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Lawns: Basic Factors, Construction, and Maintenance of Fine Turf Areas, by Dr. Jonas Vengris and William A. Torello. Designed as a textbook or a practical usage manual, this book has been completely brought up-to-date. Care of lawns and turfgrass, from selection of varieties to maintenance of established grass is completely covered. A needed tool for gardeners, nurserymen, county agents, landscape designers, and a text for college turfgrass courses. This is the most up-to-date book on turf management available today. 195 pgs. **4128 \$15.50**

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Management of Turfgrass Diseases, Joseph M. Vargus, Jr. Completely revised and updated to provide the latest information on maintaining a healthy turf and identifying turf diseases. covers cultural, genetic, biological and chemical approaches to turf management and provides practical solutions to everyday problems. Fungal, bacterial and viral diseases; black layer disease; and diseases caused by nematodes are addressed for all major grasses. Tips on irrigation, fertilization, and grass culture w. 72 full-page photos and more than 100 figures. 320 pgs. **4016 \$67.00**

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Color Atlas of Turfgrass Diseases on Golf Courses, by Dr. Toshikazu Tani and Contributing Author, Dr. James B. Beard. Presents over 350 high-quality color photographs of all the major turfgrass diseases that occur on both warm and cool season grasses and is international in scope. The standard color guide to disease diagnosis and pathogen identification for golf course superintendents and turfgrass practitioners. Maps are included to assist in disease identification by providing geographical locations where each disease/pathogen is likely to occur. It also provides color photos of step-by-step guidance on diagnostic techniques for laboratory analysis which can be used by practitioners. 140 pages. **4005 \$79.95**

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Turf

Uniformity



A key to avoiding lawsuits

by Greg Petry

While providing safe, playable athletic venues is the goal for sports field management, uniformity is key to avoiding liability lawsuits. From the athletes' standpoint, uniform playing surfaces decrease the amount of energy that's spent concentrating on the field. This allows them to focus their attention on the game.

From the facility owner's and manager's standpoint, uniform conditions demonstrate that a standard level of playability is being monitored and maintained. Liability issues are measured against this standard. Any potential lawsuit will take into consideration demonstrated actions to meet those standards.

The maintenance program

It's very important to establish a well-organized maintenance program. The program must include all of the typical practices required for individual fields and the sports played them.

For example, all turf areas require mowing, irrigation, fertilization, aeration, topdressing, seeding, sodding and/or sprigging. For baseball or softball

fields, add all aspects of mound, home plate, and skinned area maintenance. Maintenance should also be addressed for such amenities as fencing, lighting, dugouts, player's benches, stands, restrooms, concession stands, and press boxes.

Once the program is established, you'll need to repeat the maintenance practices regularly. You can't simply follow the program once and then put it away, only to bring it out again when someone complains.

If you aerify every few years or fertilize once a season, you're not going to establish uniformity in your turf. The maintenance program has to evolve over time to produce results. Factors specific to your facility, such as number of fields, amount of play, environmental factors, personnel levels, and budget, will have to be worked into the system.

Maintenance practices should be performed at regularly scheduled times to keep turf in shape. Turf managers must accept the responsibility of seeing that these schedules are followed. We have to be proactive to produce and maintain appropriate conditions.

Details

Pay attention to the details. For example, establish a height of cut that works for your program. You can produce a thicker stand of grass by lowering the cut, but it will require more maintenance to keep that grass in good condition.

Determine which height of cut produces uniform playability within the time, personnel, and budget constraints of your system. Then stick to it. You have to pay close attention to these types of details if you want your maintenance program to be successful within workable parameters for your overall system.

Document

Document your maintenance. Develop a log or reporting form so that you and your crew can keep track of expenses and labor hours. **Figure 1** is an example of an effective maintenance log. These logs provide documented evidence that you are following industry-acceptable maintenance programs, and are receiving results that you want to achieve.

Inspect

Follow up on your documentation with safety inspections. Incorporate a safety log with your maintenance log. Show that personnel have physically gone to the field site to check every detail: turf, skinned areas, soccer goals, fencing, parking lot, etc.

