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'iron-body' heads. Rubber covers are the standard for protecting the athletes. Plastic has become the industry standard.

"We always use swing joint assemblies on sports turf applications, unless a client insists on spray heads outside of playing area, then we might go to a different riser."

ST: What about design? What are some of the key design elements in selecting and placing sprinkler heads?

JB: "Always keep equipment away from high activity areas, sprinkler heads and other irrigation equipment should in no way interfere with the field of play. For example, you don't want heads placed on the home-plate side of first base, rather on the second-base side. You don't want an athlete to slide into any base and catch a sprinkler head.

"And, you never want valve boxes in the field of play. Typically, the boxes are buried under a warning track, so they don't interfere with 'traffic' and they provide a cleaner presentation. If that's not possible, I like to spec them outside the fence.

"We use predominantly part-circle arcs, because clay is very unforgiving when over watered. A critical area is the outfield lip. This seems to be the most dangerous location for heads. There's a tendency to groom the skin and push 'leftovers' out onto the grass when grooming. Over time this builds a lip along that line, which can affect sprinkler performance. Also, balls tend to hit and careen off that lip so you don't get a true play, which makes it dangerous to the outfielder.

"So you design to water the skin and the outfield differently, with two different zones. You have to isolate the irrigation system for the lip from rest of the turf. This is the most critical liability issue in baseball."

DM: "Head placement has to be a key design element. You have to strike that balance between the injury aspect and effective coverage. We use as few sprinklers as possible to achieve good coverage uniformity. We use part circles around the field perimeters, and adjust distribution arcs for the baselines, to avoid overspray. We want to keep the baselines as dry as possible, but there will be some water along the edges to ensure proper sprinkler coverage.

"Irrigation control is critical, so we design valving for the laterals to provide as much control as possible around the crown of the infield, and then valve the warning tracks and the sides separately. We also try to provide separate control valves that allow the turf manager to isolate right, center and left field."

ST: Tell me about head placement. Is the there an accepted industry standard on where heads should be placed on the diamond?

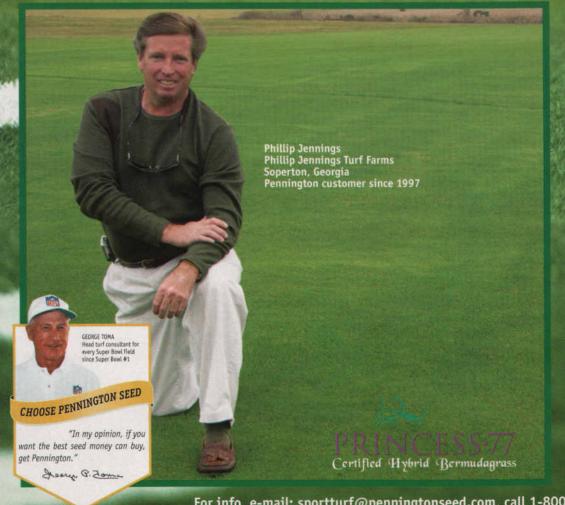
JB: "The industry pretty much has come to a standard approach. The standard head placement seems to be one head at each corner of the diamond, and one behind the pitching mound, all large rotors. Outfields vary in size and perimeter, so you have to design irrigation for those individually.

"Invariably, you'll find that you have to subtly compromise somewhere in your head spacing. So we strictly adhere to standard spacing of the outside heads. Then, we start in the center of the field and work a triangular grid pattern out toward the edges, and where you give it up is where the edge meets the center field pattern. If you're going to compensate coverage uniformity, add sprinkler heads and re-space, don't short the heads and get hot spots.

"I should say, too, that it's fundamental to only use equipment recommended by manufacturer for that use. If you spec or install big golf heads with a high pan size, and someone gets injured, it's your problem. Sprinkler heads for sports turf facilities are designed for safety and performance. Remember, injury prevention absolutely is the greatest concern."

DM: "There is a relative standard to the size and configuration of baseball fields. Generally, part-circle sprinklers around the perimeter of the outfield, and a two- or three-row system for the full-circle sprinklers perform best. In most cases we provide a high-speed rotary system to syringe the infield mix, which enables the turf manager to drag out the infield. Placing heads in a turf infield, we usually split the difference between the bases along the baseline. That's four heads in the infield. There's some overspray, but it minimizes conflicts with the athletes and maintains a safe playing surface. We also try to avoid placing sprinklers where base runners will be

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rounding the bases. Give 'em space.

"We typically try to provide a mainline loop outside of the ball field fence, then run laterals under the fence and warning tracks. Usually, there's a quick coupler behind the pitcher's mound for hand watering. Valve boxes are placed outside the fence wherever possible, or flush against the bottom of the fence.

