

STADIUMS BEGIN BIDDING FOR WORLD CUP SOCCER

Now that La Federation Internationale de Football Association (FIFA) has decided to play the 1994 World Cup soccer championships in the United States, the bidding begins by 24 stadia across America for the right to host some of the games.

The proposed stadiums crisscross the country, from Florida to Oregon, from California to New Jersey. Only 18 of the 24 sites have been made public.

The groundskeepers of these 24 sports complexes must sweat it out until 1991 or '92 before a decision is made. No matter how beautiful they keep their arenas, the deciding factor may be beyond their control.

There are several criteria for determining the games sites, Paul Stiehl, the director of the World Cup USA 1994, listed several factors in the decision-making process; the physical nature of the stadium, seating capacity, location, age —how modern is it? Also of importance is the stadiums proximity to another proposed site. Stadiums must be paired to facilitate World Cup play. One group of teams couldn't play their first round games in cities a thousand miles apart. Stiehl described the acceptable distance between sites at "about a day's drive." For example, Las Vegas and Los Angeles are close enough—Seattle and Chicago aren't.

Additional factors not to be overlooked are temperature; will the proposed site be too hot or humid during the July tournament? Although the weather can't be controlled, pleasant temperatures can translate into big attendance, and the goal is to have capacity crowds at all games, regardless of the participants.

The cities or individuals who own the stadiums will have the final say. Converting American football fields to FIFA standards for soccer will cost money. A football field as we know it is 360 feet long by 150 feet wide. A FIFA "football" field is 340 feet long and 220 feet wide. Add about 30 feet around the perimeter of the field for an out-of-bounds zone, and you're playing soccer in the second row.

A bigger problem arises from the FIFA regulation of playing only on natural grass. But if your stadium has artificial turf don't despair. There are several methods for converting fake to real, and the conversion is relatively simple (see sportsTurf May 1988). "We'll have these stadiums in January (1994), if we can't grow grass in six months then we have no business hosting the World Cup," Stiehl said.

"We'll tell each stadium owner what needs to be done to prepare the field, and let them decide if they are willing to do the work," Stiehl said, adding, "There is no insurmountable obstacle in preparing any of the proposed stadiums for World Cup soccer. Most

adjustments are minor." With all the excitement the 1994 World Cup has already generated, it is doubtful that any stadium owner will voluntarily remove their structure from the bidding block.

DODGERS NAME HICKS HEAD GROUNDSKEEPER

Al Hicks, head groundskeeper at Dodgertown in Vero Beach, FL, has been transferred to Dodger Stadium in Los Angeles, according to Bob Smith, director of stadium operations. Hicks impressed Manager Tom Lasorda and a number of players during spring training. When Curtis Scott, the groundskeeper at Dodger Stadium died this summer, Smith called Hicks in Vero Beach.

Hicks started his career on the crew at Terry Park, the former Kansas City Royals' spring training facility in Ft. Myers, FL. He served as assistant to Tom Burns during the construction of the Texas Rangers' new spring training facility at Port Charlotte before getting the head job at Dodgertown last year.

He is only the third head groundskeeper at Dodger Stadium since it was built in 1962, the year the Dodgers moved from Brooklyn, NY. Chris Duca was hired by Smith for the new stadium and maintained the bermudagrass there for 23 years.

