

By Bob Tracinski

Legion Field's transformation from "The Football Capital of the South" to an International Soccer venue began in late 1994 following its selection as a site for the 1996 Summer Olympic Games. A \$1.2 million renovation project replaced the artificial turf with a natural turf playing surface that was dubbed "incredible" by U.S. Olympic soccer coach Bruce Arena, and heralded as "one of the best seen in years" by FIFA officials.

"The City of Birmingham, Alabama, earned a huge feather in its cap and an \$80 million economic impact from the Olympics," says James B. Boynton III, director of the city's Department of Horticulture. "Nearly 400,000 people filled Legion Field during the 11 days of Olympic soccer. Millions more all over the world watched on television as teams from Mexico, Italy, Argentina, Korea, Tunisia and Japan competed.

"Packed into 16 days were 11 Olympic soccer matches, 11 team practice sessions, two opening ceremony rehearsals and the opening ceremony. That's a challenge for any mature field, even more of a test for a field that was completely resodded just 45 days prior to the opening ceremony. Legion Field's own award-winning performance was a tribute to its superior construction and the commitment to strive for perfection by a tremendous crew."

### A Risky, Logical Solution

With 1995-1996 came one of the harshest winters on record. It devastated the new field's Tifway hybrid bermudagrass. The risky, but logical, solution was to replace the playing surface with washed Tifway certified bermudagrass sod followed by an aggressive grow-in and maintenance program. Mayor Richard Arrington Jr. responded to the dilemma with, "Do what it takes to have the field ready."

"The resodding," Boynton says, "was performed with the assistance of the professionals from STN Sports. The field was completed within 15 days and turned over to our Horticulture



James Boynton credits Legion Field's award-winning performance to superior construction and a tremendous crew. Photos courtesy: James Boynton III.

Department for maintenance 30 days prior to the opening ceremonies.

"A 10-20-20 quick-release granular fertilizer was applied every 3 days, supplemented with liquid applications of a minor nutrient package and Roots 2 every 5 days. Utilizing the subsurface Power Drain, irrigation water was held in the soil profile to a depth of 6 inches to force downward root growth. After 10 days, the root mass was 6 to 8 inches deep and the sod was holding firmly."

A light vertical mowing of the entire playing surface in two directions came next, followed by topdressing and then dragging with a stiff brush. A three-ton vibratory roller completed the leveling

and smoothing process. The fertilization program was augmented with ammonium nitrate at 1/2 pound of N per thousand square feet at five-day intervals. Ten days prior to the first soccer match, crews established the competition mowing height of 7/8 inch, cutting the field in two directions daily.

"Because of all this," Boynton notes, "Legion Field was ready for soccer matches five days ahead of schedule."

But Mother Nature hadn't completed her attack. During the 16 days of Olympic activity, gauges at Legion Field measured 8.25 inches of rainfall. Armed with vigorous turf and the Power Drain, crews fought back. Even

### Legion Field Standard Maintenance – 1996 Season

"The Legion Field agronomic program must be aggressive, yet flexible enough to accommodate scheduled activities," Boynton says. "Effective use of the sand-base profile coupled with the Power Drain system is of utmost importance to ensure healthy, vigorous turf during the entire season. Budgeting for maintenance of 120,000 square feet instead of a traditional football field's 85,000 to 90,000 also makes a difference in balancing costs and revenues."

**Analysis:** Soil and tissue testing every 4 weeks to determine precise fertility needs.

**pH:** Maintained at 6.0 to 6.5 at rootzone.

**Fertilization:** Active growing season requires combination of quick-release and slow-release nutrient sources. Granular: 1/2 pound of N per 1,000 sq. ft. weekly; 1 pound of N and K in blend of poly-coated urea and sulphate of potash at 4-week intervals. Augmented by liquid micro-nutrient combinations according to tissue testing results.

**Insect and disease control:** Daily IPM monitoring; treatment only as required.

**Aeration:** Core aeration 3 to 4 times per year.

**Topdressing:** 5-6 times per year. Material precisely matches soil profile to prevent layering.

**Mowing:** Daily from spring transition through growing season. Clippings caught. Direction alternated at each mowing. Bermudagrass height maintained at 3/4 inch into August; raised to 1 to 1 1/4 inches through December.

# EARNs 1996-97 SOCCER FIELD OF YEAR HONORS



Through daily mowing, Legion Field's bermudagrass is maintained at 3/4 inch into August.



Boynton says that managing the sand-based field has required learning about its ever-changing environment.

the two-inch downpour one hour prior to the USA-Tunisia soccer match couldn't delay kickoff. Bombarded by an additional inch of rain during the first half, the field held its own, providing the superior surface that prompted players, coaches and officials to exclaim that the field played as if there had been no rain.

"Field manager Tomm Johnson and his crew did an outstanding job," says Boynton. "He worked directly with Olympic personnel on a day-to-day basis to coordinate maintenance needs with field use schedules. The interaction and cooperation were outstanding. Even the 15-person 'pitch crew,' who technically worked for the Olympic committee, joined in the 'divot stomp' during the breaks in play to keep the field in top condition."

## Ever-Changing Environment

Though Olympic soccer was the highlight of the year, it was just part of the 1996 game schedule. Legion Field played host to 13 collegiate football games and closed out the year with the NAIA National Soccer Tournament and the State of Alabama High School Football Championships, for a total of more than 40 events.

"Managing the sand-based field has been a learning experience for us, and part of what we're learning is it's an ever-changing environment," Boynton points out.

"The sand heats and cools very efficiently, which is both good and bad. Water use must be carefully balanced to keep soil temperatures within an acceptable range during the heat of the summer. We used a protective blanket this past winter to ward off potential winter injury. We also closely monitored the moisture levels in the

soil profile throughout the winter to prevent root desiccation."

