Sun Devil Stadium:
University Gridiron Grows Up

Carved between two mountain buttes in the desert Southwest is an important training facility for aspiring professional football players. Ironically professional football plays no part in its construction or maintenance. Sun Devil Stadium in Phoenix, AZ, is the sole responsibility of Arizona State University (ASU) in Tempe. The fact that this stadium has become one of the most recognized in college football and may one day serve a professional football team is purely the result of the foresight of individuals in the athletic and physical plant departments at the university.

There is no minor league in football. Those athletes whose desire in life is to be professional football players have just one way to get there, by going to school and demonstrating their prowess on the gridirons at colleges and universities in small towns and cities across the U.S. These fields are the stage where football careers begin for some and end for others. They are the proving grounds and training facilities for a multi-billion dollar industry. But they are also a tremendous source of national recognition for American colleges and universities, a factor that attracts students and endowments to campuses.

When Sun Devil Stadium was built in 1959, television was still in its infancy and national recognition for college teams was hard to gain. ASU trustees at the time weren't thinking about television revenues or professional football. Their primary concern was providing a football facility in which student athletes could compete successfully with other colleges in the Western Athletic Conference. The football stadium would also be an important part of fall student activities and the only large football stadium in Phoenix for local sports fans.

Sun Devil Stadium at Arizona State University in Tempe, AZ.

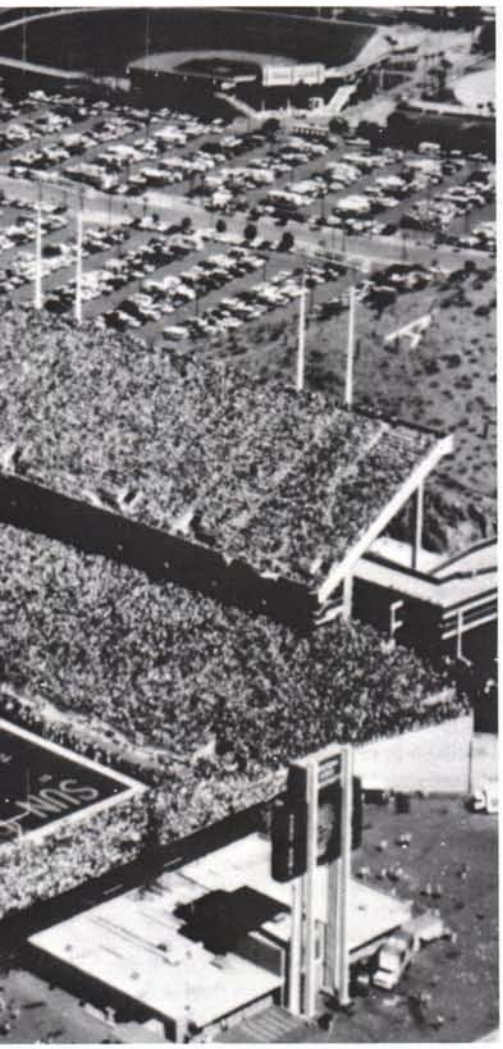
An old landfill situated between two buttes next to the campus was chosen as the site for the stadium since it formed a natural bowl. To widen the bowl, construction crews had to blast away tons of rock. When they finished blasting, the floor of the stadium was still bowl-shaped with the center over the landfill. By the time thousands of yards of local caliche (high in lime content) soil were graded to an 18-inch crown, the soil in the center was more than three feet deep while that on the sidelines was only six inches deep. Common bermudagrass was installed and irrigated with quick coupler sprinklers located on the sidelines.

For more than 15 years the grounds crew had to contend with settling in the center of the field and dry spots along the sidelines, explains Don Dickerman, assistant director of physical plant and former grounds manager. "We had to do a lot of hand watering and topdressing to keep the field in shape." A serious nutsedge problem developed in the alkaline soil. The soil got worse as the salts from the irrigation water and fertilizers built up. Leaching the salts out of the soil was just about impossible since the drainage system was so poor. Despite these challenges, Dickerman managed to produce a quality field for the Sun Devils every year.

In 1970, a group of independent businessmen in the state approached ASU about using Sun Devil Stadium for a new, post-season college bowl game they had named the Fiesta Bowl. The ASU Sun Devils had established an impressive record in the conference. The Fiesta Bowl committee wanted to stage a holiday season contest between the champion of the Western Athletic Conference, which ASU had been for several years, and a football powerhouse from another conference. The Fiesta Bowl committee reached an agreement with ASU in 1971 and the first game was held that winter.