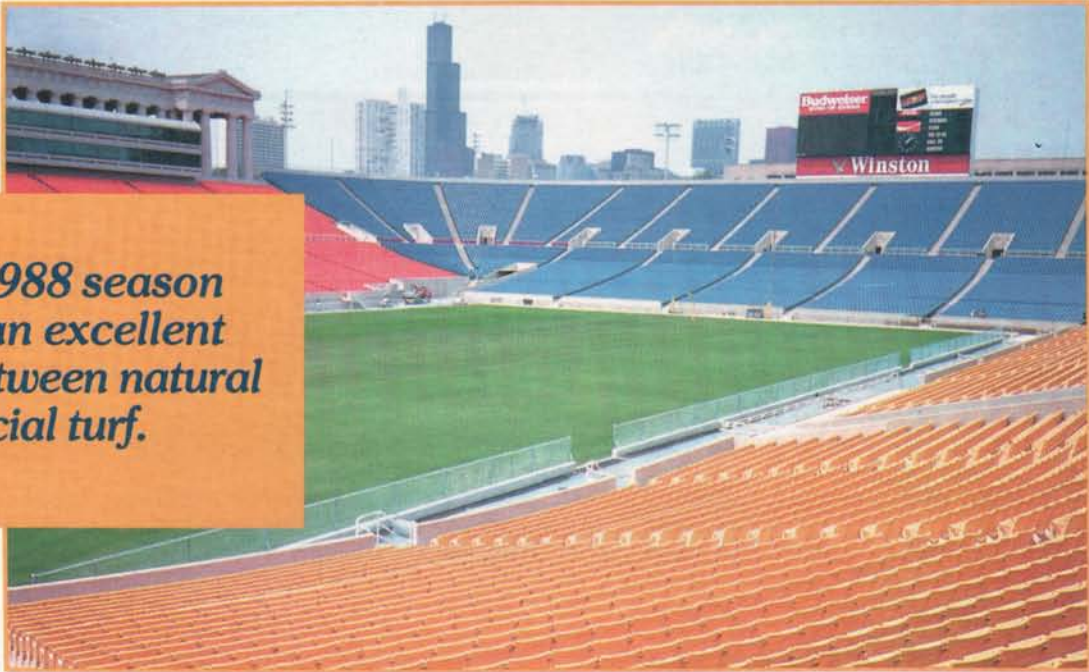


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The Battle for Natural Turf At Chicago's Soldier Field

The talk at the Chicago Bears' training camp this summer was not about Refrigerator Perry's weight or Jim McMahon's shoulder. Instead, the coaches and the players were "really excited" about playing their first home game on natural turf since 1970, says Ken Mrock, the Bears' head groundskeeper.

After two years of negotiations between the Bears and the Chicago Park District, the team got what it wanted, natural turf in Soldier Field. "The park district and Turf-grass Services Inc. really deserve a lot of praise for pulling this off," says Mrock, the former superintendent of golf courses for the park district. It took tremendous effort by many people to work out all the details and get the PAT (Prescription Athletic Turf) field installed in time for the exhibition game with the Miami Dolphins on August 6. But, they did it and everyone in the National Football League will be watching this fall to see if natural turf really makes a difference.

The Bears' 1988 season will provide an excellent comparison of the two surfaces. In previous seasons they played an average of only five games on natural turf. This year they will play 12 plus three preseason games on real grass. "Fifteen out of 20 games this year will be on natural turf, instead of four or five," says Mrock.

The players won't get to step onto the new field until the day before the Miami game. The Kentucky bluegrass sod has been down only six weeks, six of the hottest and driest weeks in Chicago history. The city has had a record five days of 100 degree plus temperatures and is behind ten inches in rain-

fall. A watering ban has made irrigating the fresh sod a subject of controversy.

It's ironic to think that too much water was one of the major reasons the PAT System was selected, says Roger Bossard, consultant to the park district for the project and head groundskeeper for the White Sox. Soldier Field is just a few blocks from blustery Lake Michigan. "A strong wind out of the northeast can raise the level of the lake as much as 15 inches and push the water table up with it." In the past, lake water has backed up into the storm drains blocking the runoff from the field.

"A professional football field has to remove rain almost as fast as it falls," Bossard adds. "With only ten home games, the team and the stadium can't afford a flood. It was important to separate the field drainage from the storm sewers and the water table. The plastic liner of the PAT System let us do that."

For Mrock, Bossard and park district personnel, the story began in the fall of 1986. Bears' owner Michael McCaskey and Coach Mike Ditka made it clear they wanted "to play on real green grass." They hinted strongly that they would build another stadium in the city if they had to. Jesse Madison, executive vice president of the park district, who is responsible for Soldier Field in addition to the city's golf courses, parks and gardens, took the threat seriously and assigned the project to Director of Landscaping Ira Berk. Berk called in architect Bob Megquair and Mrock from his staff and hired Bossard as a consultant.

