Coors Field: A Rocky Mountain Highlight

The Rockies groundskeeping crew has one mission: to keep the playing surface at Coors Field in top shape. Front row (left to right): Bob Swentzell, John Nichols, Mark Razum, Jose Gonzalez; back row (left to right) Reggie Fuentes, Mike Del Real, James Sowl, Tony Rivera, Javier Rivera and Andy Glass. Photo courtesy: CPS Distributors Inc.

By Katherine Buggy

Major League Baseball's newest diamond made its debut in April as the Colorado Rockies unveiled their pristine home ballpark, Coors Field in Denver. Fans were immediately impressed by the new facility and by the lush, green field in particular. "It's the most emerald-green diamond I've ever seen," remarked one Rockies fan, a sentiment shared by many who attended the first game played there, an exhibition contest against the New York Yankees just before the Major League Baseball Players Association ended the strike that had crippled the game.

The Rockies are paying $53 million toward the $215.5 million cost of building the stadium, with Denver taxpayers contributing $161.3 million and the stadium district chipping in the final $1.2 million. The stadium is a masterpiece, and the diamond is the crown jewel.

"If there was an MVP award given for head groundskeepers, it would definitely go to Mark Razum," says Betsy Graff of Graff Turf Farms. Graff has worked closely with Razum since he started with the Rockies in October 1994.

Razum says that he has had an interest in sports field groundskeeping since he was a boy watching baseball games on TV. A native of Cleveland, OH, Razum began his career as a member of the

Forty-five miles of underground electric heating cables will keep the field at optimum temperatures. Photo courtesy: Randall & Blake, Inc.

grounds crew at Cleveland Municipal Stadium, then home of the Cleveland Indians, in March 1978. He credits much of his current success to his mentors, Harold and Marshall Bossard, who supervised him in Cleveland. "It was a privilege to learn the art of groundskeeping from men who were pioneers in the field of groundskeeping," says Razum. "I learned things from them that are not taught in school."

Razum left Cleveland in 1982 to manage the California Angels spring training facility in Casa Grande, AZ. Besides managing the baseball fields, Razum also assisted the head groundskeeper of the 18-hole golf course at the Francisco Grande Resort, which afforded him multilevel learning experiences in turf management.

Razum's reputation in the industry grew, and in 1984, Walt Jocketty, farm director for the Oakland Athletics, contacted Razum and hired him to build and maintain several new fields at Scottsdale Community College, which would become the team's new spring practice facility. In addition, Razum maintained the grounds at Phoenix Municipal Stadium, the Athletics home field during spring training.

"During spring training of 1989, before the team's workout, [A's Manager] Tony LaRussa asked me to join him and the players on the field," Razum recalls. "He said to the players, 'I don't know about the rest of you guys, but these are the best fields that I've seen. The person responsible is Mark.' He began applauding me, and all the players joined him in applause. It was overwhelming for me to see guys like Dennis Eckersley, Carney Lansford, Terry Steinbach and Mark McGwire applauding and appreciating my work."

Razum's status with the Oakland organization grew, and he occasionally flew to Oakland to act as a consultant on problems with the Oakland Coliseum infield. The organization ultimately offered Razum the head position at the Oakland Coliseum for the 1989 season. He spent five seasons there before accepting the offer from the Colorado Rockies to become the head groundskeeper at Coors Field in April 1994. However, Razum was unable to participate in the initial field construction until after the conclusion of the 1994 season in Oakland.

In October 1994 Razum moved to Aurora, CO, near Denver, and since then he has been inordinately busy preparing the field that has impressed fans and players alike. His preparations have included researching infield soils, purchasing tools, equipment, materials and supplies, consulting on and observing daily construction, interviewing and hiring crew members, establishing maintenance and labor budgets, setting up and organizing the ground-crew shop area and generally turning Coors Field into a first-class major-league facility. Assistant Head Groundskeeper Jose Gonzalez says, "This is groundskeeper's heaven. We have everything we need. Everything is brand new, and it's obvious that they [the

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Fast Facts About Coors Field

- **The Long Haul:** Dimensions down the left field line (347 feet) and the right field line (350 feet) are the longest in the National League except for "cozy" Wrigley Field in Chicago.
- **You Mean It's Not the "Live" Baseball?:** A study conducted by University of Denver Physics Professor Thomas M. Stephen concluded that a baseball hit at Denver's altitude will travel nine percent farther than a ball hit at sea level.
- **Nosebleed Seats:** A row of purple seats in the upper deck is called "Mile High Row" because it is exactly 5,280 feet above sea level.
- **Jurassic Ballpark:** When Rockies manager Don Baylor paces back and forth in the first-base dugout at the new ballpark, he covers the same ground where 66-million-year-old dinosaur bones were discovered during the construction of Coors Field.
- **Water, Water Everywhere:** The irrigation system at Coors Field uses between 12,000 and 22,000 gallons of water per day. The complete system utilizes about 90 sprinklers. Hunter Industries supplied much of the irrigation equipment, including I-40 rotors in large turf areas and I-25 rotors in small turf areas, brass valves and quick couplers.
- **Good Wood:** 1,000 trees will be planted around Coors Field, offering pleasant scenery and an estimated $162 million in environmental benefits.