Dickerman, a 1962 graduate of the turfgrass management program at the University of New Mexico, Las Cruces, went to the directors of both the athletic and physical plant departments in 1972 about the condition of the field. He wanted to replace the caliche soil with three inches of sand on top of the best clay loam he could find, fumigate the new soil to kill any nutsedge tubers and install a new hybrid bermudagrass called Santa Ana. The bermudagrass had been developed in the late '60s by Dr. Vic Youngner of the California Extension Service. It has better wear tolerance than common bermudagrass, tolerates salty soils and smog, and retains its dark green color long into the cool football season.

Dickerman was able to take advantage



of a new spirit of cooperation between the athletic department and the physical plant department brought about largely by the Fiesta Bowl. Both the university and the Fiesta Bowl were receiving national attention as teams from football conferences across the nation came to Phoenix to play the Sun Devils. Columbia Broadcasting System (CBS) was interested in televising the game, usually held a day or two before Christmas. ASU created a public events department to help handle the details of the Fiesta Bowl and to attract other events to the stadium.

By working together, the three departments were able to generate the support needed to finance the field improvements. When CBS finalized its agreement in 1973 with the Fiesta Bowl to start broadcasting in 1974, ASU quickly decided to rebuild the field as Dickerman had suggested. In addition to the new soil and sod, the university approved a new Toro irrigation system to give Dickerman better control over soil moisture in the shallow portions of the field.

Dickerman also wanted to combat soil alkalinity. He added a small pump that could inject fertilizers and wetting agents into the irrigation system and installed a network of french drains. "I wanted to flush the salts out of the soil periodically by using irrigation water containing wetting agents," he explains. "The Santa Ana could tolerate the alkaline soil better than the common bermuda, but we also overseed with perennial ryegrass for the Fiesta Bowl. I didn't want alkaline soil hurting the germination or establishment of the ryegrass since we never have more than two to three weeks between home games in the fall to overseed." Gypsum is also spread on the field to amend the soil.

Dickerman would prefer not to overseed. "The Santa Ana rarely goes dormant here," he explains. "We found that spraying the turf with charcoal suspended in water keeps the soil warm during the fall and winter." The black granules absorb sunlight to build up a reserve of heat in the soil during the night. He experimented with pregerminating the ryegrass before overseeding, but decided that he got a denser stand of ryegrass just as fast by applying charcoal. "To apply the pregerminated seed you have to mix it with sand. The sand granules are abrasive to the soft, wet seed and can damage it."

When night temperatures fall below 60 degrees F. in the fall the field is covered at the end of a day with a tarp that is dark on one side and light on the other. "The dark side absorbs the late afternoon sunshine and keeps soil temperatures up overnight," explains Dickerman. "This helps the overseeded ryegrass germinate quickly." Conversely, the light side of the tarp reflects heat when the field needs to be covered during the day.

The field is overseeded in October with a blend of Derby, Regal and Allstar perennial ryegrasses. "We wait until the team has two away games in a row," states Dickerman. "First we scalp and verticut the field with a Toro triplex. We pick up the thatch and stems with a Turf Vac and go over the field with an Olathe sweeper to pull out any remaining debris. This opens up the Santa Ana so we can broadcast the ryegrass evenly over the field. We continue to broadcast seed before games during the rest of the season to let the players work the seed into the soil."

The agressive hybrid bermudagrass produces thatch, so Dickerman implemented a regular program of aerifying, verticutting and topdressing. This is done every four weeks between May and October. The field is heavily aerified, verticut and topdressed before overseeding and a second time after the Fiesta Bowl. "Since the field is used for mud bogs, motocross and other events (the Pope held a mass in the stadium this past September), we also aerate after those,"