AstroTurf was first installed in Soldier Field in 1971 when the Bears moved over from

Wrigley Field. The original carpet was replaced in 1979 before Monsanto developed AstroTurf 8, a drain-through combination of porous carpet, pad and asphalt base. Rain and melting snow had to run off the field to collector drains located on the perimeter.

Being a public agency, the Chicago Park District had to establish specifications and take bids from all qualified contractors. It took nearly a year to identify all the changes that needed to be made at Soldier Field and to hammer out the specifications. The bidding process didn't start until this past winter, just months before the Bears' exhibition game.

Not to be left out, AstroTurf Industries and Sportec International made their own proposals to the park district. AstroTurf was proposing its drain-through system and Sportec its sand-filled artificial OmniTurf. The Bears, represented by Tim Lefever, made it clear at numerous hearings that they wanted a PAT System.

David Heiss, president of Turf Services Inc. of Spring Lake, MI, the licensed PAT installer for the region, nevertheless understood that artificial turf companies were formidable competitors. He still had to win a price battle. "We weren't just fighting for PAT, we were fighting for natural turf," states Heiss.

One item that Heiss and PAT's Dr. William Daniel and Laurel Meade wanted to include was field heating. A number of European stadiums and Mile High Stadium in Denver, CO, have heating grids buried about

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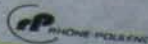
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The Battle for Natural Turf

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eight inches below the turf surface to warm the soil. Electric or hot fluid systems melt snow and keep the ground from freezing. This option would cost an estimated \$150,000 to \$200,000 and raise the price of the PAT System by more than 30 percent, explained Meade. The combination of heating and controlled drainage would provide the ultimate in natural winter turf.

Lefever surprised the park district and the PAT team by suggesting that installation of the heating system be delayed. The heating system was shelved and the bid submitted without it. "I hope the heating system can be installed in the future," says Mrock.

The final hurdle Heiss had to clear was the lack of competition to bid against for constructing a natural turf field to the city's specifications. In late February, the park district board voted to allow a single bid for the PAT system. Heiss waited nervously for more than a month for final details to be resolved and contracts to be signed. He wanted to give the sod ten weeks to knit with the soil.

To complicate matters further, Pink Floyd was scheduled to perform at Soldier Field on May 20. Heiss was not going to risk having thousands of rock fans trample the new sod. All the drainage, irrigation and soil work would have to be completed before the con-

cert so the sod could be laid immediately after. Fortunately for Heiss, the concert was cancelled.

In April, the park district removed the old surface and started excavation. The final grade of the new field would be just three feet above the average level of Lake Michigan. Park engineers decided to build a low wall around the field to serve as a dike.

With only three months to go before the first game, Heiss moved his crews and equipment onto the field. The first order of business was to make the subgrade perfectly flat. Once this was achieved, the field was divided into four separate drainage sections, two for the playing area and two on the perimeter. A network of trenches were dug in each section for the perforated drain pipe. But before the pipe was installed, the entire subgrade and trenches were lined with a plastic water barrier. The result was a two-acre bath tub about one foot deep.

Heiss and Daniel visited area sod farms in search of sod grown on sandy soil. They had heard the drought was forcing some sod growers to cut back on water. "We had to have healthy, established sod grown in sandy soil so it would take root as fast as possible," says Heiss. They found what they wanted 50 miles away at Huber Ranch Sod Nursery in Schneider, IN. It was a blend of five improved Kentucky bluegrasses growing in sandy riverbottom soil near the Kankakee River. "Our soil on the farm is 75 percent

sand," explains Bill Huber. "We grow a lot of Penncross bentgrass sod in the sand to eliminate soil interface problems on sand-based greens."

In the fall of 1986, Huber planted part of his 760-acre farm with a blend of Adelphi, Baron, Glade, Parade and Rugby Kentucky bluegrasses. "We are fortunate to have two spring-fed lakes to supply our irrigation system so our sod never lacked water. When Dave called up, I told him we had just what he needed."

The sod part of the Soldier Field story was strengthened further by Jim Walsh, president of Sportsfields Inc., who Heiss hired to lay the sod. Walsh had worked for Ben and Bob Warren for eight years at Warren Turf Nurseries. Walsh also knew chemicals from two years as a professional turf representative for Lebanon Chemical Co. While Heiss concentrated on construction at Soldier Field, Walsh coordinated preparation of the sod. That included applications of Alliete for *Pythium* control, Proxol for insect control and Agri-Plex to provide the sod with iron and micronutrients.