The fluctuating transition zone weather presents additional challenges. The Legion Field overseeding program was slipped into a 15-day "window" in September, 1996. The field was verticut in two directions, then overseeded with 8 pounds of Lesco Eagle Blend Perennial Ryegrass per thousand square feet. Following a light topdressing, the field was dragged with a drag mat to ensure

soil profile throughout the winter to prevent root desiccation."

seed-to-soil contact. The new seed was watered three times per day to provide adequate moisture for germination. But last September, bermudagrass was still actively growing in Alabama and resisted the invader. While the perennial ryegrass was needed to keep the field in top condition for fall play and to provide aesthetic appeal for TV coverage, the bermudagrass also needed proper potassium levels to prepare it for the pending winter.

"Supplemental overseeding applications were made at 10-day intervals through early November at the rate of 2 pounds per thousand square feet," Boynton says. "This gave us the turfgrass density to support the active football season."

"When field use ended in December, it was sprayed with Kerb herbicide to selectively remove the overseeded

## Legion Field Construction

By Alan Blalock

Legion Field had artificial turf since 1972. The City of Birmingham opted for our firm's design to convert it to a world-class sand-based natural turf field, conforming to the precise dimensions of international competitive soccer — if the city's bid to become a site for Olympic soccer competition was accepted. The site announcement was made in the fall of 1994 and work began in January of 1995. STN Sports was the contractor and Coston Construction the sub-contractor.

First came removal of the synthetic turf surface and 6-8 inches of concrete, including the 14-inch center crown. Compaction was poor at the original grade level. A 4-inch gravel layer was laid and laser graded to form a flat base.

A 6-head Rain Cannon system was installed with three heads along each side capable of delivering 400 gallons of water per minute and covering a radius of 230 feet.

The gravel layer was covered with vinyl, turned up 10 inches on the sides to create a "bowl." The Power Drain system was laid providing a network of 2-, 4-, 6-, 8-, 10- and 12-inch piping. The 2-inch pipes contain laser "slits" smaller than the particle size of the sand. This system can pull out or pump in water for precision moisture control.

Then 8,000 tons of sand were placed over the vinyl and piping, creating a 10-inch layer. A 3- to 4-inch layer of peat was broadcast over the sand and tilled in, creating a soil profile of 7 percent peat, 93 percent sand. This was laser graded again and covered with Tifway 419 washed sod from Tifton, Georgia. The week of sod installation was completed on June 8, 1995. The first game was scheduled for July 14.

Terms of the contract required our firm and the contracting companies to maintain the field for the first year. It performed well during the standard game schedule of 1995. When the bermudagrass was lost to winter kill in the spring of 1996, a 15-day marathon ensued. The dead sod was stripped, the surface again laser graded, and washed Tifway bermudagrass sod installed. With 30 days to go until opening ceremonies, Legion Field was turned over to the able hands of James Boynton and his staff.

Alan Blalock is president of Blalock Associates Inc., a firm based in Birmingham, Alabama, that specializes in athletic field design and golf course architecture and was responsible for the architectural renovation of Legion Field.



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perennial ryegrass, and it did eliminate much of it right away. As spring temperatures remained cool, the perennial ryegrass made a comeback while the bermudagrass remained static. A second Kerb application in late March also produced an immediate effect, but cool temperatures returned in late April and early May, again slowing bermudagrass growth and giving the ryegrass another energy surge. Obviously, field maintenance would be far easier if we did not have to deal with the transitions at both ends of the cycle.”

In June (during this writing) Boynton planned to sprig bermuda into areas of heavy wear and concentrate on increasing the density of stolons. This would follow the Promise Keepers event that brought 50,000 people to Legion Field and should coincide with the warm temperatures needed for optimum bermuda growth.

### Running Up a Red Flag

Boynton notes that playing an artificial-field schedule on a natural turf field means something has to give. For Legion Field, it's the heavy schedule. A more workable 16 games are planned for 1997, along with assorted special events.

Legion Field, like so many municipally owned and managed facilities, generates income for the city. It's difficult to achieve a balance between revenue-producing field use and the time necessary for field maintenance procedures and recuperation. There are times when certain activities on the field may cause problems that persist for the rest of the year, so sometimes field use simply has to be the sports turf manager's call.

“There are always more demands on a dual-purpose field than a one-sport field, and it's not always possible

to keep in contact with all of the field users,” Boynton says. “We've developed a red-flag system. If the red flag is hanging on the designated gate of the field, all possible users understand an agronomic procedure or program is in process or has been completed and there can be no activity on the field.”

### Striving for Perfection

Boynton joined the city staff two years ago, bringing with him an extensive background in horticulture from his experience as branch manager in Orlando for a landscape contractor that maintained high profile turf. Director of the Horticulture Dept., he has a staff of 150 and is responsible not only for the Legion Field turf, but also for all city parks, landscaped right-of-ways and the urban forestry program.

Boynton praises his agronomic consultants, Dr. Jeff Higgins and Dr. Coleman Ward, both of Auburn University; field architect Alan Blalock; and Don Roberts of Woerner Sports Turf International, who worked with the design and construction team prior to the Olympics and continues to provide support.

Boynton says, “The Soccer Field of the Year Award was earned by the entire team. Special thanks must go to Tomm Johnson, and James Horton, who took over from Tomm after the Olympics, and to Legion Field supervisor Donna Kent, who implements the daily management program. Thanks also go to stadium manager Walter Garrett for his continuing assistance.

“Perfection was our goal, and while it was virtually unattainable, we did manage to come pretty close to it.”

Bob Tracinski, public relations co-chair for STMA, manages public relations for John Deere in Raleigh, N.C.