'So, we do have kind of a process to laying out a field, but it really depends on

the field. We try to design the system where one side of the field mirrors other - left field and right field. It's easier to stake and install that way, too. We try to minimize sprinkler heads and maximize coverage and

ST: What should a sports turf manager look for in a design and installation?

JB: "Sports fields are layeredgrowing-medium systems. They're constructed very deliberately with gravel, sand, a rootzone, and turf. An irrigation consultant and contractor have to understand that. These field systems are much more surgical. You don't want to contaminate what they've created. I think it's critical that all professionals involved have experience in these types of installations; they require different irrigation equipment and design.

"A good design and installation is more important than the variability of products on the market. If you design properly around a quality piece of equipment, system performance is built in. So, look at the support of the irrigation distributor. Who's got your back? Who's going to run out at 11 at night and get you a head or a valve? We tend look at those items and issues.

"The goal of any irrigation system is to apply the minimum amount of water necessary to finish the job. Put as little down as needed to accomplish what you want to accomplish. For baseball parks, you combine that with minimizing the irrigation equipment on the field, for safety."

DM: "For a performance irrigation system, look for a consultant who has experience in sports turf applications and is familiar with available products. Because needs vary from site to site, they really should select equipment that has good local manufacturer support and is specifically designed for a sports turf application. And, the designer shouldn't use a cookie-cutter approach. The irrigation consultant and contractor should understand the game of baseball, how it is played, where the players stand, move and run, as well as how the field typically will wear. They should put a premium on the safety of the players." ST

The American Society of Irrigation Consultants (ASIC) was formed in 1970. Its members are committed to representing the client in providing independent irrigation consulting services for the effective use and management of water and other natural resources. For more information about ASIC or its members, call 508/763-8140 or visit www.asic.org.

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Fenway Park gets new irrigation system

new Toro irrigation system was part of an overall turf renovation project at Fenway Park late in 2004, which began with the excavation of 16.4 million pounds of soil. The upgrade was prompted by a number of concerns, including improved safety and playability of the surface, but also because the turfgrass had been so demanding to grow.

"That turf had certainly served its time, but it was old, and built like fields used to be built," said David Mellor, Director of Grounds at Fenway. "We had no automatic irrigation and very limited drainage. It was a heavy soil, so once it reached its capacity of water retention, there was no place for the water to go. It was a challenge to have the proper amount of water, especially in that soil."

Mellor chose Toro because of his long-standing relationship with the company and his local distributor, Turf Products Corp (TPC).

Toro's TR70XTP series rotors were installed in the outfield surface. Other shorter-radius rotors and spray heads were installed around uniquely shaped parts of the Fenway field, such as the bullpens and foul areas. For its zone valves, Mellor chose 220 Series Brass with EZ-Reg pressure regulation to maintain matched pressure throughout their field and obtain the most uniform application. A Custom Command Series 36-station metal controller controls the entire system.

"It's like night and day," said Mellor. "With the flexibility, the throw pattern, being able to adjust its arcs, it certainly helps with the uniqueness of an athletic field layout. The field will be healthier because of the efficient and more uniform application of water dispersing from the heads versus hand watering. . . also having an automated system that comes on at 2 or 3 in the morning, or being able to syringe something on a hot day will help increase our efficiency."

Renovating the surface and improving the drainage also enabled Fenway to remove the crown in the field - something once common on such playing surfaces. "We have a flat infield and center field now," said Mellor.

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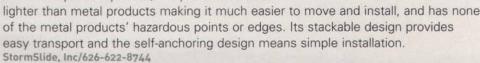


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Irritrol Systems' new Smart Dial controller introduces evapotranspiration (ET)based irrigation control technology that reacts to local weather conditions. Smart Dial features a WeatherTRAK-enabled interface that allows each zone to be programmed based on site-specific information, such as plant material, type of irrigation head installed, sun exposure, topography and soil type. Once programmed, the Smart Dial saves water by adjusting the irrigation scheduled based on local weather data downloaded daily via satellite through the ET-Everywhere Data Service (a 2-year subscription to ET-Everywhere is included with new controllers). Irritrol Systems/909-785-3623 For information, circle 054 or see http://www.oners.ims.ca/4571-054