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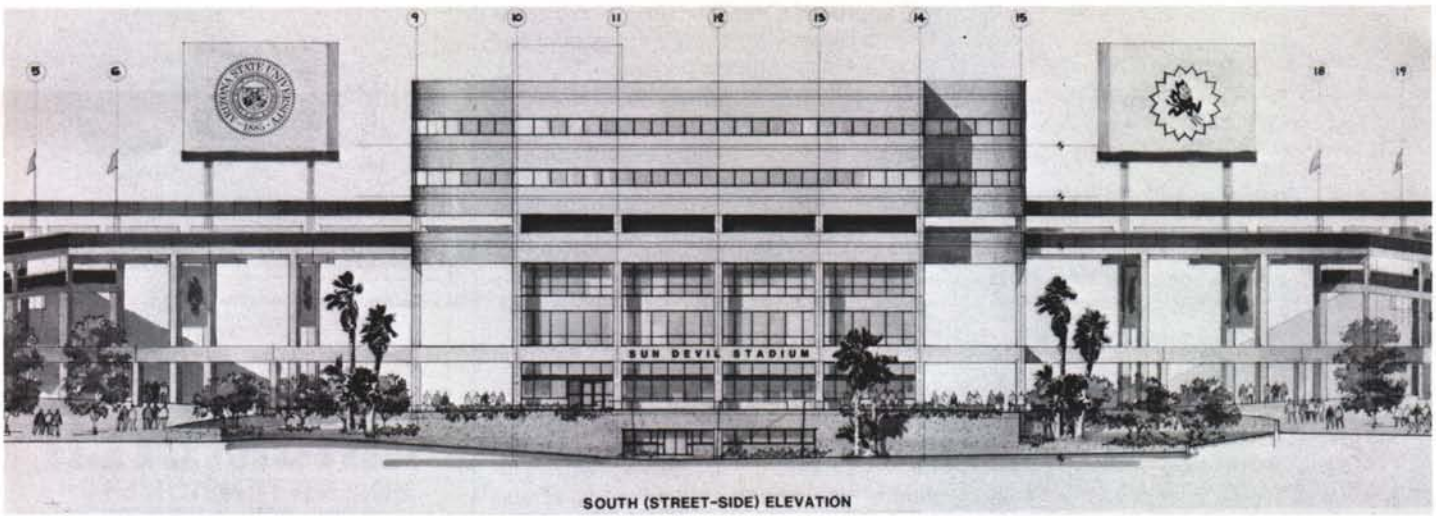

SOUTH (STREET-SIDE) ELEVATION

The seven-story expansion on the south end of Sun Devil Stadium to constructed this winter will consolidate athletic department offices now spread across campus and include a sports medicine clinic, conference center, weight training center, classrooms and 1,700 more seats.

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Dickerman adds.

Dickerman is not embarrassed to admit he uses green paint to prepare the field for a televised game. Ken Rosenbaum, who does all the field marking and painting for the athletic department and is also in charge of ASU's Packard Baseball Stadium, takes care of painting Sun Devil Stadium. "Three days before the Fiesta Bowl, Ken sprays the field with a mixture of water and green paint that contains chlorophyll," describes Dickerman. "The paint colors the thatch and any damaged or dieing turf. We mow the field before the game to give it a striped appearance. Ken touches up the lines and paints the emblems the day before the game."

The week after the game, Bob Schwietzer, lead groundsman at the stadium, verticuts deeply to break up the paint in the endzones and emblems. "Painting the field is a major decision," states Schweitzer. "It takes the cooperation of all three departments involved at the stadium. You don't paint unless it makes sense. Last year, when Miami played Michigan, everything had to be perfect, so we painted. This September we covered the field with geotextile and plywood for the Papal visit. The Sun Devils had a game four days later. It was hot and the bermudagrass was almost yellow when we uncovered the field. We had to paint."

In 1978, the success of the Sun Devils and the Fiesta Bowl led to a series of changes. Athletic Director Dr. Fred Miller believed the Sun Devils had outgrown the Western Athletic Conference. Instead of playing the U.S. Air Force Academy, Brigham Young University, Colorado State University and San Diego State, Miller felt the Sun Devils should put their strength on the line against the football powers of the Pacific-8 Conference. He was willing to put ASU's football program up against the University of California-Los Angeles, Stanford University, Washington State University, Oregon State University and the University of Southern California. To him it was the next step for the Sun Devils.

Changing conferences meant changing the Fiesta Bowl. If the Sun Devils became the champions of the Pac-10, the new name of the conference after the University of Arizona and ASU switched, they would play in the Rose Bowl, not the Fiesta Bowl. The Fiesta Bowl staff had anticipated such a move by ASU. Its contract included a release clause which allowed it to invite a second "at-large" team to replace the Sun Devils. Now the Fiesta Bowl had to compete with the Orange Bowl, Rose Bowl and other major bowl games for the best college conference champions.

While Sun Devil Stadium became the host for the football powers of the Pac-10, the Fiesta Bowl succeeded in attracting highly ranked teams from other conferences. Within a short period of time, Sun Devil Stadium was launched into national prominence. Producers of other events wanted to book the stadium. ASU's events department grew steadily to meet the demand.