Heiss, Walsh and Bossard worked closely together so that maintenance of the sod after installation would be flawless. In the meantime, the drain lines were being installed. They aren't just drain lines, they are two-way conduits between the field soil and a water control station. Moisture sensors buried at various depths in each section of the field electronically report to a central control station. By setting moisture levels for specific depths, water is pumped into or out of the field through the drain lines. This subirrigation/drainage system can suck water out of the field as fast as rain can fall or fill it like a bathtub. By controlling the depth and amount of moisture, the sports turf manager can put water in the root zone while keeping the playing surface firm and dry.

The heart of the system is a sealed concrete tank. This air-tight tank holds 200 cubic feet of air in the upper portion and 400 cubic feet of water in the bottom. The main drains are connected to the tank. Inside the tank are two four-inch submersible pumps capable of expelling 700 gpm. There is also an air suction pump. The combined suction of the air pump and the sump pumps can remove more than 2,000 gpm from the field.

As Heiss arranged for delivery of more than 8,000 tons of sand, Mueller Mist installed the Toro irrigation system. Surface irrigation was not part of the original PAT System design. Subirrigation was the sole source of water when the system was first created more than 20 years ago. But experience has shown Daniel and Meade that it can save the day on many occasions. Sports turf managers are accustomed to surface irrigation and a sand field can be very thirsty when the pumps are down. As things turned out, there wouldn't have been natural turf in Soldier Field this month if it weren't for the Toro system. The pumps were not up and running until the end of July.

Access to the stadium added to the pressure of the job. Four out of six lanes on the



Temperatures soared during the three days the sod was installed.

Dan Ryan Expressway were closed for construction. The trucks had to use Lakeshore Drive and they weren't allowed on that between 6 am and 3 pm. Noise ordinances prevented nighttime deliveries to narrow the window even further. When the trucks did arrive they could not fit through the one tunnel to the field. Smaller shuttle trucks had to carry the sand from the large trucks onto the field.

Another challenge was only union crews could work at the stadium. Heiss wasn't about to risk delays caused by union unrest. Walsh contacted Tom Koch of Koch & Son, a Chicago landscape contractor who provided more than 15 union laborers at critical times.

By the middle of June, the sand was in place. Peat and calcined clay (Surface) were worked into the top few inches of sand. The surface was fine-graded to be as flat as a pool table. Four two-inch hoses were used to wet down the soil in preparation for delivery of the sod.

At 11 pm on Sunday, June 19, the sod harvesters at Huber Ranch were fired up and started cutting the Kentucky bluegrass with a third of an inch of soil. By 2:30 am, the trucks were loaded and on their way to Chicago 50 miles away.

Walsh and his crew were there at the stadium when the trucks started arriving. Again, the trucks could not fit through the tunnel so each pallet of sod was carried onto



Laurel Meade, Roger Bossard and David Heiss (l. to r.).

the field by forklifts with turf tires. Pallets were spotted at locations marked by Walsh. Starting on a line down the center of the field the crew began to lay the sod. They were followed closely by one person with a roller and another with a hose. As each section was finished, the Toro 640 heads were installed and the particular stations were turned on.

The first day Walsh and his crew laid 3,075 square yards of sod. The temperature soared to 104 degrees, but there was no stopping. The procedure was repeated the next day with 4,200 square yards. "The guys could see the field taking shape with each roll," recalls Walsh. "They weren't used to that kind of heat, but they worked fast and

really watched the seams."

Each night Huber would cut the sod and deliver it to the stadium before dawn. As the sun rose the pallets were already in position on the field. On the third day the remaining 3,000 yards were laid. Looking over the completed field, the exhausted crew knew they had accomplished something spectacular. The brilliant green surface was a stark contrast to the faded artificial surface of a few weeks before. The stadium itself was brighter with blue, yellow and orange seats, new paint and 50 new loges on the South end. The new color highlighted the Grecian columns atop the stands on both sides of the field. "You wouldn't think this stadium was built back in the '30s," remarked Meade.