Mark Razum Profile

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Rockies] want to take care of us."

According to the players, his Oakland crew members, Colorado crew members and other who have worked with Razum, his trademark is attention to detail. "Just seeing the hard work that players go through to get to the major leagues motivates us to produce a field worthy of their efforts," says Razum.

Blue/Rye Sod Mixture

The sod for Coors Field was grown on Graff Turf Farms in Fort Morgan, CO, by Randy and Betsy Graff, who also provided sod for World Cup soccer games at Soldier Field in Chicago in 1994 and for the renovation of Kauffman Stadium for the Kansas City Royals. The Coors Field sod is a bluegrass/ryegrass mixture selected by Randall & Blake Inc. (RBI), the company subcontracted for the construction project, and RBI's consulting agronomists, Dr. Tony Koski and Mark Altman. Typically at Graff Turf Farms, the harvesting process will leave enough rhizomes to regenerate and produce the crop for the following year. However, RBI insisted upon a different growing technique for the Coors Field sod. To avoid contamination of the sod by the farm's parent soil, RBI laid approximately two to three inches of the same sand that was being used at Coors Field and seeded it. RBI requested a heavy topdressing in the fall, which suffocated the various bluegrass strains, and as a result, the plants were slow to come up in the spring.

"It was a challenge and a big learning experience for us to use someone else's guidelines and techniques," admits Betsy Graff. "We also had one of the hottest summers and excessive wind conditions to deal with, which presented more challenges," she adds. "When Mark [Razum] visited the farm for the first time, the grass was at its worst. He made several recommendations, including using a [Ransomes Motor 180] triplex mower and mowing in different directions every day at a 1 1/4-inch cutting height. We followed his advice and that of Dr. James Watson [an agronomist and consultant retained by the Rockies] and really saw more growing than in the past year — a big turnaround."

Although the sod was in great shape at the harvest time, it was very thin (approximately 1/2-inch soil depth) because of the coarse sand layer in which it was planted. It appeared similar to washed sod. Installation was difficult and tedious. The big-roll (42 inches by 100 feet) method was used. Each roll had to be wrapped with netting in an effort to keep the soil intact.

Unfortunately, RBI crews' hurried installation of the sod resulted in wide seams and grade disturbance. Heavy, uneven topdressing and brushing done about two weeks after installation in an effort to remedy the problem instead put the turf in shock during a crucial grow-in period and widened the seams. The seams were filled in with sand by hand. Thanks to diligence and mild weather conditions, the grass is growing well now. In March, Razum introduced Princeton 104 Kentucky bluegrass into the original mix, which enhanced the color and durability of the field. A special feature of Coors Field is a 6,000-square-

foot sod farm behind the centerfield fence in full view of the fans.

The Soil

The rootzone mix is a 90/10 sand and peat moss mix. Although Razum prefers a 12- to 16-inch rootzone depth, at Coors Field it varies from 7.5 to 13 inches.

The infield soil mix is a blend of two types of soil, a clay/sand mixture (approximately 40-percent clay, 20-percent silt and 40-percent sand) and another clay/sand mixture (approximately 80-percent clay and 20-percent sand) with the intention of creating a 70 clay/30 sand mix with the soil base. Turface and washed mortar sand are combined as an amendment to the clay base. The objective of this technique is to create a firm clay base that will retain moisture. The Turface and mortar sand layer acts as a shield to protect the clay base from drying out. The rich, red color is an aesthetic bonus of this clay selection. The warning track is made from crushed lava rock with approximately 10-percent clay added for better binding.

Denver's weather can be unpredictable, but the field should be able to withstand any weather conditions. The heavy snowfall on Opening Day 1994 was motivation enough to purchase a heating system. Forty-five miles of underground electric heating cables broken down into three zones, each with its own thermostat, will keep the field at optimum temperatures during the freezing days and nights. Razum also uses an Evergreen Growthcover in colder areas of the stadium. In the event of torrential downpours, RBI's patented Graviturf drainage system is guaranteed to remove up to five inches of rain per hour from the field.

"I haven't lived in snow conditions for 13 years," explains Razum. "I was a little nervous about how it would affect the field. Learning how to best use the warming system was difficult at first. There wasn't much printed information that I could research. But with the help of Drs. Watson and Koski and [San Diego Jack Murphy Stadium Head Groundskeeper] Steve Wightman and some experimentation of my own, I have reached a comfort level. It is great to see the benefits of the heating system."

Fertilization

Since the new sand is unable to hold nutrients for long periods of time, the crew will monitor the soil closely and treat it as needed. Among the fertilizers being used are Par Ex with IBDU (a slow-release fertilizer), Scotts Fluid Minors, Nutriculture products and, depending on soil analysis, Roots with iron, Agri-Plex and Ferromec AC for iron supplement.

Few, if any, multimillion-dollar projects are completed without unforeseen difficulties. Coors Field is clearly not an exception. However, because of the hard work and dedication of Mark Razum and everyone involved in the project, Coors Field is a mile-high marvel. ❑

Katherine Buggy is a freelance writer who also studies English literature at Denver's Metro State College and considers herself a great fan of baseball and ballparks.