



Two men join a 40 foot section of PVC pipe with another. It is linked to a sprinkler head on the edge of a green.



This system features individual head control, to allow for the different water needs of certain areas on the course.



Using PVC for the pipe network also meant the irrigation contractor was able to make length adjustments easily.

## A Golf Course In His Majesty's Honor

**I**F King James II of England was alive today, he could see what has happened to a certain 2500 acres of land he granted to 17th century colonists for settlement in the New World.

But he'd probably pinch himself to see if he was dreaming. History has it His Majesty was a bona fide

golfer. The showpiece on that 2500-acre site is now a 54-hole golf course named (of course) King's Grant Country Club.

It's all part of a \$200 million land development project located 15 minutes from Philadelphia and 40 minutes from the Atlantic Ocean; a project intended to be an entirely

new, planned community for 30,000 people. The first 18 holes of the course layout, a championship course set amid the pine barrens of South Jersey and a meandering stream, will be playable this spring.

To give the course an historical flavor, the project developers (Evesham Corporation, a subsidiary of Seltzer Brothers) imported Frederick W. Hawtree, noted English golf architect, as a design consultant. William Seltzer president of Evesham, envisions the original course as someday being the site for a major USGA tour event.

But even in its developmental stage, the course has several interesting qualities. For example, sand and sandy loam topsoil led Evesham landscape architect Michael Kihn to specify that the turf be maintained with an automatic irrigation system featuring double row lines on several fairways.

"Water percolates through the turf and topsoil very quickly," says Kihn. "This is good for drainage purposes, but poor for retention and turf life. So we need a fully irrigated course, even though this area has a very high water table."

To install the irrigation system required the combined expertise of Kihn; Philadelphia Toro Co., designer of the system; the irrigation contractor (John P. Schmidt Co.); the general contractor, (Harold E. Bishop, Inc.); a hydraulic project engineer (James William of Evesham); and the underground transmission system manufacturer (Cer-

*(continued on page 44)*



This pipe is light weight. One man can handle 40 foot sections with ease. No special handling equipment is needed.



Solvent welds are completed in minutes. Interior of bell and end of one section is coated. Exterior of the spigot end is coated. Joining is done manually.



A trenching machine was the only piece of special equipment required to lay the irrigation system's pipe network.

## IN HIS MAJESTY'S HONOR

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tain-teed Products Corporation).

The system is hydraulically operated and centrally controlled, with a satellite (individual fairway) con-

trol feature. The control system, directed from the maintenance building located near the clubhouse, is operated with a series of clocks and switches. It can put 1 in. of water on the fairways for 6 days, 8 hrs. per day; allowing for 1 1/4 in. on the greens and tees. And everything is accomplished at night. The system can also totally syringe the turf in 20 minutes during the day.

The irrigation system cost over \$100,000 and took nine weeks to install. Yet it took only three men to dig the trenches and lay the piping/sprinkling network. The reason, says John Schmidt, is that Philadelphia Toro specified polyvinyl chloride (PVC) pipe, with handling and flexibility characteristics highly applicable to turf irrigation.

"PVC is the only way to go," says Schmidt. "It's all we ever use. Could you imagine how long the job would have taken with steel pipe or any other material using only three men?"

Williams who supervised construction of the course, agrees. "There are many advantages of PVC," he says. The C factor is better with PVC and then there's the cost."

Cost was a prime consideration, according to Matt Ledwith of Phila-

delphia Toro. "We saved over 50 percent in material cost on PVC in comparison with steel." Overall, however, Ledwith acknowledges that the fully automatic system will not deliver a sizable return on investment; "because the more the turf is irrigated, the more you have to mow it. So what you save in manual watering costs, you make up for in turf cutting labor. The chief objective of an automatic system is to provide more efficient turf management."

In the case of King's Grant, he continues, "where high temperatures and equally high humidity prevail for 3 to 4 months of the year, there is very little ground circulation. An automatic system syringes and cools the turf, balancing the temperature to help save it."

From the pumping station, which can produce 720 gpm at 125 psi, water moves through the 30,000 feet of piping at the direction of the central control system. Individual head control allows for differentials in water needs and winds.

Schmidt's employees required no special handling for installing the system, save for a trencher. Because of the light weight of PVC, sections (continued on page 45)

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The flexibility of PPC means the pipe could easily bend around greens on King's Grant Golf Course.



This is the plan of the system, says John Schmidt (r) owner of Schmidt Irrigation System Installation Co. Other in the group are: (1-r) James Williams, hydraulic project engineer; Matt Ledwith, irrigation consultant; and Mike Kihn, landscape architect.

## IN HIS MAJESTY'S HONOR

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as long as 40 feet could be handled manually. And because of its non-brittle nature, breakage costs were virtually non-existent.

The flexibility of PVC meant that installers were able to make the piping system conform to the configuration of each hole with ease. "Look at the bends we make around

all the greens," says Schmidt pointing to the pipe contouring around the course, "and if we have to, we can cut a section in a few seconds with a handsaw."

Two types of joining systems were used, solvent weld and gasketed couplings. Both permitted sections in whatever length to be joined in minutes by two men.

From a service standpoint, adds Williams, PVC also performs well.

The pipe won't crack or break due to shifting, settling soil, and its lifespan is assured by its resistance to corrosion.

King's Grant is nearly complete, with seeding to be finished before the winter months approach. It's expected the course will be ready for play before the first of 3500 housing units are occupied. And the color, thanks to an efficient irrigation system, will definitely be green.

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