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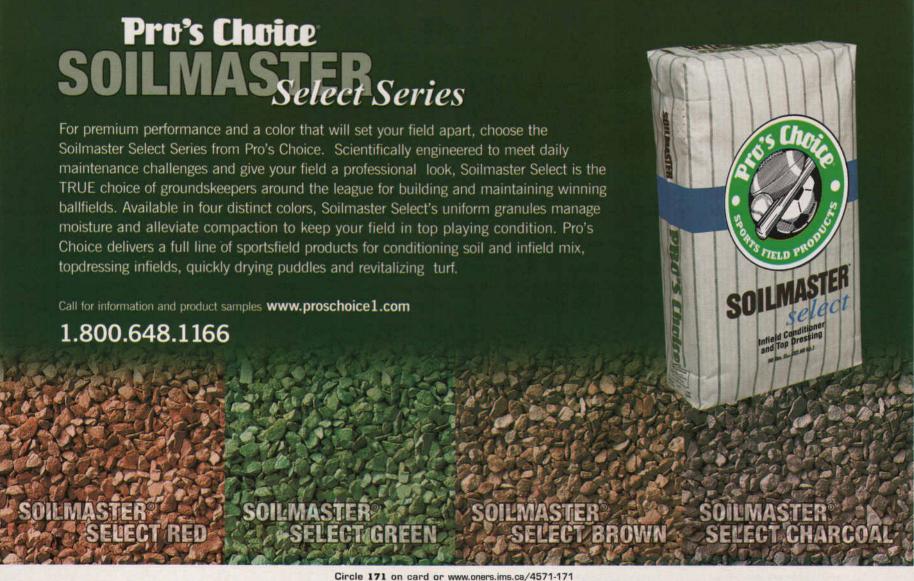
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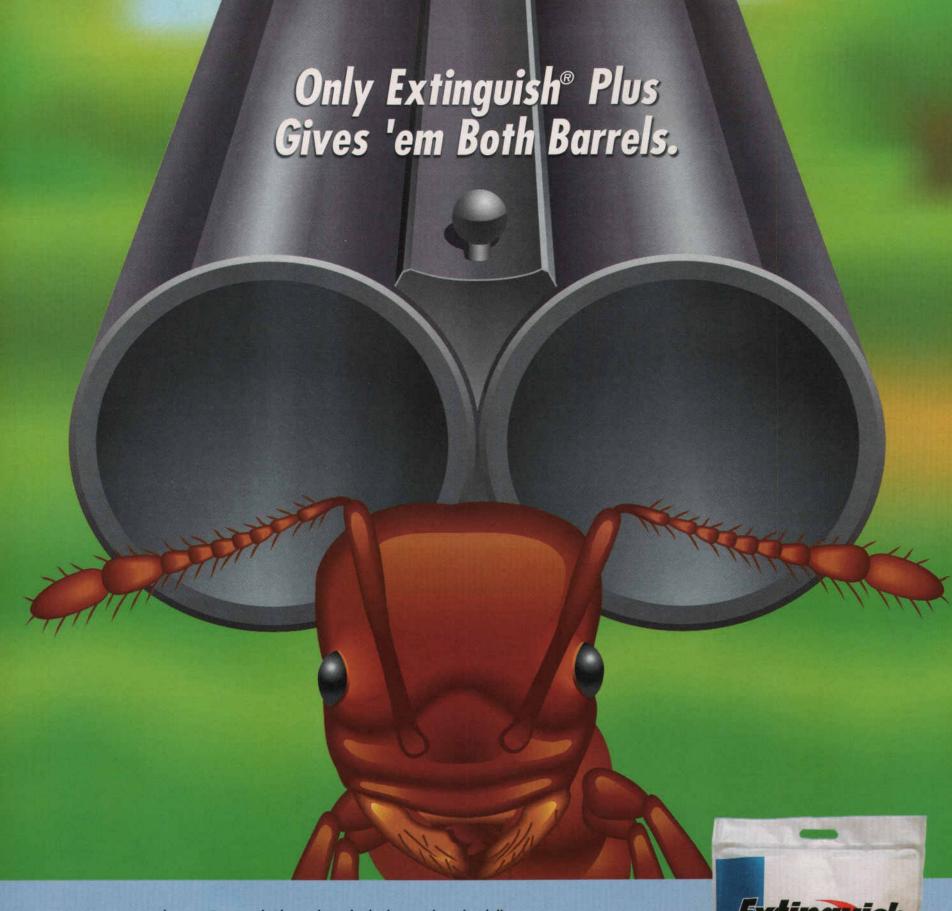


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Rain Bird introduces SiteControl Version 2.0, the latest version of its single-site, commercial central control product line, featuring new water management features designed to enhance plant conditions, conserve resources and save money. Version 2.0 is now standard with all Rain Bird SiteControl packages. Product features RainWatch for SiteControl, a new water management tool that works with up to four Site Rain Cans to automatically pause and adjust run times according to measured rainfall. It also includes a Minimum ET capability that postpones irrigation until a minimum evapotranspiration threshold is reached, promoting deep watering for optimum turf conditions and water savings. Rain Bird/800-984-2255