The temperature still hovered in the '90s. Bossard, Walsh and Heiss were concerned that the heat would shock the turf and keep it from rooting as rapidly as possible. "Once turf starts wilting and turning blue it takes six to eight days just to get it going again," Bossard pointed out. "We couldn't afford that. We didn't have any choice. We had to keep the water on. The local media jumped on us because we were irrigating every day when everybody else in the city was under a water ban."

For the next three weeks Bossard checked the root depth of the field nearly every day. "The goal was to get the feeder roots down at least three inches and the

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The Battle for Natural Turf

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hair roots spread throughout the top inch," said Bossard. He applied Scotts High K and Fairway fertilizers. He also sprayed Agriplex every week. "Normally you wouldn't push turf this hard, especially in the heat, but we had no choice," Bossard said. "We had Aliette and Subdue ready to go at the first sign of *Pythium*, but the wind off the lake must have kept humidity down."

By mid-July, Bossard decided it was time to stop babying the turf. He started cutting back the irrigation cycles while watching the turf for signs of wilt. The roots had to search deeper for water. This process would have been easier with the subirrigation system, but work on the water pit and pumping station was not yet completed.

Ten days later, the field was aerified to create channels in the soil for root penetration, something not generally recommended in hot weather. Sixty-five tons of sand and calcined clay were topdressed over the sod

and brushed into the core holes. "Basically, the topdressing stabilizes the sod by making it heavier," stated Bossard. "It also fills in any seams or spots that settled. The clay particles absorb their weight in water and hold it longer than straight sand does."

There were many other details to take care of before the Bears and the Dolphins could play on August 6. The field had to be surveyed from scratch. Templates for the team logos, NFL symbol and numbers had to be ordered. Turf paint in all the special team colors and white had to be ordered. And the park district crew had to be trained to paint natural turf as opposed to artificial.

Ira Berk wanted Soldier Field to look as good as the Super Bowl. So he called the same person George Toma calls for the Super Bowl, Larry Elliott, vice president of Missouri Paint Supply in Kansas City. Elliott proceeded to order the templates from his supplier of more than eight years, Calvin Autry, owner of Calvin Sign in Kansas City. Next he sent color swatches to Mautz Paint

in Madison, WI. The paint had to be custom-blended to exact specifications.

In the meantime, Elliott flew to Chicago to survey the field. As soon as the locations of the goal posts were spotted, footers were installed. The end zones, yard lines, hash marks and sidelines were carefully set. On July 22, the Kentucky bluegrass turf at Soldier Field became the canvas for Elliott and the park district crew. The field was painted as if the opening game was the next day.

"It's hard to describe how I felt when the painters finished," says Heiss. "I walked way up into the seats and just stared at the field for ten minutes. From the top row you look one way and see the Chicago skyline. Look the other way and you see the marina and the runway at Meigs Field. All I could think of was what a great stadium Soldier Field is... AND now it's natural turf!"

After 22 years at Comiskey Park, Bossard strongly believes that natural turf is the best surface for outdoor stadiums. "I've managed both in my time (Comiskey had artificial turf from 1968 to 1975) and natural turf is the only way to go." The new stadium to be built next to Comiskey for the White Sox will also be natural turf.

Two big challenges remain for the Chicago Park District. The first is to hire a head groundskeeper that understands the PAT System. The city is lucky to have Bossard and Mrock nearby for their advice. "The biggest problem we have today with PAT fields," says Meade, "is maintenance after installation. Stadium owners have to realize that maintenance is no simple matter. We're not just talking about mowing and marking the field. We're talking about a sand rootzone with a sophisticated drainage and irrigation system. These things require skilled, experienced management. To get someone like that, you have to be selective and pay them accordingly."

The second big challenge is field heating. "Football is tougher than baseball," explains Bossard. "Grass wants to grow during the baseball season, but doesn't during the end of football season."

"The Bears have games November 27 and December 11," says Mrock. "We used to put tarps over the AstroTurf and blow heat under them to keep the surface from freezing. The same has been tried successfully on natural turf. Eventually, all stadiums located in the North will have to address field heating. It has to be a lot cheaper than building domed stadiums." At the present time, Mile High Stadium in Denver is the only PAT field with a heating system.

