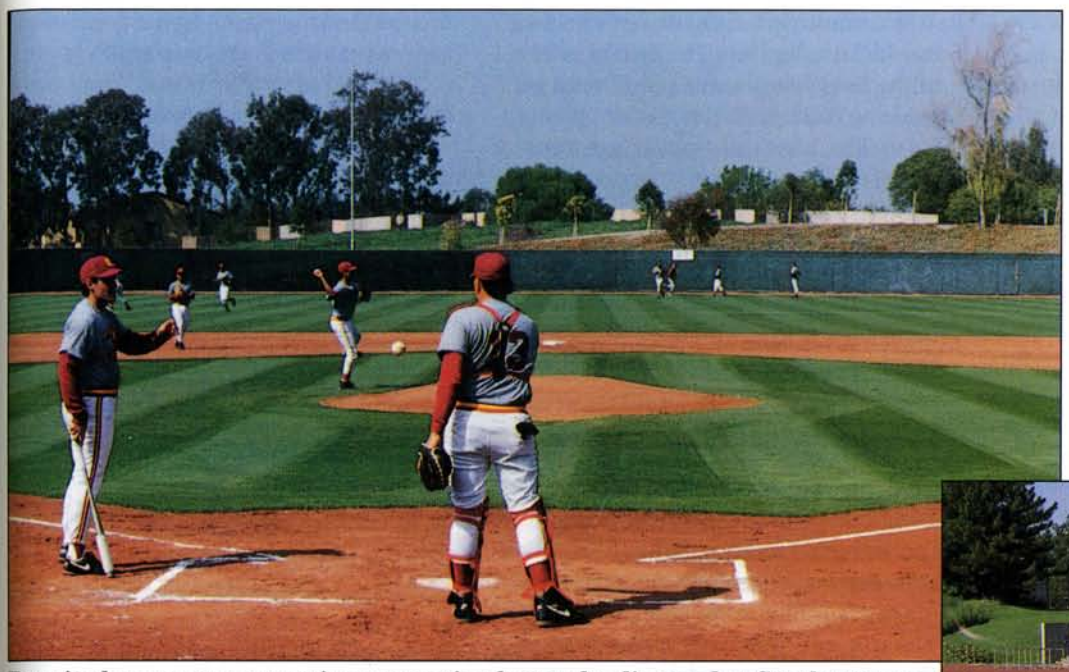

Despite heavy use, aggressive renovation keeps the diamond at Southwestern College in outstanding condition. Photo courtesy: Chris Bunnell.

Renovation scheduling depends on site conditions, field use and budget. Photo courtesy: Ransomes.

Warm-Season Turfgrass Renovation: Profiles In Excellence

By Chris Bunnell

When I returned to baseball after 20 years, not as a turf manager but as a player, I viewed athletic fields from a user's perspective. After a season in the San Diego Men's Senior Baseball League, I concluded that the most neglected and overlooked piece of athletic equipment is often the playing field. I played with men who had no problem paying more than $100 for an aluminum bat, but balked at the thought of paying fees for field maintenance.

Field renovation information is offered through numerous sources, including STMA seminars and numerous articles, yet many sites still seem unable to implement a renovation program to heal the wear caused by high use. The basics of renovation are well-known in the industry. But how are these techniques applied, and how often? And when do renovation chores become a routine maintenance function, along with mowing and irrigation?

Every athletic field has a diverse maintenance program, personnel, and budget. Each site has different uses or requirements and each has various ways to deal with demands. What follows are four rather different renovation success stories, yet each has something in common. Hopefully, the lessons contained within each example can help you with renovating your current field, or a field in the future.

San Diego Jack Murphy Stadium

Under the expert guidance of turf manager Steve Wightman and his experienced crew, San Diego Jack Murphy is one of the finest multi-use stadiums in the country. Renovation tasks on this field are actually aggressive management tools, rather than an annual, semi-annual, or quarterly event. Each year, a precise, yet flexible, schedule is planned to use every possible window of opportunity to improve the field. The turf is maintained at top levels to ensure safety for the athletes and beauty for the fans.

•Renovation Schedule: Since the field is reconstructed in March each year, there is no need for major annual renovation. During reconstruction, the root zone is amended to improve the soil structure and fertility. Then the field is resodded with hybrid bermudagrass. The turf is "renovated" at each window of opportunity, when the team is away, to maintain an extremely smooth surface for baseball. The hybrid bermuda turf is overseeded with perennial ryegrass for the cooler temperatures and heavy use during football season.

•Dethatching: Dethatching is done four times a year. It is accomplished by first lowering the mowing height by 1/16-inch, then verticutting. The first dethatching usually is done by mid-May, then repeated monthly through August. The level of the turf is raised in August to accommodate the football season. In the winter, the athletes do the dethatching with their cleats.

•Aeration: The field is core aerated four to five times a year. The cores are always removed. Core aeration usually is scheduled two to three times during the football season because of the intense compaction caused by the players and because the greatest amount of rainfall is received at that time. The additional aeration applications are worked in as needed to combat compaction stress.