"Motocross, mud bogs and concerts were a big change from football," remarks Dickerman. "We had to cover the field with geotextile and plywood. We dumped hundreds of yards of dirt on top of that for motocross and mud bogs. Afterwards, we'd have to fix depressions made in the field, patch areas with sod and aerate heavily to get the field back in shape. It wasn't the kind of thing university stadium groundskeepers normally do."

Arizona State High School football semifinals and finals have been held at Sun Devil Stadium for years, as have the state high school band championships, but now its scope of events was changing. The city of Phoenix wanted a professional football team and Sun Devil Stadium was the only facility capable of handling one. When the United States Football League (USFL) was launched, Sun Devil Stadium entered professional sports as the home field for the Wranglers.

The short life of the USFL Wranglers may have been just a glimpse of the future. "The university places some important restrictions on the use of Sun Devil Stadium," explains Tom Sadler, event coordinator. "One of them is no alcoholic beverages." Restrictions like these can complicate matters for a professional football team that relies on concession revenues for operations, especially a young expansion franchise.

Although the National Football League has yet to form a committee to consider expansion teams, Bart Star, former quarterback for the Green Bay Packers, who lives in Scottsdale, is leading a campaign to get

a NFL franchise for Phoenix, and visits Sun Devil Stadium as many as three times a week. Star has not publicly stated whether he would prefer a future team to play at Sun Devil Stadium or a dome stadium proposed for downtown Phoenix.

Meanwhile, the university is going to break ground this winter on a multi-million dollar expansion for the south end of Sun Devil Stadium. The seven-story structure will contain the ASU athletic department offices, a large weight training center, a sports medicine clinic, classrooms, locker rooms, coaches offices, a conference center, an ASU Hall of Fame, and outdoor loges facing into the stadium. The expansion will add 1,700 seats to the 72,000 at present. Two new scoreboards will also be installed, one with an instant replay video screen. The expansion will provide the university with one of the most complete stadium sports facilities in the nation.

A center of this quality could serve as a lure for a future professional football team. "The expansion on Sun Devil Stadium was not designed with a professional football team in mind," says Jason Eslamieh, design project manager. "However, there is plenty of room for offices if a franchise did want to use the facility."

"We are going to partially rebuild the field at the same time," states Dickerman. "Years of use have worn down the crown. After the Fiesta Bowl, we are going to remove the sod and rebuild the crown." New Santa Ana sod has been ordered and will be installed by May.

Dickerman believes that a total overhaul of the field will be necessary if the stadium is chosen by a new NFL franchise. "It's possible that a stadium commission will take over Sun Devil Stadium and lease it back to ASU and a professional football franchise." If that happens, Dickerman thinks the commission should install a PAT System so the field can withstand a busier event schedule. "That would solve the problems with alkalinity, poor drainage and irrigation." A stadium authority would also remove some of the restrictions on the facility and make it more attractive to event producers.

Although Dickerman, as assistant director of physical plant, has much more on his mind than the stadium field, he stays involved. Standards he implemented for the field are still followed closely by David Webb, campus grounds manager and Schweitzer. The soil is tested every six weeks for nutrient levels. "The fertilizer is adjusted to the soil test results. We increase potassium levels in the fall to boost winter hardiness and phosphorus levels in the spring to help the bermudagrass root system," Dickerman says. "We supplement the granular slow-release fertilizer with some nitrogen, iron, soil penetrant and micronutrients injected into the irrigation system."

"ASU covers 850 acres and has 43,000 students," explains Webb. "We maintain two baseball stadiums, two football practice fields, two band practice fields and acres of intramural fields." Much of the campus is designed with desert landscaping, but the athletic facilities are irrigated (both automatic and flood), overseeded, aerated and top-dressed regularly. "An 18-hole golf course and driving range are on the drawing boards," Webb adds.

It may be impossible to attribute the phenomenal growth of the university to a stadium that was built almost 30 years ago, a very successful football program, three university departments working closely together and the Fiesta Bowl. But last year, it all paid off. The Sun Devils captured the Pac-10 championship and defeated the University of Michigan in the Rose Bowl. The Fiesta Bowl was able to arrange a "college superbowl" between the number one ranked University of Miami and number two ranked Pennsylvania State University. The game was telecast in prime time on January 2 giving ASU and Sun Devil Stadium exposure the trustees could never have imagined possible.

"If those two buttes were just a little further apart, Sun Devil Stadium could have been wide enough for baseball," said expansion project manager Eslamieh. It would appear that ASU has every intention of keeping its sports program a driving force for both the university and the city of Phoenix.