigation plan.

“Sprinturf was one of the first synthetic turf manufacturers to introduce the concept of a cooling system,” says Jim McAllister, regional representative for the Sprinturf company, which has installed more than 400 fields across the U.S.

“Rinsing and dusting off the surface every week or two, especially on a high-demand field like Chief Newman, is a very practical idea. During hot summer months, it keeps the playing surface cool and comfortable and prevents heat stress or dehydration,” said McAllister.

Newman Field covers 380’ x 206’ or approximately 80,000 square feet. During installation, a perforated drain pipe was laid around the perimeter of the field and a flat drain was then placed in a herringbone pattern on an impermeable membrane. Before the all-rubber infill carpet was laid down, the base was built up with four inches of aggregate stone, topped with a fine aggregate and Sprinturf’s Stablion™ backing.

Eight M-125 valve-in-head sprinklers were placed around the perimeter. The M-125s have a 125-foot throwing radius and were spaced 120 feet apart, four along each sideline. Half the heads are adjusted to 180° and four are set at just over 90°. Each operates as a separate zone in the 2Wire system.

The M-125s feature two extra-high-capacity nozzles for an extended throw radius, along with a 4-inch pop-up height and a 22° trajectory. Sprinkler covers can also be fitted with green artificial turf so they blend right into the field.

“The M-125s provide enough long-distance coverage so that we only need cooling sprinklers along the edge of the field, which minimizes safety issues in the playing area,” said Pankow.

“Cooling systems are strictly an option, but fields that have it are much more comfortable and safer for play from June through September.”

2Wire Control System

Byrom-Davey proposed using two-wire because, they explained, it was more economical to install, easier to maintain and could quickly be expanded in the future, if needed.

Interest in 2Wire control has been growing as rapidly as the use of artificial turf. In 2008 Byrom-Davey installed a series of 2Wire systems on sports fields, using valve-in-head M-125 rotors as cooling sprinklers. They discovered their crews also prefer the new two-wire technology.

“The learning curve was a no-brainer,” said Pankow.

“It took just a day of two-wire training and our crews had it figured out.

“2Wire technology made it possible to run just two lines from the ICC to each M-125 sequentially around the field, while following the new 3-inch main water line. There was no extra trenching back and forth to the controller, though we ran a third wire as a spare.

“Having a third wire in the ground is good back-up in case a wire is damaged. It’s a lot less expensive than cutting apart the synthetic turf,” said Pankow.

Through-the-Top Servicing

The M-125 valve-in-head rotor features a unique design that is ideal for 2Wire turf cooling systems. The weather-resistant plastic housing has a removable cover for through-the-top access. With the cover removed, the installer can easily attach a 2Wire field decoder to the sprinkler solenoid.

If troubleshooting is required, through-the-top access also means the synthetic turf never needs to be cut apart and repaired.

Before an event, the sprinklers are activated one at a time using the ICC remote. With a 125-foot throwing radius and 100-gallon-per-minute delivery, the entire field can be cooled and cleaned in a matter of minutes.

Other than occasional cooling and sweeping, field maintenance is minimal, says Coleman.

“We pull a sweeper behind a golf cart once a week to pick up leaves and debris, and we pull a greens groomer every three or four weeks. The stiff groomer brushes spruce up the fibers so the blades stand up straight for a fresh appearance. That’s pretty much it.”

The price tag for Newman Field was in line with costs for a typical field renovation, \$700,000 to \$800,000. The synthetic turf was approximately \$450,000 of that amount and the cooling system approximately \$30,000.

“At Byrom-Davey we’ve been installing state-of-the-art synthetic track and fields for nearly 10 years and have seen significant improvements in quality, aesthetics and safety. Turf manufacturers typically offer eight-year warranties, but we’ve installed fields that have been down for 10 years and are still performing well,” said Pankow.

The Synthetic Turf Council estimates that between 3,000 to 3,500 fields have been installed nationwide since 1998 and growth in recent years has been doubling – from 400 installations in 2003 to more than 800 in 2005. Two-thirds of NFL teams play or practice on synthetic rubber infill.

“Our experience tells us that synthetic turf is the future in sports fields and tracks, especially in the Southwest where water use is a major concern,” said Pankow.

2Wire Cooling System: How It Was Installed

“Installing two-wire doesn’t require any special equipment or tools, even the line is typical irrigation wire,” said Pankow.

“The first step is to snap the Underhill Decoder Module into the ICC Controller in the first module slot.”

Each 2Wire field decoder was then programmed with a unique station address, using an Underhill portable programmer/tester. (There is also a built-in decoder programmer on the ICC Decoder Module, which allows the installer to program a field decoder by inserting red and black decoder wires into the ICC Decoder Module.)

The crew routed the main two-wire cable from the ICC to each valve-in-head M-125 and connected the 2Wire field decoders to the sprinkler solenoids. Back at the ICC Controller, they ran the main two-wire cable through the conduit and attached the conduit to the controller at the large portal at the right side bottom of the cabinet. They finished by connecting the wires to the Decoder Module’s L1 and L2.

As the controller “calls up” each decoder station, power runs down the main two-wire cable along with the digital signal (the address) specific to each field decoder. When the decoder/receiver hears its address, it applies voltage to the solenoid, completing communication and activating the sprinkler.

Lightning Protection

Both the 2Wire Decoder Module and field decoders have a two-year warranty that includes lightning protection, even with direct hits. Two-wire systems generally offer greater resistance to lightning damage because there is less copper wire in the ground. No field grounding is required for decoders along the two-wire path, but the Decoder Module should be properly grounded at the controller.