•Topdressing: A specified sand is used to topdress two or three times a year. Following resodding in early March,

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the field is topdressed to ensure the seams in the sod do not affect the roll of a baseball. Additional topdressing during peak growth in May and June or July, in conjunction with aeration, usually uses approximately 1/8-inch of sand.

•Fertilization: Soil tests are conducted four times a year. The turf tissue is tested three times a year to make sure that nutrients actually are reaching the grass plant. The results of the two tests are compared to fine-tune the fertility program, making sure this sand-based soil mix has optimal levels of nutrients and that the proper pH level is maintained.

•Pest Control: Disease seems to be the main concern because of the environment in which the turf is growing. Covering the infield creates the perfect circumstances for disease development. Fungicides are used both as preventative and curative treatments as necessary. Weeds are not a problem on this highly maintained field. Insects are rare and usually do not cause enough damage to warrant using pesticides. Wightman takes a proactive, Integrated Pest Management approach to pest control, making sure the turf is healthy enough to combat any problems.

•Planned Downtime: There are several windows of opportunity during the away games of both the baseball and football seasons. There is also the added pressure of the professional level of expectations. This field *must* always be playable and aesthetically pleasing. These expectations limit the severity of the renovation procedures that can be used.

•Total Labor Estimate: An estimated 72 labor hours are required to complete the combined tasks of dethatching, aeration, and topdressing.

University of Southern California

Managed by John Puncel, the USC Trojan's Dedeaux Field is built on the basics of turf management. "Do these things on a consistent basis and you'll see results," says Puncel.

When Puncel entered the athletic field maintenance profession, he contacted local STMA members including Neal Beeson, Steve Wightman, and Alan Sigwardt for technical advice. The results gave the Trojans an improved played surface. Though heavy scheduling demands restrict the renovation program, Puncel strives for consistent improvement with each year.

•Renovation Schedule: The USC baseball coaching staff is directly involved in the field-use planning and has a good working relationship with the turf manager. The baseball field is a source of school pride and all work together to keep it in top shape. The team plays from the first of the year through the end of May. To avoid any interruptions, little renovation goes on during the season. The team also plays fall baseball, which is finished around mid-November. Major renovation follows, with an aggressive overseeding program.

•Dethatching: Dethatching is done three to four times a year. Light dethatching is performed twice after the baseball season, once during the summer and once just prior to fall play. Major renovation takes place in December. The grass is vertically mowed down to the soil level and all debris is removed. During the initial major renovation of this field, more than 15 cubic yards of thatch were removed.

•Aeration: The field is aerated twice each year in conjunction with light dethatching, and the cores are always removed. Except for the area in front of the mound, the field hasn't needed aeration during the baseball season.

•Topdressing: The field was topdressed annually for years with a high-quality sand mix, but is now topdressed once every three years. With current maintenance practices, the field has retained a smooth surface and the thatch problem has decreased, reducing the need for topdressing.

•Fertilization: Conducted once a season, soils tests continue to show high levels of P and K, so the former complete fertilizer program has been adjusted to concentrate on managing nitrogen levels. Puncel is experimenting with different forms of nitrogen, applying a minimum of one pound per 1,000 square feet per month during the spring and fall baseball seasons.

•Pest Control: Preemergence control of annual weeds is now the main method of weed control, replacing the combination of pre- and post-emergent control used previously. Crabgrass had been the major weed problem. Fungus or insect problems are minor and treatment is usually not needed.

•Planned Downtime: Downtime usually is scheduled for late November and the month of December, allowing about six weeks to do the major renovation and get the perennial ryegrass germinated before practice starts in January.

•Total Labor Estimate: The major renovation, including overseeding, requires approximately 120 labor hours.

Southwestern College

The field at Southwestern College, managed by Bob Womack, is beautiful, perhaps because of the crew's dedication to it. They put out the extra effort when it's needed at the Chula Vista, CA, field.

Womack entered the world of athletic turf with a background as a golf course superintendent. Though sports turf maintenance challenges are similar to those of a busy golf course, as Womack has found, staffs are considerably smaller.

•Renovation Schedule: Renovation of this heavily-used diamond is scheduled to begin in mid-November and be completed before the baseball season begins in mid-January. This is the only window for overseeding the bermuda turf with perennial ryegrass. The field is dethatched down as close to soil level as possible. All debris is vacuumed and the kikuyugrass, a vigorous warm-season weed common in Southern California, is spot-sprayed. The first overseeding follows, with a second seed application just before the season starts in mid-January. The object of the aggressive overseeding is to produce a dense stand of grass to compete with the hybrid bermudagrass base.

•Dethatching: This procedure is performed once a year. In the final weeks of November, during the last portion of the baseball season, the turf is scalped down to the soil. This is followed by vertical mowing and leveling the field.

•Aeration: To avoid interruption of play on this high-use field, it is shatter-aerated monthly. Compaction is monitored with a probe. The field is not core aerated before overseeding in order to ensure a smooth, level surface for seed germination.

•Topdressing: Only the infield is topdressed — every two years. Topdressing is performed on the infield only to maintain a smooth level.

•Fertilization: Soil tests are performed once every three years. The field is well-established and the nutrient levels have been tracked over a long time span. Soil tests are taken every three years to check the accuracy of the fertility program.