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1) Tree Selection-New Varieties - 7:00 a.m. to 9:00 a.m. William Baker, Representing UCR Extension Dennis Swartzell, Mountain States Wholesale Nursery
Li 2) Pesticides on Turfgrass - 8:00 a.m. to 10:00 a.m. Jay Gan, Ph.D., University of California, Riverside Bruce Kidd, Dow Agro Sciences
🗀 3) Assessing Plant Stress - 7:00 a.m. to 9:00 a.m. Angela O'Callaghan, Ph.D. , University of Nevada, Cooperative Ext Susan Sims, Sims Tree Health Specialists
4) Irrigation Design - 8:00 a.m. to 10:00 a.m. Bob Morris, University of Nevada, Cooperative Extension Tom Ash, HydroPoint Data Systems
□ 5) Tree Health - 10:00 a.m. to 12:00 noon M.L. Robinson, University of Nevada, Cooperative Extension Susan Sims, Sims Tree Health Specialists
☐ 6) Turfgrass Selection - 11:00 a.m. to 1:00 p.m. Kent Kurtz, Ph.D., California State Polytechnic University, Pomona John Rector, Turf-Seed, Inc.
🗅 7) Soil Issues - 10:00 a.m. to 12:00 noon Shoumo Mitra, Ph.D., California State Polytechnic University, Pomo Dirk Muntean, Soil and Plant Laboratory, Inc.
□ 8) Irrigation Efficiency - 11:00 a.m. to 1:00 p.m. Shoumo Mitra, Ph.D., California State Polytechnic University, Pomo Mike Baron, Walla Walla Sprinkler Company
🗀 9) Pros & Cons of Micro Injections - 1:00 p.m. to 3:00 p.m. Tim Paine, Ph.D., University of California, Riverside Marc Merman, Mauget
□ 10) Evaluating and Amending Soil - 2:00 p.m. to 4:00 p.m. Kent Kurtz, Ph.D., California State Polytechnic University, Pomona Dirk Muntean, Soil and Plant Laboratory, Inc.
Land 11) Soil Erosion Control - 1:00 p.m. to 3:00 p.m. Rod Dahl, USDA Al Schrand, Fiber Marketing
12) Irrination with Reclaimed Water - 2:00 n.m. to 4:00 n.m.

Dale Devitt, Ph.D., University of Nevada, Las Vegas David D. Davis, David D. Davis and Associates

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Nutrient Management (NM) Soil & Water Management (SW) Integrated Pest Management (PM) Crop Management (CM)

	NM	SW	PM	CM	
Session 1	0.5	0.5	0.5	0.5	
Session 2	0.5	0.5	1.0		
Session 3	1.0	0.5	0.5		
Session 4	1.0	1.0			
Session 5	0.5	0.5	0.5	0.5	
Session 6	0.5	0.5	0.5	0.5	
Session 7	0.5	1.0	0.5		
Session 8	0.5	1.0	0.5		
Session 9	0.5		1.5		
Session 10	0.5	1.0	0.5		
Session 11	0.5	1.5			
Session 12	1.0	1.0			



All Sessions - .2 PDUs



Session 4 - 2 CEUs Session 8 - 2 CEUs Session 12 - 2 CEUs

Another gem in Cooperstown

BY ERIC SCHRODER

oubleday Field, named for the alleged father of baseball, won the 2004 Sports Turf Managers Association's Field of the Year in the Schools/Parks category. Owned and operated by the Village of Cooperstown, NY, home of course to the Baseball Hall of Fame, Doubleday Field is maintained by Joe Harris and Greg Lippitt alone, with some seasonal assistance in the summer.

Harris says the first official game was played on the site of the present stadium in 1920, and the grandstands that are there today were built in 1939. While the annual Hall of Fame (HOF) game featuring major league teams from each circuit

gets all the publicity, Harris reports that normally three games a day are played on the field, seven days a week, except for about 4 days before the big leaguers come to town. Last year from April 10 through October 19 the field hosted 354 total baseball games, from Pony Leagues to high school ball to Legion games and semi-pro to over-40 league games.

Joe and Greg are the lifeblood of the facility; beyond the demands of turf management, they are responsible for all other aspects of maintaining Doubleday Field, from painting to cleaning up debris. Joe says at one time the village provided him extra help for the HOF game but these days, it's just he and Greg.

Harris credits mentors such as City of Buffalo's head groundskeeper Jim Hornung and John Liburdi of Heritage Park in Albany with teaching him the most about turf management, though he's also been through the well-known "School of