"We learn something new with each installation," says Dr. Bill Daniel, who invented the system at Purdue University. "The more fields we install, the more we learn. We know that adequate infiltration, percolation and subdrainage along with moisture control, make it possible to provide and maintain a durable turfgrass cover that allows maximum use. That's the real name of the game today and that is what will preserve natural turf as the ultimate sports surface in the future." ☺

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ILLINOIS APPROVES \$150 MILLION FOR WHITE SOX PARK



St. Petersburg's attempt to have the Chicago White Sox move to its Florida Suncoast Dome in 1991 failed when the Illinois state legislature approved \$150 million for a new stadium in Chicago. The new stadium will be constructed next to Comiskey Park, which was built in 1910 and is the oldest park in the major leagues.

Roger Bossard, head groundskeeper for the White Sox, says the new open-air stadium will have a sand-bed natural turf field. The Suncoast Dome, which will have an artificial surface, is scheduled for completion in July 1989. The White Sox are also

in the process of building a new spring training facility in Sarasota, FL.

HOK Sports Facilities Group in Kansas City, MO, is designing the new stadium under the direction of Vice President Richard deFlon. One hurdle remaining for the city to clear is condemning businesses and residences on the site. The arrangement with the Sox sets a deadline of October 15, 1988 for the condemnation process.

Chicago first promised the White Sox a new stadium in 1986. The estimated cost of the facility then was \$120 million. In two years the cost increased \$30 million. The

city also had to include other guarantees and rent concessions to compete with St. Petersburg's offer.

YANKEES PLAN TO RENOVATE OUTFIELD

The House that Ruth Built is being rebuilt, by a guy named Frank. But don't expect the stadium moniker next season to be "The House That Frank Built!" Frank is Frank Albohn, Yankee Stadium's head groundskeeper, and the rebuilding won't be of the walls, but of the sod.

The outfield grass of Yankee Stadium, which was patched in some areas last fall, will be completely replaced after the 1988 baseball season. The 85,000 square feet of turf, down from 125,000 since the centerfield fence was moved closer to home plate, will take about a week to resod.

Albohn estimates the cost will be \$40,000 to \$50,000, a mere fraction of what a free agent garners in today's market. The sod will deliver a consistently high level of performance for many seasons to come—longer than free agent, quips Albohn.

Albohn became head groundskeeper when the former groundskeeper, Jimmy Espesito, passed away in 1986. Espesito was a groundskeeper for 40 years, 15 with the Brooklyn Dodgers, and the last 25 with the Yankees.



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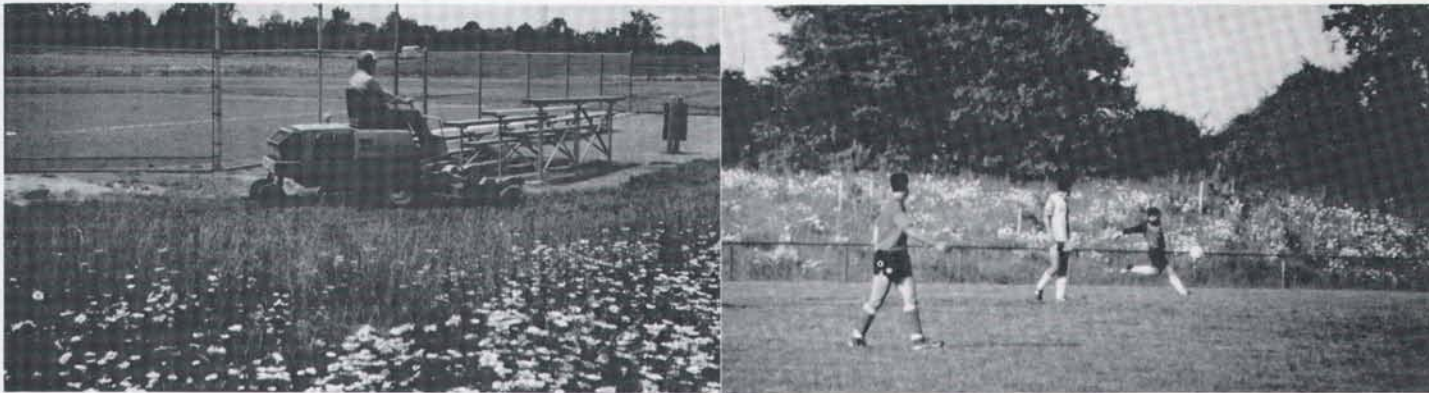
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Park Plants Wildflowers To Control Maintenance Costs