•Pest Control: The major annual problem is the persistence of kikuyugrass in the right field area. Insects are treat-

ed as required, with white grubs the most common pest. The perennial ryegrass cultivars "Palmer" and "Prelude," originally chosen for their quick germination under the cooler temperatures of December, have been resistant to diseases.

•Planned Downtime: The once-a-year renovation is a good method for this field because it allows for concentration on repair efforts without the competition of the warm season grasses.

•Total Labor Estimate: Approximately 72 hours of labor are needed for the three crew members to tackle the major renovation. All of the infield detailing also takes place at this time.

Carlsbad High School

Most field maintenance on this field is performed by volunteers. Ralph Cripe, a teacher in the Carlsbad School District, took interest in the baseball diamond at Carlsbad High in 1978. He has overcome equipment and budget problems with a "can-do" attitude. A personal donation from Cripe funded initial field reconstruction and sodding in November, 1982. He's become "hooked" on maintaining the field and handles the majority of the work himself. Community support grows stronger with each season.

•Renovation Schedule: Only the infield area is renovated. Procedures begin as soon as the regular school year ends in June. This field is located about a mile from the Pacific Ocean and the marine influence allows the hybrid bermudagrass to stay green year-round, eliminating the need for overseeding with perennial ryegrass. Renovation is performed during the active growing season of summer. The field is shut down for approximately four weeks during the renovation and recovery process.

•Dethatching: Once a year, the field is dethatched. The turf is scalped to the bare dirt with a flail mower and all debris is removed. Because of labor restrictions, no other dethatching is done during the year.

•Aeration: No equipment is available for aeration. However, this infield is cross-cut with a walk-behind vertical mower, which is the only aeration the field receives.

•Topdressing: Unfortunately, equipment and funds are not available for topdressing.

•Fertilization: The diamond's soil has not be tested. However, fertility has been maintained by frequent applications of fertilizer at one-half the recommended rates. Gypsum has been added to lower the soil pH, but the need for this should be verified by soil testing.

•Pest Control: Broadleaf weeds in the common bermudagrass outfield have been controlled with postemergence applications made by professional grounds personnel with the school district.

•Total Labor Estimate: Renovation of the infield area takes approximately 70 labor hours. The need for renovation is lower because of the ability to shut down the field for periods of rest and to control the amount of play the site receives.

Dedication Works

The common thread running through all these field operations is the desire for more renovation. Labor, even at the professional level, is always a limiting factor. With each field, flexibility is essential to coordinate the timing of procedures with field-use requirements.

To improve your own site, first start by planning the work you want to accomplish and communicating those goals to the field users. People usually are willing to accept and respect limitations if they lead to better playing conditions. ❑

Editor's Note: Chris Bunnell is grounds supervisor for the Escondido Union School District, current president of the Southern California Chapter of the Sports Turf Managers Association, and a member of the national STMA.

Motz Acquires PAT™

Motz Sports Turf, Inc., headquartered in Cincinnati, OH, has purchased Turfgrass Services, Inc., of Pueblo, CO. The purchase entitles Motz to all proprietary rights to the Prescription Athletic Turf™ sand-based athletic field design system, known in the industry as PAT.

"The acquisition of PAT has been a natural progression for our company, which started with sod farming, and now includes lawn care, commercial grounds care, and finally sports turf maintenance and construction," explained Joe Motz, owner and president of Motz Sports Turf. "I've known Laurel Meade [former owner of Turfgrass Services and PAT] and Dr. Bill Daniel [PAT developer] for a long time, and I've always considered PAT the pinnacle of athletic field systems."

PAT's engineering technology is protected by both U.S. and Canadian patents. Its design is based on the use of vacuum to forcibly extract water from the sand-based field. Motz sees the evolution of vacuum drainage as driving the trend in professional and collegiate athletics back to natural turf fields.

"Until we perfected the technology to keep fields playable in virtually any weather conditions, artificial turf was a facility's only answer to rain-outs," said Motz. "Although artificial turf does address surface playability, there are many downsides, including increased injury rates and excessive summer heat."

PAT uses vacuum pumps connected to a network of buried tubes to such water from the field. The action can be "reversed" to irrigate the field from the base up, allowing the turf to be watered even while it is in play. Subsurface electronic moisture sensors tied into the vacuum and irrigation system allow PAT to function automatically. Heating systems are available to keep the root zone warm and surfaces from freezing well into the winter.

Since its invention at Purdue University in the early 1970s, PAT technology has advanced dramatically. Motz plans to speed that evolution by establishing a series of collaborative university research projects dealing with PAT's agronomics and engineering.

There are two PAT systems, which Motz Sports Turf manages, in Cincinnati: Spinney Field and Galbreath Field. Thirty-four of the systems have been installed nationally, including those at Soldier Field, Joe Robbie Stadium, Camden Yards, Ohio Stadium, and Seminole Stadium.

"There is nothing like PAT anywhere in the world," said Motz, who founded the Motz Corporation in 1977. "The $600,000-plus price tag puts the system within reach of only the sporting elite ."