Document that these things have been inspected and that they are in good condition. If crew members identify a problem, the crew leader must make sure it is handled properly. If the problem is not an immediate hazard, it can be reported to the supervisor. If the crew leader identifies the problem as an immediate hazard and the crews are not equipped to rectify it, the leader must radio the supervisor and request assistance.

Once the hazard is corrected, the maintenance crew should sign off on the work completed and note the date. The supervisor should also sign off on it.

Technology

Keep up with technological advancements that allow you to improve conditions in your fields. Continually seek new methods that allow you to meet your goals more efficiently and effectively.

Always keep apprised of the new products that are on the market. For example, new advances in application equipment can ensure that chemical applications are administered properly, calibrated correctly, and applied exactly where they're needed and in the strength required to solve the problem. If you take advantage of this technology, you will improve your turf and enhance the program that you've created.

Also, pay attention to the people factor. Look for ways to make your job more efficient, more effective, and easier. For example, more efficient, less cumbersome equipment for lining out the fields will save time, and it will put less physical stress on your employees. This will reduce the risk of lost time and injuries, another potent source of liability and potential lawsuits.

Communicate

Management's obligation to keep up with new technology and industry-related information goes beyond personal education. You must develop methods to channel that information to your employees. Too often, we keep ourselves up to date as managers, but fail to share that information with our people so they can incorporate it into the job.

Information is a tool, like any other tool. Keeping information to ourselves is

as useless as keeping a mower in the office. When the entire staff is informed, it's able to continually do the job effectively according to established procedures. That's the key to delivering good service.

It's unrealistic to expect people to increase performance levels without proper training. By keeping personnel up to date on technology, you equip them to identify, avoid, and correct hazards, and to produce uniform turf.

Communication is a two-way street. Welcome feedback from employees, staff, players, coaches, schedulers, booster clubs, spectators, and anyone else who uses or spends time on any part of your facilities. Take this feedback to heart, respond to it, and react to it.

Your entire staff needs to be equipped to handle feedback appropriately.

Whenever you receive a complaint, feedback, or notice of inappropriate conditions, respond to it. A player may

Q: What do all of these teams have in common?

Oakland A's
Arizona Diamondbacks
University of Texas Longhorns
San Diego Chargers
University of Southern California Trojans
California Angels
Arizona State University Sun Devils
San Francisco 49'ers
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Rookies



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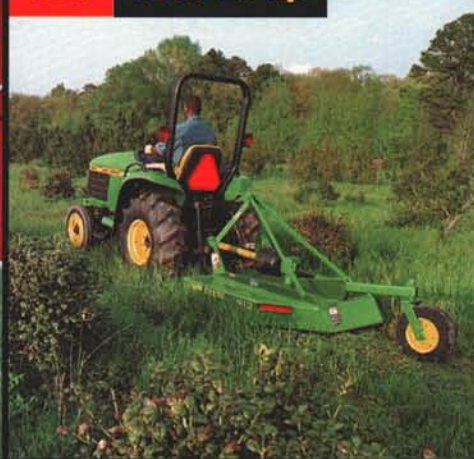
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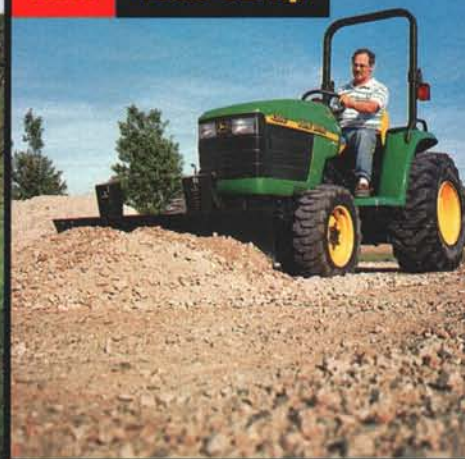
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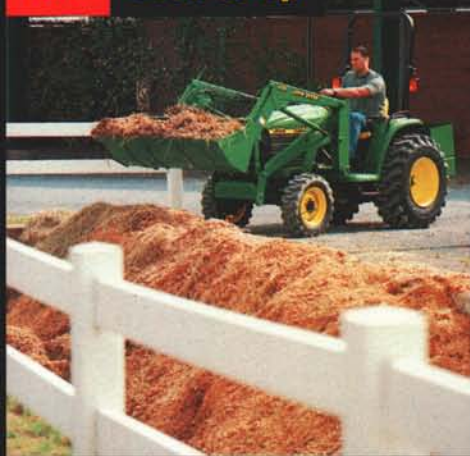
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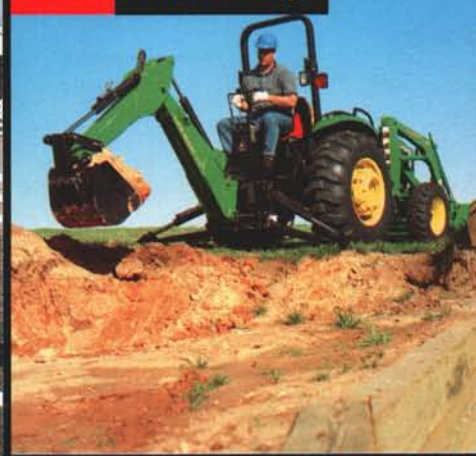
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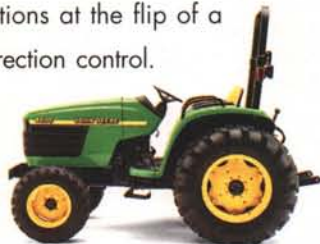