Wildflowers border fields at Howard County parks. These areas are mowed just once each year in February.

In early 1981 the Howard County Department of Recreation and Parks, through its Bureau of Parks, began to identify a potential problem in operations. Developed park acreage was expanding so rapidly that the staff envisioned a time in the near future when the overall maintenance requirements would vastly outstrip the available operating-budget dollars. The rate of development between 1975 and 1987 was more than 4,000 percent.

Various strategies to solve this problem were discussed. An overall reduction in park services was rejected as a possibility, since many functions were governed by specific health-and-safety requirements for the general public. Selective reductions would probably have to be made.

The parks bureau began looking seriously at repetitive maintenance; those highly labor-intensive tasks made up a large portion of its annual schedule.

Since the bureau had achieved a good deal of success in replacing much hand trimming with a chemical maintenance program, it was determined that some alternative to routine maintenance of large passive-use turf areas might be appropriate.

The bureau began to alter its mowing patterns, leaving large areas of tall fescue turf unmowed. Public reaction to this approach was decidedly negative. There were many complaints about poor maintenance and the generally unkempt look the parks.

The bureau had previously tried a then-popular "wildflower seed mix" with very poor results. However, this idea kept coming back as an available option. If an attractive alternative could be coupled with public education, the "naturalized" landscape could

be turned from a liability into a definite asset to the department.

The staff began to seek information on both native plantings and wildflowers. After discussions with most of the education and extension professionals in the Mid-Atlantic region, as well as private agencies and institutions, it was determined that very little information existed on the use of wildflowers in the area.

Interest has grown nationwide in wildflowers and native plantings, spurred in large part by the untiring efforts of Mrs. Lady Bird Johnson, who founded the National Wildflower Research Center. However, most of this activity was concentrated in the West.

Nevertheless, extension personnel advised that wildflowers should be an excellent alternative in the transition zone, and should do very well in poor soils under adverse conditions. They could provide a color-and-texture alternative to the limited landscaping available in the developing parks. Who could possibly object to a vibrant mass of color in a park setting?

Armed with this information, the Bureau of Parks began to gather preliminary information, hoping to develop a future wildflower-and-naturalization program. By early 1983, Mark Raab, grounds division supervisor, had organized the information gathered earlier by the bureau.

One of the first problems encountered was the lack of budget monies to establish the necessary test plots to evaluate materials for use in the parks. These test plots would be essential to any future success of this program, as no other research data existed.

Lacking information from education and extension services, Rabb hit upon the idea

of going directly to the seed producers for assistance. Approximately 20 were contacted by letter. They were informed of the bureau's intent to establish wildflower test plots on a limited basis.

It was made clear to the suppliers that the Department of Recreation and Parks was not a research agency; nor was it being supported by any extension service or university. But Rabb promised to share test results with the various suppliers, primarily in return for information and technical assistance.

Evidently the time was right. Seven of the suppliers responded with guaranteed pledges of donations—enough to establish four acres of test plots.

The department had decided that if wildflowers and a general naturalized landscape were to be successful, they would have meet certain guidelines. The areas must be passive, non-use areas with extremely low levels of maintenance. Yet the plots would have to be a positive addition to the park environment.

It was important that these plots blend into the parks—on slopes, swales, and other areas on the periphery of active park facilities. These areas were selected as much for aesthetics as to test their ability to reduce labor and equipment time. Finally, the majority of the work to establish and maintain the plots had to be done in the "off season"—late fall through very early spring.

The department selected three park sites that could be divided into 13 separate plots. These plots were not the standard research plot; each was fitted into the overall park design.

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