

Construction and Maintenance Of Baseball Infields

INFIELD CONSTRUCTION

By Marc Van Landuyt

Development of a quality field requires proper design and construction, selection of high-quality soils, careful turf establishment, and proper field management after installation.

Each site is unique. Careful consideration of specific site characteristics, such as soil type, slope, drainage, and location of existing structures must be integrated into site planning. Field design is usually predetermined in the guidelines set by the affiliated athletic association, but these may only include field dimensions and markings. More importantly, good field design reduces the risks of hazards.

Funding ultimately will determine the attainability of any proposed construction. Each of five factors and their relative costs must be weighed equally during initial planning. They include: initial planning, field construction/materials, erection of site amenities (bleachers, lighting, etc.), and subsequent field maintenance and maintenance equipment. Don't plan for a professional-level field if you won't be able to afford its maintenance. Budget for these costs and then choose a plan that meets your needs *and* budget.

To put your plans into action, choose a contractor with the experience and equipment to successfully complete the project. Experience can be measured through reference calls and on-site inspections of similar projects. Ask how much of the work was done by the contractor himself and how satisfied the organization is with the work.

The fields we will consider here are high school and small college baseball infields. This pertains to site-specific soils, how to deal with them for drainage and turf establishment, and the aspects of infield materials.

Proper construction begins with using the right equipment. There are two types of construction equipment. The first type is what I call key equipment, and includes a level or laser and a grader. The level or laser is necessary to set the angles and check the grade properly. A lightweight grader is the only machine specifically designed for leveling material and adjusting the grade to the desired elevation.

The second type of equipment is called help equipment, because it is extremely helpful during construction. It includes small, lightweight loaders with enough capacity to move the necessary material without damaging the finish grade. A land pulverizer (Gill pulverizer) keeps the material loose while grading and prepares



Baseball diamond prior to renovation. Photos courtesy: Van's Enterprises.



Same diamond following reconstruction and installation of sod.

the seedbed. A lightweight roller is important in providing a firm surface without excessive compaction. A landscape rake is excellent for any handwork, because of its width and low surface weight.

Avoid using sod cutters, dozers, and tractors with attached implements. Sod cutters cut too shallow and only to the existing contour of the ground. Dozers and tractors with implements are not as adjustable as graders for leveling the surface.

Site construction begins with field layout. Working from the architectural plans or from permanent benchmarks, such as backstops or drain openings, the field elevations are established and marked. These marks indicate both the subgrade and the finished elevation so the correct amount of soil can be removed or added.

Emphasize accuracy when removing the existing soil to the designated elevations. The subgrade contour is more important than the finished grade because it provides for even drying, a stable crown, uniform settling, and lower maintenance over the years. To prevent uneven subgrade compaction, fill low areas with loose, consistent soil spread in even layers.

A soil mixture is prepared for the new turf areas before application. Blend the soil and amendments thoroughly and correct for pH. If sand is an amendment you are using, remember that the soil may already contain sand. Check the sand content of the soil before determining the volume of sand you want to add.

Apply the soil to the designated turf areas in even layers up to the indicated elevation. Blend the first few layers with the subsurface material to avoid an interface which may cause drainage or rooting problems. Before the turf area is seeded or sodded, spread the infield mixture in the skinned areas.

The most important consideration on a baseball infield is the skinned area surface material. Infield mixes vary greatly and selection is primarily governed by climate, available resources, and preference of the management. . . *not always the players*. Materials chosen should be safe. Avoid sharp, abrasive materials. If a material is sharp, but aesthetically pleasing, it should be used only on warning tracks or entranceways.

The skinned area *should not be hard*. It should be firm but loose. Apply the material in even, consistent compacted layers four to eight inches deep. A definite line should exist where the soil mixture meets the infield material. You don't want turf to encroach into the skinned area or loose infield material spreading into the turf.

With a properly formed subgrade, suitably amended soils, and an accurate finished grade, the field will have positive drainage. This promotes optimal plant growth and minimizes disrupted play due to rain.

If subsurface drainage was budgeted for during initial planning, a slit-trench method

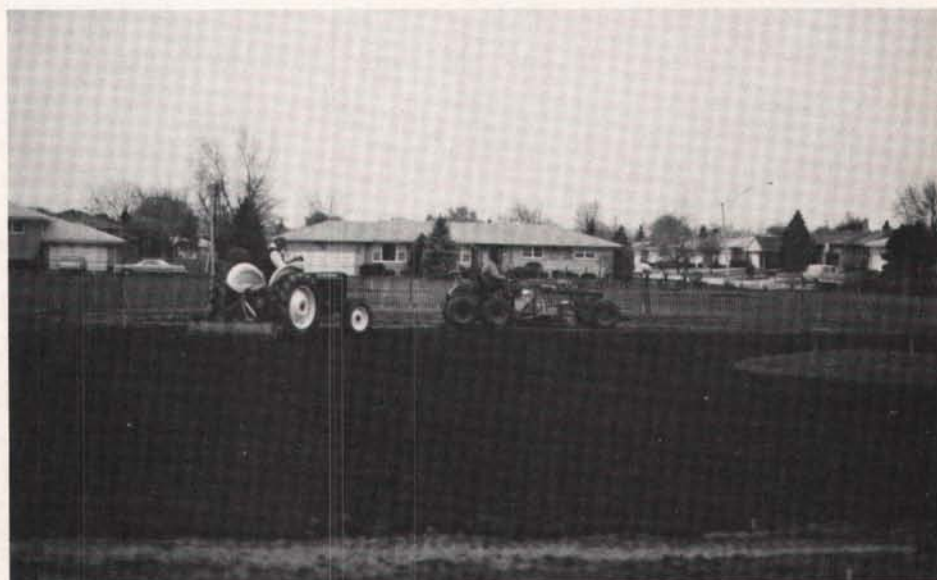
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Stakes indicate both the subgrade and the finished elevation.