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Stadium Design



**Build it right the first
time**

by Don Dillon and Mike Lloyd

No two college stadium projects are alike. When you're starting to design a new facility, you can't simply dust off plans that worked for another stadium. Each site is unique, and you must engineer design solutions that are specific to each case.

There's no margin for error with a sports project. By nature, it's a very demanding process with high expectations, tough standards, and tight time schedules. Your finished project is instantly placed on public display, so you'd better do it right the first time.

Detailed approach

Doing it right the first time means taking a painstakingly detailed management approach to each project. Remember that people skills are just as important as securing the proper materials and contractors for the job.

The initial programming stage is essential to a project's success. It's critical that you determine what everyone is expecting, and it's just as important to know who "everyone" includes.

A major college sports project often has many indirect constituencies whose agendas may differ greatly. You need to work with the school's athletic director, because this person usually determines the budget. You should also get input from the coaches, since their players will be the ultimate judges of the quality of the new field.

Projects must also conform to the school's Planning and Construction



There's no margin for error with a sports project. With high expectations and tight time schedules, you'd better do it right the first time.

Courtesy: CMX Group

Department guidelines, to its traditions and history, to the existing stadium's design and utility structure, and to the overall goal of the administrators. Basically, it's a good idea to talk to everyone.

General guidelines

Contractors need to get down and dirty on stadium turf projects long before the first shovel ever hits the ground. The following are a few general guidelines:

- First, find out exactly what the client wants.
- Determine the project's various constituencies, and establish a system of effective written and verbal communications to eliminate any potential surprises.
- Develop a realistic project budget with realistic cost estimates. Use local contractors and subconsultants to properly quantify those estimates.
- Treat each project as a unique entity. Involve local architects, planners, and landscape managers. Select only those materials that match the project's location and climate. Establish local testing protocols.

A company's versatility can be a major asset to stadium projects. It's best if a firm can do it all: design, engineer, and project manage.



Natural Springs under the stands at Berkeley's Memorial Stadium created a particular challenge.

Courtesy: CMX Group

From root zones to irrigation

While most of our stadium projects have been college facilities, our first major field installation was contracted by the Arizona Cardinals. The City of Tempe had helped fund a new, \$12-million, state-of-the-art NFL training facility as an incentive for the Cardinals to move from St. Louis. We came in to oversee the project, which included installation of three full-length, grass practice fields.

The Cardinals insisted on attention to detail. For instance, the organization requested that the three practice fields be built on the same north-south axis as Arizona State University's Sun Devil Stadium, where the team plays its home games.