Clay mixture is placed in basepaths, pitcher's mound and batter's box before the field is sodded.



Soil is applied to designated turf areas in even layers, blending the first layer with the subsoil.

should be chosen. Open trenches can be installed on both the turf and the skinned areas. For turf areas, cut narrow trenches up to 1/2 inch wide and eight to 12 inches deep on three- to four-foot centers. In skinned areas, the trenches should be two to four inches wide and eight to 12 inches deep on four- to eight-foot centers. These trenches can be filled with either a uniform sand approximately .5 mm or a calcined clay product. If a calcined clay product is used, it can also be incorporated into the top four inches of the skinned infield to improve drainage there as well.

When drainpipe is used it should be the wrapped vertical type. Install it on the perimeter of the infield with varied patterns in the outfield. The open slit trenches will deposit directly into these pipes, which in turn are connected to four- or six-inch round main drains on the edges of the field. Remember, do not install drainpipe under the skinned area of the infield. Most infield materials become compacted and sealed off. The pipe will not receive water to help playability after a normal rainfall.

At this time the soil areas should be prepared for seed or sod. Always consult your local seed distributor for the best seed mixtures for athletic fields in your particular region.

Remember, do not take short cuts to finish a job quickly. The safety of the playing surface is most important. With proper planning, construction, equipment, supplies, and maintenance any facility can look nice and be safe on a small budget. Stress that the layout and construction of a field must coincide with the available maintenance equipment and budget.

Editor's Note: Marc Van Landuyt, is vice president of Van's Enterprises, Ltd., Mundelein, IL.

MANAGING A BERMUDAGRASS INFIEL

Arlington Stadium, home of the Texas Rangers, has earned a reputation as one of the best fields in Major League Baseball. Players, coaches, and other groundskeepers are impressed by the condition of the bermudagrass field under the care of Head Groundskeeper Jim Anglea and his crew.

However, they might be shocked to see the stadium's field between home stands. That's when Anglea scares management with his renovation practices that leave the field looking thin and brown . . . but only for a few days. He's not guessing. After more than six years with the Rangers, he knows how the turf will respond.

In addition to the height of the bermuda, Anglea pays close attention to thatch and runners.

Frequent vertical mowing is part of Anglea's program to keep the 419 hybrid bermuda growing at all times to make it play up to professional standards. "If a field drains properly and you keep the grass growing, you can have good turf," he contends. "But in the big leagues, you need to treat the whole field as if it is a putting green."

Anglea spoon feeds the bermuda depending upon the game schedule, spe-

cial events, and weather. Some months he may apply two pounds of soluble nitrogen per 1,000 square feet, but he does this in quarter-pound doses. The day before a home stand he will spray with a quarter pound of nitrogen mixed with iron for "a little extra push."

The entire field is mowed daily, weather permitting, and the clippings are removed. With such a rich diet the turf can grow more than 1/4-inch per day. If rain keeps the mowers off the field for more than a day, the cutting height has to be raised. "The grass grows more under canvas," he points out. "If we don't raise the height of cut you can tell the field was scalped by that afternoon." Except for such occasions, the infield is cut between 3/8- and 1/2-inch with Jacobsen walk-behind greens mowers.

In addition to the height of the bermuda, Anglea pays close attention to thatch and runners. Based on the Rangers' schedule, the turf is verticut at least twice a month during the summer. "If the team is away for eight days, we'll put thatching reels on our Toro Greensmasters and thin the grass pretty heavily," says Anglea. "If they're out for four days, we do it lighter." As if that weren't enough, one of the walk-behind greens mowers is equipped with a groomer to lightly thin the infield almost every other day.

The only disease problems that crop up at times are brown patch and pythium. The Arlington crew treats at the first sign of brown patch with Chipco 26019. "Everyone on the crew knows what to look for and we are usually treating within an hour," says Anglea. The crew is also on the alert for pythium whenever the tarp is removed, especially when it's humid. After spraying curatively with Koban one or more times, he

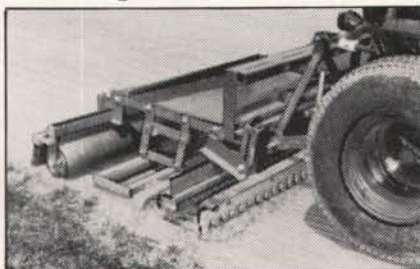
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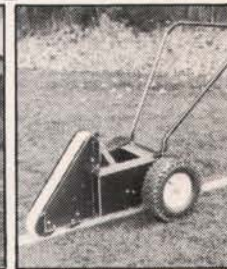


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